

Blackbaud Enterprise CRM

Multicurrency

Introduction

Many organizations have subsidiaries located in different countries. For the purposes of this white paper, we refer to these subsidiaries as offices. Each office has a local operating currency and may accept one or more different foreign currencies. In addition, as more organizations create a presence on the Internet, they can reach out to donors in different geographical locations and accept donations in the donor's currency of choice. With transactions being accepted in different currencies, organizations must be able to appropriately acknowledge donors for their gifts (stewardship), calculate the amount the organization actually receives as cash (financial records), and compare and benchmark revenue amounts across all offices to determine the success of different fundraising efforts (reports).

When you receive a gift, you must have the ability to thank the donor immediately so you can acknowledge her generosity and cultivate a relationship. With Multicurrency, you can create correspondence that refers to amounts in the currency the donor expects to see. For example, if a donor gives a recurring gift in Canadian dollars, you can generate receipts and acknowledgement letters that use the formatting associated with this currency and show the gift amount in Canadian dollars.

In addition to the receipts and acknowledgement letters you manage in Marketing and Communications, you can also create direct marketing materials and appeal mailings for your donors or prospective donors. Once you identify the constituents who should receive a mailing formatted for a specific currency, you can generate correspondence customized for the user's expectations.

Multicurrency also solves the problem of accurately recording and reporting on revenue you receive or expect to receive. When a gift officer enters a payment or a commitment to donate, the program saves the amount in the currency in which the officer received the payment, the office's local, operating currency, and the organization's currency. Using these different amounts, the program can calculate the actual amount of cash the office will deposit and the value of each commitment. Since each amount is also converted to the organization currency, you can create reports that show revenue details and totals for all offices within the organization in a single currency.

The purpose of this white paper is to explain the Multicurrency feature within Blackbaud Enterprise CRM (BBEC) from a technical perspective. The paper provides a high-level overview of Enterprise CRM's currency conversion management as it relates to entering, posting, and reporting on anticipated or actual revenue received. It also walks you step-by-step through the process of configuring the feature, adding new currencies, importing or downloading exchange rates, and defining and assigning currency sets. For specific details about how multicurrency affects each part of the program, see the Multicurrency Guide.

Multicurrency also solves the problem of accurately recording and reporting on revenue you receive or expect to receive.

©2011 Blackbaud, Inc. This publication, or any part thereof, may not be reproduced or transmitted in any form or by any means, electronic, or mechanical, including photocopying, recording, storage in an information retrieval system, or otherwise, without the prior written permission of Blackbaud, Inc.

The information in this manual has been carefully checked and is believed to be accurate. Blackbaud, Inc., assumes no responsibility for any inaccuracies, errors, or omissions in this manual. In no event will Blackbaud, Inc., be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of damages.

In the interest of continuing product development, Blackbaud, Inc., reserves the right to make improvements in this manual and the products it describes at any time, without notice or obligation.

All Blackbaud product names appearing herein are trademarks or registered trademarks of Blackbaud, Inc.

All other products and company names mentioned herein are trademarks of their respective holder.

Table of Contents

Overview	5
Multicurrency Basics.....	6
Currency Types	6
Transaction Currency	6
Base Currency.....	7
Organization Currency	7
Currency Conversions	7
Exchange Rate Types	8
Daily vs. Corporate Exchange Rates	8
Exchange Rate Scenarios.....	9
Exchange Rate Sources	9
Pivot Currency	9
Multicurrency Setup.....	10
Locales	12
Rounding	12
Currency Sets	13
Default Account Systems.....	14
Exchange Rates.....	14
Expired Rates.....	16
Change Base Currency.....	17
Benefits.....	19
Revalued Commitments	19
Recurring Gifts	20
Query.....	20
Ledger.....	21
Unrealized Gains and Losses.....	21

Realized Gains and Losses 21

Intercurrency Balancing 22

Deposit 22

 Deposit Currency and Bank Account Currency Are Different 26

Adjustments 26

Blackbaud NetCommunity 27

 Event Registrations 28

 Memberships 28

Reports 28

Security 29

Appendix A – Multicurrency Considerations 30

 Currency Considerations 30

 Exchange Rate Considerations 30

 Implementation Considerations 30

Appendix B – Revalued Commitments 31

Appendix C – Intercurrency Balancing 32

Appendix D – Multicurrency Functions and Markup 36

 Blackbaud.AppFx 36

 CurrencyFormat Class 36

 IsoCurrencyCode (String) 36

 DecimalDigits (Integer) 36

 CurrencySymbol (String) 36

 FormatStyle (CurrencyFormatStyle) 36

 RoundingType (CurrencyRoundingType) 36

 ParseValueToMoney(...), TryParseValueToMoney(...) 36

 FormatMoney(...) 36

 FormatMoneyWithoutCurrency(...) 36

 ToXml(), CreateFromXml(...) 37

 CurrencyMath Class 37

 ConvertCurrency(...) 37

 ConvertCurrencyWithoutRounding(...) 37

 SumCurrencies(...) 37

 RoundCurrency(...) 37

 GetConvertUpperLimit(...) 37

 Browser 37

 CurrencyHelper class 37

 Methods 38

 FormatMoney(...) 38

 GetCurrency(...) 38

 ConvertCurrency(...), RoundCurrency(...) 38

 Server 38

 Web Methods 38

 CurrencyGet 38

 CurrencyExchangeRateGet 38

 CurrencyExchangeRateGetLatest 38

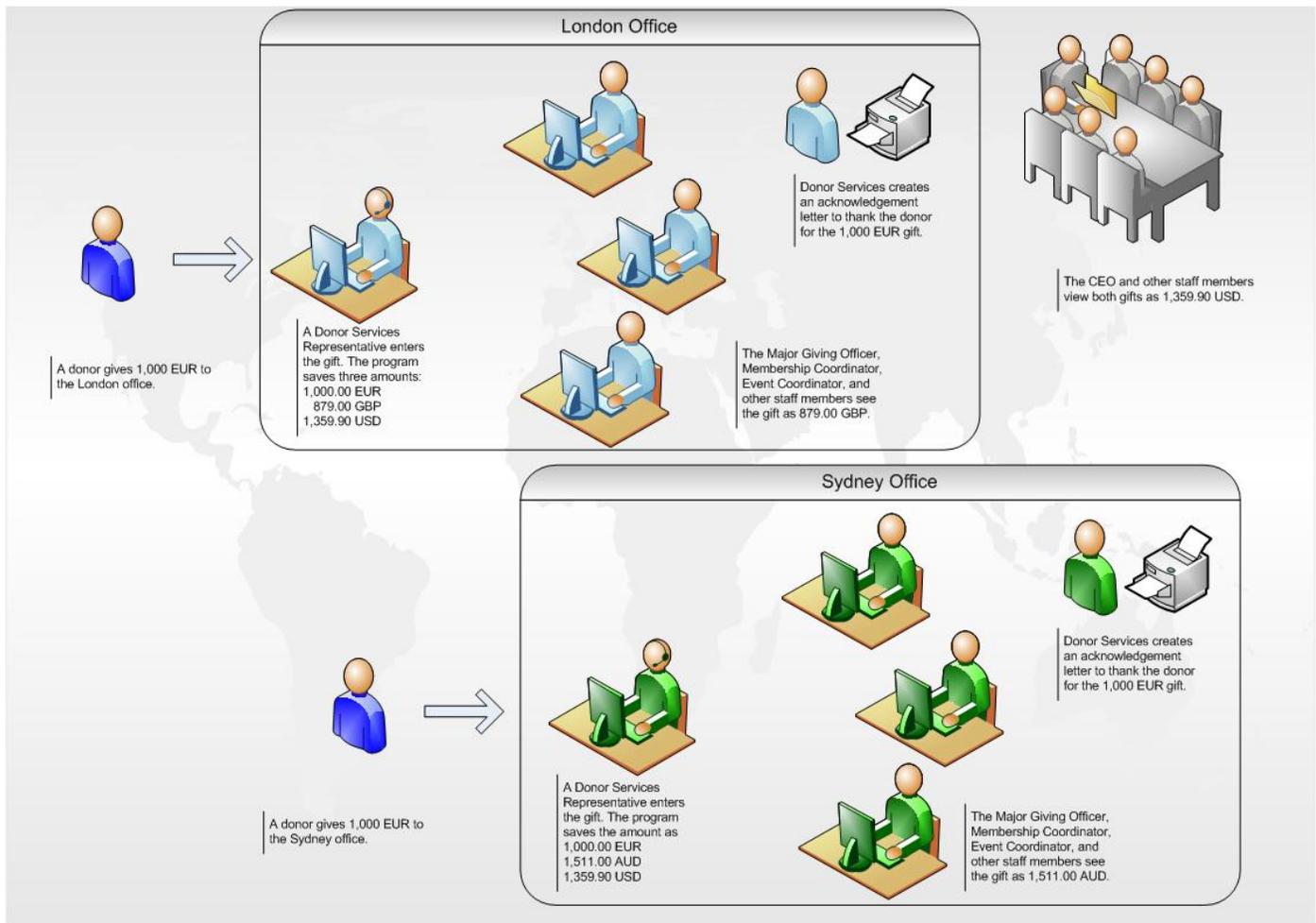
ConditionSettingExists	38
CurrencyHelper Class.....	38
FormatMoney(...)	39
GetCurrency(...)	39
GetOrganizationCurrencyId(...)	39
ConvertCurrency(...), RoundCurrency(...)	39
ConditionSettingsHelper Class.....	39
UIModel.....	39
MoneyField and NullableMoneyField Classes	39
CurrencyFieldId	39
CurrencyId	39
DoNotApplyFormat	39
FormatValue().....	40
FormatValueWithCurrency()	40
SQL	40
Frequently Used Functions and Procedures	40
Application User Functions and Procedures	42
Functions and Procedures for Specific Record Types	42
Infrequently Used Functions	43
Specs	44
CurrencyField Element.....	44
Condition Settings	44
Spec Expressions	44
FormatMoney(ByVal amount as Decimal, ByVal currencyID as String) As String.....	44
Appendix E – Entity Relationship Diagrams.....	45

Overview

You work for an international organization whose headquarters is in New York. Currently, there are three offices in England and two offices in Australia. The London office accepts pounds sterling and euros and the staff members view transactions as pounds sterling. In Sydney, your office accepts Australian dollars and euros and the staff views transactions in Australian dollars. Since your headquarters is in New York, the reporting currency is United States dollars.

A donor in England gives a gift of 1,000 EUR to the London office. When the Donor Services Representative enters this gift, the program saves the amount as 1,000 EUR (the gift's transaction currency), 879 GBP (the base currency of the London office), and 1,359.90 USD (your organization's reporting currency).

In Australia, a donor gives a gift of 1,000 EUR to the Sydney office. The program saves the amount as 1,000 EUR (the gift's transaction currency), 1,511 AUD (the base currency of the Sydney office), and 1,359.90 USD (the reporting currency for your organization).



