Infor FMS Infinium

Currency Management

Guide to Setup and Processing

INFINIUM SOFTWARE

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About This Guide

This section includes the following information:

- Intended audience
- Purpose of this guide
- Organization of this guide
- Conventions used in this guide
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Intended audience

This guide is written for users of Infinium Currency Management who are responsible for creating and maintaining the Infinium Currency Management controls.

Purpose of this guide

The purpose of this guide is to provide you with an in-depth explanation of how to use the Infinium Currency Management system to complete specific multi-currency processing tasks.

Organization of this guide

This guide is task oriented. We have grouped related tasks into chapters. Each chapter contains overview information and step-by-step instructions to lead you through the tasks.

Conventions used in this guide

This section describes the following conventions we use in this guide:

- Fonts and wording
- Function keys
- Promptable fields
- Prompt and selection screens
- Infinium applications and abbreviations

Fonts and wording

Convention	Description	Example
Italic typeface	Menu options and field names The guide uses the same abbreviations as the screen.	*Work with currency controls* Use the *Max Lnth* field to specify the maximum length of alpha user fields.
Bold	Used for notes, cautions and warnings Messages that are displayed Characters that you type or values you specify	**Caution:** You must ensure that all Infinium Currency Management users are signed off before you reorganize and purge. If there are jobs in the queue, those files will not be reorganized. Type **A** to indicate that the position is alphanumeric and type **N** to indicate that the position is numeric. Log on as **CM000**. Specify either **0** or **2** in the *Implied decimal precision* field.
F2 through F24	Keyboard function keys used to perform a variety of commands.	Press F2 to display a list of available function keys.

Convention	Description	Example
F13 through F24	Function keys higher than F12 require you to hold down the Shift key and press the key that has the number you require minus 12.	Press F19 to work with project and activity comments.
Select	Choose a record or field value after prompting.	Select **1** (direct) or **2** (indirect) as the *Exchange rate quotation method* value.
Press Enter	Provide information on a screen and when you have finished, press Enter to continue.	Press Enter to save your changes and continue.
Exit	Exit a screen or function, usually to return to a prior selection list or menu. May require exiting multiple screens in sequence.	Press F3 to return to the main menu.
Cancel	Cancel the work at the current screen (page) or dialog box, usually to return to the prior screen.	Press F12 to cancel your entries.
Help	To access online help for the current context (menu option, screen or field), press Help (or the function key mapped for help). To move through the other applicable levels of help, press Enter at each help screen. To return directly to the screen from which you accessed help, exit the help screen by clicking Exit or by pressing F3.	Press Help for more information about the current field.

Convention	Description	Example
[Quick Access Code]	Quick access codes provide direct access to functions. Most quick access codes in Infinium CM consist of the first letter of each word of the menu option name. Quick access codes are listed on the menu tree and in the path for each task next to the executable function.	*Work with currency controls* [WWCC]
Publication and course titles	Unless otherwise stated, titles refer to Infinium applications and use standard name abbreviations.	*Infinium Currency Management Guide to Setup and Processing* is referred to as *Infinium CM Guide to Setup and Processing.*

Function keys

The table below describes the Infinium AM function keys and universal Infinium CM function keys for the System i. All Infinium CM function keys are identified at the bottom of each screen.

Function Key	Name	Description
F1	Help	Displays help text
F2	Function keys	Displays window of valid function keys
F3	Exit	Returns you to the main menu
F4	Prompt	Displays a list of values from which you can select a valid entry
F10	Quick Access	Enables you to access another function from any screen Type the quick access code in *Level*. You can change the application designator, such as PA, GL, IC and so forth, by selecting another application.
F12	Cancel	Returns you to the previous screen

Function Key	Name	Description
F24	More keys	Displays additional function keys at the bottom of the screen

Promptable fields

A plus sign displayed next to a field indicates that you can choose your entry from a list of possible values. Place the cursor in the field and press F4 to display a list of values.

To select an entry perform one of the following:

- Position the cursor at the desired value, type **1** and press Enter.
- Type the value in the appropriate field.

Prompt and selection screens

A prompt screen, similar to Figure 1, is the screen in which you type information to access a record or a subset of records in a file.

A selection screen, similar to Figure 2, is the screen from which you select a record or records to perform an action.

When we first explain a task in this guide, we fully document how you access a prompt and selection screen. If a related task uses that prompt or selection screen, we include the prompt and selection steps in that task. However, we do not include the screen(s) again.

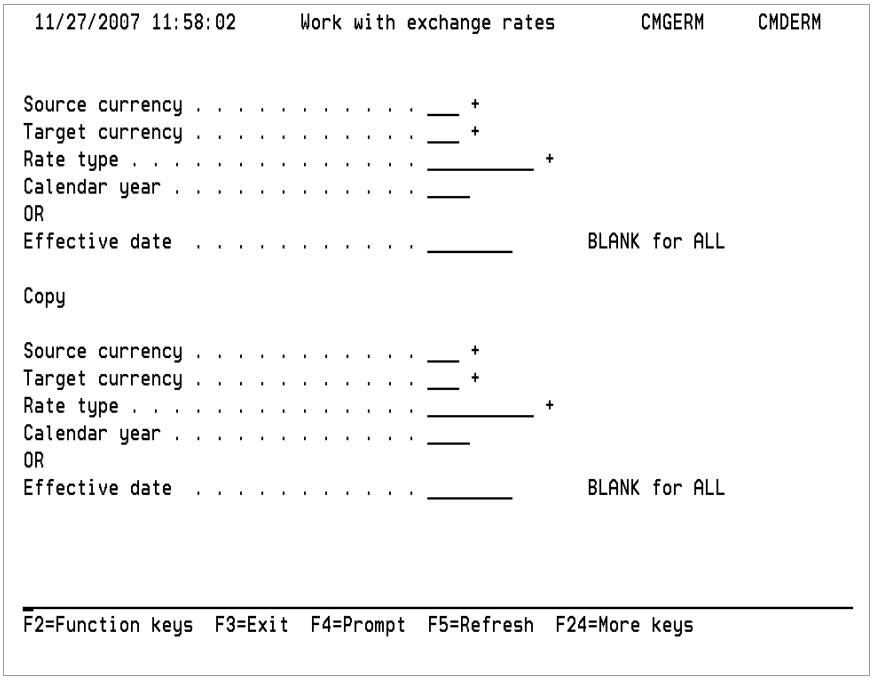

Figure 1: Prompt screen

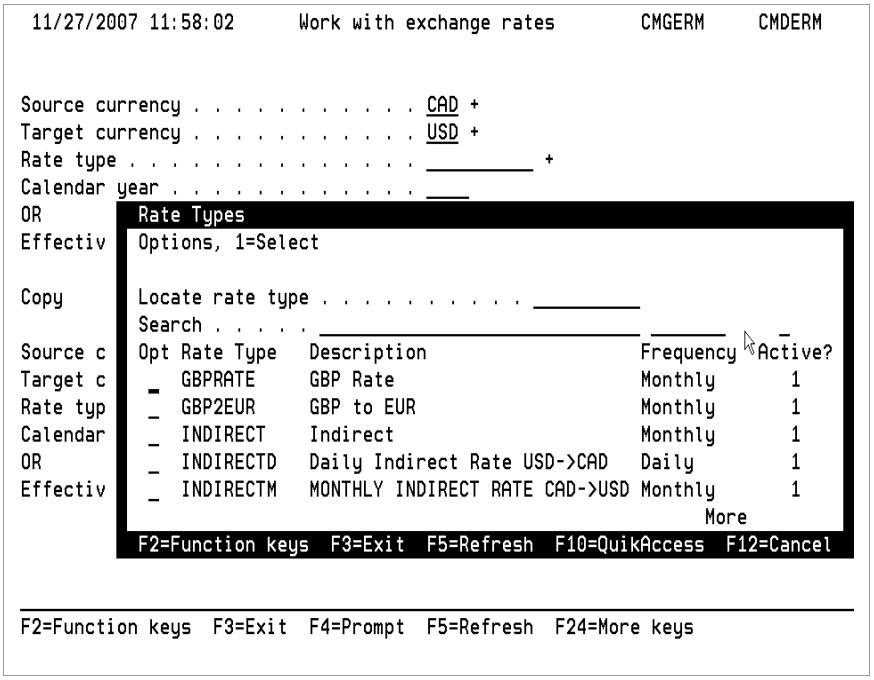

Figure 2: Selection screen

Infinium applications and abbreviations

The table below lists Infinium names and the corresponding product abbreviations that are associated with this product.

Application	Abbreviation
Infinium Application Manager Infinium Application Manager Extended	Infinium AM Infinium AM/X
Infinium Financial Management Suite	**Infinium FM**
Infinium Accounts Receivable	Infinium AR
Infinium Cash Book	Infinium CB
Infinium Financial Products	Infinium FP
Infinium Fixed Assets	Infinium FA
Infinium General Ledger	Infinium GL
Infinium Global Taxation	Infinium GT
Infinium Income Reporting	Infinium IR
Infinium Payables Ledger	Infinium PL
Infinium Project Accounting	Infinium PA
Infinium Purchasing/Payables Exchange	Infinium PX
Infinium ReportWriter	Infinium RW
Infinium Materials Management Suite	**Infinium MM**
Infinium Cross Applications	Infinium CA
Infinium Electronic Exchange	Infinium EX
Infinium Inventory Control	Infinium IC
Infinium Journal Processor	Infinium JP
Infinium Order Processing	Infinium OP
Infinium Purchase Management	Infinium PM

Related documentation

For additional information about Infinium CM, refer to the following:

- *Infinium GL Guide to Currency Processing*
- *Infinium CM Program Reference Guide*
- *Infinium CM File/Field Descriptions*
- *Infinium CM Database Relations*

- *Infinium FM Converting to Euro Base Currency*
- *Infinium CA Guide to System Controls and Materials Maintenance*
- Online help
- The currency processing parts of guides for other Infinium applications that interface with Infinium CM

Chapter 1 Infinium CM: An Overview

1

This chapter defines Infinium CM and provides an overview of the Infinium CM menus as well as definitions of key terms and concepts.

The chapter consists of the following topics:

Product Information

Infinium CM is the central Infinium repository for currency and exchange rate data.

All other Infinium FM and Infinium MM applications that process currency-related information can access Infinium CM to request exchange rate information and amount conversion as needed. The diagram below illustrates this two-way flow of information.

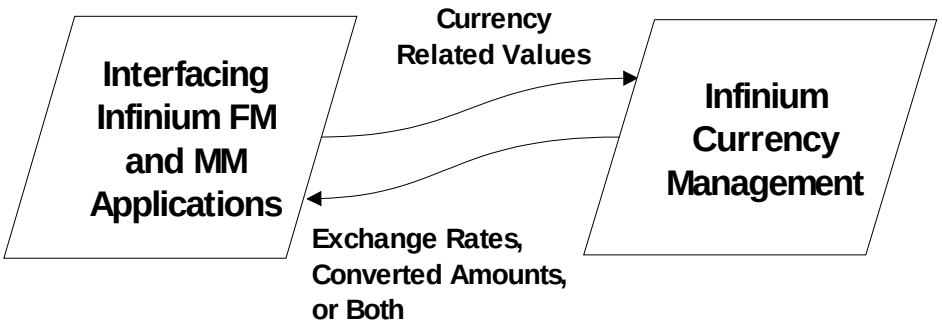

Figure 1-1: Data Communications with Interfacing Systems

When an application requires an exchange rate and a converted amount, the application passes currency related values to Infinium CM.

Infinium CM returns an exchange rate, the converted amount, or both to the application, depending upon which application made the request and the type of amount conversion.

Application Overview

The diagram below provides an overview of Infinium CM.

