Guidewire ClaimCenter®

ClaimCenter Globalization Guide

RELEASE 8.0.2

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About ClaimCenter Documentation

The following table lists the documents in ClaimCenter documentation.

Document	Purpose
InsuranceSuite Guide	If you are new to Guidewire InsuranceSuite applications, read the *InsuranceSuite Guide* for information on the architecture of Guidewire InsuranceSuite and application integrations. The intended readers are everyone who works with Guidewire applications.
Application Guide	If you are new to ClaimCenter or want to understand a feature, read the *Application Guide*. This guide describes features from a business perspective and provides links to other books as needed. The intended readers are everyone who works with ClaimCenter.
Upgrade Guide	Describes how to upgrade ClaimCenter from a previous major version. The intended readers are system administrators and implementation engineers who must merge base application changes into existing ClaimCenter application extensions and integrations.
New and Changed Guide	Describes new features and changes from prior ClaimCenter versions. Intended readers are business users and system administrators who want an overview of new features and changes to features. Consult the “Release Notes Archive” part of this document for changes in prior maintenance releases.
Installation Guide	Describes how to install ClaimCenter. The intended readers are everyone who installs the application for development or for production.
System Administration Guide	Describes how to manage a ClaimCenter system. The intended readers are system administrators responsible for managing security, backups, logging, importing user data, or application monitoring.
Configuration Guide	The primary reference for configuring initial implementation, data model extensions, and user interface (PCF) files. The intended readers are all IT staff and configuration engineers.
Globalization Guide	Describes how to configure ClaimCenter for a global environment. Covers globalization topics such as global locales, languages, date and number formats, names, currencies, addresses, and phone numbers. The intended readers are configuration engineers who work with locales and languages.
Rules Guide	Describes business rule methodology and the rule sets in ClaimCenter Studio. The intended readers are business analysts who define business processes, as well as programmers who write business rules in Gosu.
Contact Management Guide	Describes how to configure Guidewire InsuranceSuite applications to integrate with ContactManager and how to manage client and vendor contacts in a single system of record. The intended readers are ClaimCenter implementation engineers and ContactManager administrators.
Best Practices Guide	A reference of recommended design patterns for data model extensions, user interface, business rules, and Gosu programming. The intended readers are configuration engineers.
Integration Guide	Describes the integration architecture, concepts, and procedures for integrating ClaimCenter with external systems and extending application behavior with custom programming code. The intended readers are system architects and the integration programmers who write web services code or plugin code in Gosu or Java.
Gosu Reference Guide	Describes the Gosu programming language. The intended readers are anyone who uses the Gosu language, including for rules and PCF configuration.
Glossary	Defines industry terminology and technical terms in Guidewire documentation. The intended readers are everyone who works with Guidewire applications.

Conventions in This Document

Text style	Meaning	Examples
italic	Emphasis, special terminology, or a book title.	A *destination* sends messages to an external system.
bold	Strong emphasis within standard text or table text.	You **must** define this property.
narrow bold	The name of a user interface element, such as a button name, a menu item name, or a tab name.	Next, click **Submit**.
`monospaced`	Literal text that you can type into code, computer output, class names, URLs, code examples, parameter names, string literals, and other objects that might appear in programming code. In code blocks, bold formatting highlights relevant sections to notice or to configure.	Get the field from the `Address` object.
`monospaced italic`	Parameter names or other variable placeholder text within URLs or other code snippets.	Use `getName(`*`first, last`*`)`. `http://`*`SERVERNAME`*`/a.html`.

Support

For assistance with this software release, contact Guidewire Customer Support:

- At the Guidewire Resource Portal – `http://guidewire.custhelp.com`
- By email – `support@guidewire.com`
- By phone – +1-650-356-4955

part I

Introduction

chapter 1

Understanding Globalization

Globalization in ClaimCenter is the set of features and configuration procedures that make ClaimCenter suitable for operation in a global environment.

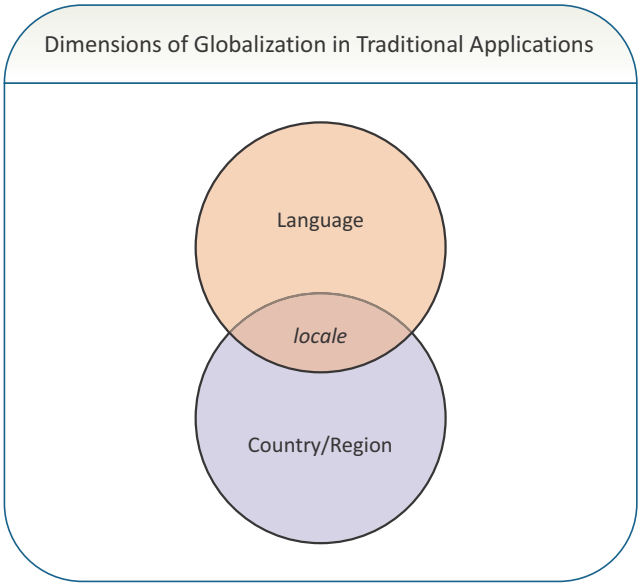
This topic includes:

Dimensions of Globalization

Traditionally, software solves the problem of operation in a global environment along two dimensions that intersect:

- **Language** – Writing system and words to use for text in the user interface
- **Country/region** – Formatting of dates, times, numbers, and monetary values that users enter and retrieve

The intersection of these two dimensions – language with country/region – is known as *locale*.



Traditionally, applications let you select from a pre-configured set of locales. Java embodies this globalization dichotomy in Java locale codes. A Java locale code combines an ISO 639-1 two-letter language code with an ISO 3166-1 two-letter country/region code.

For example, the Java locale code for U.S. English is `en-US`. A locale defines the language of text in the user interface as used in a specific country or region of the world. In addition, the locale defines the formats for dates, times, numbers, and monetary amounts as used in that same country or region.

Shortcomings of the Two Traditional Globalization Dimensions

In traditional applications, the two dimensions of globalization do not cover the following issues for software that operates in a global environment:

- Linguistic searching and sorting
- Phone number formats
- Address formats

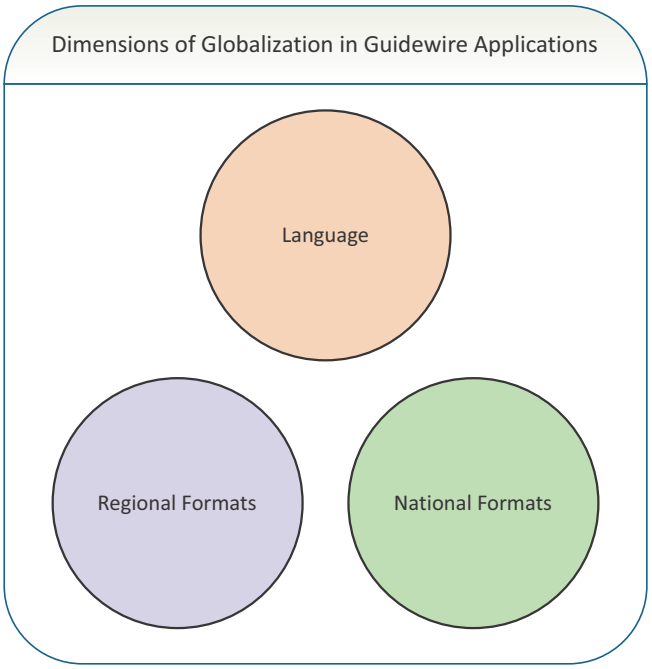
Furthermore, traditional applications enable users to select only pre-defined locales. For example, users typically cannot select French as the language, and, at the same time, select formats for dates, times, numbers, and monetary amounts used by convention in Great Britain.

Globalization Dimensions in Guidewire Applications

Guidewire applications overcome the shortcomings of the traditional model by providing three dimensions for operating in a global environment. These three dimensions are independent:

- **Language** – Writing system and words to use for text in the user interface, as well as for linguistic searching and sorting behavior.
- **Regional formats** – Formatting of dates, times, numbers, and monetary amounts that users enter and retrieve. Regional formats specify the visual layout of data that has no inherent association with specific countries, but for which formats vary by regional convention.

- **National formats** – Formatting of addresses and phone numbers. National formats specify the visual layout of data for which the country or region is inherent, and the format remains the same regardless of local convention.



In Guidewire applications, you can select the language to see in ClaimCenter independently of the regional formats in which you enter and retrieve dates, times, numbers, and monetary amounts.

Phone numbers and addresses in ClaimCenter, however, use national (country) formatting, set through application configuration. For example, if you enter the China country code +86 in a phone field, ClaimCenter displays the phone number by using Chinese formatting. If you enter France for the country in an address field, ClaimCenter shows address fields specific for France, including a CEDEX field.

Selecting Language and Regional Formats in ClaimCenter

In Guidewire ClaimCenter, each user can set the following:

- The language that ClaimCenter uses to display labels and drop-down menu choices
- The regional formats that ClaimCenter uses to enter and display dates, times, numbers, monetary amounts, and names.

You set your personal preferences for display language and for regional formats by using the Options menu at the top, right-hand side of the ClaimCenter screen. On that menu, click **International**, and then select one of the following:

- **Language**
- **Regional Formats**

To take advantage of international settings in the application, you must configure ClaimCenter with more than one region.

- ClaimCenter hides the **Language** submenu if only one language is installed.
- ClaimCenter hides the **Regional Formats** submenu if only one region is configured.
- ClaimCenter hides the **International** menu option entirely if a single language is installed and ClaimCenter is configured for a single region.

ClaimCenter indicates the current selections for **Language** and **Regional Formats** by placing a check mark to the left of each selected option.

Options for Language

In the base configuration, Guidewire has a single display language, English. To view another language in ClaimCenter, you must install a language pack and configure ClaimCenter for that language. If your installation has more than one language, you can select among them from the **Language** submenu. The `LanguageType` typelist defines the set of language choices that the menu displays.

If you do not select a display language from the **Language** submenu, ClaimCenter uses the default language. The configuration parameter `DefaultApplicationLanguage` specifies the default language. In the base configuration, the default language is `en_US`, U.S. English.

Options for Regional Formats

If your installation contains more than one configured region, you can select a regional format for that locale from the **Regional Formats** submenu. At the time you configure a region, you define regional formats for it.

Regional formats specify the visual layout of the following kinds of data:

- Date
- Time
- Number
- Monetary amounts
- Names of people and companies

The `LocaleType` typelist defines the names of regional formats that users can select from the **Regional Formats** menu. The base configuration defines the following locale types:

- Australia (English)
- Canada (English)
- Canada (French)
- France (French)
- Germany (German)
- Great Britain (English)
- Japan (Japanese)
- United States (English)

Unless you select a regional format from the **Regional Formats** menu, ClaimCenter uses the regional formats of the default region. The configuration parameter `DefaultApplicationLocale` specifies the default region. In the base configuration, the default region is `en_US`, United States (English). If you select your preference for region from the **Regional Formats** menu, you can later use the default region again only by selecting it from the **Regional Formats** menu.

See also

- “About Display Languages” on page 21
- “Working with Regional Formats” on page 67

Configuration Files Used for Globalization

You use Guidewire Studio to edit the configuration files for globalization. The following list describes the configuration files and how to navigate to them in the **Project** window.

Location in Project window	Configuration file	Description
configuration → **config** → **Extensions** → **Typelist**	`Languagetype.ttx`	List of defined languages
	`Currency.ttx`	Contains currency code and similar information for the supported currencies
	`PhoneCountryCode.ttx`	Phone country codes
	`State.ttx`	Address configuration
	`StateAbreviations.ttx`	
	`Jurisdiction.ttx`	
	`Country.ttx`	
configuration → **config** → **Metadata** → **Typelist**	`LocaleType.tti`	List of defined locales
configuration → **config**	`config.xml`	Configuration parameters related to localization. The localization-related configuration parameters include, among others: • `DefaultApplicationLocale` • `DefaultApplicationLanguage` • `DefaultCountryCode` • `DefaultPhoneCountryCode` Each Guidewire application instance contains a single copy of `config.xml`.
configuration → **config** → **Localizations**	`collations.xml`	Collation configuration for one or more languages that apply to one or more database types.

Location in Project window	Configuration file	Description
configuration → **config** → **Localizations** → *LocalizationFolder*	`localization.xml`	Currency formatting information for use with single currency rendering mode only. Studio contains multiple copies of this file, one for each locale.
	`display.properties`	Application display keys for a specific language. Each region must have a separate `display.properties` file. It is the presence of multiple `display.properties` files that alerts ClaimCenter to the fact that multiple locales exist. The `display.properties` file (as with all property files) is a standard Java property file with the following format: `display_key_name = value`
	`typelist.properties`	Application typecode names and descriptions for a specific language.
	typelistName`.sort`	Sort order for typecodes in a typelist for a specific language.
	`gosu.display.properties`	Contains Gosu error messages. Studio displays these messages if it encounters a Gosu error condition. You can translate these error messages into the languages of your choice.
	`language.xml`	Collation configuration for a a specific language.
configuration → **config** → **currencies**	`currency.xml`	Regional format overrides for monetary amounts in installations with multiple currencies.
configuration → **config** → **datatypes**	*dataType*`.dti`	Data-type declarations for column types in the data model.
configuration → **config** → **fieldvalidators**	`datatypes.xml`	Default values for `precision` and `scale` values in the default currency.
	`fieldvalidators.xml`	Format information for fields such as currencies, phone numbers, and ID fields, and other fields that need validation and input masks.
configuration → **config** → **fieldvalidators** → *LocalizationFolder*	`fieldvalidators.xml`	Field validator definition overrides by country.
configuration → **config** → **geodata**	*LocaleCode*`-locations.txt`	Mapping between postal codes and cities for a country.
configuration → **config** → **geodata** → *LocalizationFolder*	`address-config.xml`	Address configuration by country.
	`country.xml`	
	`zone-config.xml`	Zone information for a specific region. Zones are address components used for address autofill and region creation.

Location in Project window	Configuration file	Description
configuration → config → phone	`nanpa.properties`	Area codes as defined by the North American Numbering Plan Administration (NANPA). These area codes apply to North American countries other than the United States.
	`PhoneNumberMetaData.xml`	Area codes and validation rules for international phone numbers. Do not made changes to this file. See the comments at the beginning of the file for more information.
	`PhoneNumberAlternateFormats.xml`	Additional area codes and validation rules for international phone numbers. Do not made changes to this file. See the comments at the beginning of the file for more information.

Globalization Configuration Parameters in config.xml

Some configuration parameters in `config.xml` relate to general globalization features, such as display languages, regional formats, national formats, territorial data, and currencies. Other configuration parameters in `config.xml` relate to globalization features specific to ClaimCenter.

Configuration Parameters for General Globalization Features

The following parameters in `config.xml` relate to the general globalization features of ClaimCenter. For more information about these parameters, see "Globalization Parameters" on page 62 in the *Configuration Guide*

Parameter name	Sets...
`AlwaysShowPhoneWidgetRegionCode`	Whether the phone number widget in ClaimCenter displays a selector for phone region codes.
`DefaultApplicationCurrency`	Currency to use by default for new monetary amounts or whenever the use does not specify a currency for an amount.
`DefaultApplicationLangauge`	Language that the ClaimCenter shows by default for field labels and other string resources, unless the user selects a different personal preference for language.
`DefaultApplicationLocale`	Locale for regional formats in the application, unless the user selects a different personal preference for regional formats.
`DefaultCountryCode`	Country code to use for new addresses by default or if a user does not specify a country code for an address explicitly.
`DefaultNANPACountryCode`	Default country code for region 1 phone numbers. NANPA stands for North American Numbering Plan Administration.
`DefaultPhoneCountryCode`	Country code to use for new phone numbers by default or if a user does not specify the country code during phone number entry.
`DefaultRoundingMode`	Default rounding mode for monetary amount calculations.
`MulticurrencyDisplayMode`	Whether ClaimCenter displays a currency selector for monetary amounts. In single currency installations, there is no need for a currency selector because all amounts are in the default currency.

Configuration Parameters for Globalization Features Specific to ClaimCenter

The following configuration parameters in `config.xml` relate to globalization features unique to ClaimCenter and claims processing.

Parameter	Related topic
`EnableMulticurrencyReserving`	"EnableMulticurrencyReserving" on page 59 in the *Configuration Guide*
`PaymentRoundingMode`	"PaymentRoundingMode" on page 60 in the *Configuration Guide*
`ReserveRoundingMode`	"ReserveRoundingMode" on page 60 in the *Configuration Guide*

part II

Language Configuration

chapter 2

Working with Languages

ClaimCenter enables you to configure support for multiple display languages. Display languages specify the writing system and words to use for text in the user interface, as well as linguistic searching and sorting behavior. Generally, you configure ClaimCenter for display languages by installing language packs from Guidewire.

This topic includes:

About Display Languages

The default display language in ClaimCenter is United States English. To display languages other than U.S. English, you must do the following:

- **Install additional display languages** – Install additional language packs from Guidewire by using the language pack installer. Language packs contain localized screen and field labels and other string resources for a specific language.
- **Select the default display language for the application** – Set one of the installed languages as the default display language for ClaimCenter. Users see the application in the default language at the time that they log in. A user can select any installed language as their preferred display language.

Important:

ClaimCenter enables you to configure display languages of your choice manually. However, Guidewire does not provide customer support for either of the following configurations:

- Configuring ClaimCenter with a language for which Guidewire does not provide a language pack.

- Configuring ClaimCenter with a language for which Guidewire provides a language without installing the Guidewire language pack for that language.

Note: ClaimCenter provides features that might appear to allow you to manually configure display languages of your choice. However, those features require that you first install a Guidewire language pack, and they support localizing your extensions to ClaimCenter only for these installed languages.

See also

- "Installing Display Languages" on page 23
- "Setting the Default Display Language" on page 28

About Language Hierarchies

You can configure ClaimCenter with language hierarchies in which one display language inherits localized values for display keys and other string resources from another language. Languages lower in a hierarchy contain only localized display keys and other string resources that differ from the localized values in the higher language. For example, you could set up Spanish as a root language, with branch languages for the variants of Spanish spoken in Spain and in Mexico.

Configuring The Root Language in a Language Hierarchy

In a language hierarchy, you configure the root language in the **Localizations** folder. You create a localization subfolder and name it by using a lower-case ISO language code that has only two letters. For example, in the Studio **Project** window, the localization folder for the root English language would be **configuration** → **config** → **Localizations** → **en**.

In the case of a Spanish language hierarchy, you start by creating an **es** folder in the **Localizations** folder to configure the root Spanish language. In the **es** folder, provide values for all the ClaimCenter display keys and other string resources localized to your version of the root Spanish language. The values that you provide might be equivalent to the values for Spanish spoken in Spain. Or, the values might be a form of international Spanish, suitable for native speakers throughout the Hispanic world.

Configuring Variant Branch Languages in a Language Hierarchy

In a language hierarchy, you configure the variant branch languages in the **Localizations** folder with localization folders that you name by using Java locale codes. A Java locale code is a language-country pair. It specifies the language by using a lower-case, two-letter ISO language code and it specifies the country by using an upper-case two-letter ISO country code.

In the case of a Spanish language hierarchy, after you establish an **es** folder for the root Spanish language, create localization folders for variants of the Spanish language. Create an **es_ES** localization folder for Spanish spoken in Spain and an **es_MX** localization folder for Mexican Spanish. For example, viewed in the Studio Project window, the localization folders for the variants of English spoken in Spain and Mexico would be the following:

- **configuration** → **config** → **Localizations** → **es_ES**
- **configuration** → **config** → **Localizations** → **es_MX**

The display keys and typecodes defined in these folders override settings in the **es** folder, or add to them, if the equivalent language is selected.

The **es_ES** localization folder would most likely hold very few display keys or other string resources. There are few variations between Spanish spoken in Spain and the **es** localization folder for root Spanish. In contrast, the **es_MX** localization folder would most likely hold many more display keys and other resource strings than the **es_ES** localization folder. Compared to root Spanish, Mexican Spanish has many more linguistic variations than does the Spanish spoken in Spain.

Configuring a Root English Language for English-speaking Countries

Creating an English folder to support British English requires more than just using **en** as the base folder because the English locale in the base configuration is **en_US**. In this case, Guidewire recommends that you do the following:

1. Create an **en** folder and copy the **en_US** property files into that folder.
2. Create an **en_GB** folder, with the localized property files that contain only the specific keys and values for use in Great Britain.
3. Create additional folders for any other variants of English you want to provide. Add the localized properties files that contain only the specific keys and values for use in those countries.

For example, viewed in the Studio **Project** window, the localization folders for the variants of English spoken in Great Britain, Australia, and New Zealand would be the following:

- **configuration** → **config** → **Localizations** → **en_GB**
- **configuration** → **config** → **Localizations** → **en_AU**
- **configuration** → **config** → **Localizations** → **en_NZ**

See also

- "Installing Display Languages" on page 23
- "Upgrading Display Languages" on page 27
- "Activity Logging by the Language Pack Installer" on page 26

Installing Display Languages

To use a display language other than U.S. English in ClaimCenter, you must install a language pack from Guidewire. To install a Guidewire language pack, you must use the language pack installer that Guidewire provides with ClaimCenter. See "About the Language Pack Installer" on page 24.

The language pack installer performs the following actions when it installs a new language pack:

- Verifies the integrity of the files in the language pack before installing them
- Copies the files to their proper locations in the Guidewire home directory
- Modifies the files in place as necessary
- Verifies whether the language pack was properly installed in your configuration of ClaimCenter.

After you install a language pack, the installation is permanent. Language packs cannot be removed.

This topic includes:

See also

- "Setting the Default Display Language" on page 28
- "Selecting a Personal Language Preference" on page 28
- "Upgrading Display Languages" on page 27

About the Language Pack Installer

The language pack installer is a command line tool that enables you to install or upgrade installed display languages.

Note: This installer is also described in the release notes file for each Guidewire language pack.

The syntax for the command is:

```
gwcc install-localized-module -Dmodule.file=fileName.zip -Dinstall.type=installType
```

The command requires you to specify the following parameters.

Command Parameter	Description
`Dmodule.file`	The name of the ZIP file that contains the language pack. Be certain to include the `.zip` extension. The file must have been saved in the root of the ClaimCenter home directory.
`Dinstall.type`	The type of operation for the language pack installer to perform: • `install` – Install a language pack for a language that is not currently installed. • `upgrade` – Upgrade an installed language with a newer version of the language pack.

Installing a Language Pack by Using the Language Pack Installer

Use the language pack installer to install a language pack for a new language. You run the command to run the installer by opening a command prompt in the *`ClaimCenter`*`/bin` directory.

To install a language pack

1. Stop the ClaimCenter application server and Guidewire Studio, if either is running.
2. Copy the ZIP file that contains the language pack to the root of the ClaimCenter home directory.
3. At a command line prompt, navigate to:
   `ClaimCenter``/bin`
4. Enter the following command:
   ```
   gwcc install-localized-module -Dmodule.file=fileName.zip -Dinstall.type=install
   ```
   The command requires you to specify the parameters described previously in “About the Language Pack Installer” on page 24.

   The language pack installer records all file operations that it executes in the command line window and in log files.
5. Restart the application server, and restart Studio if needed.
6. In ClaimCenter, the language that you installed is now a choice from the Options menu.

Installed Language Pack Files in the File System

After you install a language pack, the ClaimCenter `modules` directory contains the following:

- A copy of the language pack ZIP file. For example:
  `cc-lang-zh-cn.zip`
- A language module folder with the same name as the language pack ZIP file. For example:
  `cc-lang-zh-cn`
- An archive file that contains copies of all the files that the language pack installation modified during the installation process. For example:
  `cc-lang-zh-cn_config_archive-8.0.2.8.zip`
- A `base.zip` file

If you restart Guidewire Studio, you can see the new module in the **Project** window. The module is in a folder with the same name as the ZIP file for the language pack. For example, if you install a language pack named `cc-lang-zh-cn`, the installer creates the following folder for it:

```
modules/cc-lang-zh-cn
```

The new folder is visible at the top level of the **Project** window in Studio, at the same level as **configuration**. The files installed by a language pack can vary.

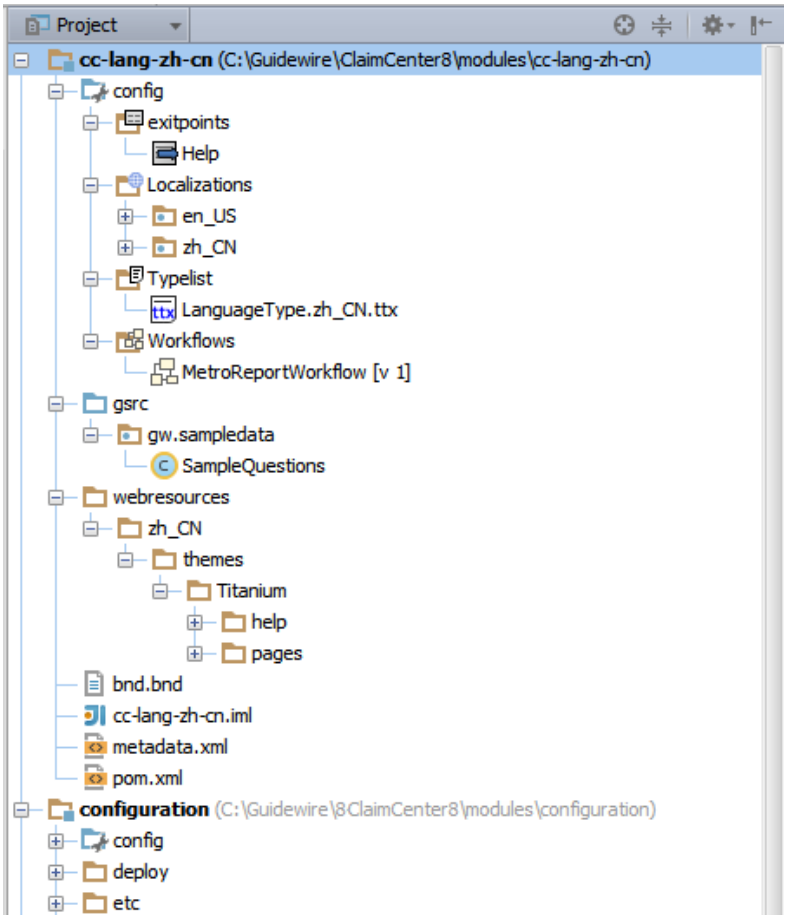
See “Installed Language Pack Files in Studio” on page 25.