In this example, the donor gives a gift in euros, so any acknowledgements or other correspondence from your organization will refer to the gift as 1,000 EUR. Each office prefers to see this amount in a

common currency. For London, users prefer to work with transactions in pounds sterling, while in Sydney users prefer to see amounts as Australian dollars. In New York, when executives create reports to determine the success of different fundraising efforts or to evaluate the organization's overall financial situation, amounts in the reports appear in United States dollars.

Multicurrency provides a means to correspond with donors in their preferred currency, present amounts in a currency that is familiar to your organization's staff, and to create reports that show a comprehensive view of your organization's financial data.

Multicurrency Basics

The *Multicurrency* feature converts each revenue transaction to two additional currency amounts so that the system can calculate the information for different views. If an office uses an operating currency that is different from the currency of the revenue transaction, revenue processors and other staff members in the office will want to view the revenue in the office's currency. In the same way, staff members and executives who work in an organization's headquarters will want to see revenue in the organization's primary currency. To perform these calculations, the system requires different exchange rates. For reporting purposes, *Multicurrency* uses the rates provided at regular intervals by your organization's headquarters. This way, when an application user in any office selects the organization view in a report, the same rates are used to determine the amounts that appear. However, to record the most accurate financial information, your organization may choose to include a second set of rates that are updated on a more frequent basis. For information about the two types of exchange rates, see "Exchange Rate" on page 8.

Currency Types

The *Multicurrency* feature records transaction amounts in three currency types: transaction, base, and organization. You group transaction and base currencies in currency sets, which you then assign to your organization's account systems and applications users. Each currency set includes one base currency and one or more transaction currencies. A common organization currency is used by all offices in your organization.

Transaction Currency

Each office in your organization may accept revenue in one or more currencies. These are called transaction currencies. The program converts transaction currency to the base currency of the account system associated with the revenue.

Your donors will always see amounts in transaction currency. A donor who pledges 20000 JPY will receive pledge reminders, payment receipts, and any other type of communication showing the outstanding balance or payment amounts in Japanese yen. The donor does not need to know your office's currency (base) or reporting currency (organization). These currency types are for internal use.

Base Currency

In Enterprise CRM, the base currency applied to a record depends on the record's type. For items not linked to an office's ledger (such as fundraising purposes and appeals), the program applies the base currency assigned to the application user who enters the record. This will always be the base currency in which the office operates, unless the application user enters records for offices in different locations. In this situation, the user can change the base currency of the record to match the operating currency of the appropriate office.

For revenue that posts to the ledger, such as a pledges or payments, the program applies the base currency of the account system associated with the revenue. In most situations, this currency will also be the office's operating currency. For example, for an office in England, the currency set assigned to application users in the office will have a base currency of pounds sterling and each user's default account system will also have a base of pounds sterling.

In this way, base currency provides a common experience for users who are accustomed to working with a specific currency. For example, an office located in France assigns a currency set with a base of Euros to application users in the office and to the office's account system. When a gift officer receives a donation in pounds sterling, the program converts this currency to Euros so that the gift officer, revenue processors, executive managers and other staff members can view, manage, and report on the amounts in the office's currency.

Organization Currency

In order to have a unified view of your organization's revenue across numerous offices, you need a third type of currency—the organization currency. This currency is the official reporting currency for your organization and will most likely be the operating currency for your organization's headquarters. For example, a Canadian organization with subsidiaries in the United States and Mexico probably prefers to view financial information from all subsidiaries in Canadian dollars. The subsidiaries will have different base currencies and accept multiple transaction currencies, but the organization currency amount associated with each record gives you the flexibility to generate totals for actual and projected giving regardless of the different base and transaction currencies.

The program stores the organization currency amount with every amount entered in the system, including event registration records and designation goals. This way, you can perform aggregate reporting on non-revenue records as well.

Currency Conversions

Each time you enter revenue into the database, the program converts the transaction currency amount to the base currency of the selected account system, as well as the organization currency. For any revenue amount in the system, three currency values exist: transaction, base, and organization.

To convert the transaction to base or organization currency, the program uses predefined exchange rates you import or download from one or more sources. In addition to predefined rates, you can also apply a spot rate to revenue. For example, if you receive a transaction from a locale with a volatile

market, you may contact your bank to get the currency exchange rate when you enter the currency rather than use an existing daily rate.

It is extremely important to import or download exchange rates. The *Multicurrency* feature requires these rates to accurately convert currency amounts. If, for example, you do not have a rate to convert a transaction or base currency amount to an organization amount, the record will appear with a zero amount in reports. For revenue records, you cannot post revenue without an exchange rate to your ledger.

Exchange Rate Types

There are three types of exchange rates: corporate, daily, and spot. The program uses the most recent, unexpired corporate rate to calculate the organization amount. It uses the most recent, unexpired rate, either corporate or daily, to calculate the base currency when you enter gifts, apply benefits, or need to perform cross-currency conversions. If the transaction and base currencies of the revenue are different, you can also select “Spot rate” to manually enter an exchange rate.

To determine which exchange rate to apply to a transaction amount, the program identifies the date associated with the record. If the program cannot locate an exchange rate, it saves the record without an exchange rate or a converted amount. When you edit a record without an exchange rate, the program will attempt to find a rate using the revenue date. For revenue transactions, if you choose to apply a new rate to the transaction amount, you can select the most current exchange rate from each exchange rate source, up to the revenue date, or you can apply a spot rate to the revenue.

For example, you receive a pledge on the first of July for 100 GBP. Your assigned base currency and your organization currency are Canadian dollars (CAD). The program automatically applies the most current exchange rate for GBP to CAD to the transaction amount, to calculate the amount of the pledge in base currency, and applies the most current corporate rate to calculate the organization currency. In August, you need to edit the pledge. If you click the **Currency and exchange rates** button on the Edit pledge screen, you can select the most current exchange rate as of July 1st for each exchange rate source. So, you may have a rate from May 1st for one source and a rate for June 30th for another source.

If the transaction currency and the base currency are the same, you do not apply an exchange rate to the transaction amount. If you click the **Currency and exchange rates** button on the revenue’s Edit screen, the **Exchange rate** field is disabled.

Once a daily or corporate exchange rate is associated with a record, you can no longer edit the rate amount, but you can edit the rate’s source. If the exchange rate is a spot rate, you can edit the amount.

Daily vs. Corporate Exchange Rates

You can choose to add either corporate rates only or both corporate and daily rates to your system. While corporate rates are usually updated on a set schedule, such as monthly or quarterly, if your organization also uses daily rates, these should be imported or downloaded more frequently so that your office has the most accurate rates for revenue you post to the ledger. For information about how to add exchange rates to our system, see “Exchange Rates” on page 14.

Exchange Rate Scenarios

For *Multicurrency* to accurately convert amounts, you must have exchange rates for the following currency pairs.

- Transaction to Base – Determines the base amount of a record, such as a revenue transaction, major giving opportunity, or grant request.
- Transaction to Transaction – Determines cross-currency payment application amounts if a payment's transaction and base currencies do not match the transaction currency of the commitment. For example, you receive a pledge for 500 GBP. You then receive a 100 EUR payment toward the pledge. In order to determine the amount in GBP that should be deducted from the pledge, the program must convert the payment's transaction currency to that of the pledge. In this example, neither the transaction nor base currency of the payment match the pledge's transaction currency, so the program must apply the appropriate EUR to GBP exchange rate to perform a transaction to transaction conversion. It can then subtract the payment (which has been converted to GBP) from the pledge amount to obtain the pledge balance.
- Base to Base – Used for reports and other views that require on-the-fly conversions between base currencies. For example, the base currency of amounts in a report are in Canadian dollars. The base currency assigned to your currency set is United States dollars and you select the "My base" view of the report. The program must convert revenue received in any currency other than USD from the base currency of CAD to your base currency of USD.¹
- Transaction to Organization – Determines the organization currency amount of a transaction when the organization source origin (pivot currency) is set to transaction.
- Base to Organization – Determines the organization currency amount of a transaction when the organization source origin (pivot currency) is set to base. For information about the transaction to organization and base to organization configuration settings, see "Pivot Currency" on page 99.
- Base to Transaction – Used to calculate benefit amounts in terms of transaction currency when the currencies are different. For information about benefit amount calculations, see "Benefits" on page 19.

Exchange Rate Sources

When you import or download exchange rates, you can identify each rate with a source. A source is usually a third-party vendor that collects and distributes rates online or publications that publish exchange rates. Your organization may also manage an internal spreadsheet that you manually update with rates from different sources.

If you include rates from more than one source and you identify the source at the time you add the rate, when you add a payment or commitment, you can choose from the rates available for the revenue record's date from each source. For example, you obtain your corporate rates from Xignite and these expire monthly. You obtain your daily rates from the London Times and these expire daily. When you add a payment, both the corporate and daily exchange rates, as well as the spot rate, appear in the **Exchange rate** field on the Currency screen.

Pivot Currency

The organization amount origin currency, which we refer to in this paper as the pivot currency, is the currency type the program converts to obtain amounts in organization currency. You must define an exchange rate to convert the pivot currency to each currency you accept, as well as your base and

¹ The transaction currency is stored with the revenue record, so a transaction amount of USD would not require a conversion to your "My base" view in USD.

organization currency. At the time you set up multicurrency, you determine whether to use the transaction or base currency as the pivot currency.

For systems with transaction currency as the pivot currency, when you receive revenue, the program converts the transaction amount to the base and organization currency. With this configuration, the parent organization (headquarters) bears the risk because all transaction currencies are converted directly to the reporting currency.

For systems with the base currency as the pivot currency, the program applies an exchange rate to the transaction currency to convert this amount to the base currency. Then, the program applies the exchange rate to the base currency, not the transaction currency, to obtain the organization currency amount. In this scenario, the parent organization and the local office split the risk related to converting transaction currencies. The parent organization's risk is much lower than the transaction to organization configuration because the office absorbs fluctuations in the local currency. The transaction to base to organization configuration is used when one or more offices report to a parent organization that operates in a different currency.

Multicurrency Setup

Once you enable the multicurrency feature, your organization may accept commitments and payments in any currency you add to the program.² You can also apply payments in one currency to commitments made in another currency. When you receive a payment, you determine which exchange rate to apply to the revenue. The first step you must perform to enable multicurrency is to select the **Organization currency setup** task in *Administration*.³



Figure 1: Organization Currency Setup Task on the Administration Page

The program uses the Microsoft Windows Regional and Language Options settings on the server where you install the Enterprise CRM database to determine the default currency. However, you can change this currency at the time you set up the feature.⁴

² You cannot return to a single-currency system once you enable multicurrency.

³ This document includes screen captures of a database configured for the United States.

⁴ Configure your organization's currency settings only once after you install or upgrade the program. If you edit the currency settings after you enter records in your new or updated database, you may invalidate your data.

The organization currency provides a means to view transaction amounts in a common currency across all offices regardless of the office's local currency, the currency in which you received the revenue, or the currency associated with fundraising goals. You can easily compare amounts, goals, and results in the same currency.

After you define which currency to use for overall reporting, you must enable multicurrency. Select the **Enable multiple currencies** task under **Tasks** on the Organization Currency Setup page in *Administration*.