Infinium CM Task and Data Flow

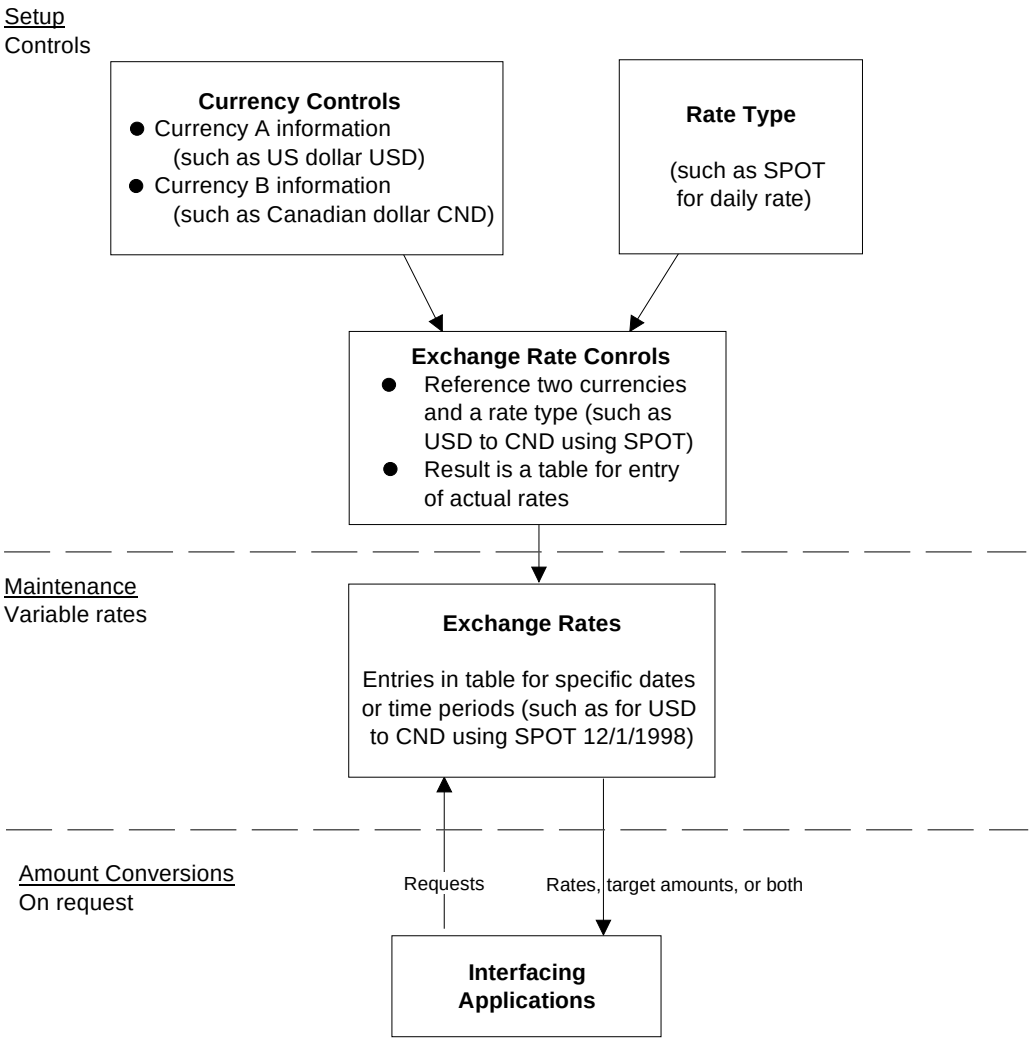

Figure 1-2 Infinium Task and Data Flow diagram

Infinium CM Menus and Functions

Infinium CM provides the following menus and functions for the completion of the tasks summarized in Figure 1-2.

The Control File Functions Menu

The *Control File Functions* menu provides access to the following submenus and functions.

Submenu	Functions and Use
Currency Controls	Provides access to the Work with currency controls, Display currency controls, and Print currency controls functions. Use this menu to define each currency, assigning the currency a code and description, and providing basic information about the currency.
Rate Types	Provides access to the Work with rate types, Display rate types, and Print rate types functions. Use this menu to define each rate type including the frequency with which rates are to be updated when this rate type is used. Example: Define rate type SPOT with a frequency of daily.
Exchange Rate Controls	Provides access to the Work with exchange rate controls, Display exchange rate controls, and Print exchange rate controls functions. Use this menu to define each unique combination of two currencies and a rate type. Defining this combination creates a rate type table for later maintenance of the actual exchange rates. Example: Exchange rate controls for US dollars and Canadian dollars with the SPOT (daily) rate type.
Exchange Rates	Provides access to the Work with exchange rates, Display exchange rates, and Print exchange rates functions. Use this menu to maintain the actual exchange rates for specified dates or time periods.

The *Control File Functions* menu also provides the following:

- A *Currency Groups* menu for grouping currencies. Grouping currencies allows supervisors to restrict users of other applications, such as Infinium PL, to working only with the currencies that are in a specified group.
- The *Work with entity controls* function

This function allows authorized personnel to define date format and rounding controls when you first install the Infinium CM system.

The *CM Supervisor Functions* Menu

The *CM Supervisor Functions* menu provides access to three functions.

Caution: The *CM Supervisor Functions* menu options are to be used only by authorized personnel responsible for basic system setup and maintenance.

- The *Clear all application files* function allows the person who sets up your system to clear all old test and training data out of the database before moving the system into production for use with live data.

WARNING! The *Clear all application files* function must never be used after the system has been migrated to production use on actual live data. Use of this function deletes all your control and exchange rate data.

- The *Purge exchange rates* function allows the supervisor to delete outdated and no longer needed exchange rate data from the system.

  This function is for periodic system maintenance.

- The *Reorganize application files* function allows the supervisor to recover disk space after data has been deleted in order to improve the efficiency of processing.

  Special rules apply to the use of this function as described later in this guide.

The *Initial Set Up* Menu

The *Initial Set Up* menu provides direct shortcut access, in the appropriate sequence, to five functions that are required for initial setup of the Infinium CM system.

Infinium Software provides this menu for efficient system setup by authorized personnel. The menu includes the following functions:

- *Clear all application files*
- *Create entity controls*
- *Create currency controls*

- *Create rate types*
- *Create exchange rate controls*

Terminology and Concepts

Entity Controls

Entity refers to the entire system.

Infinium CM entity controls are controls, such as the date format, that you set to be used throughout the Infinium CM system.

Currencies and Their Control Information

Source Currency
The original currency in which the amount is expressed before you perform a conversion.

This is the currency from which you convert an amount to the target currency.

Target Currency
The new currency in which the amount is expressed after you perform a conversion.

This is currency to which you convert a source currency amount.

Currency Control Code
User-defined code that represents a particular currency, such as **USD** for US dollars or **FRF** for French francs.

You can use any three-character code that is meaningful to you and other users to identify a currency.

Decimal Point Precision
The number of decimal places used with amounts in a particular currency.

You define the appropriate number of decimal positions in the Infinium CM currency control record for the currency.

Different currencies have different decimal precision values for their amounts; for example, amounts in US dollars have two decimal positions.

Exchange Rates and Their Control Information

Exchange Rate
A specific rate to be used for converting an amount from a source currency to a target currency.

You define exchange rates for specific dates.

Exchange Rate Controls
Exchange rate controls define the source-target relationship between two currencies. You identify the currencies by their Infinium CM codes.

Exchange rate controls link currency codes with rate types to allow multiple types of rates to be set up for a single source currency/target currency relationship.

Direct Exchange Rate
Exchange rate to be used for the direct method of converting an amount from the source currency to the target currency.

Using the direct method means multiplying the source currency amount by the exchange rate to calculate the target currency amount.

Indirect Exchange Rate
Exchange rate to be used for the indirect method of converting an amount from the source currency to the target currency.

Using the indirect method means dividing the source currency amount by the exchange rate to calculate the target currency amount.

Rate Type
A particular kind of exchange rate, such as spot, historic, or average.

You define Infinium CM codes to identify the types of rates you use.

Chapter 2 Setting Up Infinium CM Entity Controls

2

This chapter describes the setup and maintenance of the basic Infinium CM entity controls.

Entity controls are controls that apply throughout the system.

The chapter consists of the following topics:

Overview of Setting Up the Entity Controls

Setting up Infinium CM entity controls involves using the *Work with entity controls* function to define basic entity level data. The entity level values apply throughout all the Infinium CM functions.

The base data entity controls include:

- Definition of date formats
- A choice of rounding or truncation of amounts that result from currency conversions

Base data entity controls are typically to be defined when you first install and set up Infinium CM.

WARNING! The date format must match the data format that you use in all your interfacing applications. Once you have defined the date format during system setup and have begun entering data, you cannot change the date format.

Setting Up and Maintaining Entity Controls

Perform the following steps to set up and maintain the Infinium CM entity controls:

1 From the Infinium CM main menu, select *Control File Functions*.

2 Select *Work with entity controls*.

3 Type **5** in the *Option* field next to Base Data and then press Enter to continue to the Base Data screen.

The Base Data screen identifies when these controls were originally defined and by whom, as well as when these controls were most recently updated and by whom.

4 Use the information below to complete the control data.

Date format

Type one of the following to define the order in which the date elements month, day, and year, are to be displayed throughout the system's screens and are to be printed on reports:

- **1** for month + day + year as in 12/31/2007
- **2** for day + month + year as in 31/12/07
- **3** for year + month + day as in 2007/12/31

Edited format

Use this field to specify whether the system is to display the month as a number such as **12** or as a spelled out word such as **December**.

Edited date separator

Specify the separator that is to be used between date elements when the system displays a date in the edited format.

Example: */*

Round or truncate?

Use this field to specify whether the system is to round or truncate an amount that results from the conversion of a source currency amount to a target currency amount.

For example, if an amount is converted to 895.258 US dollars, rounding results in $895.26 and truncation results in $895.25.

- Type **1** to specify rounding of the target currency amount.
- Type **2** to specify truncating the target currency amount.

5 Press Enter to save the values and to return to the main menu.

Note: Alternatively, you can press F3 to exit without saving the values you typed.

Chapter 3 Setting Up Currency, Rate Type, and Rate Controls

3

This chapter describes how to set up the currency, rate type, and exchange rate controls that are required before you can specify actual exchange rates.

The chapter consists of the following topics:

Defining the Currencies

Overview of Defining the Currencies

You must define a three-character code for each currency that you use; for example, you can define **USD** as the currency code for United States dollars and **DEM** as the currency code for German deutschemarks.

Setting Up and Maintaining the Currency Controls

Perform this procedure to define currency codes by creating or maintaining currency controls.

1. From the main menu, select *Control File Functions*.
2. Select *Currency Controls*.
3. Select *Work with currency controls*.
4. Type a new or existing three-character currency code such as **USD** in the *Currency control* field.
5. Press Enter to display the second screen.

   This second screen automatically identifies when the control record was created and by whom as well as when the control record was last updated and by whom.
6. Use the information below to define or modify the controls for this currency.

   Description

   Type a short description for this currency such as **US Dollar**.

   Implied decimal precision

   The number of decimal positions to be used for amounts in this currency, such as **2** for the US dollar.

This is the number of decimal positions in which this currency is typically traded. Valid values are **0**, **1**, **2**, or **3**.

Note: Since the interfacing applications currently support a choice of no decimal positions or two decimal positions, we recommend that you specify either **0** or **2** in this field.

Exchange rate quotation method

You can use this field to specify a default quotation method for exchange rate controls. The system takes the exchange rate controls default from the controls for the target currency.

The quotation method in the exchange rate controls indicates whether the system is to multiply a source currency amount by the exchange rate or divide the source currency amount by the exchange rate.

- Type **1** (direct) if the system is to multiply the source amount by the exchange rate:

  (Source Amount) x (Exchange Rate) = Target Amount

- Type **2** (indirect) if the system is to divide the source amount by the exchange rate:

  (Source Amount) / (Exchange Rate) = Target Amount

Triangulation currency control

Triangulation refers to a two step conversion between currencies, using two exchange rates.

For example, during the transitional period from national local currencies (NLCs) to the euro among nations participating in the European Economic and Monetary Union (EMU), you can implement use of the euro. When you use the euro, conversions to and from NLCs are required to do the following:

- Convert the source currency amount to the euro amount using the exchange rate between the source currency and the euro.
- Convert the resulting euro amount to the target currency amount using the exchange rate between the euro and the target currency.

The triangulation currency is the intermediate currency in this process, such as the euro. If the currency for which you are defining controls requires triangulation, type the code for the triangulation currency in this field.

For example, in the controls for the French franc, which is an NLC within the EMU, you can type your code for euro, such as **EUR**.

Infinium CM checks the controls for both the source and the target currency during conversion of amounts between currencies. If the controls for either currency specify triangulation, the system uses triangulation for the conversion, using the intermediate currency that you specify in this field.

For example, the system uses euro triangulation if you have exchange rate controls that specify either of the following:

- Conversion between French francs and deutschemarks, and the currency controls for both specify euro triangulation.

  In this case, the system finds and uses the exchange rate controls for the French franc/euro currency pair and the exchange rate controls for the deutschemark/euro currency pair.

  For both of these pairs, the system uses the exchange rate controls that specify the exchange rate type identified by the request from the interfacing application.

- Conversion between French francs and US dollars, and the currency controls for the French francs specify euro triangulation

  In this case, the system finds and uses the exchange rate controls for the French franc/euro currency pair and the euro/US dollar currency pair.

  For both of these pairs, the system uses the exchange rate controls that specify the exchange rate type identified by the request from the interfacing application.

  The system performs triangulation only for participating countries (refer to the Working with EMU Currencies chapter, in this guide for the list of participating countries).