Installed Language Pack Files in Studio

After installing a language pack, if you open Guidewire Studio, you see the new language files in the **Project** window. They are stored in a folder that uses the name of the language pack. The folder is at the same level as the **configuration** folder.

Note: Do not edit the files in the language folder. If you want to make changes to the translations provided in these files, do so in equivalent localization folders in **configuration** → **config** → **Localizations**.

The following figure shows the files visible in the **Project** window of Studio after you install a Chinese language pack in ClaimCenter:



Note: After you complete the language pack installation, it is possible to delete the source language pack ZIP file that you saved in the root application directory. However, do not delete any files in the `modules` directory that the language pack put there during the installation process. For example, do not delete either of the language ZIP files (the source and archive file) or the `base.zip` file from the `modules` directory.

See also

- "Setting the Default Display Language" on page 28
- "Selecting Language and Regional Formats in ClaimCenter" on page 13

Activity Logging by the Language Pack Installer

Every time that the language pack installer runs, it writes messages about its activities to the command console. The activity messages have the following formats:

```
1:18:07,913 INFO INSTALL Localized Module
11:18:11,137 INFO Result:FINISHED
11:18:11,138 INFO
11:18:11,138 INFO Change Details:
11:18:11,138 INFO
11:18:11,138 INFO PREINSTALL STEP
11:18:11,138 INFO Validate Localized Module Checksum
11:18:11,138 INFO
11:18:11,138 INFO PREINSTALL STEP
11:18:11,138 INFO Validate Installation Environment and Version
11:18:11,139 INFO
11:18:11,139 INFO PREINSTALL STEP
11:18:11,139 INFO Validate Clean Environment without Previous Installation
11:18:11,139 INFO
11:18:11,139 INFO PREINSTALL STEP
11:18:11,139 INFO Ensure no typelist conflict
11:18:11,139 INFO
11:18:11,139 INFO PREINSTALL STEP
11:18:11,139 INFO Archive Current Module
11:18:11,139 INFO
11:18:11,140 INFO PREINSTALL STEP
11:18:11,140 INFO Archive Configuration Files
11:18:11,140 INFO ARCHIVE, source: C:/tmp/localized-module-test/.idea/modules.xml, target:
   cc-lang-es_config_archive-8.0.2.dev.201306181134.zip
11:18:11,140 INFO ARCHIVE, source: configuration/pom.xml, target:
   cc-lang-es_config_archive-8.0.2.dev.201306181134.zip
11:18:11,140 INFO ARCHIVE, source: C:/tmp/localized-module-test/pom.xml, target:
   cc-lang-es_config_archive-8.0.2.dev.201306181134.zip
11:18:11,140 INFO
11:18:11,141 INFO INSTALL STEP
11:18:11,141 INFO Extract Module to the Application
11:18:11,141 INFO EXTRACT, source: C:/tmp/cc-lang-es.zip/cc-lang-es, target: cc-lang-es
11:18:11,141 INFO
...
```

The first line of the log output indicates the type of installer activity in progress, which, in this example, is `INSTALL`. Valid installer activity types are:

- `INSTALL`
- `UPGRADE`

The second line of the log output indicates whether the installer was successful and whether the specified activity succeeded or failed. A value of `FINISH` indicates that the installer process completed successfully.

The following example further illustrates logging activity:

```
15:42:47,425 INFO UPGRADE STEP
15:42:47,426 INFO DisplayKey Merger
15:42:47,426 INFO DELETE_IN_MODULE, target: cc-lang-es/config/locale/es_PE/gosu.display.properties
...
```

In the previous example log:

- Line 1 indicates the type of step, which, in this case, is `UPGRADE`.
- Line 2 lists the name of the current installer step.
- Additional lines list file operations that the installer performs on this `UPGRADE` step.

In the following example, the log shows that there was an issue during the upgrade process due to a denial of file access. The log indicates that there is one file that was not accessible to the installer. As a consequence of the file

access denial, the installer generates an error. The installer then restores any modified files to their original version before the upgrade started to preserve data integrity.

```
15:52:07,780 INFO UPGRADE Localized Module
15:52:17,434 INFO Result:FAILED
15:52:18,441 ERROR There was an error. The changes have been reverted
15:52:18,441 INFO
15:52:18,441 INFO Change Details:
15:52:18,441 INFO
15:52:18,441 INFO PREINSTALL STEP
15:52:18,441 INFO Validate Installation Environment
15:52:18,442 INFO
15:52:18,442 INFO PREINSTALL STEP
15:52:18,442 INFO Validate Base Module Present
15:52:18,442 INFO
15:52:18,442 INFO PREINSTALL STEP
15:52:18,442 INFO Validate Module Already Installed
15:52:18,442 INFO
15:52:18,442 INFO PREINSTALL STEP
15:52:18,442 INFO Archive Previous Module
15:52:18,442 INFO ARCHIVE, source: cc-lang-es, target: cc-lang-es-module-archive.zip
15:52:18,443 INFO
15:52:18,443 INFO PREINSTALL STEP
15:52:18,443 INFO Delete Staging Directory
15:52:18,443 INFO DELETE, target: C:/tmp/upgrade-staging
15:52:18,443 INFO
15:52:18,443 INFO UPGRADE STEP
15:52:18,443 INFO Set up the Staging Directory
15:52:18,443 INFO COPY_TO_STAGING, source: cc-lang-es, target: C:/tmp/upgrade-staging
15:52:18,444 INFO
15:52:18,444 INFO UPGRADE STEP
15:52:18,444 INFO Localized Config File Upgrade
15:52:18,444 INFO COPY_TO_MODULE, source: C:/tmp/cc-lang-es-upgrade.zip/cc-lang-es/config/locale
  /es_ES/newGuidewireSetting.properties, target: cc-lang-es/config/locale/es_ES
  /newGuidewireSetting.properties
15:52:18,444 INFO COPY_TO_STAGING, source: C:/tmp/cc-lang-es-upgrade.zip/cc-lang-es/config/locale
  /es_ES/newGuidewireSetting.properties, target: C:/tmp/upgrade-staging/config/locale/es_ES
  /newGuidewireSetting.properties
15:52:18,445 INFO COPY_TO_STAGING, source: C:/tmp/cc-lang-es-upgrade.zip/cc-lang-es/config/extensions
  /typelist/Currency_es.ttx, target: C:/tmp/upgrade-staging/config/extensions/typelist
  /Currency_es.ttx
15:52:18,445 INFO COPY_TO_MODULE, source: C:/tmp/cc-lang-es-upgrade.zip/cc-lang-es/config/locale
   /es_PE/newConfigFile.xml, target: cc-lang-es/config/locale/es_PE/newConfigFile.xml
15:52:18,445 INFO COPY_TO_STAGING, source: C:/tmp/cc-lang-es-upgrade.zip/cc-lang-es/config/locale
  /es_PE/newConfigFile.xml, target: C:/tmp/upgrade-staging/config/locale/es_PE/newConfigFile.xml
15:52:18,446 INFO COPY_TO_STAGING, source: C:/tmp/cc-lang-es-upgrade.zip/cc-lang-es/config/locale
  /es_ES/display.properties, target: C:/tmp/upgrade-staging/config/locale/es_ES
  /display.properties
15:52:18,446 INFO COPY_TO_STAGING, source: C:/tmp/cc-lang-es-upgrade.zip/cc-lang-es/config/locale
  /es_ES/localization.xml, target: C:/tmp/upgrade-staging/config/locale/es_ES/localization.xml
15:52:18,447 INFO DELETE_IN_STAGING, target: C:/tmp/upgrade-staging/config/locale/es_MX
  /localization.xml
15:52:18,447 INFO COPY_TO_STAGING, source: C:/tmp/cc-lang-es-upgrade.zip/cc-lang-es/config/extensions
  /typelist/LanguageType_es.ttx, target: C:/tmp/upgrade-staging/config/extensions/typelist
  /LanguageType_es.ttx
15:52:18,447 ERROR display.properties:
  C:\tmp\localized-module-upgrade-test\modules\cc-lang-es\config\locale\es_ES\display.properties
  (Access is denied)
15:52:18,447 INFO
15:52:18,448 INFO REVERT STEP
15:52:18,448 INFO Delete Staging Directory
15:52:18,448 INFO DELETE, target: C:/tmp/upgrade-staging
15:52:18,448 INFO
15:52:18,448 INFO REVERT STEP
15:52:18,449 INFO Restore Archive Module
15:52:18,449 INFO RESTORE, source: cc-lang-es-module-archive.zip, target: cc-lang-es
15:52:18,449 INFO
```

Upgrading Display Languages

For information on upgrading display languages, see the release notes for your language pack.

Setting the Default Display Language

You must install the language that you want to be your application default and set `DefaultApplicationLanguage` in `config.xml` before you start your ClaimCenter server for the first time.

IMPORTANT You can install additional display languages later, but you cannot change the default application language.

The value that you set for `DefaultApplicationLanguage` must be a typecode in the `LanguageType` typelist. If you set the value of parameter `DefaultApplicationLanguage` to a value that does not exist as a `LanguageType` typecode, the application server refuses to start. The language pack installer adds a typecode for the installed language automatically to the `LanguageType` typelist.

See also

- "Globalization Parameters" on page 62 in the *Configuration Guide*

Selecting a Personal Language Preference

Users of ClaimCenter can choose a preferred display language by selecting that language from the Options menu. Language choices are available only for installed languages. A user's language preference overrides the default application language that you set system-wide with parameter `DefaultApplicationLanguage` in `config.xml`. A user's choice for preferred display language persists between logging out and logging in again.

See also

- "Setting the Default Display Language" on page 28
- "Selecting Language and Regional Formats in ClaimCenter" on page 13

chapter 3

Localized Printing

Generating PDF documents in languages other than U.S. English typically requires additional configuration of your system and of Guidewire ClaimCenter.

This topic includes:

Printing Specialized Character Sets and Fonts

PDF document generation in a specialized character set for languages other than U.S. English typically requires additional configuration. Adobe PDF (Portable Document Format) provides a set of fonts that are always available to all PDF viewers. This set of fonts includes the Courier, Helvetica, and Times font families and several symbolic type fonts. In some cases, however, it is possible that you need to download and install specialized font families to handle specific languages, such as Japanese.

Guidewire does not provide fonts for use with Guidewire products. Any fonts that you use are part of the operating system platform as provided by a specific vendor. It is the operating system vendor that defines how you can use a specific font and under what circumstances. If you have questions about the acceptable use of a specific font, contact the operating system vendor that provided the font.

In particular:

- Guidewire assumes that appropriate fonts are made available for document printing and other features of the Guidewire applications.
- Guidewire expects that document fonts are provided and supported by the operating system vendor.
- Guidewire cannot and does not guarantee any of the fonts supplied as part of an operating system platform.

If you intend to print in a language not supported by one of the standard Adobe PDF fonts:

1. Install the required font.
2. Download and install the Apache Formatting Objects Processor (FOP).

Apache FOP is a print formatter of XML objects intended primarily for generating PDF output.

3. Configure Apache FOP and Guidewire ClaimCenter for the font that you installed.

See also

- For additional information on the Apache Formatting Objects Processor, refer the following:
  `http://xmlgraphics.apache.org/fop/trunk/fonts.html`
- For Japanese fonts, refer to the following:
  `http://connie.slackware.com/~alien/slackbuilds/sazanami-fonts-ttf/pkg/12.0/`
- For information on configuring Apache FOP and ClaimCenter for specific fonts, see:
  - "Localized Printing in a Windows Environment" on page 30
  - "Localized Printing in a Linux Environment" on page 32

Localized Printing in a Windows Environment

Suppose that you want to print PDF documents in Russian.The Russian language uses the Cyrillic character set. The default font for PDF generation does not support the Cyrillic character set. Therefore, you need to customize the Apache Formatting Objects Processor (FOP) application so that it uses fonts that do support the Cyrillic character set.

Fortunately, the generic Microsoft Windows Arial TrueType font family (normal, bold, italic, bold-italic) does support Cyrillic. If you work in a Windows environment, you can simply use the Arial TrueType font. To obtain a font that supports a particular language requirement but which is not currently installed as part of your operating system, contact your operating system vendor.

The following example describes how to configure Apache (FOP) and Guidewire ClaimCenter to print documents in Russian by using Cyrillic characters in a Windows environment.

- "Step 1: Download and Install Apache FOP on Windows" on page 30
- "Step 2: Configure TTFReader" on page 31
- "Step 3: Generate FOP Font Metrics Files" on page 31
- "Step 4: Register the Fonts with Apache FOP" on page 31
- "Step 5: Register Your Apache FOP Configuration and Font Family with ClaimCenter" on page 32
- "Step 6: Test Your Configuration" on page 32

This example assumes the following:

- Apache FOP exists on your machine.
- The `fop.jar` is on the class path.
- The Arial fonts exist in `C:\WINDOWS\Fonts`.
- The fonts are TrueType fonts.

The process for non-TTF FOP supported fonts is slightly different. See the Apache FOP documentation for more information.

The example also assumes the following:

- You have a working Guidewire ClaimCenter application.
- You have installed the proper language pack for your Guidewire application.

Step 1: Download and Install Apache FOP on Windows

Download Apache FOP from the following Apache web site:

`http://xmlgraphics.apache.org/fop/download.html`

Step 2: Configure TTFReader

After you download and install Apache FOP, do the following:

1. Make a copy of `fop.bat` in the root installation directory and rename it `ttfreader.bat`.
2. Open `ttfreader.bat` and change the last line to read:

```
"%JAVACMD%" %JAVAOPTS% %LOGCHOICE% %LOGLEVEL% -cp "%LOCALCLASSPATH%"
        org.apache.fop.fonts.apps.TTFReader %FOP_CMD_LINE_ARGS%
```

   Essentially, you are changing `org.apache.fop.cli.Main` to `org.apache.fop.fonts.apps.TTFReader`. You need to do this step so that the code to generate the font metrics works correctly.

Step 3: Generate FOP Font Metrics Files

You must generate font metrics for FOP to enable it use a font.

To generate the font metrics:

1. Create the following directory:

```
C:\fopconfig
```

2. Run the following commands, which activate the Apache FOP TTFReader:

```
ttfreader.bat -enc ansi C:\WINDOWS\Fonts\arial.ttf   C:\fopconfig\arial.xml
ttfreader.bat -enc ansi C:\WINDOWS\Fonts\ariali.ttf  C:\fopconfig\ariali.xml
ttfreader.bat -enc ansi C:\WINDOWS\Fonts\arialbi.ttf C:\fopconfig\arialbi.xml
ttfreader.bat -enc ansi C:\WINDOWS\Fonts\arialbd.ttf C:\fopconfig\arialbd.xml
```

   Running these commands generates metrics files for the Arial font family and stores those metrics in the `C:\fopconfig` directory. Do not proceed until you see the following files in the `fopconfig` directory:

```
arial.xml
arialbd.xml
arialbi.xml
ariali.xml
```

Step 4: Register the Fonts with Apache FOP

You must register the fonts that you installed with Apache FOP. The following example registers the Arial font family with Apache FOP.

To create a user configuration file for FOP, perform the following steps:

1. Copy the following file into the directory `C:\fopconfig\`:

```
C:\fop_install\conf\fop.xconf
```

2. Open `fop.xconf` in an XML editor and find the `<fonts>` section. It looks similar to the following:

```
<fonts>
  ...
```

3. Enter the following font information in the appropriate place.

```
<fonts>
  <font metrics-url="c:\\fopconfig\\arial.xml" kerning="yes" embed-url="arial.ttf">
    <font-triplet name="Cyrillic" style="normal" weight="normal"/>
  </font>
  <font metrics-file="c:\\fopconfig\\arialbd.xml" kerning="yes" embed-url="arialbd.ttf">
    <font-triplet name="Cyrillic" style="normal" weight="bold"/>
  </font>
  <font metrics-url="c:\\fopconfig\\ariali.xml" kerning="yes" embed-url="ariali.ttf">
    <font-triplet name="Cyrillic" style="italic" weight="normal"/>
  </font>
  <font metrics-file="c:\\fopconfig\\arialbi.xml" kerning="yes" embed-url="arialbi.ttf">
    <font-triplet name="Cyrillic" style="italic" weight="bold"/>
  </font>
</fonts>
...
```

   If you do not want to embed the font in the PDF document, then do not include the `embed-url` attribute.

Step 5: Register Your Apache FOP Configuration and Font Family with ClaimCenter

You must register your Apache FOP configuration file and font family with ClaimCenter. The following example registers the Cyrillic font family with ClaimCenter.

1. Open ClaimCenter Studio and press `Ctrl+Shift+N`, and then search for `config.xml`.
2. Open `config.xml` and set the following parameters:

Parameter	Description	Example value
`PrintFontFamilyName`	The name of the font family for the custom fonts as defined in your FOP configuration file.	Cyrillic
`PrintFOPUserConfigFile`	The fully qualified path to a valid FOP configuration file.	C:\fopconfig\fop.xconf

3. Stop and start the ClaimCenter server so that these changes can take effect.

Step 6: Test Your Configuration

After you perform the listed configuration steps, test that you are able to create and print a PDF that uses the correct font. To test the Apache FOP configuration, you must have a ClaimCenter implementation that supports the Russian locale.

Localized Printing in a Linux Environment

The following example illustrates how to configure Guidewire ClaimCenter and the Apache Formatting Objects Processor (FOP) to print Japanese characters in a Linux environment. This example includes the following steps:

- “Step 1: Download and Install the Required Fonts” on page 33
- “Step 2: Download and Install Apache FOP on Linux” on page 33
- “Step 3: Configure the Font” on page 33
- “Step 4: Register the Font with Apache FOP” on page 33
- “Step 5: Register Your Apache FOP Configuration and Font Family with ClaimCenter” on page 34
- “Step 6: Test Your Configuration” on page 34

The example also assumes the following:

- You have a working Guidewire ClaimCenter application.
- You have installed the proper language pack for your Guidewire application.

Before Starting

Guidewire recommends that you use a package manager to manage the download and installation of the necessary application files and packages on Linux. One such package manager is `yum`, which works with the following Linux distributions, among others:

- Fedora
- CentOS-5
- Red Hat Enterprise Linux 5 or higher

In any case, chose a package manager that works with your particular Linux distribution.

Step 1: Download and Install the Required Fonts

If it does not already exist in your operating system, you must obtain and install a font that supports the language in which you want to print.

1. Obtain a font from your operating system vendor that supports your particular language requirement.

   To print Japanese characters, for example, you need to install a font that supports Japanese characters. The following are examples of fonts that support the printing of Japanese characters:

   - IPA Gothic
   - Sanazami

2. This step depends on which package manager you are using:

   - If you are using the `yum` package manager, substitute the actual font name for *`FONT-NAME`* in the `yum install` command. For example:

     ```
     yum clean all
     yum install [FONT-NAME]
     ```

   - If you are using a package manager other than `yum`, use the install commands specific to your particular Linux distribution.

See also

- "Printing Specialized Character Sets and Fonts" on page 29

Step 2: Download and Install Apache FOP on Linux

To install Apache FOP in a Linux environment:

1. Download Apache FOP from the following Apache web site:

   ```
   http://xmlgraphics.apache.org/fop/download.html
   ```

2. Unpack the ZIP file into the desired directory, using your version of FOP in place of `fop-0.95`:

   ```
   mkdir /usr/local/fop-0.95
   cd /usr/local/fop-0.95
   cp /tmp/fop-0.95-bin.zip .
   unzip fop-0.95-bin.zip
   ```

3. Perform the following test to be certain that Apache FOP is working correctly:

   ```
   ./fop -fo examples/fo/basic/readme.fo -awt
   ```

Step 3: Configure the Font

Enter commands such as the following to generate the font configuration file. Use commands that are specific to your font. The following example is specific to the IPA Gothic font family and FOP version 0.95:

```
cd /usr/local/fop-0.95
cp /usr/share/fonts/ipa-gothic/ipag.ttf .
java -cp build\fop.jar:lib\avalon-framework-4.2.0.jar:lib
        \commons-logging-1.0.4.jar:lib\xmlgraphics-commons-1.3.1.jar:lib
        \commons-io-1.3.1.jar org.apache.fop.fonts.apps.TTFReader -ttcname
        "IPA Gothic" ipag.ttf ipag.xml
```

Step 4: Register the Font with Apache FOP

You must register the font that you installed with Apache FOP. The following example registers the IPA Gothic font family with Apache FOP version 0.95.

1. Open `fop.xconf` for editing. To use the `vi` editor, enter the following at a command prompt:

   ```
   vi conf/fop.xconf
   ```

2. Add the following lines to `fop-xconf` in the `<fonts>` section:

   Note: Use the version of FOP that you installed in place of `fop-0.95`.

```
<font metrics-url="/usr/local/fop-0.95/ipag.xml" kerning="yes"
        embed-url="/usr/local/fop-0.95/ipag.ttf">
  <font-triplet name="IPAGothic" style="normal" weight="normal"/>
  <font-triplet name="IPAGothic" style="normal" weight="bold"/>
</font>
```

Step 5: Register Your Apache FOP Configuration and Font Family with ClaimCenter

You must register your Apache FOP configuration file and font family with ClaimCenter.

1. Open ClaimCenter Studio and search for `config.xml`.
2. Find the following parameters in `config.xml` and set them accordingly. The following example registers the IPA Gothic font family with ClaimCenter.

Parameter	Description	Example value
`PrintFontFamilyName`	The name of the font family for the custom fonts as defined in your FOP configuration file.	IPA Gothic
`PrintFOPUserConfigFile`	The fully qualified path to a valid FOP configuration file.	`/usr/local/fop-0.95/fopconfig/` **Note:** Use the version of FOP that you installed in place of `fop-0.95`.

3. Stop and start the ClaimCenter server so that these changes take affect.

Step 6: Test Your Configuration

After you perform the listed configuration steps, Guidewire recommends that you test that you are able to create and print a PDF file that uses the correct font. To test the Apache FOP configuration, you must have a ClaimCenter implementation that supports the Japanese locale.

chapter 4

Localizing ClaimCenter String Resources

This topic describes how to localize the following string resources that ClaimCenter displays in the application user interface:

- **Display keys** – Strings to display as field and screen labels and interactive error messages
- **Typecodes** – Strings to display as choices in drop-down lists
- **Script parameter descriptions** – Strings to display as descriptions of script parameters
- **Gosu error messages** – Strings to display as Gosu error and warning messages in Studio
- **Workflow step names** – Strings to display as individual step names in workflow processes

Note: Ruleset names and descriptions are not localized as strings. See "Localizing Rule Set Names and Descriptions" on page 45.

This topic includes:

See also

- "Localizing Guidewire Workflow" on page 53

Understanding String Resources

Guidewire designs ClaimCenter to use string resources for the following:

- **Display Keys** – Strings to display as field and screen labels and interactive error messages
- **Typecodes** – Strings to display as choices in drop-down lists
- **Script Parameter Descriptions** – Strings to display as descriptions of script parameters
- **Workflow Step Names** – Strings to display as individual step names in workflow processes

You can extract these string resources from ClaimCenter so you can easily localize them separately from other application resources.

This topic includes:

See also

Display Keys

ClaimCenter stores as *key/value* pairs the United States English string resources from which it generates field and screen labels and interactive error messages in the user interface. Guidewire calls these particular key/value pairs *display keys*. You specify the key/value pair of a display key in standard Java properties syntax. For example:

```
Admin.Workload.WorkloadClassification.General = General
```

ClaimCenter stores the key/value pairs for display keys in a file called `display.properties`. In the base configuration, ClaimCenter contains a single copy of `display.properties`, with string resources in United States English. In Guidewire Studio, you can navigate to this `display.properties` file in the **Project** window as follows:

configuration → **config** → **Localizations** → **en_US**

If you install a language pack for a language other than U.S. English, the installer adds a version of `display.properties` localized for that language.

See also

Typecodes

ClaimCenter stores as *key/value* pairs the U.S. English string resources from which it displays choices and choice descriptions in drop-down lists in the user interface. Guidewire calls these particular key/value pairs *typecodes*. You specify the key/value pairs for the name and description of a typecode in standard Java properties syntax. For example:

```
TypeKey.CoverageType.CPBldgCov = Building Coverage
TypeKeyDescription.CoverageType.CPBldgCov = Building Coverage
```

ClaimCenter stores the key/value pairs for typecodes in a file called `typelist.properties`. In the base configuration, ClaimCenter contains a single copy of `typelist.properties`, with string resources in U.S. English. In Guidewire Studio, you can navigate to the `typelist.properties` file in the **Project** window, as follows:

configuration → **config** → **Localizations** → **en_US**

If you install a language pack for a language other than U.S. English, the installer adds a version of `typelist.properties` localized for that language.

See also

- "Localizing Typecodes" on page 41.
- "Installing Display Languages" on page 23.

Workflow Step Names

In ClaimCenter, it is possible to provide localized versions for the names of individual steps in a workflow process. It is also possible to set a specific language and set of regional formats on each workflow.

See also

- "Localizing Guidewire Workflow" on page 53
- "Localizing Workflow Step Names" on page 54

Script Parameter Descriptions

File `display.properties` can contain key/value pairs for all script parameters and their descriptions. ClaimCenter stores the script parameter description in a display key of the form `ScriptParameter +` *`<Parameter Name>`*. For example:

```
ScriptParameter.InitialReserve_AutoGlassVehicleDamage = ...
```

It is possible to localize this display key in the same manner as you localize any other display key.

ClaimCenter displays the script parameter description in the ClaimCenter **Administration** tab, **Script Parameters** page. To see the parameter description, first select an individual script parameter.