Figure 2: Enable Multiple Currencies Task on the Organization Currency Setup Page

You must then decide whether to use the transaction currency or base currency when calculating the organization currency. For information about this pivot currency, see “Pivot Currency” on page 9.

Once you enable Multicurrency, the **Organization Currency Setup** task and page changes to the **Currency** task and page. You can now manage currencies and exchange rates in the system.

Add Currency

The program includes all active currencies with currency codes defined by the International Organization for Standardization (ISO). You can edit these entries or add new currencies from the **Currency** task in *Administration*. On the Currency page, click **Currencies** to access the area where you manage currencies and currency sets.

When you add a currency, you select the currency's locale. The ISO code, currency symbol, and decimal digits associated with the locale's default currency appear, but you can edit this information. For example, in some locales, there may be several regional currencies in use. You can create entries for each of these currencies. You can also select the rounding rule to use when converting the currency. For information about the rounding methods supported, see “Rounding” on page 12.

Add a currency

Name: ISO code:

Locale: Currency symbol:

Rounding type: Half rounds away from zero Decimal digits: 0

Examples: 2,462.5 rounds to 2,463
9,823.5 rounds to 9,824
44,443.0 rounds to 44,443
77,777.0 rounds to 77,777
-2,462.5 rounds to -2,463
-9,823.5 rounds to -9,824

When displaying amounts in this currency:

Always display ISO code
 Always display symbol
 Display symbol to users in regions where this currency is the default; display ISO code otherwise

Save Cancel

Figure 3: Add a Currency Screen on the Currencies Tab of the Currencies Page

To avoid confusion, we recommend you not select **Always display symbol** for multiple currencies that use the same symbol, such as United States dollars and Canadian dollars, because application users cannot tell which currency corresponds to the amount displayed. Instead, we recommend you select **Always display ISO code** or **Display symbol to users in regions where this currency is the default; display ISO code otherwise** for currencies with identical currencies or edit each currency symbol to indicate its locale, such as “US \$” or “CAN \$.”

Once you associate a record with a currency, you cannot delete the currency.⁵

Locales

When you configure the server which hosts your Blackbaud Enterprise CRM database, you must verify that the server’s culture settings support the selected organization currency. To do this, review the server’s Microsoft Windows Regional and Language Options settings. From **Start**, select **Settings, Control Panel**. Select **Regional and Language Options**. On the Regional Options tab, select the location of the server hosting the application. Select the Advanced tab and choose the language that matches the location setting you selected. Restart your machine to apply your changes.

For currency symbols and amounts to display correctly, you must also make sure your Internet Explorer language setting matches this culture setting. From Internet Explorer, select **Tools, Internet Options**. Under **Appearance**, click **Languages** and select the appropriate language.

Rounding

We support four different rounding methods. When you configure your currencies, you determine which rounding method to use. By default, the program assigns the rounding method associated with the currency’s locale.⁶

- **Half rounds away from zero.** This is the default rounding option.

⁵ You should not edit the organization currency’s details once you begin to add records to the program.

⁶ For more information about rounding rules, see <http://www.cicc.or.jp/english/hyoujyunka/databook/205.htm>.

Examples: 1.3 rounds to 1
-7.2 rounds to -7
20.5 rounds to 21

- **Half rounds to nearest even number.** This rounding rule works the same as the “Half rounds away from zero” rule for values that do not lie exactly between two unit values. If the value is exactly between two unit values, such as 0.5, the program chooses the unit that is an even number.

Examples: 1.3 rounds to 1
-7.6 rounds to -8
20.5 rounds to 20

- **Round one digit to the nearest multiple of five.** This rounding rule can affect an amount that already has the appropriate number of decimal places. The number is assigned the nearest value that makes it divisible by 5 in the 'units' decimal place. For example, an amount in a currency with two decimal places will always take the form x.x0 or x.x5.

Examples: 1 rounds to 0
26 rounds to 25
-4 rounds to -5

- **Round two digits to the nearest multiple of fifty.** This rounding rule can affect an amount that already has the appropriate number of decimal places. The number is assigned the nearest value that makes it divisible by 50 in the 'units' and 'tens' decimal place. For example, an amount in a currency with two decimal places will always take the form x.50 or x.00.

Examples: 11 rounds 0
142 rounds to 150
-40 rounds to -50

Currency Sets

A currency set includes one or more transaction currencies, but only one base currency. When you first enable *Multicurrency*, the program creates a default currency set for your organization.⁷ Any users you add will automatically inherit this currency set unless you manually assign a different set to the application user record. You must also assign a currency set to each account system you create. This limits the currencies in which a user can enter a payment or commitment and defines the base to which the revenue gets converted. For non-revenue records, such as campaigns, appeals, or events, and for recurring gifts (which do not post to the ledger), the program automatically applies the base currency of the user's currency set. In this case, the currency set makes data entry faster and easier because the user will most likely want amounts to appear in his office's local currency, which will most likely be the base currency of his assigned currency set.

You can change an application user's currency set at any time from *Administration*. In **Security**, you can access the user's record and edit the **Currency set** field on the Edit application user screen. When you assign a different currency set to the user, he can accept only the transaction currencies in that currency set and create new records, other than revenue records that post to the ledger, in the

⁷ There is no limit to the number of currency sets an organization can define.

base currency of the currency set.⁸ This flexibility is helpful for users who frequently travel between offices with different base currencies.

Currency sets do not control an application user's access to records. Users can view records of any currency type as long as no other access security exists for the record. For information about security and revenue, see "Security" on page 29.

Default Account Systems

In addition to assigning a currency set to application users, you also associate currency sets with the account systems you enter. Since you can assign a default account system to your application users, a user may have two currency sets. When this situation occurs, a revenue record always uses the base currency assigned to the account system selected and ignores the currency assigned to the user.

To assign a default account system to a user, from **General Ledger Setup** in *Administration*, click **Define default account systems** under **Tasks**. If the user has access to only one account system because of site security settings, the **Account system** link does not appear on the add screen for revenue records that post to your ledger. If the user has access to more than one account system, this link appears so the user can associate revenue with the correct ledger.

Exchange Rates

For your currency conversions to be as accurate as possible, you should frequently update your exchange rate table. You have two options for adding the latest exchange rates to your database. You can manually import rates or you can download the rates from a third-party vendor.

The reason the application limits data entry for rates to an import or download process is to prevent mistakes that may occur when manually entering exchange rates. To prevent errors when you enter a spot rate, if the rate is 10 percent greater or less than the rate with the most recent "as of" date and time, regardless of the source, a notification message appears. You can determine whether the rate is correct and continue. This validation also occurs when you import exchange rates in *Batch* and appear as exceptions when you run the batch process.

You cannot edit exchange rates in the system. If an entry is incorrect, you must import or download a new rate.

Import Exchange Rates (Batch)

In **Batch** in *Administration*, you can create a Currency Exchange Rate batch, then in **Import** you can create an import process that uses this batch template to import multiple rates from one or more sources.

Download Exchange Rates (Business Process)

⁸ For records that do not have dependencies, such as an appeal that has no associated mailings, you can change the base currency to that of a different currency set.

Blackbaud provides a means to automatically download exchange rates through the financial web service Xignite.⁹ In order to use this service, you must have a subscription with the vendor. You can then create an exchange rate download business process. From *Administration*, click **Currency** then click **Currency exchange rates**. Select the Exchange Rate Download Processes tab.

The **Rates** grid includes the recommended exchange rates you should download based on the currency sets you configured on the Currencies page in *Administration*. These include:

- transaction to base
- transaction to transaction
- base to base
- transaction to organization
- base to organization
- base to transaction

You can add new rates to the grid or delete the recommended rates¹⁰. When you run the process, the program downloads the Xignite exchange rates that match the entries in the **Rates** grid.

Add Xignite currency exchange rate download process

Web site: <http://www.xignite.com/forex/20001.html>

Name:

Description:

Type: Corporate

Set the source on rates downloaded to Xignite

Rates:

From	To
Albanian Lek (ALL)	Algerian Dinar (DZD)
Albanian Lek (ALL)	Bahraini Dinar (BHD)
Albanian Lek (ALL)	Canadian Dollar (CAD)

Hits generated: 156

Authentication

Username:

Password:

Set as default authentication for Xignite

History

Delete history older than: One week

Save Cancel

Figure 4: Xignite Download Exchange Rate Process Screen

⁹ Go to www.xignite.com/Support/FAQ.aspx?faqtype=Company&faqcat=Subscription for information about Xignite.

¹⁰ Because access to exchange rates may be considered sensitive data by your organization, the program stores the username and password you create to access Xignite in an encrypted column in the database.

The process downloads the mid-market average returned by the GetRealTimeCrossRate function in Xignite. This rate, the CrossRate.Rate property, is the average of the last amount offered to buy the currency (bid) and the last amount offered to sell the currency (ask). The “as of” date that appears in Blackbaud Enterprise CRM will be the CrossRate.Date and CrossRate.Time properties returned by the GetRealTimeCrossRate function. The date and time are in Greenwich Mean Time for London, England. The program converts this date and time format to that of your system. From the Exchange Rates tab on the Currency Exchange Rates page, you can view this converted date time in the **As of** column of the **Exchange rates** grid.

From	To	Rate	As of	Time zone	Type
UK Pound Sterling (GBP)	US Dollar (USD)	1.58350283	10/01/2010 4:00:18 PM	(GMT-05:00) Eastern Time (US & Canada)	Corporate
US Dollar (USD)	UK Pound Sterling (GBP)	0.63151135	10/01/2010 4:00:18 PM	(GMT-05:00) Eastern Time (US & Canada)	Corporate
UK Pound Sterling (GBP)	US Dollar (USD)	1.58300501	10/01/2010 1:27:05 PM	(GMT-05:00) Eastern Time (US & Canada)	Corporate
US Dollar (USD)	UK Pound Sterling (GBP)	0.63170994	10/01/2010 1:27:05 PM	(GMT-05:00) Eastern Time (US & Canada)	Corporate

Figure 5: “As of” Date and Time Column on the Exchange Rates Tab

If you selected **Set the source on rates downloaded to Xignite** checkbox on the Add Xignite currency exchange rate download process screen, you can easily locate these rates by selecting “Xignite” in the **Source** field on the Exchange Rates tab.

Expired Rates

Each time you import or download exchange rates to your database, the new rates appear on the Exchange Rates tab. Since you cannot delete exchange rates, over time old rates will accumulate in the system. When you enter revenue, rates from all sources that are current as of the revenue date appear in the **Exchange rate** field on the Currency screen.

Depending on how often you update rates, a rate from one source may be a year old, while the date on another source in the list may have been added the same day as the revenue. In this example, a revenue processor may select a rate that is no longer accurate. The revenue amounts that post to the ledger will be inaccurate and your reports will not reflect the correct amounts. To provide more control over the rates available to revenue processors, you can apply an expiration setting to your exchange rates. Under **Tasks** on the Currency Exchange Rates page in *Administration*, click **Edit expiration date settings**. You can select when, or if, corporate and daily rates expire.