Triangulation effective date

If you specified a triangulation currency in the preceding field, type the date as of which triangulation applies for this currency.

For example, if these controls are for an NLC within the EMU such as the French franc and you are using the euro currency, triangulation between NLCs can apply as early as January 1, 1999.

If the *Triangulation currency control* field for this currency control record is blank, the system ensures that the *Triangulation effective date* field is also blank. If the *Triangulation currency control* field for this currency control record has a value, the system verifies that the *Triangulation effective date* value is valid.

Note: For more information about triangulation refer to Chapter 6, “Working with EMU Currencies” in this guide and to Appendix A, "Multi-Currency Processing Business Examples" and to Appendix B, "Application Interface Processes" in this guide. Triangulation for EMU purposes no longer applies after June 30, 2002, when the NLCs are to be fully replaced by the Euro.

Active?

Type **1** (yes) to specify that the controls for this currency are active. Type **0** (no) to inactivate this currency.

7 Press Enter to continue to the third screen.

8 Use this third screen to specify optional information about this currency.

9 Press Enter to save any changes and to return to the first currency control screen or press F3 to exit this function without saving your changes.

If you return to the first currency control screen, press F3 to exit to the main menu.

Displaying Currency Control Information

Perform the following procedure to display currency control information:

1 From the main menu, select *Control File Functions*.

2 Select *Currency Controls*.

3 Select *Display currency controls*.

4 The system displays a selection list of currency controls.

5 Type **5** in the *Option* field to select a currency control record.

Note: You can use the *Locate Currency* and *Search* fields to find a specific currency control record and to position that currency control record at the top of the selection list.

6 Press Enter to display summary information for the selected currency control. You cannot edit the information.

7 Press F3 to return to the main menu.

Printing Currency Control Information

Perform the following steps to print currency control information:

1 From the main menu, select *Control File Functions.*

2 Select *Currency Controls*.

3 Select *Print currency controls*.

The system displays a report parameter selection screen.

4 To print information about all the currency controls defined in Infinium CM, leave all the fields blank.

To print only selected information, type values in one or more of the fields below.

Field	Value
Currency control	The name of a specific currency control
Active	**1** - Include only active currency controls
Used	**1** - Include only currency controls that are specified in exchange rate controls

5 Press Enter to submit the report to a batch job and to return to the main menu.

Defining the Rate Types

Overview of Defining the Rate Types

Rate types identify the frequency with which you update related exchange rates. For example, you can define a rate type SPOT as your daily rate type. This means that you update the SPOT exchange rate each day. You can define other rate types for weekly and monthly exchange rate updates.

Use the *Work with rate types* function to define rate types.

Setting Up and Modifying the Rate Type Controls

Perform the following steps to define rate types:

1. From the Infinium CM main menu, select *Control File Functions.*
2. Select *Rate Types*.
3. Select *Work with rate types*.
4. To define a new rate type, type a new rate type code of up to 10 characters in the *Rate type* field.

   To work with an existing rate type, type the rate type's code in the *Rate type* field.
5. Press Enter to continue to the second screen.
6. Use the following information to complete the fields on this screen.

   Description

   A short phrase describing this rate type.

   Frequency

   - Type **1** for Daily
   - Type **2** for Weekly

- Type **3** for Monthly

Active?

- Type **1** to specify that this rate type is active.
- Type **2** to specify that this rate type is inactive.

7 Press Enter to save the values you specified and to return to the main menu.

Alternatively, you can press F3 to exit without saving.

Displaying Rate Type Information

The *Display rate types* function allows you to view, but not edit, summary information about your rate types.

Perform the following steps to view a summary of your rate type information:

1 From the Infinium CM main menu, select *Control File Functions.*

2 Select *Rate Types*.

3 Select *Display rate types*.

4 Type **5** in the *Option* field next to the desired rate type and press Enter to display summary information for the selected rate type.

Note: If you do not see the desired rate type in the displayed list, you can use the *Locate rate type* and *Search* fields to shift the display so that the desired rate type is at the top of the list.

5 When done viewing the rate type information, press F3 to return to the main menu.

Printing Rate Type Information

Use the *Print rate types* function to generate a listing of your currently defined rate types.

You can generate a report that includes information about either of the following:

- All rate types

- A specified subset of rate types, such as all rate types of a specific frequency

Perform the following steps to print a listing of rate type information:

1 From the Infinium CM main menu, select *Control File Functions*.

2 Select *Rate Types*.

3 Select *Print rate types*.

4 Use the information below to select the report's contents.

Rate type

Specify the rate type for which you want to create the report, or leave this field blank if the report is to include multiple rate types.

Frequency

Specify a frequency to limit the report to rate types having that frequency, or leave this field blank to include rate types regardless of their frequency.

Active

Type **1** to include only active rate types, type **0** to include only inactive rate types, or leave this field blank to include rate types regardless of their active status.

Used

Type **1** to include only rate types that are currently used in one or more Infinium CM exchange rate controls, type **0** to include only rate types that are not used in any exchange rate controls, or leave this field blank to include rate types regardless of whether they are currently in use.

5 Press Enter to submit the report to a batch process and to return to the main menu.

Setting Up the Exchange Rate Controls

Overview of Setting Up the Exchange Rate Controls

Once you have defined the currencies and rate types, you can use the *Exchange rate controls* function to define a link between a source currency, a target currency, and a rate type.

Linking these three components together creates a specific exchange rate table, such as the table for converting US dollars (currency USD) to Canadian dollars (currency CDN) using a daily rate type SPOT.

You can use the same currencies with different rate types to create all the combinations that you need.

Setting Up and Maintaining Exchange Rate Controls

Perform the following steps to work with exchange rate controls:

1. From the main menu, select *Control File Functions*.
2. Select *Exchange Rate Controls*.
3. Select *Work with exchange rate controls*.

   The system displays a screen for identifying the exchange rate controls that you are creating or modifying.
4. Use the information below to identify the controls.

   Note: Press F6 to display a window that lists the exchange rate controls already defined and to select an entry. If you select an entry from the list, the system automatically fills in the field values below for you.

   Source currency

   Type the source currency code for the exchange rate controls.

Target currency

Type the target currency code for the exchange rate controls.

Rate type

Type the code for the rate type controls record that identifies the frequency with which you are specifying actual exchange rates.

5 Press Enter to continue to the second screen.

6 Use the information below to complete the fields on this second screen.

Rate per

The *Rate per* field allows you to save time and effort by avoiding repeated typing of zeros after a decimal point for small rates.

You can specify a number in this optional field and then later enter exchange rates as multiples of this number. An exchange rate is divided by the value in this field prior to converting the source currency amount to the target currency amount.

For example:

- The default value is **1**. The exchange rate you enter later is the actual exchange rate, and the initial and final target amounts are the same (Initial Target Amount / 1 = Final Target Amount).
- If you type **100** in this field, you can type an actual exchange rate of .0055 as **.55** (.0055 x 100 = .55). The system derives the correct final target amount by dividing the initial target amount by 100.

  For example, if the source amount is 1000, the rate per is 100, and you specify a direct rate of .55, the system calculates the target amount in the following two steps:

  - (Source 1000) x (Rate .55) = (550 Initial Target)
  - (550 Initial Target) / (100 Rate per) = (5.5 Final Target)

  This result of 5.5 is the same as the actual exchange rate of .0055 x the source amount of 1000 (.0055 x 1000 = 5.5).

The rate per value can be any amount from .001 to 9999.999.

Exchange rate quotation method

Use this field to specify whether the system is to multiply the source currency amount by the exchange rate or is to divide the source currency amount by the exchange rate.

The system supplies a default value from the currency controls for the target currency if those currency controls specify a method.

- Type **1** (direct) if the conversion is by multiplication:

  (Source Amount) x (Exchange Rate) = Target Amount

  Example: If the rate is 4, one unit of source currency A equals four units of target currency B. Conversion of 10 A to B is 10 A x 4 = 40 B.

- Type **2** (indirect) if the conversion is by division:

  (Source Amount) / (Exchange Rate) = Target Amount

  Example: If the rate is 4, one unit of target currency B equals four units of source currency A. Conversion of 40 B to A is 40 B / 4 = 10 A.

Notes:

- If you type **1** in this field, the system records the rate as the direct rate and for your reference records the reciprocal rate as the indirect rate.
- If you type **2** in this field, the system records the rate as the indirect rate and for your reference records the reciprocal rate as the direct rate.
- In either case, the system always multiplies or divides by the rate you type, and does not use the reciprocal rate for calculations.

Allow reciprocal relationship?

Allowing a reciprocal relationship for conversion between Currency A and Currency B allows you to set up a single set of exchange rate controls for conversions in both directions between these two currencies.

Type **1** if the system can use the same exchange rate controls and rates for conversions in both directions.

Type **0** if the reciprocal relationship is not allowed.

For example, if Currency A is the source currency, Currency B is the target currency, the quotation method is direct, the rate is 4, and you allow a reciprocal relationship:

- The system converts Currency A amounts to Currency B amounts multiplying by the exchange rate. When the system converts 10 A to currency B, the system calculates the currency B amount as 10 A x 4 = 40 B.
- The system converts Currency B amounts to Currency A amounts dividing by the exchange rate. When the system converts 40 B to

currency A, the system calculates the currency A amount as 40 B / 4 = 10 A.

Notes:

- This reciprocal relationship is unrelated to the *Reciprocal rate* field in the exchange rate records. The *Reciprocal rate* value is the inverse of the rate that you type and is calculated and displayed by the system purely for your reference.
- The system never uses the inverse rate. The system always uses the original rate, multiplying or dividing by that original rate.
- Use of the reciprocal relationship is allowed for conversions to, from, and between European Economic and Monetary Union (EMU) currencies, including the euro.
- Use of the inverse rate is not allowed by the terms of the EMU Maastricht Treaty.

Check rate entry?

Use this field to specify whether the system is to check the percentage change in rate between the old rate and a newly entered rate for this currency pair and rate type.

Type **1** to implement this check or **0** to omit this check.

If you type **1**, the system checks whether the percentage of change between the old rate and a new rate is within the maximum percentage that you specify in the next field.

Maximum tolerance %

If you typed **1** in the preceding field, specify the maximum allowable percentage difference between an old rate and a newly entered rate for this currency pair and rate type.

This check helps catch typing errors during entry of rates. For example, if you specify a 10% maximum rate change, if the old exchange rate is 10, and someone mistakenly enters a new rate of 100.2 rather than 10.2, the system issues a warning that the exchange rate exceeds the tolerance. You can press Enter to accept the rate.

Allow rate override?

If you want to be able to change the rate retrieved from Infinium CM within one of the interfacing applications, type **1**. Otherwise, type **0**.

If you type **1** in this field, use the following three fields to provide information about any checking that is to be done in the case of a user override. For triangulated rates the maximum tolerance percentage is not checked.

Maximum tolerance %

This percentage difference applies to the two rates.

If you typed **1** in the previous field, specify the maximum percentage variance to be allowed between the rate specified in Infinium CM and the rate specified by a user in the subledger application that is interfacing with Infinium CM.

Note: For triangulated rates the maximum tolerance percentage is not checked.

Check target amount?

Use this field to specify whether the system is to compare the target amount resulting from the override with the target amount that would have applied without the override.

Maximum tolerance %

This percentage difference applies to the two target amounts.

If you specify a percentage in this field and the difference between the two target amounts exceeds this percentage, the system provides a warning.

Maximum tolerance amount

If you specify an amount in this field and the difference between the two target amounts is greater than this amount, the system provides a warning.

7 Press Enter to save your changes and to return to the main menu.

Note: Alternatively, you can press F3 to exit this function without saving your changes.

Displaying Exchange Rate Control Information

Perform the following steps to display exchange rate control information:

1 From the main menu, select *Control File Functions*.

2 Select *Exchange Rate Controls*.

3 Select *Display exchange rate controls*.

4 Type **5** in the *Option* field next to the desired exchange rate control record.

You can use the *Locate* and *Search* fields to position a specific exchange rate control record at the top of the screen. You cannot use **0** as a search value in the *Tolerance* field. The system cannot distinguish between **0** and a blank value.

5 Press Enter to display the summary information for the selected exchange rate control.

6 Press F3 to return to the main menu.

Printing Exchange Rate Control Information

Perform the following steps to print a report with information from selected exchange rate controls:

1 From the main menu, select *Control File Functions*.

2 Select *Exchange Rate Controls*.

3 Select *Print exchange rate controls*.

4 Use the information below to specify the information that is to be included in the report.

Source currency

To restrict the report to a single source currency, type a currency code in this field. If you also specify a target currency and a rate type, the combination must exist in the Exchange Rate Control file.

Otherwise leave this field blank.