See also

- "Localizing Script Parameter Descriptions" on page 43

Exporting and Importing String Resources

ClaimCenter enables you to export some string resources to an external file, including the following:

- **Display Keys** – Strings to display as field and screen labels and interactive error messages
- **Typecodes** – Strings to display as choices in drop-down lists
- **Script Parameter Descriptions** – Strings to display as descriptions of script parameters
- **Workflow Step Names** – Strings to display as individual step names in workflow processes

By exporting and importing string resources, you can make all your translations directly in a single file. ClaimCenter provides separate commands for exporting and importing string resources.

Command	Related topic
`gwcc export-l10ns [-Dexport.file] [-Dexport.locale]`	"Exporting Localized String Resources with the Command Line Tool" on page 38
`gwcc import-l10ns [-Dimport.file] [-Dimport.locale]`	"Importing Localized String Resources with the Command Line Tool" on page 38

The commands provide parameters that enable you to specify the locations of the export and import files and a language-specific set of string resources to export and import. The export and import files are in the format of Java properties files.

See also

- For information on using Java property files in ClaimCenter, see “Properties Files” on page 393 in the *Gosu Reference Guide*.

Exporting Localized String Resources with the Command Line Tool

Guidewire provides a command line tool to manually export certain string resources from ClaimCenter. The command exports the following strings resources as name/value pairs:

- Display keys
- Typecodes
- Script parameter descriptions
- Workflow step names

The export file organizes the strings into translated and non-translated groups. The command provides parameters that enable you to specify the location of the export file and a language-specific set of string resources to export.

To run the export tool

1. Ensure that the application server is running.
2. Navigate to your application installation `bin` directory, for example:
   ```
   ClaimCenter/bin
   ```
3. Run the following command:
   ```
   gwcc export-l10ns -Dexport.file=targetFile -Dexport.locale=localizationFolder
   ```

-Dexport.file Command Parameter

Command line parameter `-Dexport.file` specifies *`targetFile`*, the name of the file in which ClaimCenter saves the exported resource strings. You must add the file extension to the file name. By default, ClaimCenter puts the export file in the root of the installation directory. You specify the directory as follows:

- To leave the export file in the same location, enter only the name of the file to export.
- To save the file in a different location, enter either an absolute path or a relative path to the file from the root of the installation directory.

-Dexport.locale Command Parameter

Command line parameter `-Dexport.locale` specifies *`localizationFolder`*, the target localization folder for the translated strings. The localization folder name must match a ClaimCenter language type that exists in the `LanguageType` typelist. For example: `fr_FR` or `ja_JP`.

See also

“Importing Localized String Resources with the Command Line Tool” on page 38

Importing Localized String Resources with the Command Line Tool

ClaimCenter provides a command-line tool to import localized string resources that you previously exported. The command imports the following string resources as key/value pairs:

- Display keys
- Typecode names and descriptions
- Script parameter descriptions
- Workflow step names

The command provides parameters that enable you to specify the location of the import file and a language-specific set of string resources to import.

To run the import tool

1. Ensure that the application server is running.
2. Navigate to your application installation `bin` directory, for example:
   `ClaimCenter/bin`
3. Run the following command:
   `gwcc import-l10ns -Dimport.file=sourceFile -Dimport.locale=localizationFolder`

-Dimport.file Command Parameter

Command line parameter `-Dimport.file` specifies *`sourceFile`*, the file that contains the translated resource strings. It must be in the same format as a file exported from ClaimCenter. By default, ClaimCenter puts the export file in the root of the installation directory. You can set the directory as follows:

- To leave the import translation file in the same location, you need enter only the name of the file to import.
- To move the translation file to a different location, you must enter an absolute or relative path to the file from the root of the installation directory.

-Dimport.locale Command Parameter

Command line parameter `-Dexport.locale` specifies *`localizationFolder`*, the name of the localization folder into which to save the translated strings. The localization folder name must match a ClaimCenter language type that exists in the `LanguateType` typelist, such as `fr_FR` or `ja_JP`.

See also

"Exporting Localized String Resources with the Command Line Tool" on page 38

Localizing Display Keys

ClaimCenter initializes the display key system as it scans all localization nodes in all modules for the display key property files `display.properties`. See "Properties Files" on page 393 in the *Gosu Reference Guide* for a discussion of the use of property files in Guidewire ClaimCenter.

In the base configuration, ClaimCenter provides a single `display.properties` file. In the Studio **Project** window, this file is located in:

configuration → **config** → **Localizations** → **en_US**

The **Localizations** node contains multiple folders with localization names such as **de_DE**, each of which can also contain, after configuration, additional property files. In addition, any language pack that you install also contains property files.

It is possible to provide translated display keys in either of the following ways:

Translation technique	Related topic
Using the Studio **Display Keys** editor	"Localizing Display Keys by Using the Display Key Editor" on page 40
Using the display key import and export tools	"Exporting and Importing String Resources" on page 37

See also

- For more information on display keys and string resources in general, see "Display Keys" on page 36.

ClaimCenter and the Master List of Display Keys

Using the localization node property files, on startup, ClaimCenter generates a master list of display keys for use in the user interface. For each property file, ClaimCenter loads the display keys and adds each display key to the master list under the following circumstances:

1. The master list does not already contain the display key.
2. The master list already contains the display key, but, the display key in the master list has a different number of arguments than the display key to add. If this is the case, then ClaimCenter logs a warning message noting that it found a display key value with different arguments in different regions. For example:

```
Configuration Display key found with different argument lists across locales: Validator.Phone
```

As ClaimCenter creates the master display key list, it scans the application localization folders in the following order for copies of file `display.properties`:

- The application default localization folder, as set by configuration parameter `DefaultApplicationLanguage`
- All other localization folders configured for use by the server
- The Guidewire default localization folder (`en_US`)
- All remaining localization folders

After ClaimCenter creates the master list of display keys, the application checks the display keys for the default region against the master list. ClaimCenter then logs as errors any display keys that are in the master list but missing from the default application region. For example:

```
ERROR Default application locale (en_US) missing display key: Example.Display.Key
```

Because the error message returns the display key name, you can use that name to generate a display key value in the correct localization folder.

Localizing Display Keys by Using the Display Key Editor

It is possible to enter a localized version of a display key directly in the Studio editor. To access the editor, first, in Studio, navigate to **configuration** → **config** → **Localizations**. Expand the node for the target language and open the `display.properties` file in that folder. You can also press `Ctrl+Shift+N` to find a property file for a specific region.

It is not necessary to use Studio to localize display keys. If you have a large number of translated strings to enter, you can use the export and import commands. With these commands, you export the strings, translate them, and import the translated strings into Studio. See “Exporting and Importing String Resources” on page 37.

Identifying Missing Display Keys

Guidewire provides a display key difference tool that does the following:

- Compares each language configured on the server against the master display key list.
- Generates a file that contains a list of any missing keys.

To generate a display key difference report, run the following command from the application `bin` directory:

```
gwcc displaykey-diff
```

The `displaykey-diff` tool creates a new build directory under the application root directory, for example:

```
ClaimCenter/build
```

If the tool detects that an installed language has missing display keys:

- The tool creates a subdirectory for that language using the localization code for that language to name the subdirectory.
- The tool populates that subdirectory with a `display.properties` file containing the list of missing keys.

Each `display.properties` file contains a list of display keys that are in the master list but not in that localization node. The format of the file is exactly the same as the display key configuration files. For example, the following code illustrates the contents of the file for `en_US`:

```
#
# Missing display keys for locale
# en_US
#
Web.QA.I18N.ContactDetail.AddressDetail.City = Suburb
Web.QA.I18N.ContactDetail.AddressDetail.ZipCode = Postcode
```

Note: ClaimCenter does not generate a `display.properties` file for a region that does not have any missing display keys.

Working with Display Keys for Later Translation

It is possible to create a display key in a specific localization folder that is not actually localized yet. This display key is simply a placeholder string for a display key that you intend to localize at some point. If you create one of these *to-be-translated* display keys, then Guidewire recommends that you add a suffix of [TRANSLATE] to each display key that you create as a placeholder. For example:

Actions [TRANSLATE]

The suffix can be any string that is meaningful. Use the same string in all cases to make it easy to find the placeholder display keys. Using a string such as [TRANSLATE] makes it easy to see the string in the ClaimCenter interface. It also makes it easy for users to understand that the display key has not yet been translated.

It is important to use the same tag for all the placeholder strings so that you do not miss any during a search.

Localizing Typecodes

You can provide localized typecodes for a typelist in the following ways:

- **Using the gwcc export and import commands** – Use these commands to localize all typecodes by editing a single text file. See “Using the gwcc Export and Import Commands” on page 41.
- **Using the Typelist Localization editor** – Enter localized values for individual typecodes directly through the Typelist editor. See “Using the Typelist Localization Editor” on page 42.
- **Editing the typelist.properties file in a localization folder** – Navigate to a localization folder and open the `typelist.properties` file so you can edit it.

You can also specify a sort order for each typelist, by language. See “Setting Localized Sort Orders for Localized Typecodes” on page 43.

There is also Gosu syntax for accessing typecodes that you need to be aware of. See “Accessing Localized Typekeys from Gosu” on page 43.

Using the gwcc Export and Import Commands

You use the `gw` import and export commands to create a single file and localize typecodes for all typelists in that file. The exported file has all the typecodes in it, which cannot be guaranteed for any given `typelist.properties` file. The typecodes are separated into localized and unlocalized typecodes, which makes it easier to see which ones you need to translate.

After you import the translated file, the `typelist.properties` file for the given localization code is updated.

See also

- “Exporting Localized String Resources with the Command Line Tool” on page 38
- “Importing Localized String Resources with the Command Line Tool” on page 38

Using the Typelist Localization Editor

Note: You can localize typecodes in the Typelist Localization editor only for languages that you configured in ClaimCenter. See "Installing Display Languages" on page 23.

You can use the Typelist Localization editor to localize typecodes. This technique is labor intensive, but can be useful if you want to localize just a few typecodes, or you want to localize some extension typecodes that you have created. Editing typecodes in this editor causes ClaimCenter to add them to the associated `typelist.properties` file.

To localize typecodes by using the Typelist Localization editor in Studio

1. Type `Ctrl+Shift+N` in the Studio **Project** window and enter the name of the typelist that you want to localize.
2. Select a typecode for which you want to provide a localized version.
3. Click the **Localization** link in the bottom right corner of the Typelist editor.
4. Find the group with the language code for which you want to provide localized strings.
5. Enter localized strings for any or all of the following:
   - **name** – The natural language name associated with this typecode.
   - **desc** – The description of this typecode.

   For example, you installed the French language pack, so you see the **fr** language code. Defining the French language version of the **name** field for a typecode updates the `typelist.properties` file in **configuration** → **config** → **Localizations** → **fr**. If necessary, ClaimCenter creates a file in this location and then adds the entry.

Editing the typelist.properties file

The `typelist.properties` file in a localization folder provides localized definitions for typecodes for the language represented by the folder. This file does not necessarily have definitions for all typecodes. You might edit this file, for example, to override or add to the translations in the `typelist.properties` file saved by the language pack installer.

As you use either of the other techniques to update typecode localizations, this file is also updated.

- If you want to ensure that all typecodes are localized for a language, use export and import. See "Using the gwcc Export and Import Commands" on page 41.
- If you want to edit just a few typecodes, you can use the Typelist Localization editor. See "Using the Typelist Localization Editor" on page 42

To edit a typelist.properties file

1. Open the Studio **Project** window.
2. Navigate to the localization folder and double-click the file to open it.

   For example, navigate to **configuration** → **config** → **Localizations** → **en_US** and double-click `typelist.properties`.

   Note: If there is no `typelist.properties` file in the folder, you can copy one in or right-click the folder and create a new file.
3. Edit the file, and then save it when you are finished.

Setting Localized Sort Orders for Localized Typecodes

It is possible to set the sort order for the typecodes in a typelist by creating a file named after the typelist, with a file extension of `.sort`. You save the file in the localization folder for the language to which the sort order applies. ClaimCenter stores the sort order information, by language, in the typelist table.

> **Note:** A typical use for a `.sort` file is to support Japanese with other languages on the same server. For example, you might want to provide a sort order for Japanese provinces, which customarily are in order from north to south—Hokkaido, Aomori, Iwate, and so on. Otherwise, you can prioritize typecodes by defining their priority in the typelist and in the `language.xml` files for each language. See "Determining the Order of Typekeys" on page 126.

Typecodes in the typelist that are not listed in the `.sort` file are ordered according to the sort order specified in the `language.xml` file for that region.

ClaimCenter does not provide any sort order files in the base configuration. You must put any `.sort` file that you create in the appropriate localization folder. For example, for Japanese, put the file in the following location in Studio:

configuration → **config** → **Localizations** → **ja_JP**

> **IMPORTANT** Any change that you make to a typelist sort order file triggers a database upgrade.

Accessing Localized Typekeys from Gosu

Gosu provides three `String` representations that you can use for typekeys.

Typekey property	Description
typelist.typekey.Code	String that represents the typecode
typelist.typekey.DisplayName	Localized language version of the entity name
typelist.typekey.UnlocalizedName	Name listed in the data model

For example, to extract localized information about a typekey, you can use the following:

```
var displayString = myTypekey.DisplayName
```

The following code is a more concrete example.

```
print(AddressType.TC_BUSINESS.DisplayName)
```

It is important to understand that the display key reference acts more as a function call rather than as a value. If the language setting for the user changes, then the display key value changes as well. However, the value stored in `displayString` does not automatically change as the language changes.

Localizing Script Parameter Descriptions

You can localize the descriptions of script parameters. ClaimCenter displays script parameter descriptions in the **Administration** tab → **Utilities** → **Script Parameters** screen.

To localize a script parameter description, you must add a display key for the script parameter to file `display.properties` in the localization folder for the target language. Display keys for script parameter descriptions must begin with `ScriptParameter` and follow standard Java property syntax:

```
ScriptParameter.<parameterName>=localizedParameterDescription
```

For example:

```
ScriptParameter.InitialReserve_AutoGlassVehicleDamage=Initial amount to reserve for auto glass damage
```

See also

- "Localizing Display Keys" on page 39

Localizing Gosu Error Messages

Similar to the key/value paris stored in `display.properties`, ClaimCenter stores the string resources defining Gosu errors in file `gosu.display.properties`. These strings display in Guidewire Studio if there is an error in Gosu code or if code is being compiled and an error occurs. Do not add your own strings to this file.

In the base configuration, Guidewire provides only a single U.S. English version of this file. In Studio, you can see this file at the following location in the **Project** window:

configuration → **config** → **Localizations** → **en_US**

File `gosu.display.properties` provides the key/value pairs like the following ones:

```
ARRAY = Array
BEAN = Bean
BOOLEAN = Boolean
DATETIME = DateTime
FUNCTION = Function
IDENTIFIER = Identifier
METATYPENAME = Type
NULLTYPENAME = Null
NUMERIC = Number
OBJECT_LITERAL = ObjectLiteral
STRING = String
MSG_BAD_IDENTIFIER_NAME = Could not resolve symbol for : {0}
...
```

If you install a new language pack, that language pack contains a translated version of file `gosu.display.properties` in the target language.

See also

- "Localizing Display Keys" on page 39
- "Localizing Typecodes" on page 41

chapter 5

Localizing ClaimCenter with Studio

This topic describes how you localize certain types of data by using Guidewire Studio.

This topic includes:

Viewing Unicode Characters in Studio

To configure Guidewire Studio to display Unicode characters:

1. In Studio, navigate to **File** → **Settings** → **Appearance**.
2. Change the **Theme** setting to a value that works for your operating system.
   - If you are on Microsoft Windows, change the theme to **Windows**.
   - If you are on Linux, change the theme to **Nimbus**.
3. Click **OK**.

   Note: Guidewire does not supply fonts for your system. You must download the fonts for the languages you want to use in Guidewire Studio. For example, for Japanese fonts, see:

   `http://connie.slackware.com/~alien/slackbuilds/sazanami-fonts-ttf/pkg/12.0/`

Localizing Rule Set Names and Descriptions

In Studio, it is possible to show rule names, rule set names, and rule set descriptions in a language other than English. To display a rule name or a rule set name and description in another language, you can translate these items in the definition file for that rule or rule set.

In ClaimCenter Studio, to access the rule sets, navigate in **Project** window to:

configuration → **config** → **Rule Sets**

In the application directory structure, Guidewire stores rule-related files in the following location:

```
modules/configuration/config/rules/...
```

The following list describes the various rule file types and what you can localize in each file type.

File type	Rule type	Translatable unit	Example
`.grs`	Rule set	Rule set name	`@gw.rules.RuleName("Translated rule set name")`
		Rule set description	`@gw.rules.RuleSetDescription("Translated description")`
`.gr`	Rule	Rule name	`@gw.rules.RuleName("Translated rule name")`

To modify these files, open them in a text editor in your system directory structure and not in Studio.

You can view only a single language translation of a rule set name or description in Studio. You cannot provide multiple translations at once, as you can with string translations.

Setting the IME Mode for Field Inputs

IME mode controls the state of an input method editor (IME) for entering Japanese or Chinese language characters. ClaimCenter provides three states for `imeMode`, which you set at the field level in Guidewire Studio. The three possible states are:

State	Description
Active	• Japanese – Turns on the last entry type that you selected. For example, Hiragana or full-width Katakana,. • Chinese – Turns on pinyin entry
Inactive	• Japanese – Turns off Roman entry • Chinese – Turns on Roman entry
Not selected	Does nothing – Leaves the currently-selected IME mode as set

You set the `imeMode` at the field level on a PCF file. For a rōmaji field in Japanese, for example, you might set `imeMode` to `inactive`. Then, on the next field, one that needs Kanji entry, you would set `imeMode` to `active`, and so on for the various fields in the PCF file. In general, you set `imeMode` on text input fields and possibly drop-down fields such as typelists and range input fields.

It is important to understand that ClaimCenter does not actually set the actual IME mode. ClaimCenter merely turns IME on or off for each field. ClaimCenter cannot dictate that a certain field must contain Zenkaku Katakana and a different field must contain Hiragana. The choice of input conversion style is left to the user.

IME and Text Entry

Guidewire applications support Unicode characters by default in the base configuration. However, certain PCF entry fields do not support using IME to enter Unicode characters. Many of the ClaimCenter application screens capture keystrokes as a user enters data. This capture mechanism does not work properly if you use IME to input data directly into input fields.

In particular, if you use IME to input data instead of keystrokes, the following entry field types do not process character data properly:

- Text entry fields that implement `inputMask` functionality.

- Text entry fields that implement `maxChars` functionality, especially `TextArea Input` fields.

  Note: Unlike `TextBox` fields, there is no built-in browser support for `TextArea Input` fields.

Setting a Language for a Block of Gosu Code

It is possible to set a specific language in any Gosu code block by wrapping the Gosu code in any of the following methods.

```
gw.api.util.LocaleUtil.runAsCurrentLanguage(alternateLanguage, \ -> { code } )

gw.api.util.LocaleUtil.runAsCurrentLocaleAndLanguage(
    alternateLocale,
    alternateLanguage,
    \ -> { code } )
```

Note: The second method sets both region and language at the same time. This topic covers only setting the language.

A typical use of this feature is to override the current language that the Gosu code block uses by default. The default current language is specified by the current user or the `DefaultApplicationLanguage` parameter in `config.xml`. If neither is set, ClaimCenter uses the browser language setting.

The parameters for the methods are:

Parameter	Description
`alternateLocale`	An object of type `ILocale` that represents a regional format from the `LocaleType` typelist. Specify a `GWLocale` object for this parameter.
`alternateLanguage`	An object of type `ILocale` that represents a language from the `LanguageType` typelist. Specify a `GWLanguage` object for this parameter.
`\ -> { code }`	A Gosu block as a `GWRunnable` object—the Gosu code to run in a different locale or language

Specifying an ILocale Object for a Language Type

To run a block of Gosu code with a specified language, you must use a language object of type `GWLangauge` for the first parameter to `runAsCurrentLangauge`. You can specify the object in a number of ways:

- Use the `gw.api.util.LocaleUtil.toLanguage` method to provide a `GWLanguage` object that corresponds to a Gosu typecode in the `LanguageType` typelist. You can specify the parameter to this method by using typecode syntax, such as `LanguageType.TC_EN_US`. The typecode has to be defined in the `LanguageType` typelist.
- You can specify a typecode of the correct type directly, without using the `toLanguage` method. For example, for U.S. English, use `gw.i18n.ILocale.LANGUAGE_EN_US`. This syntax requires that the language typecode `en_US` be defined the `LanguageType` typelist.
- You can specify the first parameter by using a method on `LocaleUtil` that can get the current or default language. For example, `getCurrentLanguage` and `getDefaultLanguage`.

You can add a typecode to the `LanguageType` typelist. If you add a new typecode to this typelist, you must restart Studio to be able to use it in `gw.i18n.ILocale`. For a similar example, see “To add a Java locale code to the LocaleType typelist” on page 68.

The following example Gosu code sets U.S. English as the language for a display string, overriding the current language:

```
uses gw.api.util.LocaleUtil

// Run a block of Gosu code that prints the display string in U.S. English
LocaleUtil.runAsCurrentLanguage(
    LocaleUtil.toLanguage(LanguageType.TC_EN_US),
    \-> {print(displaykey.DisplayName.Claim)})
```

See also

- "Setting Regional Formats for a Block of Gosu Code" on page 71
- "Gosu Blocks" on page 231 in the *Gosu Reference Guide*

Additional Useful Methods on gw.api.util.LocaleUtil

In addition to the `runAsCurrentLanguage` method, `gw.api.util.LocaleUtil` provides a number of other methods useful in working with localization. Some of the more important ones are:

Method	Returns...
`canSwitchLanguage`	Boolean `true` if the current user is allowed to switch to a different language
`canSwitchLocale`	Boolean `true` if the current user is allowed to switch to a different locale
`getAllLanguages`	List of all available languages as defined in the `LanguageType` typelist
`getAllLocales`	List of all available locales as defined in the `LocaleType` typelist
`getCurrentLanguage`	Current language, which can be based on the user language setting
`getCurrentLocale`	Current locale, which can be based on the user locale setting
`getCurrentLanguageType`	Language set for the current user
`getCurrentLocaleType`	Locale set for the current user
`getDefaultLanguage`	Language set by configuration parameter `DefaulApplicationLanguage`
`getDefaultLocale`	Locale set by configuration parameter `DefaulApplicationLocale`
`getLanguageLabel`	Language as a `String` value, given a language type
`getLocaleLabel`	Locale as a `String` value, given a locale type
`toLanguage`	Sets language, given a language typecode
`toLocale`	Sets locale, given a locale typecode

chapter 6

Localizing Administration Data

You can localize shared administration data through the use of localized database columns. For example, ClaimCenter uses activity patterns to create new activities. A localized column enables users to see activity names in their preferred languages.

This topic includes:

Understanding Administration Data

Guidewire refers to certain types of application data to as *administration data*, or by the shortened term *admin data*. For example, activity patterns are administration data. For selected fields in administration data, ClaimCenter stores localized—translated—values directly in the application database.

You enter translations for admin data directly in ClaimCenter, in screens that you can open on the **Administration** tab. If you have configured ClaimCenter for multiple languages, for entities with localization tables, you see a **Localization** list view that is visible at the bottom of a screen. This list view has a row for each enabled language in the application and has fields for each element on that screen that you can localize.

Localized Columns in Entities

To accommodate localized values for shared administration data or any entity data, you can specify that a column contains localized values in the database. To configure an entity to store localized values for a column, in Guidewire Studio, add a `localization` element as a child of the `column` element for the entity.

For example, in Studio open the entity in the editor. Then right-click the column you want to localize and choose **Add new → localization.**

Adding a `localization` element to a column triggers the creation of a localization table during the next database upgrade. A *localization table* stores localized values for a column for every language other than the default application language. The column itself stores values for the default application language.

The `localization` element requires that you specify a **tableName** attribute, which is the name of the localization table. This name has length restrictions and a special format. For an example, see "Localization Tables in the Database" on page 51.

Localization Attributes

Guidewire provides several attributes on the `localization` element on `column` that affect the use of the element. The following list describes each attribute:

Attribute	Type	Description
`nullok`	`Boolean`	This attribute is required. Set it to the same value as the `nullok` attribute for the column to which you are adding the table. If you set this attribute to `false`, ClaimCenter flags missing entries that it finds during a database consistency check, but it can start up with these missing entries. If ClaimCenter is configured with multiple languages: • ClaimCenter stores the values for the default application language in the main database table of the entity. • ClaimCenter stores the values for additional languages in a separate localization table. During a consistency check, ClaimCenter flags entries in the main database table for the default language if corresponding entries for additional languages cannot be found in the localization table. Entries flagged as missing additional languages are warnings only. A missing language value does not prevent the server from starting. **Note:** If only one language is configured, ClaimCenter does not run the consistency check.
`tableName`	`String`	The name of the localization table. Use the following format for this name: *`mainEntityNameAbbrevation_columnNameAbbreviation_l10n`* **IMPORTANT:** The table name must be no longer than 16 characters. If the name exceeds this length, the application server will not start.
`extractable`	`Boolean`	Default value is `false`. If you set this attribute to `true`, ClaimCenter adds the localization table to the archive for the entity. See "The Extractable Delegate" on page 244 in the *Configuration Guide*.
`overlapTable`	`Boolean`	Default value is `false`. Overlap tables are tables in which individual table rows can exist either in the domain graph or as part of reference data, but not both. The database table itself exists both in the domain graph and as reference data. If you set this attribute to `true`, ClaimCenter marks the localization table as an overlap table. See "The OverlapTable Delegate" on page 244 in the *Configuration Guide*.
`unique`	`Boolean`	Default value is `false`. If you set this attribute to `true`, ClaimCenter enforces that for each language the values are unique and there are no duplicates.

See also

- "Checking Database Consistency" on page 42 in the *System Administration Guide*

Localization Element Example

In the base configuration, the `ActivityPattern` entity's `Description` column is configured for localization. The `Description` column can store localized values for each configured language.