When you import exchange rates using the Currency Exchange Rate batch or download rates with an Exchange Rate Download Process, the program stamps the rate with the expiration date you selected. The rates will expire at midnight on the selected date. The time is time-zone sensitive. This means if the source of your exchange rates uses London time, and your office is located in Washington, DC, the rates will expire five hours before midnight on the expiration date.

Expiration Setting	As of Date	Expiration Date
Same day	JAN 1, 2011	JAN 1, 2011
In one day	JAN 1, 2011	JAN 2, 2011
In two days	JAN 1, 2011	JAN 3, 2011
In one week	JAN 1, 2011	JAN 8, 2011
In one month	JAN 1, 2011 or JAN 31, 2011	FEB 1, 2011 or FEB 28, 2011
In one quarter	JAN 1, 2011 or JAN 31, 2011	APR 1, 2011 or APR 30, 2011
In one year	JAN 1, 2011 or JAN 31, 2011	JAN 1, 2012 or JAN 31, 2012

When an exchange rate expires, if you do not have a newer version of the rate, the program applies the most recent, unexpired rate. For example, an office in London¹¹ imports corporate rates on the first of every month and imports daily rates each morning at 07:00 (7:00 am). The daily rates expire each night at 21:00 (9:00 pm). If you enter a payment in EUR between 21:00 and 07:00 the next day, the program uses the appropriate corporate exchange rate to convert the payment's amount from EUR to GBP because the daily rate has expired.

In reporting, the program ignores the expiration dates on exchange rates in cases where it must convert one currency to another currency that is not stored with the record. For example, you have a base currency of Euros. A payment in the report has a transaction currency and base currency of United States dollars and an organization currency of pounds sterling. Two currency amounts are stored with the payment—USD (transaction and base) and GBP (organization). If you select to view the report in My base, the program must convert the payment to euros. If only an expired rate exists for USD to EUR, the report uses this rate. Therefore, you can report on the revenue, although you cannot post it to your ledger.

Before your organization enables *Multicurrency*, you should decide if you want exchange rates to expire. If you import rates into your system then, at a later time, choose to apply expiration dates, the existing rates remain and never expire. Since you cannot delete exchange rates, there is a greater opportunity for application users to select an outdated exchange rate when entering revenue because an unexpired rate may appear in the **Exchange rate** field.

Change Base Currency

Often selected staff members are responsible for setting up campaigns, fundraising purposes, designations or other vehicles used to raise money across your organization's different offices, such as appeals, events or membership programs. Since these records automatically use the base

¹¹ The time zone for London, England is GMT + 1.

currency assigned to the user who creates the record, you must have a way to apply the base currency of the office associated with the record. For example, a user has a base currency of Mexican pesos (MXN) and creates appeals for offices in both Mexico and the United States. For an appeal that will be used by the US office, the user must change the default base currency of the appeal from MXN to USD after creating the appeal record.

This change should occur before an office begins using a record because you can change the base currency only if there are no dependencies. For example, once you associate a mailing with an appeal, you create a dependency between the appeal record and the mailing record and can no longer edit the currency. Your ability to change a record's base currency depends on the type of record selected and the relationships defined for the record.

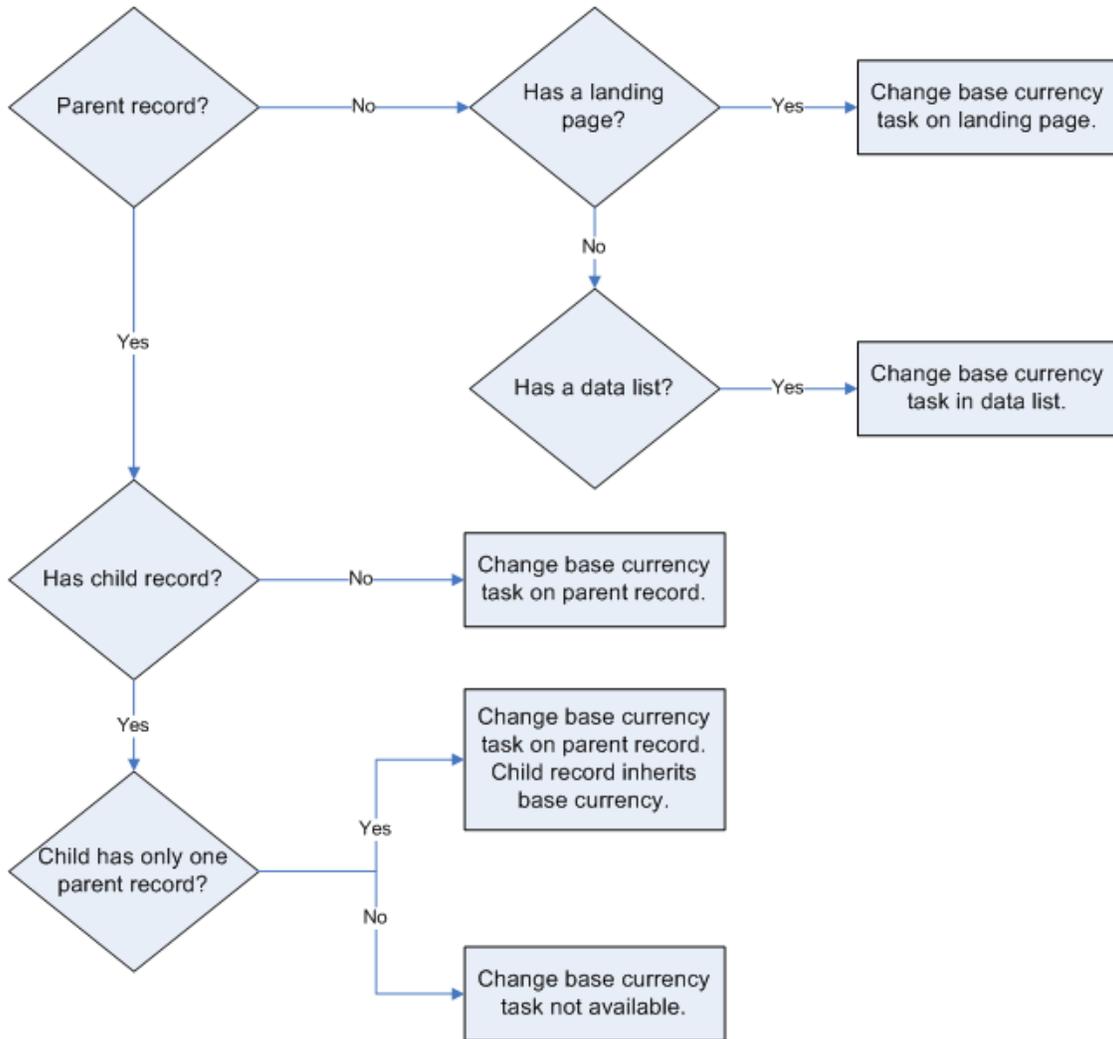


Figure 6: Change Base Currency Constraints

Benefits

You can provide benefits to donors who give or commit to giving to your organization. Before you can associate benefits with revenue, you must add items to a benefits catalog in *Fundraising*. Each benefit automatically inherits the base currency of the user who adds it to the system, but you can change this currency at any time.

Since revenue transactions, benefits, and appeals all have a base currency, there is another layer of complexity when you associate an appeal with a revenue transaction. In *Marketing and Communications*, you can add benefits of any currency type to an appeal. However, when you link an appeal to a commitment or payment, only benefits with a base currency that matches the revenue's base can be given to the donor.

If you edit the base currency, the change will not appear on any existing revenue records that include the benefit. When you add a new revenue transaction, and the benefit's updated base currency matches that of the revenue, then you can add it to the revenue record. The update will also not appear on appeals to which you previously linked the benefit. For example, you have a mug listed as a benefit for donors who contribute 25 to 50 USD in response to an appeal. You change the benefit's base currency to GBP. The benefit remains on the appeal record in USD until you manually add the benefit to the appeal again. This is because the program does not change any historical data for the benefit. Although you have to update the appeal to see the base currency change for the benefit, when you link the appeal to a transaction record, the program only allows you to choose the updated benefit. So, if you received a payment for 25 USD, you would no longer be able to select the mug because this benefit now has a base currency of GBP.

If multiple offices share an appeal, you may want to consider adding a benefit for each office's currency. For example, you have an appeal that both your United States and Canadian offices support. Since the application users who will be entering gifts for the appeal will have either a base of United States dollars or Canadian dollars, you can add two benefits for each giving level: one for USD and one for CAD.

Revalued Commitments

When you receive a pledge, grant award, recurring gift, or planned gift, the program automatically applies the most current exchange rate to the commitment amount. You can manually apply a spot rate as well. Over time, this exchange rate may change, and you will want the remaining balance of the commitment to reflect any changes. To update your commitments, you can run a revaluation process.

The Revalue Foreign-Denominated Commitments business process evaluates all commitment transaction types you select to include and applies the most recent exchange rate. Although the commitment amount and installments remain the same, the value may increase or decrease as exchange rates fluctuate. For commitments other than recurring gifts, you can calculate the commitment's gain/loss distributions during the revaluation process. The gain and loss amounts appear in the **Unrealized Gain/Loss GL Distribution** grid on the GL distributions tab of the revenue

record. For recurring gifts, you can project the actual amount you expect to receive during a given period in reports and KPIs.

Commitment Criteria

In order for the Revalue Foreign-Denominated Commitments business process to include a commitment, the revenue must not have a future date and, with the exception of recurring gifts, must have a balance.

The business process will also not revalue amounts if the following conditions apply:

- transaction currency equals base currency: no revalued amount for base currency
- transaction currency equals organization currency: no revalued amount for organization currency
- transaction currency equals base currency equals organization currency: no revalued amounts
- no exchange rate meets the revaluation criteria: no revalued amounts
- For example, when you configure the business process, you choose to apply exchange rates from a specific source. Although there are current rates the program can apply to the balances and recurring gift amounts, there are no exchange rates from the selected source. In this case, the business process will not revalue the amounts because no exchange rates meet the criteria.

Recurring Gifts

The setting you select in Recurring gift settings under **Configuration** in *Revenue* affects which recurring gifts the Revalue Foreign-Denominated Currency business process includes.¹²

If you select **Maintain installment amounts**, the business process uses specific criteria to determine if the recurring gift should be processed. If the donor does not pay the full installment amount, the remaining balance appears in the **Past due** display on the recurring gift record. But this amount is not included in the next installment. For example, you create a recurring gift of 200 USD with monthly installments. This month, the donor pays 150 USD towards the installment amount. A balance of 50 USD appears on the recurring gift record and the next installment amount is 200 USD.

If you select the **Update installment amounts to match payments** setting for recurring gifts, the gift will never have a balance and, therefore, will not be revalued. For example, if you choose this setting, when you receive the donor's payment of 150 USD, the program changes the installment amount to 150 USD to match the payment.

Query

You can use the Revenue Commitment Revaluation fields in Query to locate revalued commitments. For pledges, the pledge balance field under **Revenue** in the **Revenue Commitment Revaluation** node is the revalued balance of the pledge.