Target currency

To restrict the report to a single target currency, type a currency code in this field. If you also specify a source currency and a rate type, the combination must exist in the Exchange Rate Control file.

Otherwise leave this field blank.

Rate type

To restrict the report to a single rate type, type the rate type's code in this field. If you also specify a source currency and a target currency, the combination must exist in the Exchange Rate Control file.

Otherwise leave this field blank.

Note: If you do not specify a rate type, you must type **1** in at least one of the following rate frequency fields.

- *List daily rates?*
- *List weekly...*
- *List monthly...*

If you did not specify a rate type in the preceding field, you must type **1** in at least one of these fields to specify at least one of these frequencies.

5 Press Enter to submit the report to a batch process and to return to the main menu.

Chapter 4 Maintaining the Exchange Rates

4

This chapter describes how to enter, modify, display, and print exchange rates in Infinium CM.

The chapter consists of the following topics:

Entering or Modifying Exchange Rates

Overview of Entering or Modifying Exchange Rates

Use the *Exchange rates* function to specify the actual exchange rate for each of the exchange rate controls.

Procedure for Entering or Modifying Exchange Rates

Perform the following steps to enter or modify exchange rate information:

1. From the main menu, select *Control File Functions*.
2. Select *Exchange Rates*.
3. Select *Work with exchange rates*.
4. Type valid codes in the *Source currency*, *Target currency*, and *Rate type* fields to identify the exchange rate table for which you are entering or editing a rate.

   Note: You can press F6 to display a window of exchange rate control combinations.
5. Use the following information to specify the date or period during which the rate is in effect:
   - If the rate is for exchange rate controls that use a weekly or monthly frequency, you must specify a calendar year in the *Calendar year* field.
   - If the rate is for exchange rate controls that use a daily frequency, you must specify in the *Effective date* field the date on which this rate is in effect.

     You cannot use the *Effective date* field if the frequency is not daily.
6. Press Enter to continue to the second screen.
7. Use the information below to specify an exchange rate at the second screen.

Exchange rate

Type the exchange rate that applies for the combination of source currency, target currency, and rate type that you specified.

Exchange Rate Field Length

This field allows up to six digits to the left of a decimal point and up to nine digits to the right of the decimal point for a total of 15 digits maximum. This is known as a 15,9 format.

The valid exchange rate values are therefore **.000000001** through **999999.999999999**.

Exchange Rate Controls That Affect Expression of Exchange Rate

The following two settings in the exchange rate controls can affect how you specify the exchange rate in this *Exchange rate* field:

- The Exchange rate quotation method value
- The Rate per value

Effect of Quotation Method

The quotation method can be direct or indirect.

- The direct method means that the system is to multiply the source amount by the exchange rate to calculate the target currency amount:

  (Source amount) x (exchange rate) = Target amount

  For example, if the method is direct and the rate is 4, one unit of source currency A equals four units of currency B. Conversion of 10 A to B is: 10 A x 4 = 40 B.

- The indirect method means that the system is to divide the source amount by the exchange rate to calculate the target currency amount:

  (Source amount) / (exchange rate) = Target amount

  For example, if the method is indirect and the rate is 4, one unit of target currency B equals four units of source currency A. Conversion of 40 B to A is: 40 B / 4 = 10 A.

Effect of Rate Per Value

The information below about the *Exchange rate* field applies only if the exchange rate controls have a *Rate per* value other than the default **1**.

The *Rate per* value in the related exchange rate controls can save you repeated typing of strings of zeros. The *Rate per* control field indicates that the exchange rate is entered as multiples of the *Rate per* value. The valid *Rate per* values are **.001** through **9999.999**.

- If this *Rate per* unit is other than the default **1**, multiply the actual exchange rate by the *Rate per* value and type the result as the exchange rate. For example, if the *Rate per* value in the controls is **100** and today's exchange rate is .0055, type **.55** (.0055 x 100).
- After the system converts an amount using the .55 exchange rate, the system automatically also divides that initial target amount by the *Rate per* value to calculate the actual final target amount.

  For example, if you convert 1000 in this case with a direct rate, the system first uses the .55 rate to calculate an initial target amount of 1000 x .55 = 550, and then divides the initial target amount by the Rate per value 100 to calculate the final target amount of 550 / 100 = 5.5.

  This is the same as 1000 x .0055, the actual exchange rate.

Reciprocal rate

When you type the exchange rate in the preceding field, the system automatically calculates a reciprocal (inverse) exchange rate for your reference.

Infinium CM and the interfacing systems never use this inverse rate for currency conversions. This value is only for your reference.

Note: This field is unrelated to the *Allow reciprocal relationship?* field in the exchange rate controls. If there is a reciprocal relationship, the system uses the same rate (not the reciprocal rate) for conversions in both directions, multiplying or dividing depending upon the quotation method and depending upon which currency is the source for the conversion.

8 Press Enter to save any changes and to return to the main menu.

Note: Alternatively you can press F3 to exit this function without saving your changes.

Displaying Exchange Rates

Overview of Displaying Exchange Rates

Use the *Display exchange rates* function to do the following:

- Display a list of all exchange rate controls (combinations of source currency, target currency, and exchange rate type) that have been defined in Infinium CM.
- Select a listed combination to display all the effective exchange rates that have been defined for that combination.

Procedure for Displaying Exchange Rates

Perform the following steps to display exchange rates:

1. From the main menu, select *Control File Functions*.
2. Select *Exchange Rates*.
3. Select *Display exchange rates*.
4. Type **5** in the *Option* field next to the desired exchange rate controls combination and press Enter.

   Note: To find the desired exchange rate controls, you can type one or more values in the *Locate* fields for the source currency, the target currency, and the rate type.
5. View the rates displayed for the selected combination. You cannot change the data at this screen.
6. Press F12 or Enter to return to the selection list or press F3 to return to the main menu.

Printing Exchange Rates

Overview of Printing Exchange Rates

Use the *Print exchange rates* function to do the following:

- Specify which information to include in the report
- Submit the report

You can restrict the report to any combination of a source currency, target currency, exchange rate type, frequency, and effective date or period. You can also specify adding audit trail information to the report.

If you specify a combination of source currency, target currency, and exchange rate type, that combination must exist in the Exchange Rate Control file.

Procedure for Printing Exchange Rate Information

Perform the following steps to print exchange rate information:

1. From the main menu, select *Control File Functions*.
2. Select *Exchange Rates*.
3. Select *Print exchange rates*.
4. Use the following information to specify which exchange rates are to be included in the report.

   Source currency

   To restrict the report to a single source currency, type a currency code. If you also specify a target currency and a rate type, the combination must exist in the Exchange Rate Control file.

   Otherwise leave this field blank.

Target currency

To restrict the report to a single target currency, type the currency's code in this field. If you also specify a source currency and a rate type, the combination must exist in the Exchange Rate Control file.

Otherwise leave this field blank.

Rate type

To restrict the report to a single rate type, type the rate type's code in this field. If you also specify a source currency and a target currency, the combination must exist in the Exchange Rate Control file.

Otherwise leave this field blank.

Note: If you do not specify a rate type, you must type **1** in at least one of the following rate frequency fields.

List daily rates?
List weekly...
List monthly...

If you did not specify a rate type in the preceding field, you must type **1** in at least one of these fields to specify at least one of these frequencies.

From effective date

To restrict the report to exchange rates that are effective on or after a specific date, type the date in this field.

Otherwise leave this field blank.

To effective date

To restrict the report to exchange rates that are effective on or before a specific date, type the date in this field.

Otherwise leave this field blank.

Calendar year

If you did not specify an effective date or effective dates in the preceding fields, specify a calendar year for which you want to include exchange rates in the report.

List audit trail?

Type **1** if you also want to include the current audit trail in the report.

5 Press Enter to submit the report to a batch process and to return to the main menu.

Chapter 5 Performing Administrative and Supervisory Tasks

5

This chapter describes how to perform administrative and supervisory tasks for setting up and maintaining Infinium CM.

The chapter consists of the following topics:

Grouping Currencies for Security

Overview of Grouping Currencies for Security

Infinium CM allows you to establish a currency group to which you assign a specific list of currencies. You can set up as many currency groups as necessary for your business purposes.

Grouping currencies allows you to set the user security in interfacing applications to restrict users to working with only specified currencies. Currency groups are set up in Infinium CM, but are not otherwise used in Infinium CM. They are used for security by the interfacing applications.

Setting Up and Maintaining Currency Groups

Perform the following steps to set up or maintain a currency group:

1. From the main menu, select *Control File Functions.*
2. Select *Currency Groups*.
3. Select *Work with currency groups*.
4. Type a currency group name in the *Currency group* field.
5. Press Enter to continue to the second screen.
6. Type **X** next to a currency to include that currency in the group.
    - The system displays an **X** next to each currency that is already included in this group.
    - Remove the **X** to remove a currency from the group.
7. Press Enter to save any changes and to return to the main menu.
8. Alternatively, press F3 to exit this function without saving changes.

Displaying Currency Group Information

Use the *Display currency groups* function to view information about currency groups.

This function allows you to view the following information about a specified currency group:

- The currencies that are included in the group
- When the group was last modified and by whom

Perform the following steps to view currency group information:

1. From the main menu, select *Control File Functions*.
2. Select *Currency Groups*.
3. Select *Display currency groups*.
4. Type **5** in the *Option* field next to the desired currency group.
5. Press Enter to display detailed information about the selected currency group. You cannot edit the information.
6. Press F3 to return to the main menu.

Printing Currency Group Information

Perform the following steps to print a currency group report:

1. From the main menu, select *Control File Functions*.
2. Select *Currency Groups*.
3. Select *Print currency groups*.
4. Type a group's name in the *Currency group* field.

   Note: If you leave this field blank, the report includes all groups.
5. Press Enter twice to submit the report to a batch process and to return to the main menu.

Purging Exchange Rates

Overview of Purging Exchange Rates

Use the *Purge exchange rate* function within the *CM Supervisor Functions* menu to purge exchange rates that match criteria specified on the prompt screen.

You can choose to purge exchange rates for a specified target currency, source currency, rate type, and effective date. After the batch job completes, the program produces an audit trail of all purged rates.

Procedure for Purging Exchange Rates

Perform the following steps to purge exchange rates:

1. From the main menu, select *CM Supervisor Functions*.
2. Select *Purge exchange rates*.
3. Specify the combination of source currency and target currency for which you are purging exchange rates.
4. Use the following information to complete the fields at this screen.

   Rate type

   To restrict this purge to a specific rate type for this combination of source and target currencies, type the code for the rate type.

   Otherwise leave this field blank.

   Effective date

   This is a required field. During the purge process, the system deletes all the applicable exchange rates that are effective prior to and including this effective date.
5. Do one of the following:

- Press Enter to submit the purge process to a batch job and to return to the main menu.
- Press F3 to cancel, exiting this function and returning to the main menu without submitting the purge process.

Reorganizing Files for Processing Efficiency

Overview of Reorganizing the Files

When you delete or purge data from Infinium CM, file space becomes available. Reorganizing the files so that the space is consolidated allows the system to use the freed up space efficiently for other purposes. Reorganization therefore increases your system's processing efficiency.

Use the *Reorganize application files* function to run this reorganization process after you have deleted large quantities of data. Consider using this function after performing a major purge of exchange rates.

WARNING! Do not perform this task until you have ensured that no one else is logged on to Infinium CM or interfacing applications and no other Infinium CM functions are active.

Procedure for Reorganizing the Files

Perform the following steps to reorganize your Infinium CM files:

1. From the main menu, select *CM Supervisor Functions*.
2. Select *Reorganize application files*.
3. Read the information on the screen and then press Enter to perform the reorganization or cancel to exit this function without performing the reorganization.

   In either case, the system returns you to the menu.

Performing System Initialization Tasks

Overview of Initialization Tasks

Infinium CM provides the following initialization menu options:

- On the *CM Supervisor Functions* menu
  - *Clear all application files*

Use this function to clear old test data before moving the system into production use with your actual data. Never use this function once you have live data in the system.

- On the *Initial Set Up* menu
  - *Clear all application files*
  - *Create entity controls*
  - *Create currency controls*
  - *Create rate types*
  - *Create exchange rate controls*

This menu provides these five options as shortcuts to five functions that you ordinarily access from other menus.

If you have carefully planned the control data that you need for initial setup of your Infinium CM application, you can perform all five of these tasks in their logical order as a single procedure.

Procedure for Initialization Tasks

Select all five options at the *Initial Set Up* menu and press Enter. The system executes all five functions in the order in which they appear on the menu.

For details about responding to the displayed screens for setting up the entity, currency, rate type, and exchange rate controls, refer to Chapter 2, “Setting Up Infinium CM Entity Controls” and Chapter 3, “Setting Up Currency, Rate Type, and Rate Controls” in this guide.