To see the localization element definition on the Description column

1. In Studio, navigate in the **Project** window to **configuration** → **config** → **Metadata** and double-click `Activity.eix` to open it in the editor.
2. Expand the `Description` column, and then click its `localization` element.

3. This element has the following property values:

Property	Value
nullok	true
tablename	actpat_desc_l10n
extractable	false
overlapTable	false
unique	false

Localization Tables in the Database

ClaimCenter stores the localized values for columns that have a `localization` element in separate localization tables in the database. ClaimCenter generates localization tables automatically. Guidewire recommends that you use the following format for the table name attribute.

*mainEntityNameAbbrevation_columnNameAbbreviation*_l10n

IMPORTANT The length of the table name must not exceed 16 characters.

For example, the localization table name for the `Subject` column of the `ActivityPattern` entity uses the abbreviation `actpat` for the main entity and `sbj` for the column name:

actpat_sbj_l10n

Localization tables have the following columns:

- `Owner` – An integer that represents an ID of the owner
- `Language` – A typekey to the `LanguageType` typelist
- `Value` – A column of type `String`

Localization tables contain localized values for configured languages other than the default application language. The localized column itself contains values for the default application language.

chapter 7

Localizing Guidewire Workflow

This topic discusses localization as it relates to Guidewire workflow.

This topic includes:

Localizing ClaimCenter Workflow

At the start of the execution of a workflow, ClaimCenter evaluates the language and locale set for the workflow. ClaimCenter then uses that language for notes, documents, templates, and similar items associated with the workflow. The language and locale that the workflow uses depend on the settings of the user that executes the workflow code.

> **Note:** See "Localizing Templates" on page 57 for information on localizing application documents, notes, and emails.

It is possible to set the workflow region and the workflow language independently of the default application language and region in Studio. To set either workflow language or region, open the workflow in the Studio Workflow editor. Navigate in the **Project** window to **configuration** → **config** → **Workflows** and double-click the workflow node to open it in the Studio Workflow editor. Then click the background area in the workflow layout view. This action opens the **Properties** area at the bottom of the workflow area. In this **Properties** area, you can enter one of the following:

- A fixed name for the language or locale
- A Gosu expression that evaluates to a valid type for the language or locale

For example, to set a specific workflow locale, use one of the following:

Type	Gosu
Fixed string	`gw.i18n.ILocale.FR_FR`
Variable expression	`gw.api.util.LocaleUtil.toLocale(thisClaim.Claimant.PrimaryLanguage)` `gw.api.util.LocaleUtil.toLocale(Group.Supervisor.Contact.PrimaryLanguage)`

Localizing Workflow Step Names

You can provide translated versions of workflow step names. ClaimCenter displays translated step names in the following locations:

- **Workflow summary** – On the **Find Workflows** search screen, the workflow summary shows the last completed workflow step. Administrative accounts only can access this screen.
- **Workflow log** – On the **Workflow Detail** screen, the log shows all workflow steps.

Users can see translated step names in ClaimCenter by selecting a language from the **Language** submenu on the **Options** menu.

You can provide translated workflow steps names as described in the following topic:

- "Exporting Workflow Steps Names as String Resources for Translation" on page 54

See also

"Selecting Language and Regional Formats in ClaimCenter" on page 13

Exporting Workflow Steps Names as String Resources for Translation

To export workflow step names as string resources for translation

1. Export the ClaimCenter string resources for a particular locale by using the following `gwcc` command syntax:

   ```
   gwcc export-l10ns -Dexport.file=targetFile -Dexport.locale=localizationFolder
   ```

   In the command, you must provide a target file name and specify from which localization folder to export the string resources.

2. Find the workflow by name. For example:

   In ClaimCenter, find `Workflow.MetroReportWorkflow` and keep searching until you see an entry that ends in `.Step`. For example, `Workflow.MetroReportWorkflow.1.CheckHasReportDocumentReady.Step`.

   Note: The display key names for workflow items might contain a box character between the workflow name and the version number. A box character represents a character that your system is not configured to display, in this case the character *one dot leader*, UTF-16 hexadecimal code 0x2024. The previous examples represent that character as a period.

3. Translate the workflow step names into the target language.

4. Import the translated strings resources back into ClaimCenter by using the following `gwcc` command syntax:

   ```
   gwcc import-l10ns -Dimport.file=sourceFile -Dimport.locale=localizationFolder
   ```

   In the command, you must provide a source file name and specify into which localization folder to import the string resources.

See also

- For command parameters, "Exporting and Importing String Resources" on page 37.
- To understand their format and syntax, "Properties Files" on page 393 in the *Gosu Reference Guide*.

Creating a Locale-Specific Workflow SubFlow

You can create a child workflow, or subflow, in Gosu by using the following methods on `Workflow`. Each method handles the locale of the subflow differently.

Method	Description
`createSubFlow`	Creates a child subflow synchronously, meaning that ClaimCenter starts the subflow immediately upon method invocation. The new subflow automatically uses the default application locale, not the locale of the parent workflow. Thus, if you set the locale of the parent workflow to be different from the default application locale, the subflow does not inherit that locale.
`createSubFlowAsynchronously`	Creates a child subflow asynchronously, meaning that ClaimCenter does not start the subflow until it finishes executing all code in the Gosu initialization block. Again, the subflow uses the default application locale, not the locale set for the workflow itself. Because ClaimCenter executes all the Gosu code in the block before starting the subflow, it is possible to set the locale of the subflow before the workflow starts.
`instantiateSubFlow`	Creates a child subflow, but does not start it. You can modify the subflow that the method returns before you start the subflow.

To create a subflow that inherits the locale of the parent workflow

1. Define a workflow that has the `LanguageType` property. See “Creating New Workflows” on page 411 in the *Configuration Guide* for information on how to create a new workflow with a `LanguageType` property.
2. Set the locale for this subflow so that it uses your desired language. See “Localizing ClaimCenter Workflow” on page 53 for details.
3. Instantiate the subflow by using the `instantiateSubFlow` method rather than the `createSubFlow` method.
4. Set the `LanguageType` property on the instantiated subflow to the locale of the parent workflow.
5. Start the subflow by using one of the workflow start methods described at “Instantiating a Workflow” on page 414 in the *Configuration Guide*.

See also

“Workflow Subflows” on page 420 in the *Configuration Guide*

Localizing Gosu Code in a Workflow Step

It is possible to localize the language used for Gosu code that you add to any workflow step, such as in an **Enter Script** block. To do so, wrap the Gosu code in the following method.

```
gw.api.util.LocaleUtil.runAsCurrentLanguage(alternateLanguage, \ -> { code } )
```

In the code, set the value of `alternateLanguage` to the language to use for the Gosu code block. For example:

```
gw.api.util.LocaleUtil.runAsCurrentLanguage(gw.i18n.ILocale.LANGUAGE_FR_FR, \ -> { code } )
```

Other wrapper methods useful for localization include the following:

- `runAsCurrentLocale`
- `runAsCurrentLocaleAndLanguage`

For more information on these methods, see:

- “Setting a Language for a Block of Gosu Code” on page 47
- “Setting Regional Formats for a Block of Gosu Code” on page 71

chapter 8

Localizing Templates

This topic describes application localization as it applies to documents, emails, and notes.

This topic includes:

About Templates

In the base configuration, Guidewire provides a number of template-related definition files for notes, emails, and documents. You can navigate in the Studio **Project** window to the following folders containing these files:

- **configuration** → **config** → **resources** → **doctemplates**
- **configuration** → **config** → **resources** → **emailtemplates**
- **configuration** → **config** → **resources** → **notetemplates**

Each folder contains two files for each resource type, the template file and a descriptor file. The two files have the same names but different file extensions. ClaimCenter uses the files to define a document, an email, or a note. The following table describes these files.

File extension	Description	Example

`.rtf`
`.htm`
`.pdf`
`.xml`
`.xls`
	Template files of various types. Template files contain the actual content of the document, email, or note.	`CreateEmailSent.gosu.htm`

`.descriptor`	Template descriptor file in XML format. This file contains the template metadata, such as: • `name` • `subject` This file can also contain symbol definitions for context objects that ClaimCenter substitutes into the template content file in creating the final document.	`CreateEmailSent.gosu.htm.descriptor`

See also

For general information on templates and how to create them and use them, see:

- "Gosu Templates" on page 347 in the *Gosu Reference Guide*
- "Data Extraction Integration" on page 607 in the *Integration Guide*

Creating Localized Documents, Emails, and Notes

Creating localized versions of document, email, and note templates mainly involves:

- Creating locale-specific folders in the correct location.
- Populating each folder with translated versions of the required document, email, or note templates and descriptor files.

The following steps describe the process.

- Step 1: Create Locale-Specific Folders
- Step 2: Copy Template Content Files
- Step 3: Localize Template Descriptor Files
- Step 4: Localize Template Files
- Step 5: Localize Documents, Emails, and Notes in ClaimCenter

Notes:

- In ClaimCenter, the default locale for a document, note, or email template is the configured default locale for the application.
- Any time you add a file to a Studio-managed file folder, you must stop and restart Studio so that it recognizes the change.
- Guidewire does not provide the ability to localize Velocity templates.

Step 1: Create Locale-Specific Folders

In ClaimCenter Studio, you can see the locations of the unlocalized ClaimCenter document, email, and note templates by navigating in the **Project** window to the following folders:

- **configuration** → **config** → **resources** → **doctemplates**
- **configuration** → **config** → **resources** → **emailtemplates**

- **configuration** → **config** → **resources** → **notetemplates**

To create your own localized versions of the template files:

1. Open Studio and navigate in the **Project** window to the following folder:

   configuration → **config** → **resources** → **doctemplates**

2. Right-click the **doctemplates** folder and choose **New** → **Package**.

3. Enter the name of your locale-specific folder and click OK.

   For example, if you are creating a French locale and want to use French-language document templates, enter `fr_FR` for the name.

4. If you also want to localize the email and note templates, repeat the previous steps for the following folders:
   - **configuration** → **config** → **resources** → **emailtemplates**
   - **configuration** → **config** → **resources** → **notetemplates**

After you complete this task, you see the locale-specific folders in the **Project** window, along with all the non-localized templates. For example:

- **configuration** → **config** → **resources** → **doctemplates** → **fr_FR**
- **configuration** → **config** → **resources** → **emailtemplates** → **fr_FR**
- **configuration** → **config** → **resources** → **notetemplates** → **fr_FR**

Step 2: Copy Template Content Files

After you set up the template locale folders, copy the template files from the main directory into the locale subfolders.

- For documents, you copy only the template content files, not the descriptor files. For example, you might copy the following files from **doctemplates** to **doctemplates/fr_FR**:

  ```
  CreateEmailSent.gosu.htm
  ReservationRights.doc.cvs
  ```

- For email and notes, you copy both the template content files and the template descriptor files. For example, you might copy the following files from **emailtemplates** to **emailtemplates/fr_FR**:

  ```
  EmailReceived.gosu
  EmailReceived.gosu.descriptor
  NeedXYZ.gosu
  NeedXYZ.gosu.descriptor
  ActionPlan.gosu
  ActionPlan.gosu.descriptor
  ```

Step 3: Localize Template Descriptor Files

After you copy the template files to a template locale folder, you create localized versions of the template descriptor files.

It is important to understand that localizing template descriptor files serves a different purpose from that of localizing (translating) template content files. For example:

- Localizing the subject context object in an email template descriptor file enables a ClaimCenter user to see the subject line of that email template in the localized language in ClaimCenter.
- Localizing the content of an email template enables the recipient of that email to see its contents in the localized language.

The manner in which you create localized document template descriptor files is different from the process for creating localized email and note template descriptor files. See the following topics for details:

- Localizing Document Descriptor Files
- Localizing Email and Note Descriptor Files

Localizing Document Descriptor Files

The document template descriptor files remain in the main **doctemplates** folder, and you edit them there. Descriptor files are XML-based files that conform to the specification defined in file `document-template.xsd`. You can view these files in the Studio **Project** window at:

configuration → **config** → **resources** → **doctemplates**

The descriptor file defines context objects, among other items. *Context objects* are values that ClaimCenter inserts into the document template to replace defined symbols. For example, ClaimCenter replaces `<%=Subject%>` in the document template with the value defined for the symbol `Subject` in the descriptor file.

For example, in the base configuration, ClaimCenter provides an XML definition for the `EmailSent` template descriptor associated with the `EmailSent` document content template. The descriptor file defines a context object for the `Subject` symbol. You can define as many context objects and associated symbols as you need. You can add elements that localize the template for any languages supported by your system.

```
<?xml version="1.0" encoding="UTF-8"?>
  <DocumentTemplateDescriptor
    id="EmailSent.gosu.htm"
    name="Gosu Sample Email Sent Record"
    description="Record of an email being sent"
    ...
    keywords="CA, email">

    <DescriptorLocalization language="someLanguage" name="localizedName"
            description="localizedDescription" />
    ...

    <ContextObject name="Subject" type="string">
      <DefaultObjectValue></DefaultObjectValue>
      <ContextObjectLocalization language="someLanguage" display-name="localizedName" />
      ...
    </ContextObject>
  ...

</DocumentTemplateDescriptor>
```

Localizing a template descriptor file requires that you localize a number of items in the file. The following list describes some of the main items that to localize in a descriptor file:

Element	Attribute	Description
`<DocumentTemplateDescriptor>`	• `keywords`	Localize the keywords associated with this template to facilitate the search for this template in the ClaimCenter search screen.
`<DescriptorLocalization>`	• `language` • `name` • `description`	Subelement of `<DocumentTemplateDescriptor>` – Enter a valid `GWLanguage` value for `language`, such as `gw.i18n.ILocale.LANGUAGE_EN_US`, which uses the language typecode `en_US`. The language typecode must be defined in the `LanguageType` typelist. See also, "Obtaining an ILocale Object for a Locale Type" on page 71. You can also localize the name and description of this template as it appears in ClaimCenter.
`<ContextObjectLocalization>`	• `language` • `display-name`	Subelement of `<ContextObject>` – Enter a valid `GWLanguage` value for `language`. See the previous description for more information. You can also localize the name of this template as it appears ClaimCenter.

To localize a document template descriptor file, add the appropriate `<DescriptorLocalization>` and `<ContextObjectLocalization>` subelements to the file.

IMPORTANT There is only one copy of each document template descriptor file. Do not create additional copies in locale folders. Instead, add localization elements to the descriptor files in the `doctemplates` folder.

Localizing Email and Note Descriptor Files

To localize email and note descriptor files, you put a copy of each descriptor file in the correct locale folder and localize the following attributes in that file.

Element	Attribute	Description
`<emailtemplate-descriptor>` `<notetemplate-descriptor>`	• `keywords` • `subject`	Localize the keywords associated with this template to facilitate the search for this template in the ClaimCenter search screen. Also, localize the subject of this template to show that localized value in ClaimCenter.

For example, to localize an email or note template descriptor file for French (France), first copy the descriptor file to an `fr_FR` folder. Then localize any keywords that you want and the subject tag for the template.

Step 4: Localize Template Files

After copying the template content files to your locale folder, as described in "Step 2: Copy Template Content Files" on page 59, you then need to translate them. Unless you want to create a new template, the simplest procedure is to do the following:

- Open the copied base language content template.
- Translate it into the language of your choice.
- Save the translated file in the locale-specific configuration folder.

Step 5: Localize Documents, Emails, and Notes in ClaimCenter

After you create localized versions of your templates, you can then use these templates in ClaimCenter to create a language-specific version of a document, an email, or a note.

Note: In ClaimCenter, you can select the unlocalized templates that are in the default directory. ClaimCenter displays these templates with no language specified. If you select one, however, ClaimCenter makes the **Language** field in the **New Document** worksheet editable.

To create a localized document

1. In ClaimCenter, open a claim and navigate to **Actions** → **New Document** → **Create from a template**.

   This action opens the **New Document** worksheet at the bottom of the screen.

2. In the **New Document** worksheet, click the search icon in the **Document Template** field.

   Note: The base configuration *Sample Acrobat* document (`SampleAcrobat.pdf`) uses Helvetica font. If you want to create a document that uses Unicode characters, such as one that uses an East Asian language, then the document template must support a Unicode font. Otherwise, the document does not display Unicode characters correctly.

3. In the search screen that opens, set the **Language** field to your language and set the other search fields as needed. If a document template for your language exists, ClaimCenter displays it in **Search Results**.

4. Click **Select**. ClaimCenter returns to the **New Document** worksheet with the selected localized template.

5. Complete the rest of the worksheet fields as necessary. You can enter text in your chosen language in the appropriate fields to further localize the document.

To create a localized email

1. In ClaimCenter, open a claim and choose **Actions** → **New** → **Email** to open the **New Email** worksheet at the bottom of the screen.
2. In the **Email** worksheet, you can either enter text in your chosen language or click **Use Template** to open the template selection worksheet.
3. If you click **Use Template**:
   a. In the search screen that opens, set the **Language** field to your chosen language and set the other search fields as necessary. If an email template for the language exists, ClaimCenter displays it in **Search Results**.
   b. Click **Select**. ClaimCenter returns to the **New Email** worksheet with the selected localized template.
4. Complete the rest of the worksheet fields as needed. You can enter text in your chosen language in appropriate fields to further localize the document.

To create a localized note

1. In ClaimCenter, open a claim and choose **Actions** → **New** → **Note** to open the **New Note** worksheet at the bottom of the screen.
2. If you click **Use Template**:
   a. In the search screen that opens, set the **Language** field to your chosen language and set the other search fields as necessary. If an email template for the language exists, ClaimCenter displays it in **Search Results**.
   b. Click **Select**. ClaimCenter returns to the **New Note** worksheet with the selected localized template.
3. Complete the rest of the worksheet fields as needed. You can enter text in your chosen language in appropriate fields to further localize the document.

Document Localization Support

ClaimCenter provides a number of useful methods for working with document localization in the following APIs. You can use methods of classes that implement the interfaces described in the following topics to search for document templates and generate documents by using a specific locale:

- "IDocumentTemplateDescriptor Interface Methods" on page 63
- "IDocumentTemplateSource Plugin Interface Methods" on page 63
- "IDocumentTemplateSerializer Plugin Interface Methods" on page 63

See also

- "Document Creation" on page 145 in the *Rules Guide* for general information on APIs used in document creation.
- "Document Management" on page 199 in the *Integration Guide* for integration-related issues in document creation.

IDocumentTemplateDescriptor Interface Methods

If you need to customize the ClaimCenter interface, Guidewire provides the following methods on the `IDocumentTemplateDescriptor` interface for working with locales:

Method	Return type	Returns
`getLanguage()`	`String`	Language to use to create the document from this template descriptor. A return value of `null` indicates the default language for the application. ClaimCenter returns the language that matches the directory that contains the `.descriptor` file that the user selected in the ClaimCenter interface.
`getName(locale)`	`String`	Localized name from the document descriptor file for a given `locale`. If a translation does not exist, the method returns `null`.

You can also use the following property on `IDocumentTemplateDescriptor` to retrieve the locale:

```
gw.plugin.document.IDocumentTemplateDescriptor.locale
```

See also

- "Localizing Document Descriptor Files" on page 60

IDocumentTemplateSource Plugin Interface Methods

The `IDocumentTemplateSource` plugin provides the following useful getter methods.

Method	Return type	Returns
`getDocumentTemplate(date, valuesToMatch, maxResults)`	`IDocumentTemplateDescriptor[]`	Array of `IDocumentTemplateDescriptor` objects. If you need to perform a search based on the locale of a document template, you can specify this in the `valuesToMatch` argument.
`getDocumentTemplate(templateId, locale)`	`IDocumentTemplateDescriptor`	Document template instance corresponding to the specified template ID and locale.
`getTemplateAsStream(templateId, locale)`	`InputStream`	One of the following: • Returns an `InputStream` for reading the specified template • Returns `null` if ClaimCenter cannot find the template • Returns `null` if the caller does not have adequate privileges to retrieve the template

IDocumentTemplateSerializer Plugin Interface Methods

The `IDocumentTemplateSource` plugin provides the following method that you can use to retrieve a localized version of a template.

Method	Return type	Returns
`localize(locale, descriptor)`	`IDocumentTemplateDescriptor`	Localized instance of the specified template

part III

Regional Format Configuration

chapter 9

Working with Regional Formats

You can configure support for multiple regional formats in ClaimCenter. Regional formats specify how to format items like dates, times, numbers, and monetary amounts for use in the user interface. Regional formats specify the visual format of data, not the database representation of that data.

This topic includes:

Configuring Regional Formats

In ClaimCenter, you can either use the regional formats defined in the International Components for Unicode (ICU) Library, or you can override those formats by defining formats in `localization.xml`. You save this file in the localization folder for the region it defines. If a localization folder does not have a `localization.xml` file, ClaimCenter uses the ICU Library. You configure these formatting options in Guidewire Studio.

This topic includes:

About the International Components for Unicode (ICU) Library

The International Components for Unicode (ICU) library is an open source project that provides support for Unicode and software globalization. ClaimCenter includes this library.

The ICU library, `icu4j`, attempts to maintain API compatibility with the standard Java JDK. However, for most features, the ICU library provides significant performance improvements and a richer feature set than the Java

JDK. The core of the ICU library is the Common Locale Data Repository (CLDR). The CLDR repository is a comprehensive repository of locale data.

See also

- For a feature comparison between the ICU library and the Oracle JDK, see `http://site.icu-project.org/`.
- For comparisons of text collation performance, see `http://site.icu-project.org/charts/collation-icu4j-sun`.
- For more information about the CLDR, see `http://cldr.unicode.org/`.

Configuring Locale Codes for Default Application Locale and the ICU Library

If a localization folder does not contain a `localization.xml` file, ClaimCenter uses the ICU library defaults for that region, as follows:

- ClaimCenter uses the ICU library for regional formats for dates, times, numbers, and monetary amounts.
- ClaimCenter uses the ICU library for the Japanese Imperial Calendar.

ICU uses Java locale codes to identify specific regional settings. For ClaimCenter to be able to access the ICU library for a region, the locale code for that region must be defined in the `LocaleType` typelist. In the base configuration, ClaimCenter provides the following set of Java locale codes in the `LocaleType` typelist:

```
en_US United States (English)
en_GB Great Britain (English)
en_CA Canada (English)
en_AU Australia (English)
fr_CA Canada (French)
fr_FR France (French)
de_DE Germany (German)
ja_JP Japan (Japanese)
```

The Java locale codes defined in this typelist are used by ClaimCenter as follows:

- To define the locale codes that you can use to set the default application locale. See “Configuring Locale Codes for Default Application Locale and the ICU Library” on page 68.
- To access the regional formats for a locale supplied by the ICU library. See “About the International Components for Unicode (ICU) Library” on page 67.

You can add additional Java locale codes to the `LocaleType` typelist.

To add a Java locale code to the LocaleType typelist

1. In ClaimCenter Studio, navigate in the **Project** window to **configuration** → **config** → **Metadata** → **Typelist**.
2. Right-click `LocaleType.tti` and choose **New** → **Typelist Extension**.
3. Click OK in the dialog box to create `LocaleType.ttx` in the `extensions/typelist` folder.

   The Typelist editor opens so you can edit the new `LocaleType.ttx` file.

   Note: You need to perform these steps only the first time you add a new Java locale code. To add subsequent locale codes, just navigate to **configuration** → **config** → **Extensions** → **Typelist** and double-click `LocaleType.ttx`.
4. Right-click the typelist element and choose **Add new** → **typecode**.
5. For **code**, enter the Java locale code.

   For example, enter the Java locale code `nl_NL` to configure regional formats used in the Netherlands.
6. For **name** and **description**, by convention, specify the country followed by the language in parentheses.

   For example, enter `Netherlands (Dutch)` for both the name and the description.

Configuring a localization.xml file

A localization folder can contain a `localization.xml` file, which defines regional formats. If you open Guidewire Studio and navigate in the **Project** window to **configuration** → **config** → **Localizations**, you can see the localization folders provided in the base configuration of ClaimCenter. These localization folders have Java locale codes for names, such as:

- **de_DE**
- **en_US**
- **fr_FR**
- **ja_JP**

In the base configuration, the `en_US`, `fr_FR`, and `ja_JP` localization folders have `localization.xml` files that define regional formats customary to each region. For example:

- In `en_US`, the file contains configuration information on date, time, number, and currency formats for use in the United States.
- In `ja_JP`, the file contains configuration information on how to format address information for Japan. It also contains configuration information on the Japanese Imperial Calendar in use in Japan.

  Note: In the base configuration, Guidewire uses the ICU library defaults for certain regions, such as `de_DE`. For those regions, there is no `localization.xml` file. See "International Components for Unicode (ICU) Library" on page 22.

You can add a new localization folder to **Localizations**. To do so, use the contextual right-click menu to create a new folder that uses a Java locale code defined in the `LocaleType` typelist. If there are multiple copies of a localization folder, then the contents of the folder in the main **configuration** module override any files installed by a language pack.

You can use an existing `localization.xml` file as a starting point if you want to create a new `localization.xml` file to override the ICU library settings for a region. You define attributes and subelements of the `<GWLocale>` element in a `localization.xml` file, as described in the following topic.

<GWLocale> XML Element

A `localization.xml` file contains a single `<GWLocale>` element in which you define the settings for a region. If you do not define an element or attribute, ClaimCenter uses the ICU library setting. The `<GWLocale>` element can take the following attributes and subelements.

<GWLocale> Attributes

- `code` – The region identifier, typically the same as the Java locale code defined in `LocaleType`. For example, `"en_US"`.
- `name` – A `String` value for the name of the locale, which the application can display to the user in its screens. For example, `"United States (English)"`.
- `firstDayOfWeek` – Defines the first day of the week for the region. Value is an integer representing a day of the week, starting with `"1"` for Sunday, `"2"` for Monday, and so on.