¹² The Revalue Commitment process revalues only the unpaid balance on recurring gifts.

Ledger

In addition to providing an effective means to communicate currency amounts to current and prospective donors, *Multicurrency* allows you to manage and reconcile deposits with bank account statements. An office in the United States has the ability to record a 100 GBP donation as 157.43 USD (assuming an exchange rate of 1.5743). Then, once the revenue has been deposited, you can update the cash amounts to reflect any difference between the exchange rate associated with the deposit and the exchange rate applied by the bank.

The complexity increases when you must account for exchange fluctuations related to commitments. A commitment refers to revenue you expect to receive at some point in the future. At the time you enter a commitment, the program applies an exchange rate. However, since the commitment will be paid over time, its value will increase or decrease relative to changes in this rate. When you run a revaluation process, the program applies the latest exchange rate according to the criteria you specify. The commitment may become more or less valuable to your organization depending on the rate applied. You must account for this fluctuation as an unrealized gain or loss in your ledger.

The payments you apply toward a commitment may also increase or decrease in value over time. For example, a 100 MXN payment toward a pledge may increase in value if the exchange rate between Mexican pesos and the currency of your office increases. This gain must also be accounted for as a realized gain in the ledger.

In **General ledger setup** in *Administration*, you can map information related to gains and losses for unrealized and realized revenue. Select an account system and click **Define Transaction Mappings**. Go to the **Development** office and select the Currency tab.

Unrealized Gains and Losses

For commitments that represent future revenue (pledges, planned gifts, recurring gifts, and grant awards), you can revalue the revenue at scheduled intervals to determine the commitment's value to your organization at a given time. For example, your base and organization currency are GBP and a constituent pledges 1,200 EUR at the beginning of the calendar year. You expect to receive 100 EUR installments for the next twelve months. In February, the exchange rate for EUR to GBP is 1.12765, so the February installment is worth 112.77 GBP. In October the rate has decreased to 1.09239 for a value of 109.24 GBP. In this example, a 100 EUR installment is worth 3.52 GBP less than the same installment in February, so you have an unrealized loss of 3.52 GBP.

The **Unrealized Gain/Loss GL Distributions** grid on the GL Distributions tab of a constituent record displays the amounts you gained or lost as a result of revaluing the commitment.

Realized Gains and Losses

With realized gains and losses, you can account for an increase or decrease in actual revenue caused by differences in exchange rates. When you receive a pledge, the program applies the most current exchange rate available for the date and time you enter the pledge. This exchange rate will, most

likely, change over time. So, you will have a increase or decrease in the value of the revenue you apply to the pledge. For example, your base currency is USD and you receive a pledge in the amount of 1000 CAD to be paid in five installments of 200 CAD. At the time you enter the pledge, the exchange rate for CAD to USD is 1.0427. If the exchange rate did not change from the time you entered the commitment until you received the final payment, you could expect to receive 1042.70 USD from this pledge. When you receive the first payment of 200 CAD, the exchange rate has increased to 1.05611. So, instead of receiving an installment amount of 208.54 USD (200 CAD * 1.0427), the donor's 200 CAD pledge is now worth 211.22 USD. For this payment, you will post a realized gain of 2.68 USD.

In the **Realized Gain/Loss Distribution** grid on the GL Distributions tab of a transaction record, you can view the amounts you gained or lost as a result of exchange rate fluctuations.

Intercurrency Balancing

The Intercurrency Balancing account is a means to balance the transactions in one currency that are applied to transactions in another currency so you can reconcile your ledger with your bank statements. Intercurrency accounts are required in the following situations: payments in one currency are deposited to a bank account in a different currency; you transfer money from one bank account to another bank account in a different currency; when you apply a payment in one currency to a pledge made in a different currency.

Deposit

When you add a bank account, you associate the account with an account system. You define account systems in *Administration*. Click **General ledger setup** and click **Add** in the **Account systems** grid. For each account system you add, you must select a currency set. This determines which transaction currencies a user can accept when a specific account system is selected, and it also determines which currency is used as the base currency.

Each deposit is associated with a bank account, and therefore, a specific account system. When you add a deposit in *Treasury*, the bank account you select determines which currencies you can work with in the deposit. For example, the entries in the **Payment currency** field on the Add a deposit screen are the transaction currencies defined for the bank account (these are the transaction currencies included in the currency set assigned to the account system you associated with the bank account). To access this screen, on the Treasury page, click **Add a deposit**.

Add a deposit

Deposit information

Bank account: RBS

Deposit date: 1/1/2011

Post status: Not posted

Post date: 1/1/2011

Reference:

Payment currency: Euro (EUR)

Deposit projections

Number of payments: 20

Amount: 2,500.00 EUR

Save Cancel

Figure 7: Add a Deposit Screen in Treasury

The bank account's account system and currency determine the selections available when you click the **Currency** button on the Add a deposit screen. For example, you have a bank account with a base currency of GBP and a transaction currency of EUR (GBP because this is the base defined in the associated account system and EUR because this is the transaction currency you selected from the **Currency** field on the Add a bank account screen). In this example, the deposit's transaction currency (the currency you select in the **Payment currency** field on the Add a deposit screen) and the bank account's transaction currency are both euros.

Currency

Exchange payment currency to bank account currency

Total linked payments: 0.00 EUR

Payment currency: Euro (EUR)

Exchange rate: 1.00000000

Deposit amount: 0.00 EUR

Exchange bank account currency to base currency

Deposit amount: 0.00 EUR

Bank account currency: Euro (EUR)

Exchange rate: Sep 20 2010 11:07AM (GMT-05:00) E 5.10000000

Base amount: 0.00 GBP

OK Cancel

Figure 8: Transaction and Base Currencies Match

You cannot select a different exchange rate under **Exchange payment currency to bank account currency** because these currencies are the same.

If you were to choose a different currency in the **Payment currency** field, you must then select the appropriate exchange rate to convert the payment currency to the bank account's transaction currency. The resulting amount appears in the deposit row in the bank register.

Currency

Exchange payment currency to bank account currency

Total linked payments: \$0.00

Payment currency: US Dollar (USD)

Exchange rate: Jan 1 2011 12:00AM (GMT-05:00) Ea 0.7755

Deposit amount: 0.00 EUR

Exchange bank account currency to base currency

Deposit amount: 0.00 EUR

Bank account currency: Euro (EUR)

Exchange rate: Jan 1 2011 11:07AM (GMT-05:00) Ea 0.5155

Base amount: 0.00 GBP

OK Cancel

Figure 9: Transaction and Base Currencies Do Not Match

In both of these examples, you can select an exchange rate under **Exchange bank account currency to base currency** to convert the bank account's transaction currency to its base. Although you can specify a transaction currency for a bank account, the base currency for the account will always be the base defined for the currency associated with the bank's account system. In this example, the bank has a transaction currency of Euros, but a base currency of pounds sterling. The program must convert the deposit amount (in the bank account currency) to the bank account's base. Once you link payments to the deposit, you can view the currency exchanges that occur based on the settings you select for the deposit.

Currency

[Exchange payment currency to bank account currency](#)

Total linked payments: \$600.00

Payment currency: US Dollar (USD)

Exchange rate: Jan 1 2011 12:00AM (GMT-05:00) Ea 0.7755

Deposit amount: 465.30 EUR

[Exchange bank account currency to base currency](#)

Deposit amount: 465.30 EUR

Bank account currency: Euro (EUR)

Exchange rate: Jan 1 2011 11:07AM (GMT-05:00) Ea 0.5155

Base amount: 239.86 GBP

OK Cancel

Figure 10: Currency Screen with Linked Deposits

To access this screen, from the deposit record, click **Edit deposit** under **Tasks**. Then, click the **Currency** button on the Edit deposit screen.

Deposit Currency and Bank Account Currency Are Different

In this example, your base currency is USD. You receive a donation of 500 EUR that will deposit in a bank account that uses GBP as its currency. In this example, the program must convert the transaction amount of 500 EUR to your base currency of USD. When you create the deposit, the program must convert the 500 EUR gift to GBP in order to calculate the deposit amount. It will also convert the GBP deposit amount to USD to determine the base amount that will appear in your ledger.

Adjustments

When you submit a deposit to your bank, the exchange rate the bank applies may be different than the rates in the deposit, or the bank may charge additional fees related to converting currencies. In this case, you can add an adjustment to the bank account. From a bank account record in *Treasury*, click **Add an adjustment** under **Tasks**. If the exchange rate the bank applies is greater than the rate in the deposit, you can select “Deposit” in the **Type** field to indicate an increase in the account balance. If the exchange rate applied is lower or if you need to include bank fees, you can select “Payment” to indicate a decrease in the account balance.

When you create an adjustment, you can select a pre-defined adjustment category to identify the reason you entered new amounts. From a bank account record, select the Adjustment Categories tab

and enter the categories revenue processors can select from when adding adjustments related to exchange rate changes or currency conversion fees.

Blackbaud NetCommunity

With Blackbaud NetCommunity, your organization can accept payments which you can then import into Blackbaud Enterprise CRM using the appropriate NetCommunity batch workflow in *Batch*.

In order to accept different currencies in Blackbaud NetCommunity, you must configure a merchant account for each transaction currency you accept. This is a one-to-one relationship, so you must have a corresponding merchant account for each currency. In NetCommunity, you configure merchant accounts in **Merchants Accounts** in *Administration*. The payment gateway you select in the **Gateway** field determines which payment currencies you can select from the **Currency** field.

New Merchant Account (New merchant account)

Save Help Return

Merchant Account Details

Name: *

Merchant account is inactive

Process mode: Live

Description:

Gateway Account Details

Gateway: IATS-Canada

Currency: Canadian Dollar

Login: *

Password: *

Confirm Password: *

AVS Level: None

CSC Level: None

Supported Credit Cards:

Enable	Card
<input checked="" type="checkbox"/>	American Express
<input checked="" type="checkbox"/>	Diner's Club
<input checked="" type="checkbox"/>	Discover
<input checked="" type="checkbox"/>	Mastercard
<input checked="" type="checkbox"/>	Visa

Blackbaud Internet Solutions

Figure 11: New Merchant Account Screen in Blackbaud NetCommunity

When you receive a payment, the program links the ISO code associated with the merchant account to the payment. This ISO code appears in the transaction batch you use to import the payment records into Blackbaud Enterprise CRM. This ISO code and the date and time your organization received the payment determines which exchange rates the program applies to the amount.

Event Registrations

When you create an event registration form in Blackbaud NetCommunity, you link the registration to an event in Blackbaud Enterprise CRM. You also associate the registration form with a merchant account or a payment part that includes a merchant account so your organization can process payments. The currency associated with the selected merchant account must match the base currency of the event to which you linked the registration. As of version 2.8, currency conversions occur only in Blackbaud Enterprise CRM.

Memberships

When you create a membership form in Blackbaud NetCommunity, you link the form to a membership program in Blackbaud Enterprise CRM. You also associate the form with a merchant account or a payment part that includes a merchant account so your organization can process payments. The currency associated with the selected merchant account must match the base currency of the membership program to which you linked the form. As of version 2.8, currency conversions occur only in Blackbaud Enterprise CRM.