Notes

Chapter 6 Working with EMU Currencies

6

This chapter provides information about setting up and maintaining Infinium CM controls for working with Economic and Monetary Union (EMU) currencies, including:

- Setting up the controls for the multi-national European currency, the Euro
- Setting up the controls for the national currencies of participating countries
- Setting up exchange rate controls for conversions among the euro, other EMU currencies, and non-EMU currencies

Appendix A, "Multi-Currency Processing Business Examples" in this guide provides examples of processing for various EMU related business scenarios.

Note: The procedures for defining rate types and entering actual exchange rates are the same as for non-EMU currency processing.

The chapter consists of the following topics:

Overview of Euro Setup and Processing

Effective January 1, 1999, conversion between the national local currencies (NLCs) of the EMU members must be handled in accordance with the terms of the Maastricht Treaty, Article 235.

Infinium CM allows you to meet the new requirements by setting up controls for the new common EMU currency, the euro, and modifying controls for the EMU members' NLCs.

The Euro

Effective January 1, 1999, the euro is a valid unit of currency for all countries that are members of the EMU. The euro has subunits called cents. Cents means hundredths.

Multi-Currency Processing during the Transitional Period

Between January 1, 1999, and June 30, 2002, EMU countries, banks, and businesses may use both their NLCs and the new common currency, the euro. By June 30, 2002, however, the NLCs will no longer be valid.

Each business must switch entirely to the euro for its own processing at some time during this transitional period. This timing is up to the individual company.

Currency Conversion Triangulation during the Transitional Period

Triangulated Conversions between Two NLCs

Some of the rules that apply to conversions between any two NLCs during the period from January 1, 1999, to June 30, 2002, are as follows:

- There is no direct conversion between one NLC, such as the French franc, and another NLC, such as the German deutschemark. Instead, you must use triangulation. Triangulation means converting the first NLC to

the euro, and then converting the resulting euro amount to the second NLC.

- For each step of the conversion between two NLCs, you must use the fixed published conversion rate between the euro and the national currency. This rate is published with six significant figures.

Note: Infinium CM provides for up to nine significant digits (digits after the decimal point) and up to six digits before the decimal point for exchange rates. The largest valid number is 999999.999999999.

The rules forbid using an inverse rate. That is, the rules do not allow a reciprocal rate between the euro and a specific NLC.

The prohibition of using the inverse rate does not forbid use of the Infinium CM reciprocal relationship between two currencies. You can still define one set of exchange rate controls for the relationship between two currencies.

The system appropriately multiplies or divides by the rate, depending upon the direction of conversion and your quotation method. The table below summarizes the possibilities.

Infinium CM Control Source and Target	Quotation Method	To convert euro to NLC	To convert NLC to euro
Euro/NLC	Direct	Mutiply by rate	Divide by rate
Euro/NLC	Indirect	Divide by rate	Multiply by rate
NLC/Euro	Direct	Divide by rate	Multiply by rate
NLC/Euro	Indirect	Multiply by rate	Divide by rate

Note: Since the EMU publishes the exchange rates as 1 euro = X NLC units, we recommend that you define the exchange rate controls with the euro as the source currency, the NLC as the target currency, and the quotation method as direct.

The euro amount resulting from the first step of the triangulation process (conversion of the first NLC to the euro) cannot be rounded to fewer than three decimal positions prior to converting that amount to the other NLC.

Infinium uses up to eight decimal positions for the intermediate amount.

Triangulated Conversions between a Non-NLC and an NLC

The same rules apply to conversion between a non-NLC and an NLC as to conversions between two NLCs, except that the published rates between the euro and the non-NLC fluctuate over time.

These rules apply to both the EMU's member countries and to all countries doing business with those EMU member countries.

EMU Terminology

Conversion Rate

The EMU conversion rates from NLCs to the euro are fixed rates set by the European Central Bank. The conversion rates must not be rounded or truncated.

The rates are to be used for conversions in both directions (to euro and from euro). Inverse rates derived from the conversion rates are forbidden.

EC

The EC or European Community is the former name for the core organization that became the EU after the November 1993 Maastricht treaty. Refer to the entry for *European Union (EU)*.

EMU

The EMU is the Economic and Monetary Union, the unification of many European Union (EU) national monetary systems under a single currency, the euro. EMU rules are defined both locally within specific member countries of the EU and, by the EU itself, for the entire EU.

Euro and Euro Symbol

The euro is the new common currency to be used by 6/30/02 by all participating European Economic Monetary Union countries in place of their past national currencies. The euro is also to be used instead of the old national currencies by companies trading with participating nations.

- The symbol for the euro is a C crossed by a double horizontal line:

  €

- The Euro is subdivided into 100 euro cents.

Euro Implementation Choices: Big Bang, Parallel, or Phased

Financial software uses one of the following three implementation strategies for the euro. These names are from the BASDA white paper.

Infinium supports the phased implementation strategy.

Big Bang Implementation

Big bang implementation is one-time complete changeover from the old currencies on the old pre-euro system to the euro. The conversion program brings forward the old balances converted to euro from that point on. Reporting thereafter is only in euros.

Parallel Implementation

Parallel implementation is a transitional method in which there are two systems or at least two parallel entities for a database during a transitional period. The legacy version provides the pre-euro information in the local currency prior to the cutover date and the new version provides information in the euro currency after the cutover date.

Companies using the parallel implementation strategy must manually enter or programmatically convert opening balances and open transactions into the new system although certain other information such as customer and inventory information can be directly converted from the old legacy system.

Parallel implementation applies best to single currency systems.

Phased Implementation

Phased implementation is possible with a system that can support triangulation so that you can use both the NLCs and the euro for a transitional period.

Some phased implementation systems let you show the foreign currency amount and two base currencies: the national currency and the alternate base currency, the euro. This flexibility in a multi-currency system allows a company to use the NLC as the primary base currency until a specific date and then change the euro to the primary base currency.

Phased implementation lets you report in either the NLC or the euro.

European Union (EU)

EU is the name adopted in November 1993 under the Maastricht treaty by the former European Community (EC) and other organizations sharing a common foreign policy and other forms of legal cooperation.

The full members by the 1993 treaty were Austria, Belgium, Britain, Denmark, Finland, France, Germany (in 1993, West Germany), Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, and Sweden. As of 1998, all of these countries except Britain and Denmark were planning to participate in the transition to the euro.

National or Local Currency

The national or local currency is the reporting currency used in an EMU country prior to conversion to use of the euro for accounting and reporting purposes. National or local currencies (NLCs) are no longer to be used after 6/30/02.

Transition Period

The transition period is the period during which both the NLCs and the euro currencies can be in use: 1/1/99 to 6/30/02.

The EMU regulations specify that during this period everyone must allow use of the euro and nobody is to be required to use the euro for business transactions.

For example, organizations have the right to present invoices and to pay invoices in the euro beginning on 1/1/99 and at any time thereafter during the transitional period, but cannot be required to do so until 6/30/02.

This policy is known as the “no prohibition/no compulsion” policy.

Triangulation

Triangulation is the required method of converting amounts from one NLC (national local currency) to another NLC, such as Italian lira to German deutschemarks, or between an NLC and a non-NLC, such as French francs to US dollars. Direct conversion from one NLC to another NLC and between an NLC and a non-NLC is forbidden within the European Economic and Monetary Union (EMU),

- You must convert the first NLC amount to the euro using the mandated conversion rate. Any rounding must be to at least three decimal positions for this conversion.

- You must then convert the euro to the second NLC using the mandated conversion rate.

Finding More Information

In This Guide

The remainder of this part of the guide provides instructions for setting up the Infinium CM controls for the euro and modifying the controls for the NLCs during the transitional period.

Appendix A provides examples illustrating the use of the euro in various business scenarios during the transitional period. The examples illustrate the impact on participating and non-participating countries.

About Related Controls in Other Infinium Applications

For information about multi-currency processing controls in other Infinium Software applications, refer to the documentation for those applications. Note that there is a separate currency processing guide for Infinium GL, the *Infinium GL Guide to Currency Processing*.

About Cutover/ Conversion

For information about the cutover/conversion process for converting your Infinium financial and materials management applications' base currency and historical data to the euro, refer to the following related guides:

- *Infinium FM Converting to Euro Base Currency*
- *Infinium CA Guide to System Controls and Materials Maintenance*

The EMU Impact on Financial Software in General

For detailed information about the impact of the EMU on computerized financial accounting in general and recommendations for affected companies' decisions during the transitional period, refer to the Business and Accounting Software Developers Association (BASDA) white paper, *BASDA EMU Specification for Application Software*.

The BASDA white paper was developed with the help of the EU Commission, APACS, HM Treasury, the Bank of England, CSSA, DTI, FEE, ICAEW, and 28 software development companies including IBM and Infinium. The document can be purchased from BASDA at Templestowe, Longbottom Lane, Seer Green, Beaconsfield, Bucks. HP9 2UL UK or +44 1494 678840.

Your Next Steps

The remainder of this part of the guide addresses setting up controls for euro processing and includes the following procedures:

- Setting Up Euro Currency Controls
- Setting Up NLC Currency Controls
- Setting Up Euro Exchange Rate Controls

Setting Up Euro Currency Controls

Overview of Setting Up Euro Currency Controls

You must complete this procedure before you can do the following:

- Specify triangulation for conversions between national currencies
- Define exchange rate controls for conversions between the euro and other currencies, including both NLCs and non-NLCs
- Enter rates for conversions that involve the Euro

Caution: You must complete all of these tasks before using the euro for any transactions or as a base currency in any interfacing application that uses Infinium CM for currency conversions.

Procedure for Setting Up Euro Currency Controls

Perform the following steps to define currency controls for the euro.

1. From the Infinium CM main menu or desktop, select *Control File Functions*.
2. Select *Currency Controls*.
3. Select *Work with currency controls*.
4. Type a three-character code for the euro such as **EUR** in the *Currency control* field and press Enter to display the second screen.
5. At the top of the second screen, the system displays maintenance information for this currency's control record. Use the following table to complete the remaining fields at this screen.

Field	Value for Euro Controls
Description	Short phrase describing this currency, such as **European Euro**

Field	Value for Euro Controls
Implied decimal precision	**2** - (only for display and reporting purposes; the system uses the required three decimal positions for calculations)
Exchange rate quotation method	**2** - (indirect, that is, divide by rate) This value is the default in the exchange rate controls that you set up with this currency as the target currency. If you define the euro as the source currency in the exchange rate controls, this default is not used for the euro.
Triangulation currency control	Leave this field blank. You must specify the Euro in this field only in the controls for the NLCs, not in the controls for the euro itself.
Triangulation effective date	Leave this field blank.
Active?	When you are ready to activate use of the euro, type **1** in this field. The euro is a valid currency as of 1/1/1999. You must set up and activate this control record prior to June 30, 2002, if you have any financial business involving the former NLCs. These currencies are to be completely replaced by the euro by that date. You may be required to activate the euro in your system prior to that date if, for example, you have customers or vendors that opt to do business with you in euro earlier in the transitional period.

6 Press Enter to continue to the third screen.

7 At the third screen, you can specify additional optional information.

8 When done at the third screen, press Enter to save any changes and to return to the first screen or press F3 to exit this function without saving your changes.

If you return to the first currency control screen, press F3 to return to the main menu.

Setting Up NLC Currency Controls

Overview of Setting Up NLC Currency Controls

Perform the following steps to define or modify the controls for each National Local Currency (NLC) that you use.

Note: You must complete this procedure by 1/1/1999 for each NLC that you use before you can perform conversions that comply with EMU legislation between NLCs. It is particularly important that you complete the triangulation fields for these currencies.

Procedure for Setting Up NLC Currency Controls

Perform the following steps to set up or modify the NLC currency controls before implementing use of the euro:

1. From the Infinium CM main menu or desktop, select *Control File Functions*.
2. Select *Currency Controls*.
3. Select *Work with currency controls*.
4. Type a three-character code for the NLC such as **FRF** for French franc in the *Currency control* field and press Enter to display the second screen.
5. At the top of the second screen, the system displays maintenance information for this currency's control record. Use the following table to complete the remaining fields at this screen.

Field	Value for NLC Controls
Description	Short phrase describing this currency, such as **French franc**
Implied decimal precision	The number of decimal positions in which this currency is typically traded Type **0** or **2** since these are the decimal precision values that the interfacing applications support.