  If not defined, the base configuration uses the default ICU library setting for the region:

  - **Sunday** – `en_AU`, `en_CA`, `en_US`, `fr_CA`, `ja_JP`
  - **Monday** – `de_DE`, `en_GB`, `fr_FR`
- `typecode` – The corresponding regional typecode defined in the `LocaleType` typelist. For example, `"en_US"`.
- `defaultCalendar` – `"Gregorian"` or `"JapaneseImperial"`. The default value is `"Gregorian"`.
- `enableJapaneseCalendar` – A `Boolean` value, `true` or `false`, that determines whether or not to enable the Japanese calendar for this region. See "Working with the Japanese Imperial Calendar" on page 75.

<GWLocale> Subelements

- `CurrencyFormat` – Currency format pattern for the region, used in single currency rendering mode. For multi-currency configuration information, see "ClaimCenter Base Configuration Currencies" on page 85.

  Attributes are:

  - `negativePattern` – Pattern for a negative currency value. For example, for U.S. dollars, `"($#)"`.
  - `positivePattern` – Pattern for a positive currency value. For example, for U.S. dollars, `"$#"`.
  - `zeroValue` – Pattern for a scalar value of zero. For example, `"-"`.
- `DateFormat` – Patterns for the date formatter and parser. Attributes are:
  - `long` – The long date format pattern. For example, `"E, MMM d, yyyy"`.
  - `medium` – The medium date format pattern. For example, `"MMM d, yyyy"`.
  - `short` – The short date format pattern. For example, `"MM/dd/yyyy"`.

  See http://cldr.unicode.org/translation/date-time-patterns.
- `FlexibleDateFormat` – Date format patterns in addition to short, medium, and long. This element is used only by ClaimCenter. Attributes are:
  - `year-month-day` – Format that contains year, month, and day. For example, `"M/d/y"` or `"y-MM-dd"`.
  - `year-month` – Format that contains year and month. For example, `"MMM y"` or `"y MMM"`.
  - `month-day` – Format that contains month and day. For example, `"MMM d"` or `"MM-dd"`.
- `JapaneseImperialDateFormat` – Japanese imperial calendar settings. See "Working with the Japanese Imperial Calendar" on page 75.

  Attributes are:

  - `long` – Long Japanese imperial date format.
  - `medium` – Medium Japanese imperial date format.
  - `short` – Short Japanese imperial date format.
  - `yearSymbol` – Japanese year symbol.
- `NumberFormat` – Number formatter and parser configurations. Attributes are:
  - `decimalSymbol` – Symbol used to denote a decimal, usually a period or a comma. For example, `"."`.
  - `negativeEntryPattern` – Format for entering negative numeric values. For example, `"(#)"`.
  - `thousandsSymbol` – Symbol used to denote a grouping separator, usually a period or a comma. For example, `","`.
- `TimeFormat` – Time formatter and parser configuration. Attributes are:
  - `long` – Long time format pattern. For example, `"h:mm:ss a z"`.
  - `medium` – Medium time format pattern. For example, `"hh:mm:ss a"`.
  - `short` – Short time format pattern. For example, `"h:mm a"`.

  See http://cldr.unicode.org/translation/date-time-patterns.
- `NameFormat` – Formatting of names by the PCF file `GlobalContactNameInputSet` or `GlobalPersonNameInputSet`. Attributes are:
  - `PCFMode` – Mode of the PCF file to use. The mode must exist. In the base configuration, there are two modes, `default` and `Japan`. The default value in the base configuration is `default`.
  - `textFormatMode` – How to format the text. In the base configuration, `Japan` and `France` are possible values.
  - `visibleFields` – Fields the user can see in the PCF file `GlobalContactNameInputSet` or `GlobalPersonNameInputSet`. For example, for France, the visible fields are `"Prefix,FirstName,MiddleName,Particle,LastName,Suffix,Name"`.
- `CalendarWidget` – Defines the year-month pattern used by the calendar widget. Attribute is:
  - `yearMonth` – For example, for `ja_JP`, the value is `"yyyyMM"`.

Setting the Default Application Locale for Regional Formats

The default application locale determines the regional formats for users who have not chosen a personal preference. You must set a value for the default application locale, even if you configure ClaimCenter with a single region as the choice for regional formats. You set the default application locale in Guidewire Studio by editing the configuration parameter `DefaultApplicationLocale` in the file `config.xml`. In the base configuration, the default application locale is set to `en_US`.

The following example sets the default application locale to `France (French)`, which sets the default choice for regional formats.

```
<param name="DefaultApplicationLocale" value="fr_FR" />
```

IMPORTANT The value for `DefaultApplicationLocale` must match a typecode in the `LocaleType` typelist. If you set the value of parameter `DefaultApplicationLocale` to a value that does not exist as a `LocaleType` typecode, then the application server refuses to start.

See also

- "Configuring Locale Codes for Default Application Locale and the ICU Library" on page 68

Setting Regional Formats for a Block of Gosu Code

The class `gw.api.util.LocaleUtil` provides the following methods to enable you to run a block of Gosu code with a specific set of regional formats:

```
gw.api.util.LocaleUtil.runAsCurrentLocale(alternateLocale, \ -> { GosuCode } )

gw.api.util.LocaleUtil.runAsCurrentLocaleAndLanguage(
    alternateLocale,
    alternateLanguage,
    \ -> { code } )
```

The second method sets both region and language at the same time.

Running a block of Gosu code in this way enables ClaimCenter to format dates, times, numbers, and names of people appropriately for a specific region. Otherwise, the block of Gosu code uses the regional formats specified by the current region. The current region is either specified by the current user or, if not, by the `DefaultApplicationLocale` parameter in `config.xml`.

The parameters that the methods can take are:

Parameter	Description
`alternateLocale`	An object of type `ILocale` that represents a regional format from the `LocaleType` typelist. Specify a `GWLocale` object for this parameter.
`alternateLanguage`	An object of type `ILocale` that represents a language from the `LanguageType` typelist. . Specify a `GWLanguage` object for this parameter.
`\ -> { code }`	A Gosu block as a `GWRunnable` object—the Gosu code to run with different regional formats or a different language

Obtaining an ILocale Object for a Locale Type

To run a block of Gosu code with a specified set of regional formats, you must specify a locale object of type `ILocale`. You must specify the subtype `GWLocale` or `GWLanguage` as appropriate for the parameter `alternateLocale` or `alternateLanguage`.

- For the parameter `alternateLocale`, use the `gw.api.util.LocaleUtil.toLocale` method to provide an `ILocale` object that corresponds to a Gosu typecode in the `LocaleType` typelist. The object is actually of type

GWLocale, which implements ILocale. You can specify the object directly by using typecode syntax. For example LocaleType.TC_EN_US. The typecode has to be defined in the LocaleType typelist.

- For the parameter alternateLanguage, use the gw.api.util.LocaleUtil.toLanguage method to provide an ILocale object that corresponds to a Gosu typecode in the LanguageType typelist. The object is actually of type GWLanguage, which implements ILocale. You can specify the object directly by using typecode syntax. For example LanguageType.TC_EN_US. The typecode has to be defined in the LanguageType typelist.
- You can specify a typecode of the correct type directly, without using the toLocale or toLanguage method. Use the following syntax:
  - GWLocale – gw.i18n.ILocale.FR_FR
  - GWLanguage – gw.i18n.ILocale.LANGUAGE_FR_FR
- You can specify the first parameter by using a method on LocaleUtil that can get the current or default locale or language, as appropriate. For example, getDefaultLocale or getDefaultLanguage.

You can add a typecode to the LocaleType or LanguageType typelist. If you add a new typecode to one of these typelists, you must restart Studio to be able to use it in gw.i18n.ILocale. For example, see "To add a Java locale code to the LocaleType typelist" on page 68.

The following example Gosu code formats today's date by using the default application regional formats, overriding the any region that the user might have specified. The code uses runAsCurrentLocale to run a block of code that prints today's date formatted according the default application region's date format. The first parameter to this method is a call to getDefaultLocale to obtain a GWLocale object that represents the application's default regional formats.

```
uses gw.api.util.LocaleUtil
uses gw.api.util.DateUtil

// Run a block of Gosu code that prints the current date
// in the application's default regional format
LocaleUtil.runAsCurrentLocale(getDefaultLocale(),
    \-> {print(DateUtil.currentDate().format("long"))}
)
```

See also

- "Setting a Language for a Block of Gosu Code" on page 47
- "Gosu Blocks" on page 231 in the *Gosu Reference Guide*

Configuring the Catastrophe Heat Map Locale

In the base configuration, the catastrophe heat map uses Bing Maps. ClaimCenter maps the possible region settings to the locale formats used by Bing Maps in the following Gosu class:

```
gw.api.heatmap.BingMap
```

In the base configuration, ClaimCenter defines a HashMap in this class that contains the following values:

```
var bingLocaleMap : HashMap = new HashMap<String, String>() {
  "en_AU" -> "en-AU",
  "en_CA" -> "en-CA",
  "en_GB" -> "en-GB",
  "en_US" -> "en-US",
  "fr_FR" -> "fr-FR",
  "ja_JP" -> "ja-JP"
}
```

If you add additional regions to ClaimCenter, then you need to edit the BingMap class and add the region to bingLocaleMap. See "Configuring Locale Codes for Default Application Locale and the ICU Library" on page 68.

Adding a new locale code to bingLocaleMap affects only the localizable elements of the catastrophe map itself, the place names and the labels and tooltips that are on the map. You localize the non-map parts of the **Catastrophe Search** screen in the same ways as you localize the rest of ClaimCenter.

To view the current Bing locale

To determine the current locale in use for a Bing map, use the `BingMap.getBingMapsLocale` method. This method returns the closest equivalent to the Bing locale string, or U.S. English, if there is no close equivalent.

To view the list of Bing supported languages and locales

Navigate to the following web page to see the languages and locales supported by Bing Maps:

```
http://msdn.microsoft.com/en-us/library/cc469974.aspx
```

chapter 10

Working with the Japanese Imperial Calendar

This topic discusses the Japanese Imperial Calendar and how to configure Guidewire ClaimCenter to access and display Japanese Imperial Calendar dates correctly.

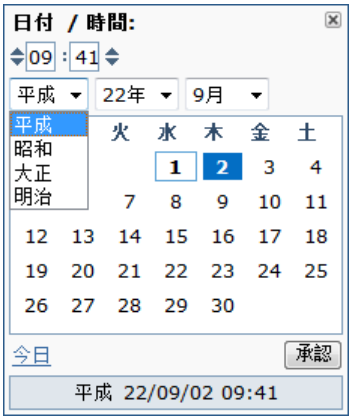
This topic includes:

The Japanese Imperial Calendar Date Widget

The ClaimCenter user interface supports the use of a Japanese Imperial calendar date widget. You must enable this feature through configuration. After you enable it, you can specify the default calendar type for the following:

- An entity property
- A Java or Gosu property

The following graphic illustrates the date picker for the Japanese Imperial calendar:



The date widget displays only the four most recent Imperial eras. They are:

- Heisei
- Showa
- Taisho
- Meiji

Note: Guidewire does not support the use of an input mask for Japanese Imperial calendar input. Enter date input by using the date picker. If you use a copy-and-paste method to enter a date, then you must paste an exact matching string into the date field.

Configuring Japanese Dates

You configure ClaimCenter display of Japanese Imperial calendar dates by specifying the `<JapaneseImperialDateFormat>` element in `localization.xml`. The `<JapaneseImperialDateFormat>` element is similar to the existing Gregorian `<DateFormat>` element. You define the following attributes:

Date format	Description
`long` `medium`	ClaimCenter uses only the `long` and `medium` date formats to display Japanese dates. You cannot use these fields to format user input data.
`short`	ClaimCenter uses the `short` date format to format user date input. Any date input format pattern that you choose must be compatible with the fixed width of the input mask. Guidewire recommends that you use `short="G yy/MM/dd"`.
`yearSymbol`	ClaimCenter uses the Japanese `yearSymbol` as a signal to render the Japanese Imperial calendar date picker.

The following graphic shows the base configuration Japanese `<GWLocale>` definition, which is in `localization.xml` in the localization folder `ja_JP`. This definition includes the `<JapaneseImperialDateFormat>` element.

```
localization.xml
<?xml version="1.0" encoding="UTF-8"?>
<Localization xmlns="http://guidewire.com/localization">
  <GWLocale
    code="ja_JP"
    name="Japanese"
    typecode="ja_JP">
    <JapaneseImperialDateFormat
      long="EEEE, Gy年M月d日"
      medium="G yy-MM-dd"
      short="G yy/MM/dd"
      yearSymbol="年"/>
    <NameFormat
      PCFMode="Japan"
      textFormatMode="Japan"
      visibleFields="LastName,FirstName,LastNameKanji,FirstNameKanji,Name,NameKanji"/>
    <CalendarWidget yearMonth="yyyyMM" />
  </GWLocale>
</Localization>
```

Setting the Japanese Imperial Calendar as the Default for a Region

ClaimCenter provides a way to set a default calendar for a region through the `defaultCalendar` attribute of the `<GWLocale>` element. Additionally, for the Japanese Imperial calendar, you must also set the `enableJapaneseCalendar` of the `<GWLocale>` element to `true`. These attributes determine whether or not to enable the Japanese calendar for this region.

To set the Japanese Imperial calendar as the default calendar for Japan:

1. Open the file **configuration** → **config** → **ja_JP** → **localization.xml**.
2. Add the `defaultCalendar` attribute to the `<GWLocale>` element, with the value set to `JapaneseImperial`.
3. Add the `enableJapaneseCalendar` attribute to the `<GWLocale>` element, with the value set to `true`.

```
<GWLocale
  code="ja_JP"
  name="Japanese"
  typecode="ja_JP"
  defaultCalendar="JapaneseImperial"
  enableJapaneseCalendar="true">
```

IMPORTANT Guidewire uses the *International Components for Unicode* (ICU) open source library to format dates according to the Japanese Imperial calendar. The ICU library specifies formats according to the historical Imperial calendar. Contemporary changes to the calendar, such as the start of a new era, require an updated ICU library. If such an event occurs, contact Guidewire support for details on how to upgrade to a newer version of the ICU library.

See also

- "Working with Regional Formats" on page 67.

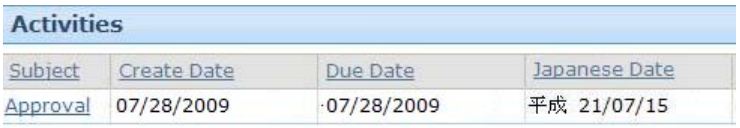
Setting a Field to Always Display the Japanese Imperial Calendar

You can set a field of an entity to always display the Japanese Imperial calendar when it is used the ClaimCenter user interface.

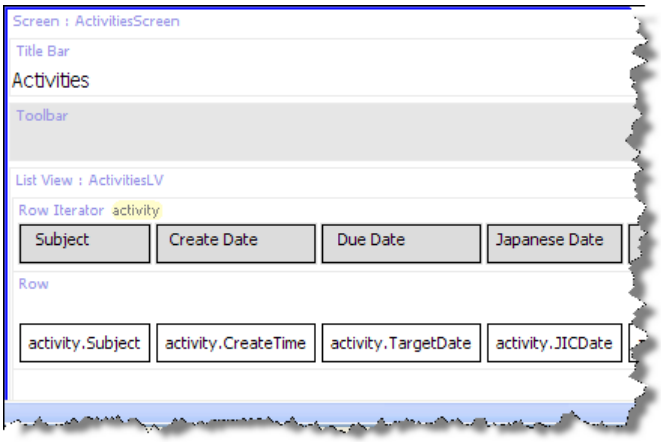
Suppose, for example, that you want to add an additional field to the `Activity` object that uses the `japaneseimperialdate` data type.

1. Navigate in the Studio **Project** window to **configuration** → **config** → **Extensions** → **Entity**, and then double-click `Activity.etx` to open it in the editor.
2. Right-click an element on the left, such as **entity (extension)** and choose **Add new** → **column**.
3. Select the new column and enter the following values for the following attributes:
   - **name** – `JICDate`
   - **type** – `japaneseimperialdate`
   - **nullok** – `true`

To be useful, you need to use this field to display a value in the Japanese Imperial calendar format. For example, in the **Activities** screen, you can add a **Japanese Date** field.



In the `Activities` PCF file, it looks similar to the following:



IMPORTANT You must configure your installation for the Japanese locale in order to display a date in Japanese Imperial calendar format. Otherwise, regardless of the calendar setting, you see only Gregorian dates.

Setting a Field to Conditionally Display the Japanese Imperial Calendar

Suppose, for example, that you want to treat a field as either a Gregorian date or a Japanese Imperial calendar date depending on certain factors. In this case, it is possible to write a datatype annotation that causes ClaimCenter to display certain fields in different formats in different situations. For example (as described in

"Working with Japanese Imperial Dates in Gosu" on page 80), suppose that you want to do the following:

- If the user's locale is `ja_JP` and `Policy.PolicyType != "CALI"`, then ClaimCenter is to display these fields by using the Gregorian calendar.
- If the user's locale is `ja_JP` and `Policy.PolicyType == "CALI"`, then ClaimCenter is to display these fields by using the Japanese calendar.

ClaimCenter provides several different ways to accomplish this date formatting. For example, you can:

- Annotate an entity field (database column)
- Annotate a Gosu property

To annotate an entity field

1. First, configure the data type for the entity field in an extension file. For example, add a column with the following attributes:
   - **name** – `JICDate`
   - **type** – `japaneseimperialdate`
   - **nullok** – `true`

   See "Setting a Field to Always Display the Japanese Imperial Calendar" on page 78.

2. Define a `PresentationHandler` class for the data type. For example:

```
class JapaneseImperialDateDataTypeDef implements IDataTypeDef {

  construct() { }

  override property get PresentationHandler() : IDataTypePresentationHandler {
    return new JapaneseImperialCalendarPresentationHandler()
  }
  ...
}
```

   If the class that you create implements an interface, in this case, `IDataTypeDef`, then you need to provide implementations for all methods and properties in the interface. If you place your cursor in the class definition line and press `Alt+Enter`, Studio prompts you with the required method and property bodies to automatically insert. You then need to define these properties and methods to suit your business needs.

   For an example of how to implement a presentation handler class, see "Defining a New Tax Identification Number Data Type" on page 265 in the *Configuration Guide*. For sample code for a JIC presentation handler, see "Working with Japanese Imperial Dates in Gosu" on page 80.

3. Implement the date presentation handler for the data type. You can make the implementation logic dynamic based on the entity context. For example:

```
class JapaneseImperialCalendarPresentationHandler implements IDatePresentationHandler {

  construct() { }

  override function getCalendar( ctx: Object, prop: IPropertyInfo ) : DisplayCalendar {
    /** If the "ctx" object is a policy, and the policy is "cali" type
      * and the "prop" is the effectivedate field ...
      **/
    if (...)
      return JAPANESEIMPERIAL }
    else
      return GREGORIAN
  }
  ...
}
```

To annotate a Gosu property

1. Annotate the data type for the Gosu property. For example:

```
@DataType("japaneseimperialdate")
property get JICDate() : Date {
  return _bean.DateField1
}
```

2. Define a `PresentationHandler` class for the data type in a similar fashion to that described previously in step 2 of "To annotate an entity field" on page 79.
3. Implement the date presentation handler class for the data type in a similar fashion to that described previously in step 3 of "To annotate an entity field" on page 79.

See Also

- For an example of how to implement the `IDataTypeDef` interface, see "Defining a New Tax Identification Number Data Type" on page 265 in the *Configuration Guide*. Specifically, see "Step 2: Implement the IDataTypeDef Interface" on page 266 in the *Configuration Guide*.
- "Working with Japanese Imperial Dates in Gosu" on page 80

Working with Japanese Imperial Dates in Gosu

ClaimCenter enables you to create an object extension of type `japaneseimperialdate` based on `java.util.Date`. You can use this data type to do the following:

- To set a calendar field value so that it always displays values in Japanese Imperial calendar style.
- To set a calendar field value so that it displays values in Japanese Imperial calendar style depending on a data field. This option requires additional configuration.

For example, consider the following two fields:

- `Policy.EffectiveDate`
- `Policy.ExpirationDate`

Now consider the following cases:

Locale	Policy.PolicyType	Description
en_US	–	If `Policy.PolicyType` is `null` (unspecified), then ClaimCenter displays all date fields in the Gregorian calendar in all situations
ja_JP	–	If `Policy.PolicyType` is `null` (unspecified), then ClaimCenter displays all date fields in the Japanese Imperial calendar in all situations
en_US	==”CALI”	If `Policy.PolicyType = “CALI”`, then ClaimCenter displays `Policy.EffectiveDate` and `Policy.ExpirationDate` in the Japanese Imperial calendar and all other date fields in the Gregorian calendar.
ja_JP	!=”CALI”	If `Policy.PolicyType != “CALI”`, then ClaimCenter displays `Policy.EffectiveDate` and `Policy.ExpirationDate` in the Gregorian calendar and all other date fields in the Japanese Imperial calendar.

Note: *CALI* (*Compulsory Auto Liability Insurance*) is a type of automobile policy in Japan that every driver must carry by law. It covers only injury to other parties, basically mandating that every driver protect others around them but not themselves, just like auto liability coverage in the United States. A driver who wants personal coverage must purchase another policy, known as a Voluntary policy.

These cases result in the following behavior:

- In the first two cases, the calendar to use in formatting `EffectiveDate` and `ExpirationDate` is dependent on the locale of the user only. For this, you merely need to set the `defaultCalendar` attribute on `<GWLocale>` in `localization.xml` to the correct value.
- In the last two cases, ClaimCenter displays these fields depending on additional conditions. For this, you need to provide additional configuration. See "Setting a Field to Conditionally Display the Japanese Imperial Calendar" on page 78.

See Also

- "Setting the Japanese Imperial Calendar as the Default for a Region" on page 77

- “Setting a Field to Always Display the Japanese Imperial Calendar” on page 78
- “Setting a Field to Conditionally Display the Japanese Imperial Calendar” on page 78

part IV

National Formats and Data Configuration

chapter 11

Configuring Currencies

You can configure ClaimCenter with multiple currencies. With multiple currencies, you can specify monetary amounts in different currencies in a single instance of ClaimCenter.

This topic includes:

ClaimCenter Base Configuration Currencies

In the base configuration, Guidewire provides support for the following global currencies:

- `AUD` – Australian dollar
- `CAD` – Canadian dollar
- `EUR` – European Union euro
- `GBP` – British pound
- `JPY` – Japanese yen
- `RUB` – Russian ruble
- `USD` – U.S. dollar

You use the following files in working with a currency, depending on whether you configure your installation for single currency or multicurrency mode:

Studio	Single currency rendering mode	Multicurrency rendering mode
`Currency` typelist	Provides currency code and similar information for the supported currency. • In a new installation, remove all currency typecodes except that of the default application currency. • In an installation that you are upgrading, retire all Currency typecodes except that of the default application currency.	Contains information on all supported currencies, such as currency codes and similar information.
`currency.xml`	In single currency mode, do not use this file to define currency formats. Remove all currency formatting from this file. Instead, use file `localization.xml` to format currency information.	Studio supports multiple copies of `currency.xml`, one for each supported currency, in each currency folder. Tor example: **configuration** → **config** → **currencies** → **aud** → **currency.xml**
`datatypes.xml`	Use to set the following for the application currency—the default application currency: • `precision` • `scale` • `appscale`	Use to set the following for the default currency only: • `precision` • `scale` • `appscale` Use individual `currency.xml` files to set the `storageScale` attribute on the `<CurrencyType>` element for each defined currency.
`localization.xml`	Contains currency formatting information for use with single currency rendering mode only. Studio supports multiple copies of this file, one for each localization folder. For example: **configuration** → **config** → **Localizations** → **en_US**	In multicurrency mode, do not use this file to define currency formats. Remove all currency formatting from `localization.xml`.

In addition, in working with currency and monetary amounts, you must set the following configuration parameters in `config.xml`:

- `DefaultApplicationCurrency` – Default application currency for currency and monetary amounts
- `DefaultRoundingMode` – Default rounding mode for currency and monetary amounts
- `MulticurrencyDisplayMode` – Currency display mode in the application for selecting currencies

IMPORTANT If you integrate the core applications in Guidewire InsuranceSuite, you must set the values of `DefaultApplicationCurrency` and `MulticurrencyDisplayMode` to be the same in each application.

See also

- "Setting the Default Application Currency" on page 91
- "Choosing a Rounding Mode" on page 92
- "Setting the Currency Display Mode" on page 92

Working with Currency Typecodes

The typecodes in the `Currency` typelist determine which currencies you can use to enter monetary amounts in ClaimCenter. The base configuration of the `Currency` typelist defines the following currencies:

- U.S. Dollar
- Euro
- United Kingdom Pound

- Canadian Dollar
- Australian Dollar
- Russian Ruble
- Japanese Yen

For your configuration, add or retire currencies in the `Currency` typelist to suit your needs. The typelist must include at least one active currency.

Working with Currency Typecodes in the Currency Typelist

Depending on your installation type, you need to add, remove (delete), or retire existing typecodes from the `Currency` typelist.

Installation type	Action
Single currency install	Remove all Currency typecodes except for the default application Currency typecode.
Multiple currency install	Add or delete Currency typecodes as representative for your installation.
Upgrading previous install	Retire all Currency typecodes that you do not intend to use in the upgraded installation.

To add a currency to the Currency typelist

1. In Studio, open the `Currency.ttx` typelist either by:
   - Searching for it with `Ctrl+Shift+N`.
   - Navigating in the **Project** window to **configuration** → **config** → **Extensions** → **Typelist** and double-clicking `Currency.ttx`.
2. In the toolbar, click the Add icon ✚.

   Studio adds a row for the typecode and selects it automatically.
3. Enter the following properties for the new currency.

code	Specify the lowercase version of the three-letter ISO 4217 currency code, for example, `nzd`.
name	Specify the uppercase version of the three-letter ISO 4217 currency code, for example, `NZD`.
desc	Specify the country or jurisdiction that issues the currency, followed by the name of the currency, for example, `New Zealand Dollar`.

Monetary Amounts in the Data Model and in Gosu

In the base configuration, Guidewire defines multiple data types to handle monetary amounts. You use the monetary data types to store and display monetary amounts within Guidewire ClaimCenter.