Reports

When you create reports, you have to option to view the results by different currency types.

Transaction – Displays the report amounts in the revenue’s transaction currency. A report may include more than one transaction currency, so you cannot view a total amount. However, some reports include summary sections in which you can view totals by transaction currency type. For example, you can see the total amount given in United States dollars and the total amount given in Canadian dollars.

Base – Displays amounts in the base currency assigned to the revenue or non-revenue record. If the report includes more than one base currency, it will not include an overall total amount. Instead, you will see “N/A” in areas where a total cannot be calculated.

My Base¹³ – Displays amounts in the base currency of the user’s currency set. This way you can easily see amounts in a single currency with which you are familiar. In most cases, Base and My Base will be the same. If, for example, you run reports in an office that has a different base, the amounts you view in My Base will not be as accurate as those that appear when you select the Organization view. The program stores the transaction, base, and organization amounts with each revenue entry. If you select “My base,” and the report process must convert amounts, the results may not be as accurate as the “Base” and “Organization” views, which display existing amounts. This is because revenue reports disregard exchange rate expiration dates. If a report must convert an amount in this way, it uses the most recent exchange rate as of the date on the record, even if that rate has expired.

¹³ The My base view will always be less accurate than the Base or Organization currency view because the amounts may be more than one conversion away from the original amount. For example, the program automatically saves the original transaction currency in the office’s base currency. Your base currency may be different from the office’s base, so the amount that appears in the report undergoes two conversions.

This also applies to appeals and fundraising reports if the program must convert an amount in a different currency to the base of the appeal or fundraising vehicle.

Organization – Displays amounts in organization currency. For revenue, the program always applies the corporate exchange rate to amounts in the organization currency view. Therefore, these amounts may not be as accurate as the Base view, since the base currency amount uses the most current exchange rate at the time you entered the record. However, with the Organization view, you have a consistent, overall view of fundraising efforts. Corporate rates are distributed by your organization's headquarters, so the rates used across all offices will be the same and the currency will be the same, so you can perform aggregate reporting across all offices.

Security

Site security does not apply to multicurrency. However, you can control which users can enter payments in a particular currency by applying site security to your account systems. From **General Ledger Setup** in *Administration*, when you add an account system, you can determine which sites it applies to on the Add an account system screen. If you assign the account system to "Office A," users who are associated with Office B cannot select the account system when entering a payment.

Appendix A – Multicurrency Considerations

Review the following checklist before you enable *Multicurrency*.

Currency Considerations

- Determine the organization currency – page 10.
- Determine the pivot currency – page 9.
- Select how currencies display – page 11.
- Determine if currency display exceptions exist. For example, does a local office use regional formatting that is different from the ISO definition for the selected base currency – page 11.
- Define the currency sets. Select a default currency set. Determine which application users and account systems should be assigned a specific currency set – page 13.
- Determine the adjustment categories to add for multicurrency-related adjustments – page 26.

EXCHANGE RATE CONSIDERATIONS

- Determine the exchange rate sources – page 9 .
- Determine whether corporate and daily rates expire, then define the expiration business rules – page 16.

IMPLEMENTATION CONSIDERATIONS

- Explain the exchange rate types available to application users – page 8.
- Explain report views (Base, My Base, Organization) – page 28.

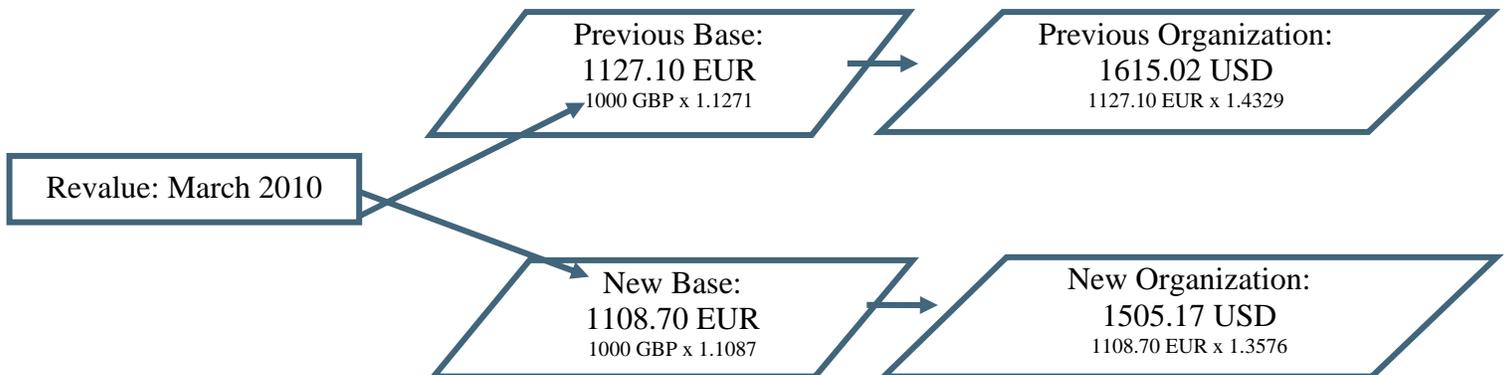
Appendix B – Revalued Commitments

In the following example, a pledge you receive in January is revalued twice. After each revaluation, the program must determine if a gain or loss occurred.¹⁴

	Base Currency (GBP to EUR)	Organization Currency (EUR to USD)
January 2010	1.1271	1.4329
March 2010	1.1087	1.3576
June 2010	1.191	1.223



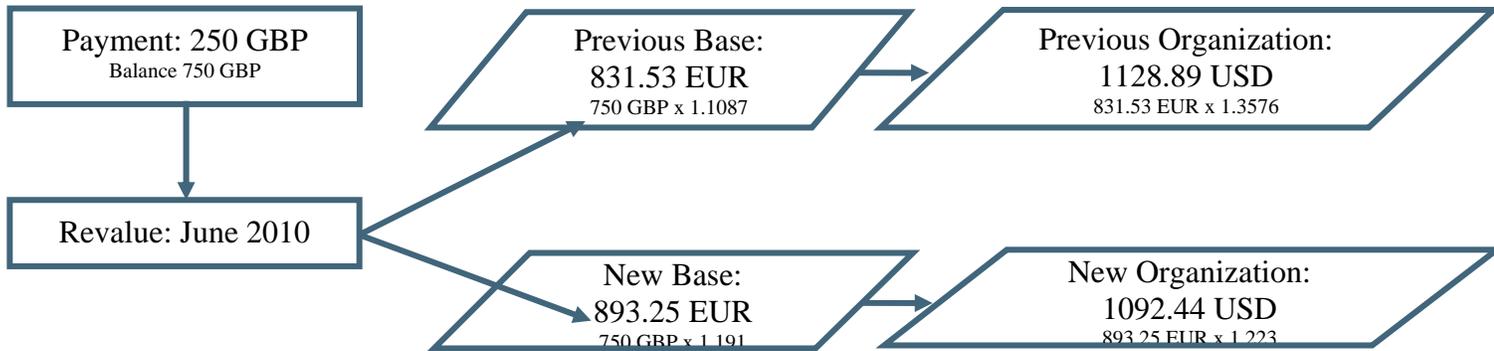
When you run the Revalue Foreign-Denominated Currency business process, the program applies the previous exchange rate used to the balance. This amount appears in the **Previous amount** column on the Currency Revaluations tab. It applies the most recent exchange rate that meets the process’s criteria to obtain the amount in the **New amount** column.



You receive a payment of 250 GBP after you run the revaluation process, which decreases the pledge balance to 750 GBP. When you run the revaluation process, the program applies the appropriate exchange rates to this balance. In this example, the latest exchange rates from the previous revaluation (1.1087 for GBP to EUR and 1.3576 for EUR to USD) become the rates used to determine the previous amounts in the **Currency revaluations** grid. The program applies these rates to the outstanding balance of 750 GBP to calculate the entries in the **Previous amount** column. It then determines the most current exchange rates, based on the criteria specified in the business process,

¹⁴ In the example, the base amount is the pivot currency, which means the program applies the appropriate exchange rate to the base amount to calculate the organization amount.

and applies these rates to the 750 GBP to calculate the base and organization amounts in the **New amount** column.



The final calculation determines if a gain or loss occurred as a result of the changes to the exchange rate. The program applies the original exchange rate associated with the commitment to the balance. In this example, the current exchange rates at the time your organization received the gift in January 2010 were 1.1271 for GBP to EUR and 1.4329 for EUR to USD. It then subtracts this total from the latest revalued base and organization amounts.



The gain and loss amounts appear in the **Unrealized Gain/Loss GL Distribution** grid on the GL distributions tab of the revenue record.

Appendix C – Intercurrency Balancing

The following sample calculations explain how the intercurrency balancing account works.¹⁵

You work in an office located in Madrid, which is a subsidiary of an organization with headquarters in New York. In this scenario, your office’s base currency is EUR and your organization currency is USD. A donor pledges 5000 USD to your organization. However, the first payment you receive is 400 EUR.

Exchange Rates:

USD to EUR – 0.3

¹⁵ In this example, we do not use actual exchange rates.

EUR to USD – 1.5

The ledger distribution for the payment is 600 USD (400 EUR * 1.5). This creates a debit to cash and a credit to the pledge receivable account, which reduces the balance on the pledge. The remaining distributions are to balance the debits and credits by currency and record exchange gain or loss.

The program creates a debit and credit for converting the payment’s transaction currency (EUR) to that of the pledge (USD).

Debit – Intercurrency Balance account

Credit – Revenue account

The program then applies the pledge’s exchange rate (0.3) to the 600 USD, which is 180 EUR. Next, it applies the corporate exchange rate of 1.5 to the 180 EUR to get 270 USD for the organization amount.¹⁶

GL Distributions

Account system: Spain account system

GL distribution Edit distribution

Mapping type	Transaction type	Account	Transaction amount	Base amount	Organization amount	Reference
Pledge Payment for Bookable Pledges - Check	Debit	SP	400.00 EUR	400.00 EUR	\$600.00	Mustermann-Pledge Payment for bookable pledges
Pledge Payment for Bookable Pledges - Check	Credit	IB	400.00 EUR	400.00 EUR	\$600.00	Intercurrency Balancing

GL balancing distributions

Mapping type	Transaction type	Account	Transaction amount	Base amount	Organization amount	Reference
Pledge Payment for Bookable Pledges - Check	Credit	SC	\$600.00	180.00 EUR	\$270.00	Mustermann-Pledge Payment for bookable pledges-Check
Pledge Payment for Bookable Pledges - Check	Debit	IB		220.00 EUR	\$330.00	Intercurrency Balancing
Pledge Payment for Bookable Pledges - Check	Debit	IB	\$600.00	180.00 EUR	\$270.00	Intercurrency Balancing
Pledge Payment for Bookable Pledges - Check	Credit	GG		220.00 EUR	\$330.00	Currency Exchange Gain

To determine if there is a gain or loss on the base amount, the program must first find the base amount of the payment. In this example, the base is 400 EUR. Conversion is not necessary because the transaction and base currencies are the same.