Field	Value for NLC Controls
Exchange rate quotation method	**1** (direct) - use as the default in exchange rate controls when this NLC currency is the target currency. All conversions to an NLC must be by triangulation through the euro. All conversions from the euro to an NLC are by multiplication of the euro amount by the published exchange rate when the method is direct and the NLC is the target.
Triangulation currency control	The three character code you defined for the euro, such as **EUR** The system provides a selection list of valid currency codes. **Note:** Refer to the overview at the beginning of this part of the guide for an explanation of triangulation.
Triangulation effective date	Date as of which the system is to begin performing triangulation. This date should be no earlier than January 1, 1999. This is a required field if you specified a triangulation currency in the preceding field. **Note:** Type this date in the date format defined for your system in the entity controls.
Active?	To make this currency control active in your system, type **1**. **Note:** When you stop using the NLCs and convert entirely to the euro (no later than June 30, 2002), change this value to **0**.

6 Press Enter to continue to the third Work with Currency Controls screen.

7 At the third screen, you can specify additional optional information about this currency, if any.

8 When done at the third screen, press Enter to save your changes and return to the first currency control screen or press F3 to exit this function and return to the main menu without saving your changes.

If you return to the first currency control screen, press F3 to return to the main menu.

Setting Up Euro Exchange Rate Controls

The European Economic and Monetary Union (EMU) publishes fixed triangulation exchange rates for conversion from the euro to each EMU NLC.

Refer to the overview at the beginning of this part of the guide for an explanation of triangulation.

Exchange rates between non-EMU currencies and EMU NLCs also require triangulation through the euro. For example, conversion of US dollars to French francs requires conversion from the US dollars to the euro and then conversion from the euro to the franc.

The rates between non-EMU currencies and the euro fluctuate over time.

Identifying Existing Exchange Rate Controls That Use NLCs

All conversions to and from NLCs must be from and to the euro.

Effective January 1, 1999, the following exchange rate control currency pairs (source and target combinations) are no longer valid:

- Any combination of two EMU NLCs, such as the controls for conversions between French francs and German deutschemarks
- Any combination of an EMU NLC with the currency of a non-participating country, such as the controls for conversions between French francs and the US dollar.

If you correctly set the triangulation controls, the system no longer uses these NLC/NLC and NLC/non-NLC exchange rate controls after the date that you specify in the applicable currency control *Triangulation effective date* field.

You can use the *Display exchange rate controls* or *Print exchange rate controls* function to identify the NLCs for which you have existing controls so that you can add exchange rate controls for the applicable euro/NLC currency pairs and rate types.

You do not need to modify the existing NLC exchange rate controls. The system determines whether triangulation applies by checking the NLC currency control records' *Triangulation currency control* field. If triangulation applies, the system automatically looks for the exchange rate controls that

use the euro as the intermediate currency and does not use the NLC/NLC or NLC/non-NLC exchange rate controls.

The initial mid-1998 list of EMU members committed to using the euro effective with calendar year 1999 includes the following:

Country	NLC
Austria	Schilling
Belgium	Belgian franc
Finland	Markka
France	French franc
Germany	Deutschemark (German mark)
Greece (Hellenic Republic)	Drachma
Ireland	Punt
Italy	Lira
Luxembourg	Luxembourg franc
The Netherlands	Guilder
Portugal	Escudo
Spain	Peseta
Sweden	Krona

Planning the New Controls for the Identified NLCs

For each of the NLCs for which you find exchange rate controls, use the information in the remainder of this part of the guide to do the following:

- Ensure that you have exchange rate controls for converting between the euro and the NLC. We recommend that you specify the euro as the source currency and the NLC as the target currency.

  Since the same exchange rate applies to conversion of a specific NLC to the euro and the conversion of the euro to that NLC, you can use the same exchange rate controls for both conversions by setting the *Reciprocal relationship allowed* flag to **1** for yes.

  To prepare for activation of the euro, define new exchange rate controls for each combination of the euro and an NLC, assigning an effective date no earlier than 1/1/1999.

You can continue to use the old controls until the date on which you activate the new controls.

- Wherever you have been using exchange rate controls for the combination of an NLC with the currency of a non-EMU country, ensure that you have exchange rate controls for converting between the euro and the non-EMU currency.

  Since the same exchange rate applies to conversion of a specific non-EMU currency to the euro and the conversion of the euro to that non-EMU, you can use the same exchange rate controls for both conversions by setting the *Reciprocal relationship allowed* flag to **1** for yes.

  To prepare for activation of the euro, define new exchange rate controls for each combination of the euro and a non-NLC currency, assigning an effective date no earlier than 1/1/1999.

  You can continue to use the old controls until the date on which you activate the new controls.

Defining Controls for Conversions between the Euro and NLCs

To create the controls for amount conversions between the euro and an NLC, and from the NLC to the euro, follow the standard procedure for defining or modifying exchange rate controls using the following information:

- The EMU quotes the exchange rates only as 1 euro = X number of NLC units. We therefore recommend that you define the euro as the source currency and the NLC as the target currency.

  If the NLC is the target, specify a direct quotation method (value of **1**). All conversions from the euro to an NLC require multiplication of the euro amount by the exchange rate. The method is therefore always direct when the NLC is the target.

- You can specify allowing the reciprocal relationship for conversions between these two currencies. The system performs the correct multiplication or division by the rate when converting in either direction between these two, using the same rate for both conversions.
- If you opt to set up the euro as the target, specify an indirect quotation method (value of **2**). All conversions from an NLC to the euro require division of the NLC amount by the exchange rate. The method is therefore always indirect when the euro is the target.

  For example, if the controls are for FRF to EUR, specify an indirect method. If the controls are for EUR to FRF, specify a direct method.

Defining Controls for Conversions to and From Non-EMU Currencies

To create the controls for amount conversions between the euro and a non-NLC currency such as the US dollar, and from the non-NLC to the euro, follow the standard procedure for defining or modifying exchange rate controls.

No special procedures apply.

You can specify allowing the reciprocal relationship for conversions between the two currencies. The system performs the correct multiplication or division by the rate when converting in either direction between the two, using the same rate for both conversions.

Appendix A Multi-Currency Processing Business Examples

A

This appendix provides multi-currency processing examples, including a payment cycle, a cash receipt, an invoice cycle, a billing cycle, and a journal cycle event for each type of currency relationship.

Guides for interfacing applications, such as Infinium GL and Infinium PL, provide more detailed examples specific to those applications.

Note: An NLC is the national local currency of a country participating in the EMU, such as France's francs and Germany's deutschemarks.

The appendix consists of the following topics:

Overview of the Processing Scenarios

For each of the multi-currency cases, this appendix provides a summary example of a currency conversion for each of five processing scenarios. This overview summarizes the business tasks assumed by those five scenarios.

Notes:

- The rates cited in this appendix are only for illustrative purposes and are not actual rates.
- The EMU establishes a single rate for the relationship between the Euro and other currencies such as 1 Euro = X French francs.

We recommend that you make the Euro the source currency, the relationship reciprocal, and the quotation method direct in the exchange rate controls. If you follow this recommendation, the system multiplies or divides by the rate depending upon whether you are converting an amount to the Euro or from the Euro as specified in the table below.

Conversion by Direct Method	Operation
From the Euro (source to target)	Multiply by the rate
To the Euro (target to source)	Divide by the rate

- The EMU requires that Euro amounts used as the middle term of triangulation are rounded to no fewer than three decimal positions.

  For illustrative purposes, the examples in this appendix use the three-decimal amounts. During actual triangulation, Infinium CM uses more decimal positions for the intermediate Euro amount.

- The exchange rate between the US dollar (as well as other non-EMU currencies) and the Euro fluctuates over time.

The table below summarizes the kinds of tasks included in each of the cycles specified in these business examples.

Cycle	Tasks
Payment	Remit payment, apply payment to invoice, post payment transaction to the general ledger

Cycle	Tasks
Cash Receipt	Receive receipt, post receipt transaction to the general ledger, apply receipt to obligation, post application transaction to the general ledger
Invoice	Generate purchase order, receive goods, post receipt transaction to the general ledger, receive invoice, match PO to invoice, post invoice transaction to the general ledger
Billing	Receive sales order, ship goods, bill obligation, post transaction to receivables subsystem, post obligation transaction to the general ledger
Journal	Input journal, accept journal, post journal

The NLC examples in the remainder of this appendix assume the following:

- The exchanges occur on or after 1/1/1999.
- All the NLC currency controls specify a triangulation currency of the Euro and a triangulation date of 1/1/1999.

1: Non-NLC -> Euro -> NLC

A United States company does business with a German company. The US dollar is not an NLC. The deutschemark is an NLC.

To be converted from US dollars to deutschemarks, amounts must be triangulated through the Euro.

Traders and Exchange Rates

Traders

Country	Company	Base Currency	Code
United States	Company A	US dollars	USD
Germany	Company B	Deutschemarks	DEM

Exchange Rates

Exchange	Rate
USD to Euro	1.0776 Indirect
Euro to DEM	1.92573 Direct

Processing Examples

Payment Cycle Example

United States Company A sends an invoice for 1000 USD to German Company B. Company B enters the invoice in USD, planning to pay in DEM. Conversion of USD to DEM requires triangulation.

During the payment process, triangulation occurs in Company B's payables ledger as follows:

1000 USD / 1.0776 = 927.988 EUR

927.988 EUR x 1.92573 = 1787.05 DEM

Cash Receipt Cycle Example

United States Company A receives an invoice in DEM from German Company B. Company A sends 559.58 USD as payment. Company B's conversion of USD to DEM requires triangulation.

During the cash receipt process, triangulation occurs in Company B's receivables ledger as follows:

559.58 USD / 1.0776 = 519.284 EUR

519.284 EUR x 1.92573 = 1000.00 DEM

Note: Since the rate between USD and EUR fluctuates, the cash receipt can result in an exchange gain or loss.

Invoice Cycle Example

German Company B submits a purchase order for 1000 widgets at 27 USD per widget to US Company A and posts the purchase order transaction as 27000 USD.

Company B receives the goods and an invoice for 27968.22 USD.

Company B matches the USD PO to the USD invoice. The tolerances for Company B are in base currency DEM. The matching process finds the difference between the invoice amount and the PO amount and uses triangulation for the conversion necessary for comparing the difference with the tolerance as follows:

- Company B's PO receiving ledger transaction is 27000 USD.
- During matching of the PO to the invoice, triangulation of the difference between the invoice amount and the amount in the receiving ledger transaction occurs as follows:

  27968.22 USD - 27000 USD = 968.22 USD difference

  968.22 USD / 1.0776 = 898.497 EUR

  898.497 EUR x 1.92573 = 1730.26 DEM

The system compares the 1730.26 DEM to the tolerance amount.

Billing Cycle Example

US Company A submits a sales order to Company B for 10000 widgets at 50 USD (total 500000 USD). Company B ships the goods and an invoice in DEM, posting a DEM transaction in the Company B receivables ledger.

- Company B records the sales order as 500000 USD.
- During Company B's billing of the obligation, triangulation to derive the invoice amount occurs as follows:

  50000 USD / 1.0776 = 46399.406 EUR

  46399.406 EUR x 1.92573 = 89352.73 DEM

Journal Cycle Example

Company A has incurred expenses on behalf of Company B but has not yet billed Company B for those expenses.

Company B records an accrual journal related to these expenses, inputting, accepting, and posting a journal in USD.

During conversion of the USD amount to the base currency DEM amount, triangulation occurs as follows:

10000.00 USD / 1.0776 = 9279.881 EUR

9279.881 EUR x 1.92573 = 17870.55 DEM

2: NLC -> Euro -> Non-NLC

Traders and Exchange Rates

Traders

Country	Company	Base Currency	Code
United States	Company A	US dollars	USD
Germany	Company B	Deutschemarks	DEM

Exchange Rates

Exchange	Rate
USD to Euro	1.0776 Indirect
Euro to DEM	1.92573 Direct

Processing Examples

Payment Cycle Example

Company A receives an invoice from Company B for 1000 DEM and enters the DEM invoice into the payables ledger but pays in USD.

During conversion of the DEM invoice amount to the USD payment amount, triangulation occurs as follows:

1000 DEM / 1.92573 = 519.284 EUR

519.284 x 1.0776 = 559.58 USD

Cash Receipt Cycle Example

Company A receives 1000 DEM from Company B and must apply the DEM amount in an invoice denominated in USD.

During entry of the transaction in Company A's receivables subledger to record the DEM denominated receipt, triangulation to convert the amount to USD is as follows:

1000 DEM / 1.92573 = 519.284 Euro

519.284 x 1.0776 = 559.58 USD

Note: Since the rate between USD and Euro fluctuates, the cash receipt can result in an exchange gain or loss.

Invoice Cycle Example

US Company A orders 1000 widgets at 50 DEM per widget from German Company B and posts the purchase order transaction (50000 DEM).

Company A receives the goods along with an invoice for 50500 DEM.