IMPORTANT Do not use the `<monetaryamount>` subelement in your data model. Do not use the corresponding `MonetaryAmount` Gosu or Java class. Use the `currencyamount` datatype instead.

Monetary Data Types

The money data types store and show monetary amounts in the system. ClaimCenter assumes that all monetary amounts in a money data type column are in the default application currency, as set by configuration parameter DefaultApplicationCurrency. The base configuration has the following money data types.

Money data type	Description
money	Permits positive, negative, and zero values.
nonnegativemoney	Does not permit negative values, However, zero values are acceptable.
positivemoney	Does not permit negative or zero values.

The money data types use the following specialized attributes, which you set in datatypes.xml for the default application currency:

- precision
- scale
- appscale

The settings that you make for these parameters affect all money columns.

Precision and Scale of Monetary Amounts

With money columns, precision controls the total number of digits and scale controls the number of digits to the right of the decimal point. For example, if precision=5 and scale=2, then the maximum value for monetary amounts is 999.99 and the minimum value is -999.99.

Some factors to consider in choosing the scale value include globalization issues and specific business requirements. For example, to track monetary amounts down to 1/100 of the currency unit, then set scale to 4. The default value for scale is 2.

IMPORTANT The MulticurrencyDisplayMode parameter setting is permanent. After you change the value of MultiCurrencyDisplayMode to MULTIPLE and then start the server, you cannot change the value back to SINGLE again. The MultiCurrencyDisplayMode parameter is in config.xml.

Guidewire recommends that you set the scale attribute to the maximum number of decimal position that you would possibly need in the future. Setting scale initially to a large value enables you to later add currencies for which the number of decimal digits is larger than your initial configuration.

You set precision and scale for the default application currency in the <MoneyDataType> element in file datatypes.xml, for example:

```
<MoneyDataType precision="18" scale="2" validator="Money"/>
```

The precision and scale attributes control how ClaimCenter displays monetary amounts in the user interface and how ClaimCenter stores monetary amounts in the database.

See also

- "The Data Types Configuration File" on page 260 in the *Configuration Guide*

Storage Scale in Multicurrency Installations

Installations that contain multiple currency definitions frequently need to set the number of decimal digits to store in the database differently for monetary amounts in different currencies. To set specific storage values for individual currencies, use the storageScale attribute on the <CurrencyType> element in file currency.xml. In

installations that support the display of multiple currencies, there is a `currency.xml` file for every defined currency.

Attribute `storageScale` sets the number of decimal places to store in the database for monetary amounts in that currency. For example, in the base configuration:

File `currency.xml` for the Australian dollar defines the following `storageScale`:

```
<CurrencyType code="aud" desc="Australian Dollar" storageScale="2">
```

File `currency.xml` for the Japanese yen shows the following `storageScale`:

```
<CurrencyType code="jpy" desc="Japanese Yen" storageScale="0">
```

Application Scale

The `appscale` attribute is a rarely-used optional data type attribute. Guidewire provides the `appscale` attribute to facilitate upgrades of single currency configurations to configuration with multiple currencies. The value of `appscale` must be less than the value of `scale`.

Setting a value for the `appscale` attribute enables a single currency configuration to operate with a scale in the user interface that is appropriate to a particular currency. At the same time, monetary amounts stored in the database have a different and larger scale. The `appscale` value becomes the effective scale of `BigDecimal` values that ClaimCenter saves to and loads from monetary columns in the database.

For example, suppose that you implement a single currency configuration of ClaimCenter for the Japanese Yen, which typically has a scale of zero. You intend to convert to a multicurrency configuration in the future. In the conversion, you intend to add the U.S. Dollar, which typically has a scale of two.

In this example, you initially set `appscale=0` and `scale=2`. Thus in the interface, `BigDecimal` values for `money` and `currencyamount` columns have a scale of zero but are stored in the database with a scale of two. Later, during your conversion to multicurrency mode, you removed the `appscale` attribute from `datatypes.xml`. In its place, you use the `storageScale` attributes in the `currency.xml` configuration files for each currency to specify the scale of each currency.

Otherwise, you must re-create monetary columns during an upgrade to have a scale value of two. The Guidewire upgrade tool does not support changes in the scale of monetary columns.

The following rules and restrictions apply to the `money` data type.

- Set the value for `appscale` to the largest number of decimal positions that the currency you currently use requires. This value sets the scale for monetary amounts in the interface.
- Set the value for `scale` to the largest number of decimal positions that the currencies you plan to use in the future require. This value sets the scale for monetary amounts in the database.
- The value for `appscale` must be less than the value for `scale`.
- If you do not set a value for `appscale`, then ClaimCenter uses the value for `scale` in the user interface and in the database.

Guidewire does not use the `appscale` attribute in the base configuration. If you want to use this attribute, then you must add this attribute to the `<MoneyDataType>` element in `datatypes.xml`. Use the `appscale` attribute only in single currency mode. In multicurrency mode, use the `storageScale` attribute in the `currency.xml` file for each currency.

Currency Amount Data Types

Guidewire provides a number of `currencyamount` data types that extend the `money` data types to specify the currency of monetary amounts. The primary purpose of the `currencyamount` data types is for use in multicurrency configurations.

The following list describes the Guidewire base configuration of the `currencyamount` data types.

Currency amount data type	Description
`currencyamount`	Permits positive, zero, and negative.
`nonnegativecurrencyamount`	Permits only positive and zero values.
`positivecurrencyamount`	Permits only positive values.

In both Gosu and Java code, a `currencyamount` property returns a `CurrencyAmount` object, which associates a `BigDecimal` monetary amount with a particular `Currency` typekey. ClaimCenter persists the `BigDecimal` amount to the database. You can configure the `Currency` value for that particular column.

To specify the currency for amounts that are stored in a column, use the `<columnParam>` element on that column to set a `currencyProperty` value. The `currencyProperty` parameter points to a property on the entity that returns the `Currency` for the column. This property can be either of the following:

- A virtual property, which you typically define in an enhancement class
- A `Currency` column on the entity, which stores a `Currency` typekey value

If the property is a virtual property, it usually looks up the relevant `Currency` from a parent entity, such as a `Claim`.

For example, in ClaimCenter, if you want to store a monetary amount in the same currency as the claim, then you can use `ClaimCurrency` as the currency property.

```
<column name="SomeAmount" type="currencyamount" ...>
  <columnParam name="currencyProperty" value="ClaimCurrency"/>
</column>
```

See also “Multiple Currencies” on page 335 in the *Application Guide*.

In the base configuration, Guidewire provides a definition for the `ClaimCurrency` property on many entities, either in Java or through a Gosu enhancement class. If it does not exist, you can define it in an enhancement class on that particular entity type.

If you define a currency property, you must ensure that it does not throw a `NullPointerException` if the entity is not yet linked to its parent. Instead of throwing an exception, have the currency property return `null` if the entity that stores the currency value is not reachable. This is a relatively simple task in Gosu, because of the null-safety of entity path expressions. The following sample ClaimCenter code illustrates how to construct a null-safe `ClaimCurrency` property:

```
enhancement GWWorkStatusEnhancement : entity.WorkStatus {

    /**
     * Retrieves the currency of the claim associated with this WorkStatus object
     *
     * @return The associated Claim's currency, if any. Is null if the Claim is not
     *   currently reachable (for example, if the necessary entity connections have
     *   not yet been made).
     */
     property get ClaimCurrency() : Currency {
         return this.EmploymentData.ClaimCurrency
    }
    ....
}
```

It is possible to create a column that contains a multicurrency value that could potentially contain any `Currency`. In this case, you need to define another extension column on the entity to store the `Currency` value and reference that in the `currencyProperty` `<columnParam>` element. For example:

```
<typekey name="SomeCurrency" nullok="false" typelist="Currency" …/>
<column name="SomeAmount" type="currencyamount" ...>
  <columnParam name="currencyProperty" value="SomeCurrency"/>
</column>
```

It is not mandatory to provide the `currencyProperty` in a `<columnParam>`. If you do not, then ClaimCenter defaults to using the value that you set for `DefaultApplicationCurrency` in `config.xml`.

Exceptions Whenever Coercing BigDecimal Values to CurrencyAmount Values

If you attempt to coerce a value from `BigDecimal` to `CurrencyAmount`, the default application behavior creates a `CurrencyAmount` with a null `Currency` property. The base configuration sets the application server to strict currency mode, which typically generates exceptions for currency amounts with no designated currency. Guidewire recommends that you be aware of this issue and take steps to mitigate it.

The following sample Gosu code illustrates how coercing a `BigDecimal` value to a `CurrencyAmount` value can cause an exception.

```
var lineItem = new TransactionLineItem()
var bigDecimalAmount = new java.math.BigDecimal("1.23")

lineItem.setTransactionAmountAndUpdate(bigDecimalAmount) // Method takes a CurrencyAmount argument, so
                                                            Gosu coereces the BigDecimal value to a
                                                            CurrencyAmount with a null Currency.
```

See also

- "<column>" on page 187 in the *Configuration Guide*
- "<columnParam> Subelement" on page 190 in the *Configuration Guide*

Currency-related Configuration Parameters

The following list describes the configuration parameters that you must set in file `config.xml` that relate to currency.

Configuration parameter	Description	See...
`DefaultApplicationCurrency`	Default currency for the application	"Setting the Default Application Currency" on page 91
`DefaultRoundingMode`	Default rounding mode for money and currency amount calculations	"Choosing a Rounding Mode" on page 92
`MulticurrencyDisplayMode`	Determines whether ClaimCenter displays currency selectors for monetary values	"Setting the Currency Display Mode" on page 92

IMPORTANT If you integrate the core applications in Guidewire InsuranceSuite, you must set the values of `DefaultApplicationCurrency` and `MulticurrencyDisplayMode` to be the same in each application.

See also

- "Globalization Parameters" on page 62 in the *Configuration Guide*

Setting the Default Application Currency

You must set configuration parameter `DefaultApplicationCurrency` to a typecode in the `Currency` typelist. You must set this configuration parameter even if you configure ClaimCenter with a single currency.

You set the default application currency in file `config.xml`, for example:

```
<param name="DefaultApplicationCurrency" value="usd"/>
```

Guidewire applications that share currency values must have the same `DefaultApplicationCurrency` setting in their respective `config.xml` files.

The base ClaimCenter configuration sets the default application currency to the U.S. dollar.

IMPORTANT The `DefaultApplicationCurrency` parameter setting is permanent. After you set the parameter and then start the server, you cannot change the value.

In most cases:

- ClaimCenter assumes that columns of type `money` are in the default application currency.
- ClaimCenter also assumes that `currencyamount` columns without a `currencyProperty <columnParam>` are in the default application currency.

Choosing a Rounding Mode

There are a number of factors to consider as you select a rounding mode, especially for Payments and Reserves. If you are creating a multicurrency transaction, ClaimCenter converts the `TransactionAmount` that you enter in the transaction currency to the claim currency. ClaimCenter then stores this amount as the `ClaimAmount`. The rounding mode that you stipulate and which ClaimCenter uses in this calculation can result in unexpected behavior at a later time as ClaimCenter makes Payments against the Available Reserves.

By default, ClaimCenter enforces a constraint that demands that the payments in the claim currency not exceed the reserves in the claim currency. If the selected rounding modes result in rounding upwards for particular payment amounts, and downwards for particular reserve amounts, then it is possible to violate this rule. This can occur even though the result does not exceed the Available Reserves if you consider the Transaction Amounts alone.

Therefore, Guidewire recommends that you make a careful selection of the rounding modes for the payments and the reserves. For example, you do not want ever to have the sum of the rounded claim-currency payments exceed the sum of the rounded claim-currency reserves. The default rounding modes for Payments and Reserves of `Down` and `Up`, respectively, achieve this invariant. Other combinations are possible as well.

Guidewire recommends that you choose `HALF_UP` or `HALF_EVEN` for both Payment and Reserve rounding modes in the following cases:

1. A downstream system, such as your General Ledger accounting system, expects a particular rounding mode to be used while determining the conversion.
2. You consider using `HALF_UP` or `HALF_EVEN` rounding to be more correct, and are comfortable with the possible side effect listed in the previous discussion.

See also

- "DefaultRoundingMode" on page 63 in the *Configuration Guide*
- "PaymentRoundingMode" on page 60 in the *Configuration Guide*
- "ReserveRoundingMode" on page 60 in the *Configuration Guide*

Setting the Currency Display Mode

You use configuration parameter `MulticurrencyDisplayMode` in `config.xml` to set the currency display mode for your instance of ClaimCenter. You must set a currency display mode for ClaimCenter. Set the parameter to one of the following values:

- `SINGLE`
- `MULTIPLE`

The currency display mode determines how ClaimCenter stores monetary values and displays them in the interface.

IMPORTANT The `MulticurrencyDisplayMode` parameter setting is permanent. After you change the value of `MultiCurrencyDisplayMode` to `MULTIPLE` and then start the server, you cannot change the value back to `SINGLE` again. The `MultiCurrencyDisplayMode` parameter is in `config.xml`.

The value that you set for `MulticurrencyDisplayMode` influences the column type you use in your data model.

Currency display mode	Recommendations
`SINGLE`	If you set the currency mode to `SINGLE`, you can use the `money` data types for monetary amount columns. Use this value if you do not foresee a need for multicurrency operation in the future. With the parameter value set to `SINGLE`, ClaimCenter uses one currency only. So, there can be no ambiguity of the currency for monetary amounts that are stored in the database. However, there are advantages in using the `currencyamount` data types, even if you set the currency mode to `SINGLE`: • The `currencyamount` data types assure the accuracy of monetary amounts in the system because ClaimCenter stores monetary amounts in the database with the currency that the amounts represent. • Your Gosu code can pass around `CurrencyAmount` data types for monetary amounts with no ambiguity about the currency that the amounts represent. If you switch the currency mode to `MULTIPLE` at a later time, you avoid the necessary conversion of your Gosu code from `money` data types to `currencyamount` data types. Use the `currencyamount` data types if you set the currency mode to `SINGLE` and you foresee the remotest possibility of a need for multicurrency operation in the future.
`MULTIPLE`	If you set the currency mode to `MULTIPLE`, use only the `currencyamount` data types for monetary amount columns. With the parameter value set to `MULTIPLE`, ClaimCenter uses several currencies, so monetary amounts stored in the database carry the currencies that the amounts represent. If you set the currency mode to `MULTPLE`, your Gosu code must pass around only `CurrencyAmount` data types for monetary amounts. If you convert the currency mode from `SINGLE` to `MULTIPLE`, you can change the type on `money` extension columns to `currencyamount` without any upgrade cost. This change triggers a database upgrade, but the upgrade utility does not make changes to the database because the database types of the monetary columns do not change.

The value that you set for `MulticurrencyDisplayMode` influences where you specify regional formats for monetary amounts.

Specifying Regional Formats for the Currency in Single Currency Display Mode

In single currency display mode, ClaimCenter assumes that all monetary amounts in the system are in the same currency. ClaimCenter uses the `<CurrencyFormat>` entries in each `<GWLocale>` in `localization.xml` to format the monetary amount, depending on the locale of each user. For example:

```
<Localization xmlns="http://guidewire.com/localization">
  <GWLocale code="en_US" name="English (US)" typecode="en_US">
    ...
    <CurrencyFormat negativePattern="($#)" positivePattern="$#" zeroValue="-"/>
  </GWLocale>
</Localization>
```

Because all monetary values are in the default currency, you must ensure that the `<CurrencyFormat>` for each `<GWLocale>` specifies the monetary format for that one currency. It is possible to set slightly different formatting based on local custom, but all monetary formatting must be for the one default currency.

In single currency display mode, ClaimCenter assumes that all monetary amounts in the system are in the same currency, as specified by configuration parameter `DefaultApplicationCurrency`. ClaimCenter formats the

display of monetary amounts using the `CurrencyFormat` entry in the `GWLocale` definition for the user's preferred regional formats.

As all monetary values are in the same currency, you must ensure that the `CurrencyFormat` for each `GWLocale` specifies the monetary format for that one currency. It is possible to set slightly different formats based on local custom, but all monetary formats must be for the single currency.

IMPORTANT Guidewire strongly recommends that you set configuration parameter `DefaultApplicationCurrency` to its correct value if you set `MulticurrencyDisplayMode` to `SINGLE`. This ensures the correctness of the data in the database if you upgrade to multicurrency at a later time.

Specifying Regional Formats for Different Currencies in Multiple Currency Display Mode

In multiple currency display mode, ClaimCenter obtains regional formats for monetary amounts from `currencies.xml`. For example:

```
<CurrencyType code="usd" desc="US Dollar" storageScale="2">
  <CurrencyFormat positivePattern="$#" negativePattern="($#)" zeroValue="-" />
</CurrencyType>
```

In `MULTIPLE` mode, ClaimCenter ignores any `CurrencyFormat` information in file `localization.xml`. However, even though unused, a tag for the default currency must be present in file `localization.xml`, even in `MULTIPLE` mode.

chapter 12

Configuring Geographic Data

This topic describes how to configure the typelists `Jurisdiction`, `Country`, and `State`, and configuration file `zone-config.xml` for the territorial data in your instance of ClaimCenter.

This topic includes:

Working with Country Typecodes

In the base configuration, Guidewire provides the country typelist `Country.ttx`, which defines a standard set of countries. The country information includes the ISO country code and the English language country name. The ISO country code is the two-character uppercase ISO 3166 code for a country or region. To view a list of countries codes, refer to the following web site:

```
http://www.iso.org/iso/country_codes/iso_3166_code_lists /country_names_and_code_elements.htm
```

Individual country definitions can provide additional country information as well. For example, the `Country.ttx` typecode definition for `VA`, Vatican City, indicates that the currency in use is the euro, code `eur`.

Configuring Country Address Formats

The `country.xml` files in the country folders define settings that control the appearance of address information for each country in ClaimCenter. In Guidewire Studio, to access a country's `country.xml` file, you can navigate in the **Project** window to **configuration** → **config** → **geodata** → *`countryCode`*. For example, the `country.xml` file for the address-related information in Australia is in the following location in Studio:

configuration → **config** → **geodata** → **AU**

In the base configuration, Guidewire provides `country.xml` definition files for the following countries:

- `AU` – Australia
- `CA` – Canada
- `DE` – Germany
- `FR` – France
- `GB` – Great Britain
- `JP` – Japan
- `US` – United States

You use `country.xml` to set address-related configuration for a single country. In this file, you can set the following attributes on `<Country>`.

> **Note:** For attributes that take display key values, ClaimCenter uses the `display.properties` file defined in the associated localization folder, such as **Localization** → **ja_JP** for Japan. If there is no `display.properties` file in the localization folder for that region, ClaimCenter uses the `display.properties` file defined in **Localization** → **en_US**. See "Localizing Display Keys" on page 39.

Attributes	Sets...
`PCFMode`	PCF mode for `GlobalAddressInputSet.pcf`. In the base configuration, Guidewire provides three modes for showing address information. The base configuration modes are: • `BigToSmall` – Used to format addresses for Japan • `PostCodeBeforeCity` – Used to format addresses for France and Germany • `default` – Used to format all other addresses The default value is `default`. You can add new PCF modes and use them in file `country.xml`.
`postalCodeDisplayKey`	Name of the display key to use for the postal code label in ClaimCenter. For example: • In the United States, `US` – `Web.AddressBook.AddressInputSet.ZIP` • In Japan, `JP` – `Web.AddressBook.AddressInputSet.Postcode` The default value is `Web.AddressBook.AddressInputSet.PostalCode`.
`cityDisplayKey`	Name of the display key to use for the city label for a country. For example: • In Great Britain, `GB`, – `Web.AddressBook.AddressInputSet.TownCity` The default value is `Web.AddressBook.AddressInputSet.City`.
`stateDisplayKey`	Name of the display key to use for the label designating the major administrative subdivisions in a country. For example: • In the United States, `US` – `Web.AddressBook.AddressInputSet.State` • In Canada, `CA` – `Web.AddressBook.AddressInputSet.Province` • In Japan, `JP` – `Web.AddressBook.AddressInputSet.Prefecture` The default value is `Web.AddressBook.AddressInputSet.State`.
`visibleFields`	Comma-separated list of address-related fields that you want to be visible in ClaimCenter for this country. For example, for `AU`, the values are: • `Country` • `AddressLine1` • `AddressLine2` • `AddressLine3` • `City` • `State` • `PostalCode` Any address field that you designate as visible in this file must correspond to the constants defined in `AddressOwnerFieldId.gs`.

See also

- "Configuring Address Data and Field Order for a Country" on page 106
- "Address Modes in Page Configuration" on page 109

Setting the Default Application Country

You set the default application country in `config.xml`, in configuration parameter `DefaultCountryCode`. The country code must be a valid ISO country code that exists as a typecode in the `Country` typelist. See the following web site for a list of valid ISO country codes:

`http://www.iso.org/iso/english_country_names_and_code_elements`

See "Globalization Parameters" on page 62 in the *Configuration Guide* for more information on this configuration parameter.

Configuring Jurisdiction Information

Guidewire applications divide jurisdictions into several areas:

- **National jurisdictions** – Japan or France, for example
- **State or province jurisdictions** – United States and Canada, for example
- **Other jurisdictions** – Other local regulatory jurisdictions at a level below the country level, such as Berlin, Germany

In the base configuration, Guidewire provides a `Jurisdiction` typelist that contains a set of pre-defined jurisdictions. This typelist is used by a number of PCF files to display a list of states or provinces, as well as jurisdictions that are not states or provinces.

For example, when you are editing a contact who is a `Person` subtype in ClaimCenter, there is a **Driver's License** section on the edit screen. The **State** field on this screen uses `Jurisdiction.ttx` to populate the drop-down list for the field. If you want to change the contents of the drop-down list, edit the `Jurisdiction.ttx` file in Studio and add or remove values from the outgoing category `driving_lic`.

Configuring Zone Information

Guidewire ClaimCenter uses `zone-config.xml` files to define one or more zones. A *zone* is a combination of a country and zero or more address elements, such as a city or state in the United States or a province in Canada. You can configure zones to apply to any area in a single country. In the United States, for example, you typically define zones by state, city, county, and ZIP code. There is a separate `zone-config.xml` file for each country defined in the base configuration.

ClaimCenter uses zones for the following:

- Region and address auto-fill
- Business week and holiday definition by zone

This topic includes:

Location of Zone Configuration Files

ClaimCenter stores the `zone-config.xml` files in the `geodata` folder, each in its own individual country folder. For example, the `zone-config.xml` file for the address-related information in Australia is in the following location in Studio:

configuration → **config** → **geodata** → **AU**

In the base configuration, Guidewire defines zone hierarchies for the following geographical locations:

- `AU` – Australia
- `CA` – Canada
- `DE` – Germany
- `FR` – France
- `GB` – Great Britain
- `JP` – Japan
- `US` – Unites States of America

In a `zone-config.xml` file, you define:

- The links between the country's zones, the *zone hierarchy*
- How ClaimCenter uses those links to extract the value of zone from address data

Working with Zone Configuration Files

A `zone-config.xml` files contains the following XML elements:

- `<Zones>`
- `<Zone>`
- `<ZoneCode>`
- `<Links>`
- `<AddressZoneValue>`

For example, in the base configuration, ClaimCenter defines the zone hierarchy for the United States in the following file:

configuration → config → geodata → US → zone-config.xml

This file uses the following elements:

```
<Zones countryCode="US">
  <Zone code="zip" fileColumn="1" granularity="1" regionMatchOrder="1" unique="true">
    <AddressZoneValue>Address.PostalCode.substring(0,5)</AddressZoneValue>
    <Links>
      <Link toZone="city"/>
    </Links>
  </Zone>

  <Zone code="state" fileColumn="2" granularity="4" regionMatchOrder="3">
    <AddressZoneValue>
      Address.State.Abbreviation.DisplayName
    </AddressZoneValue>
    <Links>
      <Link toZone="zip" lookupOrder="1"/>
      <Link toZone="county"/>
      <Link toZone="city"/>
    </Links>
  </Zone>

  <Zone code="city" fileColumn="3" granularity="2">
    <ZoneCode>state + ":" + city</ZoneCode>
    <AddressZoneValue>
      Address.State.Abbreviation.DisplayName + ":" + Address.City
    </AddressZoneValue>
    <Links>
      <Link toZone="zip"/>
    </Links>
  </Zone>

  <Zone code="county" fileColumn="4" granularity="3" regionMatchOrder="2">
    <ZoneCode>state + ":" + county</ZoneCode>
    <AddressZoneValue>
      Address.State.Abbreviation.DisplayName + ":" + Address.County
    </AddressZoneValue>
    <Links>
      <Link toZone="zip" lookupOrder="1"/>
      <Link toZone="city" lookupOrder="2"/>
    </Links>
```

```
    </Zone>
  </Zones>
```

This topic includes:

See also

- "Zone Import Command" on page 194 in the *System Administration Guide*.

<Zones>

This element defines the largest region, a country. The `zone-config.xml` files contains a single `<Zones>` element representing the zones in a specific country. Each `<Zones>` element contains one or more `<Zone>` elements.

The `<Zones>` element takes the following attributes:

Attribute	Description
`countryCode`	*Required.* Defines the country to which this zone configuration applies.
`dataFile`	For Guidewire internal use only. Do not set this attribute.

<Zone>

The `<Zone>` subelement of `<Zones>` defines a zone type. The zone type must exist in the `ZoneType` typelist. The `Zone` element takes the following attributes, all optional except for the `code` attribute:

Attribute	Description
`code`	Sets the zone type, which must be a valid value defined in the `ZoneType` typelist. You also use this value as a symbol in `<ZoneCode>` expressions to represent the data extracted from the data import file based on the column specified in the `fileColumn` attribute.