The program must then find the base of the pledge. To do this, it multiplies 600 EUR by the pledge’s exchange rate of 0.3 to get 180 EUR.

400 EUR – 180 EUR = 220 EUR. This is a positive number so there is a gain in the base currency.¹⁷

¹⁶ Corporate exchange rate is always used to calculate organization currency.

¹⁷ The integers in the GL balancing distributions grid are always positive. The text “Currency Exchange Loss” appears in the Reference column if this number indicates a loss.

GL Distributions

Account system: Spain account system

GL distribution Edit distribution

Mapping type	Transaction type	Account	Transaction amount	Base amount	Organization amount	Reference
Pledge Payment for Bookable Pledges - Check	Debit	SP	400.00 EUR	400.00 EUR	\$600.00	Mustermann-Pledge Payment for bookable pledges
Pledge Payment for Bookable Pledges - Check	Credit	IB	400.00 EUR	400.00 EUR	\$600.00	Intercurrency Balancing

GL balancing distributions

Mapping type	Transaction type	Account	Transaction amount	Base amount	Organization amount	Reference
Pledge Payment for Bookable Pledges - Check	Credit	SC	\$600.00	180.00 EUR	\$270.00	Mustermann-Pledge Payment for bookable pledges-Check
Pledge Payment for Bookable Pledges - Check	Debit	IB		220.00 EUR	\$330.00	Intercurrency Balancing
Pledge Payment for Bookable Pledges - Check	Debit	IB	\$600.00	180.00 EUR	\$270.00	Intercurrency Balancing
Pledge Payment for Bookable Pledges - Check	Credit	GG		220.00 EUR	\$330.00	Currency Exchange Gain

The gain of 220 EUR is credited to the account you configured for **Currency exchange gain** under **Realized Gains And Losses** on the Currency tab in *Administration*. The program debits 220 EUR from the Intercurrency Balancing account.

The actual payment amount in organization currency is 600 USD. To determine the expected pledge amount, the program multiplies 600 USD by the rate on the pledge (0.3) to calculate an expected base currency amount of 180 USD.

It then multiplies the expected base currency amount of 180 USD by 1.5 (organization rate on the pledge) to get 270 USD as the expected organization currency amount.

To determine the gain or loss, the program calculates the actual amount minus the expected amount.¹⁸ In this example, it subtracts the expected organization currency amount of 270 USD from the actual payment organization amount of 600 USD to get a gain of 330 USD.

The next step is to add a deposit and link the payment to the deposit. When you create the deposit, you find that there is a new corporate exchange rate of 0.5 for organization currency (a decrease from 1.5). The deposit uses this rate. The program takes the payment's base amount of 400 USD and multiplies it by the deposit's exchange rate of 0.5 to get 200 USD. This is the actual deposit amount in organization currency.

¹⁸ If the base and organization currencies both have a gain or both have a loss the distribution appears as a single line item in the **GL balancing distributions** grid. If there is a gain for one and a loss for the other, the distributions appear on separate lines.

GL Distributions

GL information

Account system: Spain account system

GL distribution Edit distribution

Mapping type	Transaction type	Account	Transaction amount	Base amount	Organization amount	Reference
Pledge Payment for Bookable Pledges - Check	Debit	SC	400.00 EUR	400.00 EUR	\$200.00	Mustermann-Pledge Payment for bookable pledges-Check
Pledge Payment for Bookable Pledges - Check	Credit	IB	400.00 EUR	400.00 EUR	\$600.00	Intercurrency Balancing

GL balancing distributions

Mapping type	Transaction type	Account	Transaction amount	Base amount	Organization amount	Reference
Pledge Payment for Bookable Pledges - Check	Credit	SC	\$600.00	180.00 EUR	\$270.00	Mustermann-Pledge Payment for bookable pledges-Check
Pledge Payment for Bookable Pledges - Check	Debit	IB		220.00 EUR	\$330.00	Intercurrency Balancing
Pledge Payment for Bookable Pledges - Check	Debit	IB	\$600.00	180.00 EUR	\$270.00	Intercurrency Balancing
Pledge Payment for Bookable Pledges - Check	Debit	LL			\$400.00	Currency Exchange Loss
Pledge Payment for Bookable Pledges - Check	Credit	GG		220.00 EUR	\$330.00	Currency Exchange Gain

While the actual deposit amount is 200 USD, you expected was 600 USD. You subtract 600 from 200 to get a loss of 400 USD.

GL Distributions

GL information

Account system: Spain account system

GL distribution Edit distribution

Mapping type	Transaction type	Account	Transaction amount	Base amount	Organization amount	Reference
Pledge Payment for Bookable Pledges - Check	Debit	SC	400.00 EUR	400.00 EUR	\$200.00	Mustermann-Pledge Payment for bookable pledges-Check
Pledge Payment for Bookable Pledges - Check	Credit	IB	400.00 EUR	400.00 EUR	\$600.00	Intercurrency Balancing

GL balancing distributions

Mapping type	Transaction type	Account	Transaction amount	Base amount	Organization amount	Reference
Pledge Payment for Bookable Pledges - Check	Credit	SC	\$600.00	180.00 EUR	\$270.00	Mustermann-Pledge Payment for bookable pledges-Check
Pledge Payment for Bookable Pledges - Check	Debit	IB		220.00 EUR	\$330.00	Intercurrency Balancing
Pledge Payment for Bookable Pledges - Check	Debit	IB	\$600.00	180.00 EUR	\$270.00	Intercurrency Balancing
Pledge Payment for Bookable Pledges - Check	Debit	LL			\$400.00	Currency Exchange Loss
Pledge Payment for Bookable Pledges - Check	Credit	GG		220.00 EUR	\$330.00	Currency Exchange Gain

In this scenario, the payment's transaction currency and base currency are the same (EUR). If these currencies are different, there is an additional exchange rate applied, which means that there could be another gain or loss distribution in the **GL balancing distributions** grid.

Appendix D – Multicurrency Functions and Markup

This appendix includes information about the functions and markup that determine multicurrency behavior and formatting.

Blackbaud.AppFx

Blackbaud.AppFx is available at the client and web server tiers.

CurrencyFormat Class

This class contains the formatting information needed to correctly display a currency to the user. Always specify currency information. When currency information is not specified for a method in this class, the application uses the current culture settings. Therefore, a user in the United States will see the format \$1,000.23, while a user in Spain will see the same amount formatted as 1.000,23 €.

Properties

`IsoCurrencyCode (String)`

`DecimalDigits (Integer)`

`CurrencySymbol (String)`

`FormatStyle (CurrencyFormatStyle)`

Indicates whether the symbol or ISO code should be used.

`RoundingType (CurrencyRoundingType)`

Indicates the algorithm to use when rounding. This value is usually used in SQL rather than in VB.NET code. All of the default currency data currently uses the `HalfRoundsAwayFromZero` algorithm.

Methods

`ParseValueToMoney(...), TryParseValueToMoney(...)`

Parses an amount string according to a given `CurrencyFormat` and the current culture.

`FormatMoney(...)`

Formats a decimal value with the currency symbol or ISO code according to the given `CurrencyFormat` and the current culture.

`FormatMoneyWithoutCurrency(...)`

Formats a decimal value with the currency group and decimal separators, but with no symbol and no ISO code according to the current culture. This routine is useful when the amount could represent a value in one of several currencies, for example, when specifying search form criteria.

`ToXml()`, `CreateFromXml(...)`

Serializes and deserializes the `CurrencyFormat` to and from an XML string. Use the `CreateFromXml()` routine to process the result of the `CurrencyGet` web method.

CurrencyMath Class

This class contains functions for rounding, converting, and aggregating currency amounts. These functions are the same as the SQL functions described below.

Methods

`ConvertCurrency(...)`

Converts a decimal amount from one currency to the decimal amount of another using the rate and information provided about the target currency. The amount is rounded to be a meaningful value in the target currency.

`ConvertCurrencyWithoutRounding(...)`

Similar to `ConvertCurrency` but this function does not round the converted amount. Use this function if you will be performing further calculations or aggregations with the amount.

`SumCurrencies(...)`

Sums together amounts from various currencies and returns the result in a target currency.

`RoundCurrency(...)`

Rounds a number according to information about its currency.

`GetConvertUpperLimit(...)`

Computes the maximum value that can be converted at the specified rate without exceeding the specified amount. Use this function when you need to present a value in a currency, such that when it is converted is equal to or just less than a specified value in another currency. For example, a pledge payment made in a different currency than the pledge must not exceed the pledge balance—this function can be used to compute the maximum amount that can be paid.

Browser

CurrencyHelper class

This class provides a facade for the `CurrencyFormat` and `CurrencyMath` classes. It takes GUID IDs from the `dbo.CURRENCY` and `dbo.CURRENCYEXCHANGERATE` tables as parameters so the caller does not need to look up those values. Currencies are cached for the life of the ClickOnce shell session; if a currency's properties are changed, the ClickOnce shell must be restarted. Currency exchange rate information is not cached, so there may be situations where it is more appropriate to load the currency exchange rate data once and use `CurrencyMath` routines instead of these routines.

Methods

FormatMoney(. . .)

Looks up information about a currency by ID and uses the logic of the routines defined in CurrencyFormat.

GetCurrency(. . .)

Looks up a CurrencyFormat by currency ID.

ConvertCurrency(. . .) , RoundCurrency(. . .)

Looks up information about a currency or exchange rate by ID and uses the logic of the routines defined in CurrencyMath.

SERVER

Web Methods

The AppFxWebService.asmx endpoint provides several methods for getting currency information from the database. In addition, there are condition setting methods that are often used where currencies are used.

Methods

CurrencyGet

Looks up information about a currency by ID or by ISO code. Use the CurrencyFormat.CreateFromXml() routine to deserialize the CurrencyXml property in the reply.

CurrencyExchangeRateGet

Looks up information about an exchange rate by ID.

CurrencyExchangeRateGetLatest

Looks up information about the latest exchange rate between two currencies with an "as of" date on or before the specified criteria.

ConditionSettingExists

Returns a Boolean indicating whether a condition setting exists. The condition setting is looked up by its name. For multicurrency, this name is "Multicurrency". Keep in mind that the multicurrency condition setting should be checked instead of the multicurrency product flag in order to determine if the system is configured to use multiple currencies.

CurrencyHelper Class

This class provides a facade for the CurrencyFormat and CurrencyMath classes. It takes GUID IDs from the dbo.CURRENCY and dbo.CURRENCYEXCHANGERATE tables as parameters so the caller does not need to look up those values. Currencies are cached, but the cache is kept up to date when currency properties are changed.

Methods

`FormatMoney(...)`

Looks up information about a currency by ID and uses the logic of the routines defined in `CurrencyFormat`.

`GetCurrency(...)`

Looks up a `CurrencyFormat` by currency ID.

`GetOrganizationCurrencyId(...)`

Looks up the ID of the organization currency.

`ConvertCurrency(...), RoundCurrency(...)`

Looks up information about a currency or exchange rate by ID and uses the logic of the routines defined in `CurrencyMath`.