Company A matches the DEM PO to the DEM invoice. The tolerances for Company A are in base currency USD. The matching process finds the difference between the invoice amount and the PO amount and uses triangulation for the conversion necessary for comparing the difference with the tolerance as follows:

- Company A's PO receiving ledger transaction is 50000 DEM.
- During matching of the PO to the invoice, triangulation of the difference between the invoice amount and the amount in the receiving ledger transaction occurs as follows:

  50500 DEM - 50000 DEM = 500 DEM difference

  500 DEM / 1.92573 = 259.642 EUR

  259.642 EUR x 1.0776 = 279.79 USD

The system compares the 279.79 USD to the tolerance amount.

Billing Cycle Example

Company A orders 10000 widgets at 5 DEM per widget from Company B. Company B posts the order transaction in DEM and ships the goods along with an invoice in USD.

During conversion of the DEM amount to the USD amount for the invoice, triangulation occurs as follows:

50000.00 DEM / 1.92573 = 25964.180 EUR

25964.180 EUR x 1.0776 = 27979.00 USD

Journal Cycle Example

Company A records an accrual journal for 50000 DEM of expenses incurred on Company A's behalf by Company B but not yet billed by Company B. Company A inputs, accepts, and posts the journal in DEM.

During conversion of the DEM amount to the base currency USD amount, triangulation occurs as follows:

50000.00 DEM / 1.92573 = 25964.180 EUR

25964.180 EUR x 1.0776 = 27979.00 USD

3: Euro -> Non-NLC

Traders and Exchange Rates

Traders

Country	Company	Base Currency	Code
United States	Company A	US dollars	USD
Germany	Company B	Euro	EUR

Exchange Rate

Exchange	Rate
USD to Euro	1.0776 Indirect

Note: The rate between the Euro and the non-NLC USD fluctuates.

Processing Examples

Payment Cycle Example

Company A receives an invoice from Company B for 1000 EUR. Company A enters the invoice in the payables ledger as EUR but pays in USD.

The conversion to USD is 1000 EUR x 1.0776 = 1077.60 USD.

Cash Receipt Cycle Example

Company A receives 1000 EUR from Company B for an outstanding receivable. In the Company A receivables subledger, the transaction to record the EUR receipt is converted to USD.

The conversion is 1000 EUR x 1.0776 = 1077.60 USD

Note: Since the rate between EUR and USD fluctuates, the cash receipt could result in an exchange gain or loss.

Invoice Cycle Example

Company A orders 1000 widgets at 50 EUR per widget from Company B and posts the purchase order transaction in EUR (50000 EUR).

Company A receives the goods along with an invoice for 50500 EUR.

Company A matches the EUR PO to the EUR invoice. The tolerances for Company A are in base currency USD. The matching process finds the difference between the invoice amount and the PO amount and compares the difference with the tolerance amount as follows:

- Company A's PO receiving ledger transaction is 50000 EUR.
- During matching of the PO to the invoice, the calculations necessary for performing the tolerance checking are as follows:

  50500 EUR - 50000 EUR = 500 EUR difference

  500 EUR x 1.0776 = 538.80 USD

The system compares the 538.80 USD to the tolerance amount.

Billing Cycle Example

Company B receives an order from Company A for 10000 widgets. Company B posts the order in EUR and ships the goods along with an invoice in USD.

The conversion is 50000.00 EUR x 1.0776 = 53880.00 USD.

Journal Cycle Example

Company A records an accrual journal for expenses that Company B has incurred on behalf of Company A but has not yet billed.

Company A inputs, accepts, and posts the journal in EUR.

Conversion to Company A's base USD is 10000.00 EUR x 1.0776 = 10776.00 USD.

4: Non-NLC -> Euro

Traders and Exchange Rates

Traders

Country	Company	Base Currency	Code
United States	Company A	US dollars	USD
Germany	Company B	Euro	EUR

Exchange Rates

Exchange	Rate
USD to Euro	1.0776 Indirect

Note: This rate fluctuates over time.

Processing Examples

Payment Cycle Example

Company B receives an invoice from Company A for 1000 USD. Company B enters the invoice into the payables ledger in USD but pays in EUR.

The conversion for payment is 1000 USD / 1.0776 = 927.99 EUR.

Cash Receipt Cycle Example

Company B receives 1000 USD from Company A for an outstanding receivable. Company B converts the receivables transaction in USD to EUR for application to the invoice.

The conversion is 1000 USD / 1.0776 = 927.99 EUR.

Note: Since the rate between USD and EUR fluctuates, the cash receipt can result in an exchange gain or loss.

Invoice Matching Cycle Example

Company B orders 1000 widgets at 50 USD per widget from Company A and posts the purchase order transaction in USD (50000 USD).

Company B receives the goods along with an invoice for 50500 USD.

Company B matches the USD PO to the USD invoice. The tolerances for Company B are in base currency EUR. The matching process finds the difference between the invoice amount and the PO amount and compares the difference with the tolerance amount as follows:

- Company A's PO receiving ledger transaction is 50000 USD.
- During matching of the PO to the invoice, the calculations necessary for performing the tolerance checking are as follows:

  50500 USD - 50000 USD = 500 USD difference

  500 USD / 1.0776 = 463.99 EUR

The system compares the 463.99 EUR to the tolerance amount.

Billing Cycle Example

Company A receives an order from Company B for 10000 widgets. Company A ships the goods along with an invoice in EUR. Company A posts the order in USD and converts the amount to EUR for the invoice.

The conversion is 50000.00 USD / 1.0776 = 46399.41 EUR.

Journal Cycle Example

Company B records an accrual journal for expenses that Company A has incurred on Company B's behalf but has not yet billed. Company B inputs, accepts and posts the journal in USD.

The conversion of the USD transaction amount to the EUR base amount is 10000.00 USD / 1.0776 = 9279.88 EUR.

5: Non-NLC -> Non-NLC

Traders and Exchange Rates

Traders

Country	Company	Base Currency	Code
United States	Company A	US dollars	USD
Mexico	Subsidiary A	US dollars (not peso)	USD (not PES)
UK	Company B	British pound	GBP

Exchange Rates

Exchange	Rate Day 1	Rate Day 30
USD to GBP	1.6375 Indirect	1.6410 Indirect
USD to PES	.115714 Indirect	.11865 Indirect

Note: These rates fluctuate over time.

Processing Examples

Payment Cycle Example

On Day 1, Company A receives an invoice from Company B for 10000 GBP. Company A records the invoice transaction in the payables ledger in GBP.

On Day 30, Company A pays 6,093.85 USD to Company B. Company A posts the payment transaction and the exchange gain of 13.02 to the appropriate accounts in the general ledger.

The conversion between GBP to USD and the calculation of the exchange gain (loss) do not involve triangulation.

Cash Receipt Cycle Example

On Day 30, Company B receives a check for 3055.00 USD from Company A and posts the receipt transaction to the general ledger. The general ledger base currency is GBP.

Company B applies the receipt to a 1852.39 GBP obligation dated Day 1. Company B posts the application transaction (1865.65 GBP) and the exchange gain (13.26 GBP) to the general ledger.

The conversion between USD to GBP and the calculation of the exchange gain (loss) do not involve triangulation.

Invoice Cycle Example

On Day 1, Company A orders 20000 widgets at 2.00 GBP each from Company B. On Day 30, Company A receives the goods and posts the receipt transaction for 40000 GBP to the general ledger.

A week later, Company A receives an invoice for 40000 GBP from Company B. Company A matches the purchase order to the invoice and posts the invoice transaction to the general ledger.

The conversion from GBP to USD for checking the tolerance does not require triangulation.

Billing Cycle Example

On Day 1, Company A receives an order for 1000 units at 100 GBP each (100000 total) from Company B. On Day 30, Company A ships the goods to Company B along with a 60938.45 USD obligation (100000 GBP x 1.6410 = 164100 USD).

Company A posts a USD transaction to the receivables ledger and a USD obligation transaction to the general ledger.

The conversion from GBP to USD does not require triangulation.

Journal Cycle Example

Company A records an accrual journal in Subsidiary A’s books for expenses that a US-based company has incurred on the subsidiary’s behalf but has not yet billed.

The USD transaction amount is converted to PES (the peso).

The conversion from USD to PES does not require triangulation.

6: NLC A -> Euro -> NLC B

Traders and Exchange Rates

Traders

Country	Company	Base Currency	Code
France	Company A	French francs	FRF
Spain	Subsidiary A	Spanish peseta	PST
Germany	Company B	Deutschemarks	DEM

Exchange Rates

Exchange	Rate
Euro to FRF	6.45863 (fixed) Direct
Euro to DEM	1.92573 (fixed) Direct
Euro to PST	163.826 (fixed) Direct

Processing Examples

Payment Cycle Example

Company A owes Company B 1000 DEM for an outstanding invoice. Company A pays 500 FRF and posts the FRF payment transaction to the applicable accounts in the general ledger.

The calculation for partial closing of the DEM invoice in the payables ledger requires conversion of the 500 FRF to DEM and involves triangulation as follows:

500 FRF / 6.45863 = 77.416 EUR

77.416 EUR x 1.92573 = 149.08 DEM

Note: Because the rates between NLCs and the Euro are fixed and all conversions between two NLCs must be triangulated through the Euro, there are no exchange gains or losses from transactions between two EMU countries.

Cash Receipt Cycle Example

Company A receives 2000 DEM from Company B. Company A posts the DEM receipt transaction to the general ledger, which has a base currency of FRF.

The receivables ledger transaction requires triangulated conversion of the DEM receipt to FRF as follows:

2000 DEM / 1.92573 = 1038.567

1038.567 EUR x 6.45863 = 6707.72 FRF

Company A also applies the receipt to a 6707.72 FRF obligation and posts the transaction for the application to the general ledger.

The application transaction requires triangulated conversion to FRF as follows:

2000 DEM / 1.92573 = 1038.567

1038.567 EUR x 6.45863 = 6707.72 FRF

Invoice Cycle Example

Company A orders 1000 widgets at 50 DEM per widget from Company B.

In the Company A purchasing subledger, the calculation to convert the 50000 DEM order to FRF requires triangulation as follows:

50000 DEM / 1.92573 = 25964.179 EUR

25964.179 EUR x 6.45863 = 167693.02 FRF

When Company A receives 900 widgets, Company A posts the receipt transaction for 45000 DEM to the general ledger.

The calculation for converting the DEM receipt amount to FRF requires triangulation as follows:

45000 DEM / 1.92573 = 23367.761 EUR

23367.761 EUR x 6.45863 = 150923.72 FRF

Company A then receives an invoice for 45000 DEM, matches the purchase order to the invoice, and posts the DEM receipt and invoice transactions to the general ledger.

Since the purchase order and invoice transactions are both in DEM but the base currency is FRF, the system uses triangulation to check the tolerance as follows:

50000 DEM (PO) – 45000 DEM (Invoice) = 5000 difference

5000 DEM / 1.92573 = 2596.418 EUR

2596.418 EUR x 6.45863 = 16769.30 FRF

The system compares the 16769.30 FRF with the tolerance amount.

Billing Cycle Example

Company A receives an order for 10000 units at 5 DEM each from Company B. Company A ships the goods and bills Company B 50000 DEM.

Company A posts a DEM receivables transaction to the receivables ledger and a DEM obligation transaction to the general ledger.

The calculation to convert the DEM transactions to FRF requires triangulation as follows:

50000 DEM / 1.92573 = 25964.179 EUR

25964.179 EUR x 6.45863 = 167693.02 FRF

Journal Cycle Example

Company A records an accrual journal in Subsidiary A's books for expenses of 10000 FRF that a French-based company has incurred on the subsidiary's behalf but has not yet billed.

Subsidiary A inputs, accepts, and posts a journal denominated in FRF.

Conversion of the 10000 FRF to the subsidiary's base currency of pesetas (PST) requires triangulation as follows:

- 10000 FRF / 6.45863 = 1548.316 EUR
- 1548.316 EUR x 163.826 = 253654.40 PST

7: Euro -> NLC

Traders and Exchange Rates

Traders

Country	Company	Base Currency	Code
France	Company A	Euro	EUR
Spain	Subsidiary A	Peseta	PST
Germany	Company B	Deutschemarks	DEM

Exchange Rates

Exchange	Rate
Euro to French francs (FRF)	6.45863 (fixed) Direct
Euro to DEM	1.92573 (fixed) Direct
Euro to PST	163.826 (fixed) Direct

Processing Examples

Payment Cycle Example

Company A receives an invoice from Company B for 1000 EUR, pays in EUR and posts the payment transaction in EUR to the applicable accounts in the Company A general ledger.

Because the amounts are all in Euro, no conversion is necessary.

If Company A still uses FRF as an Infinium GL secondary currency in order to compare present and past business, however, the conversion of the EUR amount to FRF is 1000 EUR x 6.45863 = 6458.63 FRF.