`fileColumn`	*Optional.* Specifies the column in the import data file from which to extract the zone data. The numeric value of `fileColumn` indicates the ordered number of the column in the data file. For example, `fileColumn="4"` specifies the fourth column in the data file.
	A `<Zone>` element without a `fileColumn` attribute can contain an expression that derives a value from the other zone values. For example, in the base configuration, Guidewire defines the following `fsa` zone in the Canadian `<Zones>` element:
	`<Zone code="fsa" regionMatchOrder="1" granularity="1">`
	`<ZoneCode> postalcode.substring(0,3) </ZoneCode>`
	`<AddressZoneValue> Address.PostalCode.substring(0,3) </AddressZoneValue>`
	`</Zone>`
	Both the `<ZoneCode>` and `<AddressZoneValue>` elements extract data from the actual address data by parsing the data into substrings.
	Notes:
	• Specify at least one `<Zone>` element with a `fileColumn` attribute. If you do not specify at least one `fileColumn` attribute, then ClaimCenter does not import data from the address zone data file.
	• Import address zone data upon first installing Guidewire ClaimCenter, and then at infrequent intervals thereafter as you update zone definitions.

`granularity`	Sets size levels for each defined zone. The smallest geographical region is 1. The next larger geographical region is 2, and so on. The sequence of numbers must be continuous. ClaimCenter uses this value with holidays and business weeks. For ClaimCenter catastrophe administration, you must set the granularity for zones that you want to make available in the list of **Zone Types** on the **New Catastrophe** page.

Attribute	Description
`orgZone`	For Guidewire internal use only. Do not set this attribute.

`regionMatchOrder`	Controls the order in which ClaimCenter uses these zones in matching algorithms. ClaimCenter uses this attribute as it matches users to a zone for location-based or proximity-based assignment. For example, in the base configuration for the United States, Guidewire defines the following `<Zone>` attributes for a `county`:
	`<Zone`
	`code="county"`
	`fileColumn="4"`
	`regionMatchOrder="2"`
	`granularity="3" >`
	`...`
	`</Zone>`
	Setting the `regionMatchOrder` to 2 means that ClaimCenter matches county data second, after another zone, while matching a user to a location.
	The `county` value also:
	• Appears in the fourth column of the data file.
	• Is third in `granularity`, one size less than a state—`granularity` 4—and one size more than a city—`granularity` 2.

`unique`	*Optional.* Specifies whether this zone data is unique. For example, in the United States, a `county` data value by itself does not guarantee uniqueness across all states. There is a county with the name of Union in seventeen states and a county with the name of Adams in twelve states.
	To differentiate zones that can be identical—not unique—use a `<ZoneCode>` element to construct a zone expression that uniquely identifies that zone data. For example, you can combine the county name with the state name to make a unique identifier by defining the following `<ZoneCode>` subelement of `<Zone>`:
	`<ZoneCode>`
	`state + ":" + county`
	`</ZoneCode>`
	See “<ZoneCode>” on page 100.

<ZoneCode>

The `<ZoneCode>` element is a subelement of `<Zone>`. It is possible for zone information to not be unique, meaning that the zone import data column contains two or more identical values. In this case you need to use `<ZoneCode>` to define an expression that uniquely identifies the individual zone.

For example, in the United States, it is possible for multiple states to have a city with the same name, such as Portland, Oregon and Portland, Maine. To uniquely identify the city, you associate a particular state with the city. To make this association, create an expression that prepends the state import data value to the city import data value to obtain a unique city-state code. For example:

```
<Zone code="city" fileColumn="3" granularity="2">
  <ZoneCode>
    state + ":" + city
  </ZoneCode>
  ...
</Zone>
```

This expression instructs ClaimCenter to concatenate the State value with the County value, separated by a colon delimiter. The values you use to construct the expression must be valid `<Zone>` code values, other than constants, that are defined in a `<Zones>` element for this country.

See also

- “<Zone>” on page 99

<Links>

The `<Links>` element is a subelement of `<Zone>`. This element defines one or more `<Link>` elements, each of which defines a connection—a link—between one zone type and another. For example, in the base configuration,

Guidewire provides a `<Link>` element that defines a link between a county and a ZIP code in the United States. You can also use a link to define a lookup order to speed up searches.

The `<Link>` element has the following attributes:

Attributes	Description
`lookupOrder`	*Optional.* Tells the application the order in which to apply this value while performing a lookup. Specifying a lookup order can increase performance somewhat. If you do not specify a `lookupOrder` value, ClaimCenter uses the order that appears in the file.
`toZone`	*Required.* Defines a relationship to another zone for ClaimCenter to use if the `<Zone>` `code` value is not available for lookup.

For example, the following code defines a relationship between one zone type, `county`, and several other zone types. ClaimCenter uses these other zone types to look up an address if the address does not contain a `county` value.

```
<Zone code="county" fileColumn="4"  regionMatchOrder="2">
  ...
  <Links>
    <Link toZone="zip" lookupOrder="1"/>
    <Link toZone="city" lookupOrder="2"/>
  </Links>
</Zone>
```

This code has the following meaning:

- The first `<Link>` definition, `<Link toZone="zip" lookupOrder="1"/>`, creates a link from `county` to `zip`. If ClaimCenter cannot look up the address by its `county` value, then ClaimCenter attempts to look up the address first by `zip` value.
- The second `<Link>` definition, `<Link toZone="city" lookupOrder="2"/>`, creates a link from `county` to `city`. If ClaimCenter cannot look up the address by its `county` value or its `zip` value, it looks up the address by its `city` value.

See also

- "<Zone>" on page 99

<AddressZoneValue>

The `<AddressZoneValue>` element is a subelement of `<Zone>`. This optional element uses an expression to define how to extract the zone code from an `Address` entity. Use entity dot notation, such as `Address.PostalCode`, to define a value for this element. These expressions can be subsets of an element or a concatenation of elements.

ClaimCenter extracts a value from the address data that uses this element and matches the value against zone data in the database. For example, in the base configuration, ClaimCenter defines a `<Zone>` element of type `postalcode` for Canada. It looks similar to the following:

```
<Zone code="postalcode" fileColumn="1" unique="true">
    <AddressZoneValue>
      Address.PostalCode
    </AddressZoneValue>
</Zone>
```

Given this definition, ClaimCenter uses the value of the `PostalCode` field on the `Address` entity as the value of the `postalcode` zone.

Note: Guidewire recommends that you set this value even if there is a property defined on the `Address` entity that has the same name as the `Zone` name.

See also

- "<Zone>" on page 99

chapter 13

Configuring Address Information

Address data and formats in Guidewire ClaimCenter vary by country. For example, ClaimCenter shows a ZIP code or postal code field for an address depending on the country of the address. You can customize this feature, as described in this topic.

This topic includes:

Addresses in ClaimCenter

Many ClaimCenter screens display address information. ClaimCenter provides multiple PCF address modes to represent address formats that vary by country.

Read-only and Editable Addresses

ClaimCenter displays address information as read-only text or as editable text entry fields:

- ClaimCenter displays read-only addresses as read-only text on multiple lines. ClaimCenter uses the `country.xml` file for the current country and the `AddressFormatter` class to determine which address fields to show.
- ClaimCenter displays editable addresses as a set of editable text fields in which you can add, modify, or delete information. ClaimCenter uses the `country.xml` file for the current country to determine the address fields to show.

ClaimCenter displays a range selector—a drop-down list—in the address screen to enable you to select from an array of appropriate addresses. If you cannot edit an address, the address fields are dimmed. The drop-down list can also display a **New...** command that you can use to create a new address.

Address Owners

ClaimCenter builds the address view around the concept of an address owner. The address owner identifies the object that owns a particular address. Additionally, the address owner controls how the address widget looks in the user interface and ensures that ClaimCenter saves the address properly. You can define different address owners depending on your requirements.

See also

- "Understanding Global Addresses" on page 104
- "Address Modes in Page Configuration" on page 109
- "Address Owners" on page 109
- "AddressOwnerFieldId Class" on page 111

Understanding Global Addresses

The information that you see for an address depends on:

- The country of the address.
- Whether ClaimCenter displays the address as text entry fields or read-only text, as described at "Read-only and Editable Addresses" on page 103.

This topic includes:

Country XML Files

The `country.xml` files define settings that control the appearance of address information in ClaimCenter. In Guidewire Studio, you can see that there is a `country.xml` file for each defined country. ClaimCenter stores the `country.xml` files in the `geodata` folder, each in its own individual country folder. For example, the `country.xml` file for the address-related information in Australia is in the following location in Studio:

configuration → **config** → **geodata** → **AU**

See "Configuring Address Data and Field Order for a Country" on page 106.

Modal Address PCF Files

In general, the country of an address determines which address fields in the database are visible in the ClaimCenter user interface for that address. The page configuration file `GlobalAddressInputSet` has modal ver-

sions that make different sets of address fields visible. The modal versions of `GlobalAddressInputSet` also control the order in which ClaimCenter displays address fields.

Note: ClaimCenter PCF files that display addresses use the PCF file `CCAddressInputSet`, which wraps `GlobalAddressInputSet`. `CCAddressInputSet` passes the country to `GlobalAddressInputSet` to ensure that the correct mode displays. An additional ClaimCenter class that uses `GlobalAddressInputSet` directly is `CCAddressBookSearchProximityAddressInputSet`.

You can configure the modal versions of PCF `GlobalAddressInputSet` to provide a modal version for each country for which you want to support address editing. However, in practice, the addresses of different countries follow a small number of patterns in terms of components of an address and their order of presentation. Components of an address include the street name, the house number, the city, and country. Some countries have additional address components, such as prefecture in Japan, state in the United States, and province in Canada.

In the base configuration, Guidewire provides the following modal versions of the PCF file `GlobalAddressInputSet`:

- `GlobalAddressInputSet.default` – Used for Japan.
- `GlobalAddressInputSet.BigToSmall` – Used for Australia, Canada, Great Britain, and the United States.
- `GlobalAddressInputSet.PostCodeBeforeCity` – Used for France and Germany.

To determine which modal PCF file is used for a country, you set the `PCFmode` attribute in the `country.xml` file for that country. See “PCFMode Attribute of the Country XML File” on page 107.

See also

- For more information on `CCAddressInputSet` and `GlobalAddressInputSet`, see “Address Modes in Page Configuration” on page 109.
- For more information on modal PCF files, see “Working with Shared or Included Files” on page 297 in the *Configuration Guide*.

AddressFormatter Class

The `AddressFormatter` class is used to handle address display for globalization. If you change, add, or delete columns of the `Address` entity, you must also update this class. Additionally, if you add a new country definition, you might need to update the switch statement in the `internalFormat` method of this class.

The `AddressFormatter` class consists of two parts:

- The class contains variables for all the address columns. You can extend the class to add new variables if you extend the `Address` entity with new columns.
- The class contains two versions of the `format` method with different signatures.
  - The following version of the `format` method formats an address as text and by default includes all fields. The `IncludeCountry` and the `IncludeCounty` properties of this class can hide the `Country` and `County` fields. This method has the following signature:

    ```
    format(address : AddressFillable, delimiter : String) : String
    ```
  - The following version of the `format` method formats an address as text and includes only the specified set of fields. This method has the following signature:

    ```
    format(address : AddressFillable, delimiter : String,
           fields : Set<AddressOwnerFieldId>) : String
    ```

  The method parameters have the following meanings:

Parameter	Description
`address`	The address to format.
`delimiter`	Use this delimiter to separate the various string elements. If the delimiter is a comma, then the method also adds a space after the comma.
`fields`	The set of fields to include in the address.

See also

- "Additional Country and Address Configurations" on page 108

Addresses and States or Jurisdictions

The country of an address controls the label used for the state or province field of an address through the `stateDisplayKey` setting in `country.xml` for that country. The `Jurisdiction` and `State` typelists have definitions for states, provinces, and other jurisdictions, each of which can be filtered.

For example, when you are editing a contact who is a `Person` subtype in ClaimCenter, there is a **Driver's License** section on the edit screen. The **State** field on this screen uses `Jurisdiction.ttx` to populate the drop-down list for the field. If you want to change the contents of the drop-down list, edit the `Jurisdiction.ttx` file in Studio and add or remove values from the outgoing category `driving_lic`.

Some examples:

- For Japan, ClaimCenter displays Kanji address fields.
- For Canada, ClaimCenter displays the label **Province** for this field.

See also

- "Configuring the Country XML File" on page 107
- "Configuring Jurisdiction Information" on page 97

Address Configuration Files

The following configuration files play a role in address configuration.

Studio location	File	Description
configuration → **config** → **Extensions** → **Typelist**	`State.ttx`	Used for addresses and locations.
	`StateAbbreviation.ttx`	Abbreviations used for states, provinces, and jurisdictions.
	`Jurisdiction.ttx`	Jurisdictions that regulate insurance and licensing. Similar to the `State` typelist.
	`Country.ttx`	Definitions of country codes for countries and regions.
configuration → **config** → **geodata** → *`CountryCode`*	`address-config.xml` – Defines formats to use for address auto-fill and input masks for postal codes.	Each country code has its own settings for these three files
	`country.xml` – See "Configuring the Country XML File" on page 107	
	`zone-config.xml` – See "Configuring Zone Information" on page 97	
configuration → **config** → **geodata**	*`CountryCode`*`-locations.txt`	Mappings between postal codes and cities for a country

Configuring Address Data and Field Order for a Country

You use country-specific `country.xml` files to configure the data and order that ClaimCenter uses to display addresses for specific countries. A country maps to an address mode by using the settings in `country.xml`.

If you add a new address format for a country or you add a new `Address` property, you must configure the files that support read-only addresses. See "Additional Country and Address Configurations" on page 108.

This topic includes:

- "Configuring the Country XML File" on page 107
- "Additional Country and Address Configurations" on page 108

Configuring the Country XML File

ClaimCenter stores `country.xml` files in country-specific folders under the `geodata` folder, which you can access in Guidewire Studio. For example, the `country.xml` file for Japan is stored in the following folder:

configuration → config → geodata → JP

The file `country.xml` defines the following address-related attributes:

Attribute	Description	Related topic
`visibleFields`	Which address fields to display	"Visible Fields Attribute of the Country XML File" on page 107
`PCFMode`	Order in which to display address fields	"PCFMode Attribute of the Country XML File" on page 107
`postalCodeDisplayKey`	Label for the postal code field	"Postal Code Display Key Attribute of the Country XML File" on page 108
`stateDisplayKey`	Label for state or province field	"State Display Key Attribute of the Country XML File" on page 108

Visible Fields Attribute of the Country XML File

The attribute `visibleFields` defines the set of address fields that are visible for this country. For example:

France	`visibleFields="Country,AddressLine1,AddressLine2,AddressLine3,PostalCode,City, CEDEX,CEDEXBureau"`
Japan	`visibleFields="Country,PostalCode,State,City,CityKanji,AddressLine1,AddressLine1Kanji, AddressLine2,AddressLine2Kanji"`
United States	`visibleFields="Country,AddressLine1,AddressLine2,AddressLine3,City,State,PostalCode, County"`

The order of the fields does not matter. The fields must be defined in the class `AddressOwnerFieldId` or a class that extends it, such as:

```
CCAddressOwnerFieldId
```

See "AddressOwnerFieldId Class" on page 111.

If a `country.xml` file does not have `visibleFields` defined, ClaimCenter uses the set of address fields defined for the United States.

PCFMode Attribute of the Country XML File

The attribute `PCFMode` of the `country.xml` file determines which modal version of the address PCF file that ClaimCenter uses for specific countries. For example, country-specific `country.xml` files individually specify the PCF mode for the following countries:

France	`PCFMode="PostCodeBeforeCity"`
Japan	`PCFMode="BigToSmall"`

If a `country.xml` file does not define the `PCFMode` attribute, ClaimCenter uses the default modal version of the address PCF file. In the base configuration, the default version is generally suitable for English-speaking countries.

See also

- "Address Modes in Page Configuration" on page 109

Postal Code Display Key Attribute of the Country XML File

The attribute `postalCodeDisplayKey` sets the display key to use as the label for the postal code of an address. For example, ClaimCenter uses the following display keys to label the postal code field for the following countries:

Japan	`postalCodeDisplayKey="Web.AddressBook.AddressInputSet.Postcode"`
United States	`postalCodeDisplayKey="Web.AddressBook.AddressInputSet.ZIP"`

If a `country.xml` file does not define `postalCodeDisplayKey`, ClaimCenter uses the value `"Postcode"`.

State Display Key Attribute of the Country XML File

The attribute `stateDisplayKey` sets the display key to use as the label for state or province of an address. For example, ClaimCenter uses the following display keys to label the state or province field for the following countries:

Japan	`stateDisplayKey="Web.AddressBook.AddressInputSet.Prefecture"`
United States	`stateDisplayKey="Web.AddressBook.AddressInputSet.State"`

If a `country.xml` file does not have `stateDisplayKey` defined, ClaimCenter uses the value of state display key for the United States.

Additional Country and Address Configurations

If you add a new country, in addition to the configurations described previously for the `country.xml` file, you must also add the country to a method of the `AddressFormatter` class. Add a new case option to the switch statement of the `AddressFormatter.internalFormat` method to handle the formatting of the address string for the new country.

If you extend the `Address` entity to add a new column, you must also incorporate this column into the following:

Class, enhancement, or configuration file	Task
`gw.address.AddressFormatter`	Add a new `case` option to the `switch` statement of the `AddressFormatter.internalFormat` method to handle the formatting of the address string for the new country.
`Address.en`	Modify the definition of the display name through the **Entity Names** editor. See "Using the Entity Names Editor" on page 131 in the *Configuration Guide* for details.
`AddressOwnerFieldID.gs`	Add a variable for the new `Address` column to this class or to the ClaimCenter class that extends it: • `CCAddressOwnerFieldId` See "AddressOwnerFieldId Class" on page 111.

See also

- "AddressFormatter Class" on page 105

Address Modes in Page Configuration

ClaimCenter uses a wrapper file for the modal `GlobalAddressInputSet` PCF files that is named `CCAddressInputSet`. This ClaimCenter PCF file includes `GlobalAddressInputSet` in a widget and ensures that the correct mode of `GlobalAddressInputSet` is used. Additionally `CCAddressInputSet` provides more fields than `GlobalAddressInputSet`.

To work with `CCAddressInputSet`, navigate in the Studio Project window to **configuration** → **config** → **Page Configuration** → **pcf** → **addressbook** → **shared.**

In the base configuration, ClaimCenter provides the following modal versions of `GlobalAddressInputSet`.

Modal Address PCF File	Country
`GlobalAddressInputSet.BigToSmall`	• Japan
`GlobalAddressInputSet.PostCodeBeforeCity`	• France • Germany
`GlobalAddressInputSet.default`	• Australia • Canada • Great Britain • United States

To see the `GlobalAddressInputSet` PCF files, navigate in the Guidewire Studio **Project** window to **configuration** → **config** → **Page Configuration** → **pcf** → **address.**

Mapping Countries to Modes

A country maps to a mode through the settings in `country.xml`.

Controlling Field Properties

Each modal PCF file uses an implementation of the Gosu interface `AddressOwner` to control the following field properties:

- `available`
- `editable`
- `required`
- `visible`

Gosu Address Formatter

ClaimCenter uses Gosu class `AddressFormatter` to format the address display fields. You can extend `AddressFormatter` to handle additional countries.

Address Owners

In the base configuration, Guidewire provides the following address-related interface:

`CCAddressOwner`

If an entity type contains an address, then that entity type must extend the `CCAddressOwner` interface. In actual practice, interface `CCAddressOwner` extends interface `AddressOwner` to provide a merged set of properties and methods that you use to manage address-related objects.

`AddressOwner` is the interface for a helper object that is passed to the `CCAddressInputSet` PCF file. The helper object provides a way to set and get a single address on the enclosing entity. It also provides methods that you can use to set a field as required or visible, for example. Following are some properties on `AddressOwner`.

Property	Description
`Address`	Sets (or retrieves) a single address on the enclosing entity. For example, you can use this to set or get the primary address for a `Contact`. ClaimCenter automatically creates a new `Address` object if you use a Gosu expression of the form: `owner.Address.State = someState`
`HiddenFields`	Set of address fields that ClaimCenter hides (does not show) in the application interface.
`RequiredFields`	Set of address fields for which the user must supply a value.

In the base configuration, ClaimCenter provides the `CCAddressOwner` interface, which extends `AddressOwner`. Additionally, ClaimCenter provides the class `CCAddressOwnerFieldId`, which you modify when you add new fields to the `Address` entity.

See also

- "CCAddressOwner Interface" on page 110
- "CCAddressOwnerFieldId Class" on page 112

CCAddressOwner Interface

The `CCAddressOwner` interface extends the `AddressOwner` interface to add ClaimCenter specific fields. Following are some of the many classes that implement this interface:

```
CCAddressOwnerBase
ClaimAddressOwner
ContactAddressOwner
ContactSearchAddressOwner
FixedPropertyAddressOwner
PolicyLocationAddressOwner
PolicyRelatedAddressOwner
PolicySearchAddressOwner
SearchAddressOwner
VehicleIncidentAddressOwner
```

You pass a `CCAddressOwner` object to the `CCAddressInputSet` modal PCF files. These PCF files call methods and properties on `CCAddressOwner` to determine the following, for example:

- Which fields to show as visible on the screen
- Which fields require user input on the screen
- How to get and set the `Address` object

The following list describe the properties and methods available on `CCAddressOwner`. For more details on how these methods work, see the comments in the `gw.address.CCAddressOwner` Gosu class.

Property or method	Description
`Addresses`	Array of pre-populated addresses that ClaimCenter shows in a drop-down list from which the user can select. If this method returns `null`, then ClaimCenter does not show a drop-down selection list.
`AddressNameLabel`	The label (text string) to use for one of the following: • The range input to use in picking an address from a list of addresses • The summary of an address Only one can be visible at one time, either the range input or the address summary.

Property or method	Description
`Claim`	If non-null, then the address input set also displays additional claim-specific fields: • The claim loss location code, `Claim.LossLocationCode`, a simple string field. • The claim jurisdiction state, `Claim.JurisdictionState`. These fields are only visible if `CCAddressOwner.Claim` returns a non-null value and if a field is not in the `HiddenFields` list.
`ConfirmCountryChange`	Boolean value that indicates whether to display a confirmation message if the user changes the address country. This value is usually set to `true`, except on search screens.
`DefaultCountry`	Sets the default country to use if the current address is `null`.
`getOrCreateNewAddress`	Method that retrieves an existing address or creates a new address for use in the address drop-down list. ClaimCenter calls this method if the user selects **New...** from the address drop-down list.
`InputSetMode`	The country that determines the mode to use for the address input set, almost always the same as the selected country. The only exception is if the address input set is being used as part of a search screen. In that case the default country and selected country can both return `null`. It is common to perform a search operation with no country set.
`Jusridiction`	The `Jurisdiction` corresponding to the `Address`,
`Jusridictions`	The array of `Jurisdiction` objects corresponding to the `InputSetMode`,
`NonEditableAddresses`	Set of addresses that you cannot edit. If an address appears in the `Addresses` array and also in `NonEditableAddresses`, it is possible to select it from the drop-down list of addresses. However, the address fields are read-only.
`SelectedCountry`	Sets (or retrieves) the currently selected country. For example, the following code sets the currently selected country to France: `addrs.SelectedCountry = "FR"`
`ShowAddressSummary`	Boolean value that sets whether ClaimCenter displays the address as a summary instead of separate input fields.

AddressOwnerFieldId Class

Guidewire provides a `gw.api.address.AddressOwnerFieldId` class that provides type safety for `Address` entity fields. If you extend the `Address` entity with a new column, you must add it as a constant either to this class or to the following ClaimCenter class that extends `AddressOwnerFieldId`:

```
CCAddressOwnerFieldId
```

In the base configuration, `AddressOwnerFieldId` provides the following constants that represent address fields:

```
ADDRESSLINE1
ADDRESSLINE2
ADDRESSLINE1KANJI
ADDRESSLINE2KANJI
ADDRESSLINE3
ADDRESSTYPE
CEDEX
CEDEXBUREAU
CITY
CITYKANJI
COUNTRY
COUNTY
DESCRIPTION
POSTALCODE
STATE
VALIDUNTIL
```

The class `AddressOwnerFieldId` also defines a set of constants that use these address field ID constants. Some examples:

```
public final static var ALL_PCF_FIELDS : Set<AddressOwnerFieldId> =
```

```
  { ADDRESSLINE1, ADDRESSLINE2, ADDRESSLINE3, CITY, COUNTY, STATE, POSTALCODE, COUNTRY,
    ADDRESSLINE1KANJI, ADDRESSLINE2KANJI, CITYKANJI, CEDEX, CEDEXBUREAU }.freeze()

public final static var CITY_STATE_ZIP : Set<AddressOwnerFieldId> =
    { CITY, STATE, POSTALCODE, CEDEX, CEDEXBUREAU }.freeze()

public final static var HIDDEN_FOR_SEARCH : Set<AddressOwnerFieldId> =
  { ADDRESSLINE1, ADDRESSLINE2, ADDRESSLINE3, COUNTY, ADDRESSLINE1KANJI,
    ADDRESSLINE2KANJI, CEDEX, CEDEXBUREAU }.freeze()
```

See also

- "CCAddressOwnerFieldId Class" on page 112

CCAddressOwnerFieldId Class

The `CCAddressOwnerFieldId` class extends `AddressOwnerFieldId` with a set of constants used in ClaimCenter for the address name field and by classes that implement the `CCAddressOwner` interface. Additionally, this class defines a single method, `normalizeRequiredFields`.

The constants defined in this class include the following:

```
ADDRESS_NAME
LOCATIONCODE
JURISDICTIONSTATE

public static final var NON_ADDRESS_FIELDS : Set<AddressOwnerFieldId> =
  {LOCATIONCODE, JURISDICTIONSTATE}.freeze()

public static final var VALIDUNTIL_ADDRESSTYPE_HIDDEN : Set<AddressOwnerFieldId> =
  {VALIDUNTIL, ADDRESSTYPE}.freeze()
public static final var WC_HIDDEN_FIELDS : Set<AddressOwnerFieldId> =
  VALIDUNTIL_ADDRESSTYPE_HIDDEN.union(NON_ADDRESS_FIELDS).freeze()

public static final var SEARCH_HIDDEN_FIELDS : Set<AddressOwnerFieldId> =
  VALIDUNTIL_ADDRESSTYPE_HIDDEN.union(HIDDEN_FOR_SEARCH).union({
    ADDRESSTYPE, DESCRIPTION, VALIDUNTIL, LOCATIONCODE, JURISDICTIONSTATE}).freeze()
```

Note: For more details on the meaning of these constants and how the method is used, see the comments in the `gw.address.CCAddressOwnerFieldId` Gosu class.