ConditionSettingsHelper Class

Avoid using this class. Instead use the `ConditionSettingExists` web method.

UIModel

MoneyField and NullableMoneyField Classes

Instances of these classes can be generated for money form fields.

Properties

`CurrencyFieldId`

The field ID of another field in the model that will contain an ID from the `dbo.CURRENCY` table. The value of this money field will be formatted according to that currency. The currency field must be in the same model (i.e. it cannot be in a parent model). If the value of the currency field changes or if the value of the `CurrencyFieldId` property changes, the money field will automatically be reformatted.

`CurrencyId`

The value of the field referenced by `CurrencyFieldId`. This property is read-only.

`DoNotApplyFormat`

When set to true, the currency symbol and currency ISO code are not included in the formatted value. The default is False, which includes the currency in the formatted value. The group and decimal separators are always included in the formatted value. Used by search lists when the value could be used to filter records using varying currencies.

Methods

`FormatValue()`

Formats the field's value as string. When `DoNotApplyFormat` is true the value is formatted without a currency symbol and without an ISO code.

`FormatValueWithCurrency()`

Formats the field's value as a string and always uses the currency for formatting.

SQL

There are no routines to format currency in SQL using the algorithm from `Blackbaud.AppFx.CurrencyFormat`. Since this algorithm depends on knowing the current culture from the user's machine, it can only be executed closer to the display tiers of the application. The `UFN_FORMAT_CURRENCY` and `UFN_FORMAT_CURRENCY_ISO` functions are for special purpose applications and should not be used.

Frequently Used Functions and Procedures

`UFN_CURRENCY_GETORGANIZATIONCURRENCY`

Gets the ID of the organization currency.

`USP_CURRENCY_GETCURRENCYVALUES`

Converts a transaction or base amount to base and organization currency. Can simultaneously look up organization exchange rates. Use this function to convert amounts to be stored on a record.

`UFN_CURRENCY_CONVERTBYPROPORTION`

The `BYPROPORTION` functions and procedures are used when the converted amounts of a child record must add up to the converted amount of a parent record. If each child record amount was converted independently of the others, rounding can result in converted amounts that do not add up to the converted total. Adding up to the converted total is especially important for ledger distributions, but is probably desired for most parent-child relationships.

This function is well suited for situations where a cursor is already being used to loop over amounts; if all of the amounts are in a collection XML variable, use

`UFN_CURRENCY_GETCURRENCYVALUESBYPROPORTIONINXML`.

When using this function, keep track of the sum of unconverted amounts from all previous calls and the sum of converted amounts from all previous calls. Call this function with the unconverted amount of the current record plus the pass in the sum of all unconverted amounts from previous calls. Starting with the result of this function, subtract the sum of all converted amounts from previous calls to obtain the proportionally converted amount for the record currently being processed.

UFN_CURRENCY_GETCURRENCYVALUESBYPROPORTIONINXML

See the note on UFN_CURRENCY_CONVERTBYPROPORTION for an introduction to BYPROPORTION functions.

This function is well suited for situations where several amounts are in a collection field represented by XML.

When using this function, the XML you pass in must contain a single root element with child elements called ITEM. Each ITEM element must contain an AMOUNT element with transaction amount or base amount. The ITEM elements may contain other child elements, which will be returned by the function unchanged. If the XML you are processing does not meet these requirements, create a new XML variable by selecting from your existing XML variable with the FOR XML clause. The output of this table-valued function has a row for each ITEM in the XML. Each output row contains the ROW number, which is in document order of the passed-in XML and starts at 1; the unmodified ITEM XML element; the computed base amount; and the computed organization amount. You can use these values directly or you can select them into the original XML variable using the SQL XML VALUE() method to extract values from the ITEM column.

UFN_CURRENCYEXCHANGERATE_GETLATEST

Looks up the ID of the currency exchange rate that converts between the two specified currencies and is the latest as of the specified date.

If no date is specified, the current date is used. If a date is specified with a blank time component (i.e. 12:00:00 AM) it is changed to be the latest possible time on the same day—that is, passing in a date with no time will select any rate from that date instead of only rates from the previous day. If a date is specified it is assumed to be in the system default time zone. This function only considers exchange rates that are not expired.

The TYPECODE parameter should be specified as 1 to get corporate or daily rates for converting most amounts. When converting amounts to organization currency for storage on a record use the UFN_CURRENCYEXCHANGERATE_GETLATESTORGANIZATIONRATE function.

UFN_CURRENCYEXCHANGERATE_GETLATESTORGANIZATIONRATE

Looks up the ID of the currency exchange rate that converts from the specified base or transaction currency to the organization currency and is the latest as of the specified date. The organization amount origin code is used to determine whether the base or transaction currency should be used when looking up rates. If no transaction currency applies to the record where this rate will be used, pass in null for the TRANSACTIONFROMCURRENCYID parameter.

The ASOFDATE parameter is processed in the same way for this function as it is for UFN_CURRENCYEXCHANGERATE_GETLATEST.

This function only considers corporate rates.

UFN_CURRENCYEXCHANGERATE_GETLATESTINCLUDEEXPIRED and
UFN_CURRENCYEXCHANGERATE_GETLATESTORGANIZATIONRATEINCLUDEEXPIRED

These functions consider expired exchange rates, but otherwise operate in the same way as their counterparts above. Use these functions for reporting.

UFN_CURRENCYEXCHANGERATE_GETLATESTBASETOORGANIZATIONRATE

Looks up the ID of the currency exchange rate that converts from the specified base currency to the organization currency and is the latest as of the specified date. If the organization amount origin code indicates organization amounts are converted from base amounts, then the value of the ORGANIZATIONEXCHANGERATEID parameter will be returned.

This function only considers corporate rates.

UFN_CURRENCY_CONVERT

Converts an amount given an exchange rate ID. Consider using USP_CURRENCY_GETCURRENCYVALUES if you are converting to base and organization amounts. Consider using UFN_CURRENCY_CONVERTTOORGANIZATIONCURRENCY if you are only converting to organization currency.

UFN_CURRENCY_CONVERTTOORGANIZATIONCURRENCY

Converts a base or transaction amount to organization currency according to the organization amount origin setting. Consider using USP_CURRENCY_GETCURRENCYVALUES if you are converting to base and organization amounts.

Application User Functions and Procedures

UFN_APPUSER_GETBASECURRENCY

Gets the base currency that should be used for records added by this application user. This base currency will either come from the app user's currency set or from the default app user currency set if no currency set is defined for this app user.

For some record types, the currencies that are used are not based on the application user adding the record. This function is not used for those records.

UFN_CURRENCYSET_GETAPPUSERCURRENCYSET

Gets the application user's currency set or the default application user currency set if no currency set is defined for the application user.

Functions and Procedures for Specific Record Types

UFN_<EntityTable>_GET<EntityColumn>INCURRENCY and
UFN_<EntityTable>_GET<EntityColumn>INCURRENCY_BULK

These functions are scalar functions that convert a value to another currency.

If the target currency is the same as the base currency or organization currency of the record, the precomputed value is used. If the target currency is any other currency, including the transaction currency, then the organization amount is converted to the target currency. The date that was used to look up the base and organization exchange rates is used to look up this exchange rate. All daily and corporate rates are considered, even expired rates. If no rate is found, a rate from the target currency to the organization currency is looked up and its inverse is used.

Since this is a scalar, calling it for a large number of records can take a long time to execute. When processing many records, consider using a `UFN_<EntityTable>_GET<EntityColumn>INCURRENCY_BULK` instead.

`UFN_<EntityTable>_CONVERTAMOUNTSINXML`

These functions generally take an XML parameter containing a collection of items with transaction amounts specified by the user. The function uses `UFN_CURRENCY_GETCURRENCYVALUESBYPROPORTIONINXML` to return a new XML instance with transaction amount, base amount, and organization amount values.

Infrequently Used Functions

`UFN_CURRENCY_GETCURRENCYFROMISO`

Looks up the currency ID based on a three-letter currency code from the ISO 4217 standard.

`UFN_CURRENCY_APPLYRATE`

Multiplies an amount by a rate. Used by other currency functions.

`UFN_CURRENCY_CONVERTINVERSE`

Converts an amount using the multiplicative inverse of the rate. Used by other currency functions.

`UFN_CURRENCY_GETEXPIRATIONDATE`

Computes an expiration date based on an “as of” date and a type code. Used by other currency functions.

`UFN_CURRENCY_ROUND`

Rounds an amount based on a currency's rounding rules. Used by other currency functions.

`UFN_CURRENCYEXCHANGERATE_GETRATE`

Looks up the decimal rate of a currency exchange rate. Used by other currency functions.

`UFN_CURRENCYSET_GETAPPUSERDEFAULTCURRENCYSET`

Looks up the ID of the currency set that is default for users that do not have a currency set specified on their application user record.

`UFN_CURRENCYSET_BASEANDTRANSACTIONCURRENCYCOMBOISVALID`

When adding a record that has a base currency and a transaction currency there may be situations where the transaction currency is not in any currency set with the selected base currency. These situations should be avoided and this function can be used to check for invalid combinations of IDs.

Be careful to not restrict editing records that have an invalid combination of currencies. Since currency sets are editable a record may be valid when it is added and invalid when it is edited.

UFN_CURRENCY_GETCURRENCYVALUESBYPROPORTION

Can be used instead of UFN_CURRENCY_CONVERTBYPROPORTION when converting to base amount and organization amount.

USP_CURRENCY_GETCURRENCYVALUESBYPROPORTION

Consider using UFN_CURRENCY_GETCURRENCYVALUESBYPROPORTION instead.

Specs

CurrencyField Element

Add a CurrencyField element to form fields and output fields to format them according to a given currency. It is not necessary to add the element to fields that display an amount in the organization currency.

Example:

```
<FormField FieldID="GOAL" DataType="Money" Caption="Goal" ... >
  <CurrencyField CurrencyFieldID="BASECURRENCYID" />
</FormField>

...

<FormField FieldID="BASECURRENCYID" DataType="Guid" ...>
```

Condition Settings

Multicurrency features can be conditionally hidden or shown using condition settings. Similar to product flags, condition settings may control the visibility of form fields, output fields, and page actions. Unlike product flags, condition settings may be turned on or off regardless of which optional modules are licensed for the installation—a condition setting may only be valid for certain products, but there is no technical limitation on which condition settings can be used in any given installation.

Condition setting information is stored in the dbo.CONDITIONSETTING table. Condition settings are identified by a name (also called a key). A condition setting name should be Pascal-cased; the first letter in the identifier and the first letter of each subsequent concatenated word are capitalized.

Spec Expressions

```
FormatMoney(ByVal amount as Decimal, ByVal currencyID as String) As String
```

Used to format money in an attribute that supports an expression. For example, page headers and action captions support using this property provider routine.

Appendix E – Entity Relationship Diagrams

The following diagrams explain the relationships among revenue and opportunities and the currency tables in Multicurrency.

[Opportunity Revenue I](#)

[Opportunity Revenue II](#)