See also

- "CCAddressOwner Interface" on page 110

Automatic Address Completion and Fill-in

ClaimCenter provides automatic completion and fill-in of address information:

- **Automatic address completion** – As a user types characters in an address field, ClaimCenter displays a drop-down list of choices, such as city names.
- **Automatic address fill-in** – After a user completes entering a value in an address field, ClaimCenter fills in other address fields with appropriate values. For example, after entering a postal code, ClaimCenter fills in the city and state/province fields automatically.

Configuring Automatic Address Completion

As a user enters in a value in one address field, ClaimCenter fills in values in other address fields.

For example, suppose that a user enters a postal code of 99501 for a United States address. If configured, ClaimCenter sets the city, state, and county to that of Anchorage, Alaska, county of Anchorage.

To trigger the autofill functionality, the user must navigate away from the initial address field. It is also possible to trigger this functionality by using the autofill icon next to certain address fields.

You must configure automatic address completion as a separate step.

Configuring Automatic Address Fill-in

As a user types characters into an address field, ClaimCenter opens a drop-down list. The drop-down list displays possible completions of the entered characters based on the values in other address fields.

For example, suppose that a user sets the State value in a United States address to CA (California). The user then moves to the City field and enters `Pa` as the start of a city name. If configured, ClaimCenter opens a drop-down list that shows the names of various cities in California that start with `Pa`, for example

- Palmdale
- Pasadena
- …

The user can then select one of the items on the drop-down list for automatic entry into the address field.

You must configure automatic address fill-in as a separate step.

The Address Automatic Completion and Fill-in Plugin

Use the address automatic completion plugin `IAddressAutocompletePlugin` to modify how automatic completion and fill-in operate in ClaimCenter. The base configuration of ClaimCenter provides the Java implementation class `DefaultAddressAutocompletePlugin`.

See also

- "Automatic Address Completion and Fill-in Plugin" on page 265 in the *Integration Guide*

chapter 14

Configuring Phone Information

Phone numbers are specific to each country. Guidewire ClaimCenter uses country information to determine the appropriate fields to show for user entry of the phone number. ClaimCenter also uses country information to correctly format a phone number in read-only mode.

This topic includes:

Working with Phone Configuration Files

You can access phone-related configuration files in Studio by navigating in the **Project** window to **configuration** → **config** → **phone.**

Important files in this folder include the following:

File	Description
`nanpa.properties`	Area codes as defined by the North American Numbering Plan Administration (NANPA). These area codes apply to North American countries other than the United States.
`PhoneNumberMetaData.xml`	Area codes and validation rules for international phone numbers. Do not made changes to this file. See the comments at the beginning of the file for more information.
`PhoneNumberAlternateFormats.xml`	Additional area codes and validation rules for international phone numbers. Do not made changes to this file. See the comments at the beginning of the file for more information.

Any change to an XML file in the `phone` folder requires that you regenerate the phone data in the `data` subdirectory. To regenerate phone data, run the following gwcc utility from the application `bin` directory:

```
gwcc regen-phone-metadata
```

For details on how to use the gwcc commands, see “Build Tools” on page 106 in the *Installation Guide*.

Setting Phone Configuration Parameters

You use configuration parameters to set phone-related information in ClaimCenter:

Configuration parameter	Sets...
`DefaultPhoneCountryCode`	The default ISO country code to use for phone data. The country code must be a valid ISO country code that exists as a typecode in the `PhoneCountryCode` typelist. See the following web site for a list of valid ISO country codes: `http://www.iso.org/iso/english_country_names_and_code_elements` The base application default phone country code is `US`.
`DefaultNANPACountryCode`	The default country code for region 1 phone numbers. If mapping file `nanpa.properties` does not contain the area code for this region, then ClaimCenter defaults to the area code value configured by this parameter. The base application default NANPA phone country code is `US`.
`AlwaysShowPhoneWidgetRegionCode`	Whether the phone number widget in ClaimCenter always shows a selector for phone region codes. The base application value for this parameter is `false`.

See “Globalization Parameters” on page 62 in the *Configuration Guide* for more information on this configuration parameter.

Phone Number PCF Widget

PCF widget `GlobalPhoneInputSet` provides a way to show phone-related fields in ClaimCenter. The phone-related fields that you see in ClaimCenter depend on

- Country information that the user selects.
- Screen mode, editable or read-only.

If the screen is in edit mode, a ClaimCenter user has access to the following phone-related fields, set in the PCF widget `GlobalPhoneInputSet`:

- Country code
- National subscriber number
- Extension

If the screen is in read-only mode, a ClaimCenter user views previously entered phone-related information, the format of which depends on the phone country code.

You initialize the `GlobalPhoneInputSet` by providing the `InputSetRef` with a `PhoneOwner`. You initialize a `PhoneOwner` by providing a `PhoneFields` object.

Phone Numbers in Edit Mode

International phone numbers begin with a country code, according to the following format.

```
+phoneCountryCode phoneNumber extensionNumber
```

It is also possible to have an extension to the phone number as well.

For ease of entering phone information, it is possible to configure the `GlobalPhoneInputSet` widget to show a list of **Region Code** values in ClaimCenter from which the user can chose. For ClaimCenter to show the **Region Code** drop-down, the following must be true:

- Configuration parameter `AlwaysShowPhoneWidgetRegionCode` in `config.xml` must be set to `true`.
- The user must initially enter a plus sign in the phone number field.

If the user initially enters a plus sign (+) in the phone number field, the `GlobalPhoneInputSet` widget issues a post-on-change event to expose a **Region Code** drop-down list. Application logic maps the region code to a country code by using `CountryCodeToRegionCode.xml` and identifies the corresponding country. ClaimCenter formats the phone number based on the user's phone region and the country selected for the phone number. For example:

User phone region	Phone number country	ClaimCenter formats number for...
US	US	Domestic United States
US	CN	International Chinese
CN	CN	Domestic Chinese
CN	US	International United States

If a user enters a numeric phone number without first entering a country code, then ClaimCenter invokes only the format action on a targeted post-on-change event. Also, ClaimCenter invokes only the format action if the country code is the same as the user's selected default, or, if none, the default configured for the server.

See also

- "AlwaysShowPhoneWidgetRegionCode" on page 65 in the *Configuration Guide*

Phone Numbers in Read-only Mode

The read-only phone number field of the `GlobalPhoneInputSet` widget formats phone numbers based on one of the following:

- The default phone region selected by the user
- The default phone country code configured for the server

Users select a default phone region on the standard **Preferences** screen in ClaimCenter, available on the **Desktop** tab in the **Actions** menu. A user's selection for default phone region overrides the default phone region set for the server.

chapter 15

Linguistic Search and Sort

This topic describes how to configure ClaimCenter to perform search and sort operations in languages other than the default `en_US`. ClaimCenter provides support for language-appropriate text search and sort for a single language.

> **Note:** This topic does not cover localization of free-text search. The base configuration of ClaimCenter provides free text search only in United States English. You must configure Guidewire Solr Extension to be able to perform free text searches in languages other than United States English. This configuration requires expertise in configuring Apache Solr. For information on basic configuration of free-text search, see "Free-text Search Configuration" on page 360 in the *Configuration Guide*.

This topic includes:

Linguistic Search and Sort of Character Data

There are two primary ways to search for and sort character data:

- Treat the character data as binary code points and compare and sort the data numerically.
- Treat the character data linguistically. This approach applies specific collation rules to order words in a list that reflect the commonly accepted practices and expectations for a particular language.

Linguistic search applies a specific collation to the character data. A *collation* is an overriding set of rules that applies to the ordering and comparison of the data. Collation *strength* refers to the elements of the collation process that the search and sort code applies to the data.

For example:

- Collation strength controls whether the search and sort code respects or ignores differences in case and accent on a character, such as the leading character on a word.
- In the Japanese language, collation strength also controls whether the search and sort code respects or ignores the differences between:
  - Katakana and Hiragana.
  - Full-width and half-width Katakana character differences.

ClaimCenter uses the value of configuration parameter `DefaultApplicationLocale` and the `language.xml` and `collations.xml` configuration files to implement localized search and sort functionality.

Note: ClaimCenter displays the default locale value when the current locale value is missing. However, ClaimCenter always sorts by the current locale value. As a result, sorting of a localized column of a list view can appear to be broken when the column has one or more untranslated values.

Effect of Character Data Storage Type on Searching and Sorting

Guidewire ClaimCenter stores character data in the following ways:

- Database storage
- In-memory storage

ClaimCenter handles searching and sorting of character data differently for these storage types.

Character Data in the Database

ClaimCenter writes most application data directly to the database. This action stores the data on a physical disk storage system. Each discrete piece of data is an entry in a table column, with each table being organized by rows. During a comparison and sort of data in the database, the database management system (DBMS) performs the operations and applies rules that control these operations.

Character Data in Memory

ClaimCenter writes some application data to volatile memory devices, such as the local machine RAM memory. ClaimCenter typically uses this kind of memory storage for the display of certain kinds of data in the user interface. For example, ClaimCenter uses in-memory storage for drop-down lists and the results of list views that do not use database queries. During a comparison and sort of data in memory, programming code provided in the base configuration controls the operations.

Searching and Sorting in Configured Languages

Your ClaimCenter installation provides support for searching and sorting for a single language. ClaimCenter reads the localization code from the `DefaultApplicationLocale` configuration parameter, which you set in `config.xml`. The default is United States English, `en_US`.

You set the value of `DefaultApplicationLocale` once, before you start the application server for the first time. ClaimCenter stores this value in the database and checks the value at server startup. If the application server value does not match a database value, then ClaimCenter throws an error and refuses to start.

IMPORTANT You must set the value of configuration parameter `DefaultApplicationLocale` before you start the application server for the first time. You cannot change this value after you start the application server without dropping the database.

Guidewire also provides support for language-appropriate searching and sorting for display keys for each supported localization code. You define and manage language characteristics in `language.xml` files. You define these files for each localization folder, such as `en_US`. You can access the localization folders in Studio by navigating in the **Project** window to **configuration** → **config** → **Localizations**.

Each `language.xml` file contains a `<GWLanguage>` element. This element supports the following subelements that you can use to configure the behavior of searching and sorting operations in the Guidewire application:

- `<SortCollation>`

  Element `<SortCollation>` has a `strength` attribute that you use to define the sorting collation strength for this language. The exact meaning of the `SortCollation` `strength` attribute value depends on the specific language. For more information on this attribute, see "Configuring Database Sort in language.xml" on page 125.
- `<LinguisticSearchCollation>`

  Element `<LinguisticSearchCollation>` supports a `strength` attribute that you use to define the searching collation strength for a language. For more information on this attribute, see "Configuring Oracle Search in language.xml" on page 121.

See also

- "Configuring Search in the ClaimCenter Database" on page 121
- "Configuring Sort in the ClaimCenter Database" on page 124
- "Setting Linguistic Search Collation" on page 56 in the *Upgrade Guide*

Configuring Search in the ClaimCenter Database

For a column to be eligible for inclusion in the database search algorithm, the `supportsLinguisticSearch` attribute on that column must be set to `true`. Setting this column attribute to `true` marks that column as searchable, regardless of which DBMS you use.

See "<column>" on page 187 in the *Configuration Guide* for more information on the `<column>` element and the attributes that you can set on it.

IMPORTANT You cannot use the `supportsLinguisticSearch` attribute with an encrypted column. If you attempt to do so, the application server refuses to start.

How Guidewire ClaimCenter handles searching of data depends on the database involved. See the following:

- Searching and the Oracle Database
- Searching and the SQL Server Database

Searching and the Oracle Database

To implement linguistic searching in Oracle, the database compares binary values that ClaimCenter modifies for searching. For functional and performance reasons, ClaimCenter does not use Oracle collations.

- For primary, accent-insensitive searching, Guidewire uses the configurable Java class described in "Configuring Oracle Search in collations.xml" on page 122 to compute the comparison values. Guidewire also uses this Java class to define the search semantics for searching in the Japanese and German languages.
- For secondary, case-insensitive searching, Guidewire transforms the search values to lower case.

Configuring Oracle Search in language.xml

Guidewire provides the ability to configure language-appropriate linguistic search capabilities through the `<LinguisticSearchCollation>` element. This subelement of `<GWLanguage>` is defined in `language.xml` in the

appropriate localization folder. You use the `strength` attribute of this subelement to configure and control specialized search behavior.

IMPORTANT Any change to the `<LinguisticSearchCollation>` element in `language.xml` requires a database upgrade. If you make a change to this element, then you must restart the application server to force a database upgrade.

The meaning of the `strength` attribute depends on the specific language. In general, the settings mean the following:

- A `strength` of `primary` considers only character weights. This setting instructs the search algorithms to consider just the base, or primary letter, and to ignore other attributes such as case or accents. Thus, the collation rules consider the characters é and E to have the same weight. For more information on this attribute, see "Configuring Database Sort in language.xml" on page 125.
- A `strength` of `secondary`, the default, considers character weight and accent differences, but, not case differences. Thus, the collation rules consider the characters e and é to be different and thus the rules treat them differently. The collation rules do not, however, treat e and E differently.

To summarize, the `strength` attribute can take the following values, with the default being `secondary`.

Strength	Search description
`primary`	• accent-insensitive • case-insensitive
`secondary`	• accent-sensitive • case-insensitive

Note: Localized search supports only two levels for the `strength` value, in contrast to localized sorting, which supports three levels for the `strength` value.

The following `language.xml` file is an example of this file in the localization folder **ja**, with suggested settings.

```
<?xml version="1.0" encoding="UTF-8"?>
<Language xmlns="http://guidewire.com/language">
  <GWLanguage code="ja" name="Japanese" typecode="ja">
    <LinguisticSearchCollation strength="primary"/>
    <SortCollation strength="primary"/>
  </GWLanguage>
</Localization>
```

Configuring Oracle Search in collations.xml

For the Oracle database, Guidewire provides specialized search rules through the use of a Java class that you can configure. ClaimCenter exposes this Java class as a `CDATA` element in the `<Database>` element for Oracle in file `collations.xml`. You access `collations.xml` in the Studio **Project** window by navigating to **configuration** → **config** → **Localizations**.

In this file, search for the following:

```
<Database type="ORACLE">
  ...
  <DBJavaClass> <![CDATA[...]]></DBJavaClass>
  ...
</Database>
```

Guidewire ClaimCenter uses this Java code as the source code for a Java class. In the base configuration, the provided Java class defines:

- General rules for primary-strength searching in the database
- Specialized rules for searching in the Japanese language
- Specialized rules for searching in the German language

As defined in the comments in `collations.xml`, it is possible to modify the embedded `GWNormalize` Java class directly to meet your business needs. It is useful to modify the `GWNormalize` class under the following circumstances:

- You are using an Oracle database and either Japanese or German language strings
- You are using an Oracle database and primary, accent-insensitive search collation

General Search Rules

In the base configuration, ClaimCenter uses the following general rules as it performs a database search on a column that is configured to support linguistic searching:

- All searches are case insensitive, regardless of the value of the `strength` attribute on `<LinguisticSearchCollation>`. ClaimCenter regards the characters `e` and `E` as the same.
- All searches take punctuation into account. ClaimCenter regards O'Reilly and OReilly as different.
- All searches in which the `strength` attribute on `<LinguisticSearchCollation>` is set to `primary` ignore accent marks. ClaimCenter regards the characters `e` and `è` as the same in this type of search.
- All searches in which the `strength` attribute on `<LinguisticSearchCollation>` is set to `secondary` take into account any accent marks. ClaimCenter regards the characters `e` and `è` as different in this type of search.

ClaimCenter searches only database columns for which you set the `supportsLinguisticSearch` attribute to `true`.

General Search Rules for the Japanese Language

In the base configuration, Guidewire provides specialized search algorithms specifically for the Japanese language. Guidewire sets these rules in `collations.xml`, as described at the beginning of this topic. This Java class provides the following behavior for searching in a Japanese-language database:

Search case	Rule
Half-width/Full-width	All searches in Japanese ignore the difference between half-width and full-width Japanese characters.
Small/Large characters	All searches in Japanese in which the `strength` attribute on `<LinguisticSearchCollation>` is set to `primary`, meaning accent-insensitive, ignore Japanese small/large letter differences in Katakana or Hiragana. Searches in which this attribute is set to `secondary` take small/large letter differences into account.
Katakana and Hiragana	All searches in Japanese ignore the difference between Katakana and Hiragana characters. This type of search is known as *kana-insensitive* searching.
Long dash (—)	All searches in Japanese ignore the long dash character.
Sound marks (``` and °)	All searches in Japanese in which the `strength` attribute on `<LinguisticSearchCollation>` is set to `primary` ignore sound marks. Searches in which this attribute is set to `secondary` take sound marks into account.

If you modify the contents of `collations.xml` or the embedded Java class, ClaimCenter forces a database upgrade the next time the application server starts.

General Search Rules for the German Language

In the base configuration on Oracle, Guidewire provides specialized search algorithms specifically for the German language. Guidewire sets these rules through the use of a configurable Java class that it exposes as a `CDATA` element in the `collations.xml`. This is the same Java class that the discussion on rules for the Japanese language covered.

This Java class provides the following behavior for searching in a German-language database:

Search case	Rule
Vowels with umlauts	All searches in German compare as equal a vowel with an umlaut or the same vowel without the umlaut but followed by the letter e. Thus, all searches in German explicitly treat the following as the same value: • ä and ae • ö and oe • ü and ue
German letter Eszett	All searches in German treat the Eszett character ß (also known as Sharp-S) the same as the characters ss.

Searching and the SQL Server Database

In SQL Server, the collations provided by the Windows operating system are effective in providing language-appropriate searching. To work correctly, Guidewire requires that you create a SQL Server database with case-insensitive collation. Guidewire uses this collation for all character data sorting and searching by default, as well as to provide case-insensitive table and column names.

Through the linguistic search configuration, it is possible to specify a different collation for searching on columns that support linguistic searching:

- If simple, case-insensitive searching meets your requirements, then configure file `collations.xml` to select the same collation as the database collation.
- If you need different search semantics, then configure the SQL Server entry in `collations.xml` for a `primary` strength search collation, which will give you accent-insensitive searching.

The semantics of linguistic searching for SQL Server are those of the Windows collation selected from the `collations.xml` file. The collation is based on the default language and linguistic search collation strength from `language.xml`, in which `secondary` strength is the default. Microsoft controls the Windows collation rules, not Guidewire.

With reference to the discussion about Japanese and German search rules on Oracle, the Windows collations configured in the base configuration in `collations.xml` provide the following:

- Kana-insensitivity and width-insensitivity for Japanese collations
- Umlaut and Eszett handling in the German collations

If you are currently using SQL Server in those languages, your IT staff is mostly likely familiar with these issues.

Configuring Sort in the ClaimCenter Database

ClaimCenter handles the ordering of data as consistently as possible between database sorting and in-memory sorting. ClaimCenter derives the collation to use for sorting from the following:

- The default localization code set in the configuration parameter `DefaultApplicationLocale` in `config.xml`.
- The collation strength setting. This value is set in the localization folder's `language.xml` file.

ClaimCenter uses these values along with the database type to look up the collation in `collations.xml`.

> **Note:** ClaimCenter uses in-memory sorting in the application interface for various elements, such as drop-down lists and list views that do not result from queries. To perform in-memory sorting, ClaimCenter uses a language-specific `Collator` object that is modified with the collation strength setting for that language.

This topic includes:

- "Configuring Database Sort in language.xml" on page 125

- "Configuring Database Sort in collations.xml" on page 125

Configuring Database Sort in language.xml

For optional use, the `<SortCollation>` subelement of the `<GWLanguage>` element in `language.xml` controls specialized sorting behavior. Each localization folder has a separate `language.xml` file. To access the localization folders, navigate in the Guidewire Studio **Projects** window to **configuration** → **config** → **Localizations** → *`localizationFolder`*.

The `<SortCollation>` element has a single `strength` attribute that determines *collation strength*—how ClaimCenter sorting algorithms handle accents and case during the sorting of character data for the following:

- Sorting of in-memory data
- Sorting of data in the database

The `strength` attribute, which defaults to `secondary`, can take the following values:

- `primary`
- `secondary`
- `tertiary`

The specific meaning of the `strength` attribute depends on the language. In general:

- A `strength` of `primary` instructs the search and sort algorithms to consider just the base, or primary letter, and to ignore other attributes, such as case or accents. With this setting, the collation rules consider the characters `e` and `E` to have the same weight.
- A `strength` of `secondary` instructs the search and sort algorithms to consider character weight and accent differences. This value is the default setting. With this setting, the collation rules consider the characters `e` and `è` to be different and order them differently.
- A `strength` of `tertiary` instructs the search and sort algorithms to consider character weight, accent differences, and case. With this setting, the collation rules consider the characters `e` and `è` and `E` to be different and order them differently.

The following list describes these differences.

Strength	Case-sensitive	Accent-sensitive
`primary`	No	No
`secondary`	No	Yes
`tertiary`	Yes	Yes

Configuring Database Sort in collations.xml

Guidewire uses `collations.xml` as a lookup file. To access `collations.xml`, navigate in the Guidewire Studio **Projects** window to **configuration** → **config** → **Localizations**. ClaimCenter uses the following definitions in this file to look up the sort collation name and apply it:

- The application localization code
- The `strength` attribute value from the `<SortCollation>` element in `language.xml`
- The database management system (DBMS) type

ClaimCenter primarily uses these values to look up the sort collation. For example, suppose that the following are all true:

- The database is Oracle.
- The user language is German.
- The `strength` value of `SortCollation` in `language.xml` is set to `secondary`.

ClaimCenter then looks at the following for instructions on how to set `NLS_SORT` for Oracle sessions and sets it to `GERMAN_CI`.

```
<Database type="ORACLE">
  ...
  <Collation locale="de" primary="GERMAN_AI" secondary="GERMAN_CI" tertiary="GERMAN"/>
...
```

Determining the Order of Typekeys

ClaimCenter uses the language collation rules defined in `language.xml` as part of determining the ordering of typekeys from the database. To sort typekeys, ClaimCenter applies the following criteria:

1. If there is no `.sort` file defined for the typelist in the localization folder, ClaimCenter:
   a. Uses the priority associated with each typekey in its typelist to order the typekeys by priority order.
   b. For typekeys with the same priority, applies the language collation rules to the typekey display names.
2. If there is a `.sort` file defined for the typelist in the localization folder, ClaimCenter:
   a. Uses the order of the typekeys specified in that file.
   b. For typekeys from the typelist that are not defined in the `.sort` file, orders them by applying the language collation rules to the typekey display names.

Note: You typically need the `.sort` file only if you are supporting Japanese with other languages on the same server. Otherwise, the preferred technique is to specify the sort order by defining priority in the typelist and language collation in `language.xml`.

ClaimCenter applies the collation rules to the typekey columns in database query `ORDER BY` clauses that sort database query results. File `collations.xml` contains multiple language collations because ClaimCenter supports storing typekey values in multiple languages in one database, enabling ClaimCenter to sort the typekey names correctly for each language. This storage scheme enables users with different language settings to see different translations of a typekey.

See also

- For information on `.sort` files, see “Setting Localized Sort Orders for Localized Typecodes” on page 43.
- For information on setting typecode priority, see “Entering Typecodes” on page 277 in the *Configuration Guide*.

chapter 16

Configuring National Field Validation

Field validation in ClaimCenter generally relies on regular expressions and input masks to validate data that users enter in specific fields. Field validators define specific regular expressions and input masks. Sometimes, field validation varies by country. For example, many countries issue taxpayer IDs, but the validation rules for taxpayer IDs vary by country.

This topic includes:

- "Understanding National Field Validation" on page 127
- "Localizing Field Validators for National Field Validation" on page 128

See also

- "Field Validation" on page 251 in the *Configuration Guide*

Understanding National Field Validation

Field validators provide basic validation for data that users enter in specific fields.

- Field validators apply only to the value in a single field.
- Field validators do not enforce the uniqueness of values in that field.
- Field validators generally ignore relationships between values in that field and values in other fields.

A field validator typically defines a *regular expression*, which is a pattern of characters and special symbols that a value entered in a text field must match to be valid. Optionally, field validators can define an *input mask*, which provides a visual indication to the user of the expected format for values to enter in the field.

Note: You cannot define an input mask for input of Japanese characters—katakana and hiragana.

You can configure national field validation for fields of data type `LocalizedString` only. In addition, any entity definition that contains localized string fields must have an additional field to store a country code associated with each entity instance. ClaimCenter applies national field validation based on the value of the country code associated with specific entity instances.

You configure field validation by editing `fieldvalidtors.xml` files in various locations in the `fieldvalidators` folder.

- You define global field validators once in the `fieldvalidtors.xml` file located in the root of the `fieldvalidators` folder.
- You define national field validators in `fieldvalidtors.xml` files located in country-specific packages in the `fieldvalidators` folder.

See "Localizing Field Validators for National Field Validation" on page 128.

See also

- "Data Types" on page 257 in the *Configuration Guide*

Localizing Field Validators for National Field Validation

You define national field validators in `fieldvalidtors.xml` files located in country-specific folders in the **field-validators** folder. Country-specific folder names must match typecodes from the `Country` typelist.

To define national field validators for a specific country

1. In Guidewire Studio, navigate in the **Project** window to **configuration** → **config** → **fieldvalidators**.
2. Right-click **fieldvalidators**, and then select **New** → **package** from the context menu.
3. Enter the typecode from the `Country` typelist for the country, and then click **OK**.
4. Copy the `fieldvalidators.xml` file from the root of the **fieldvalidators** package to the new country-specific package.
5. Modify the copy of `fieldvalidators.xml` that you just made to define national field validators for the country.

See also

- "Understanding National Field Validation" on page 127