Cash Receipt Cycle Example

Company A receives 5000 EUR from Company B, posts the receipt transaction to the general ledger, and applies the receipt to an outstanding obligation of 10000 EUR. Company A also posts the application transaction to the general ledger.

Because the amounts are all in EUR, no conversion is necessary.

If Company A still uses FRF as an Infinium GL secondary currency, the calculation to convert the 5000 EUR receipt to FRF is 5000 Euro x 6.45863 = 32293.15 FRF.

Invoice Cycle Example

Company B orders 1000 widgets at 25 Euro per widget from Company A. When Company B receives the 1000 widgets, Company B posts the receipt transaction to the general ledger in Euro.

The calculation to convert the 25000 Euro order amount and the receipt amount in Company B's purchasing ledger to DEM is 25000 EUR x 1.92573 = 48143 DEM.

Company B receives an invoice for 25000 Euro from Company A. Company B matches the PO to the invoice and posts the invoice transaction in Euro to the general ledger.

The calculation to convert the 25000 Euro invoice to DEM for matching and posting is also 25000 EUR x 1.92573 = 48143 DEM.

Billing Cycle Example

Company A receives an order for 10000 units at 5 Euro each from Company B. Company A ships the goods to Company B and bills Company B 50000 Euro.

Company A posts a receivables Euro transaction and posts a Euro obligation transaction to the general ledger.

If Company A still uses a secondary currency of FRF, the EUR transactions need to be converted as follows to record the secondary currency amounts in FRF:

50000 EUR x 6.45863 = 322931.50 FRF

Journal Cycle Example

Company A records an accrual journal in Subsidiary A's books for expenses of 10000 Euro that a Euro-based company incurred on behalf of the subsidiary but has not yet billed.

Subsidiary A inputs, accepts, and posts a journal in Euro.

The conversion of the Euro amount to Subsidiary A's own base currency is 10000 EUR x 163.826 = 1638260 PST.

8: NLC -> Euro

Traders and Exchange Rates

Traders

Country	Company	Base Currency	Code
France	Company A	French francs	FRF
Ireland	Subsidiary A	Euro	EUR
Germany	Company B	Euro	EUR

Note: In some of the following examples, Company A is also using the Euro as a secondary currency for historical comparison purposes.

Exchange Rates

Exchange	Rate
Euro to FRF	6.45863 (fixed)

Processing Examples

Payment Cycle Example

Company A pays Company B 1000 FRF. Company A posts the FRF payment transaction to the applicable accounts in the general ledger.

If Company A is using the Euro as a secondary currency, the conversion of the payment transaction amount is 1000 FRF / 6.45863 = 154.83 EUR.

Cash Receipt Cycle Example

Company A receives 10000 FRF from Company B and posts the receipt transaction to the general ledger.

If Company A is using the Euro as a secondary currency, the calculation to convert the 10000 FRF receipt to EUR is 10000 FRF / 6.45863 = 1548.32 EUR.

Company A applies the receipt to an obligation of 20000 FRF and posts the application transaction to the general ledger.

The calculation to convert the 10000 FRF application transaction to EUR is the same as for the receipt, 10000 FRF / 6.45863 = 1548.32 EUR.

Invoice Cycle Example

Company B orders 1000 units at 25 FRF per unit from Company A. Company B receives 900 units from Company A and posts the receipt transaction of 22500 FRF to the general ledger.

In Company B's purchasing ledger, the calculation to convert the 25000 FRF purchase order to EUR is 25000 FRF / 6.45863 = 3870.79 EUR.

Company B receives an invoice for 22500 FRF from Company A (900 units at 25 FRF per unit), matches the purchase order to the invoice, and posts the invoice transaction to the general ledger.

The calculation to convert the 22500 FRF invoice to EUR is 22500 FRF / 6.45863 = 3483.71 EUR.

Billing Cycle Example

Company A receives an order for 1000 widgets at 100 FRF each from Company B. Company A ships the goods to Company B along with a bill for 100000 FRF.

Company A posts a FRF transaction to its receivable subsystem and a FRF obligation transaction to its general ledger.

If Company A is using the Euro as a secondary currency, the calculation to convert the FRF transactions to EUR is 100000 FRF / 6.45863 = 15483.16 EUR.

Journal Cycle Example

Company A records an accrual journal in Subsidiary A's books for expenses of 10,000 FRF that a French company incurred on behalf of the subsidiary but has not yet billed.

Subsidiary A inputs, accepts, and posts a journal in FRF.

The conversion of the FRF amount to the subsidiary's base currency, EUR, is 10000 FRF / 6.45863 = 1548.32 EUR.

Notes

Appendix B Application Interface Processes

B

This appendix summarizes general information about the currency amount conversion processes that occur when an interfacing application submits a currency amount conversion request to Infinium CM. This appendix also includes summary technical information about the application interface program and the conversion processes.

CMGAIP4 Application Interface Program

Communications between Infinium CM and the interfacing multi-currency processing applications use the currency application interface program, CMGAIP4.

The interfacing applications' programs call CMGAIP4 whenever a currency amount needs to be converted to another currency.

CMGAIP4 Processes

This topic describes processes that can apply during conversion of amounts from one currency to another currency under the following conditions:

- Basic process (no special circumstances apply)
- Special steps when triangulation applies
- Special override steps when a rate is locked

Basic Process

The following steps summarize the actions that your system takes when no special currency conversion circumstances apply.

Step 1: Receives Request to CMGAIP4

A subledger application calls CMGAIP4, providing required data in a standard multi-occurrence data structure named CMSAI4.

This structure allows simultaneous requests for multiple currency amount conversions.

The CMGAIP4 program processes multiple requests in the order in which they occur in the data structure.

Step 2: Validates Currencies (or Group) and Rate Type

CMGAIP4 checks to ensure that the currency codes and rate type code are listed as valid and active in the Infinium CM controls.

If the request references a currency group rather than a specific currency, the system ensures that the group is valid in Infinium CM controls.

Step 3: Checks Whether Triangulation Applies

CMGAIP4 checks whether either the source or target currency controls specify triangulation.

In the basic process, triangulation does not apply and the system continues to Step 4.

Step 4: Retrieves Rate and Calculates Target Amount

CMGAIP4 retrieves the current Infinium CM exchange rate and uses that rate along with the submitted source amount to calculate the target amount.

Notes:

- CMGAIP4 uses the quotation method value in the exchange rate controls for the specified pair of currencies to determine whether to multiply or divide the source currency by the exchange rate.
- The direct method uses multiplication. The indirect method uses division.
- In the case of non-triangulated conversions for Infinium GL, CMGAIP4 does not calculate the target amount. Infinium GL performs the actual calculation after receiving the rate from Infinium CM.

Step 5: Updates the Interface Data Structure

Finally, CMGAIP4 updates the multi-occurrence data structure with the exchange rate and the target amount for communication back to the interfacing application program that called CMGAIP4.

Note: In the case of non-triangulated conversions for Infinium GL, CMGAIP4 omits the target amount and sends only the exchange rate. Infinium GL uses the exchange rate to calculate the target amount.

Special Steps When Triangulation Applies

This topic summarizes the additional and alternative steps that apply when currency conversion requires triangulation.

Note: Under current circumstances at the beginning of 1999 there is only one triangulation currency, the Euro.

Validation of Triangulation Currency

If either the source currency controls or the target currency controls specify triangulation, the system validates the triangulation currency.

Retrieval of Two Exchange Rates

If the triangulation currency proves valid, CMGAIP4 retrieves both exchange rates (source to Euro and Euro to target) using the triangulation formula described later in this appendix to calculate the target amount.

Target Amount Calculation and Rounding

CMGAIP4 uses the exchange rates to calculate the Euro amount and then convert the Euro amount to the target currency amount. Refer to the "Triangulation Calculation Formulae and the Quotation Methods" topic later in this appendix for details about the formulas that the program uses for these calculations.

Updates to Data Structure

CMGAIP4 then updates the data structure as follows to send information back to the application:

- Provides the target amount
- Sets the direct/indirect flag to **3** to indicate triangulation

In the case of triangulation, CMGAIP4 does not send the exchange rate back to the interfacing system since the interfacing systems display only one

exchange rate at a time. Instead, Infinium CM provides a special pop-up window that interfacing systems can use to display both exchange rates to the user on request.

Refer to the “Triangulation Exchange Rate Pop-Up Window (Program CMGDTER)” topic later in this appendix for more information.

Fields Used for Triangulation Information

Physical file CMPCC (the Infinium CM Currency Controls file) contains the following fields for tracking whether and when triangulation applies:

- CCTCC (Triangulation Code)

  The value in this field identifies the triangulation currency, if any.

- CCTEDE (Effective Date – Edited)
- CCTEDH (Effective Date – HYF, that is, hundred year format)
- CCTED8 (Effective Date – 8 Digit)

The triangulation effective date specifies the date as of which the currency specified in the preceding field is to be used for triangulation.

Use of Euro triangulation does not apply until January 1, 1999.

Special Override Steps When a Rate Is Locked

Some interfacing applications allow the user to provide an exchange rate and lock that rate. In this case the interfacing system typically needs to use Infinium CM to check for rate override controls in the applicable Infinium CM exchange rate controls.

If this type of override does not apply, the CMSAI4 data structure field AIRATE is **0**. If the interfacing application provides an override exchange rate in the data structure field AIRATE, CMGAIP4 performs the following alternative steps:

- Validates the currency pair and rate type sent by the interfacing system as usual.
- Validates that the exchange rate controls allow a rate override.

In the case of triangulation, the system checks only the exchange rate controls that include the target currency. For example, if the conversion is for NLC A to NLC B, triangulation through the Euro applies. The system checks whether the override is allowed for the conversion from the Euro to NLC B.

- If the request passes both validations, calculates the target amount using the override rate from the interfacing system.
- If triangulation applies, the system cannot tell which of the two exchange rate control records applies. The system therefore always uses the override rate as a direct rate and multiplies by that rate.
- If triangulation does not apply, ensures that the resulting target amount meets the tolerance requirements specified in the exchange rate controls.
- If triangulation applies, the checking of the tolerance requirements does not apply.
- Returns the resulting target amount to the data structure's special override target amount field AITOVR for communication to the interfacing system. Also returns **1** to the data structure's AIRO field indicating that the exchange rate controls did allow this override.

Triangulation Exchange Rate Pop-Up Window (Program CMGDTER)

The interfacing systems typically provide a single exchange rate field, but in the case of triangulation conversions of amounts there are two exchange rates. The Business and Accounting Software Developers Association (BASDA) rules prohibit use or display of a composite (combined) rate.

Infinium CM and the interfacing systems provide the following method of allowing users to display the two exchange rates that resulted in the target amount:

- The interfacing system displays an asterisk (*****) next to the exchange rate field and leaves the exchange rate field blank to indicate that triangulation applied in this case.
- The interfacing system provides an Exchange Rates function key (F20 or, where F20 is not available, F21) that you can press to display the exchange rates.
- When you press the function key, the interfacing system calls Infinium CM program CMGDTER. CMGDTER retrieves the two exchange rates and displays a special window. The window identifies the currencies and the exchange rates used for triangulation.

Triangulation Quotation Methods and Calculations

This topic summarizes the calculations used by the CMGAIP4 program to derive a target amount when triangulation applies. The calculation depends upon the following factors:

- Whether the quotation method is direct or indirect in the applicable exchange rate controls

  Since the conversion rates are published in the format 1 Euro = N units of an NLC, we recommend that you set up Euro exchange rate controls with the Euro as the source currency and with a direct quotation method.

- Whether the reciprocal relationship applies

  You can set the exchange rate control flag *Reciprocal relationship allowed?* to allow the same controls to be used for conversions in both directions between two currencies.

  If the controls have Currency A as the source and Currency B as the target, the reciprocal relationship applies only when the conversion is from Currency B to Currency A.

The table below summarizes the calculations used under four different scenarios.

Note: In the case of triangulation, the information in the following table applies both to the first conversion from the original currency to the Euro, and to the second conversion from the Euro to other currency.

Settings and Calculations	Exchange Rate Controls Set to Direct Quotation Method		Exchange Rate Controls Set to Indirect Quotation Method	
	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Quotation Method in Exchange Rate Controls	Direct	Direct	Indirect	Indirect
Does the reciprocal relationship apply?	No	Yes	No	Yes
Multiply or Divide by Exchange Rate?	Multiply	Divide	Divide	Multiply

Rounding of Euro Amounts and Potential Rounding Issues

The Euro is divided into 100 Euro cents (hundredths). When the system converts an amount to the Euro as a final target currency (rather than as the intermediate currency during triangulation), the system rounds the result to two decimal places.

Note that rounding issues can arise if you convert individual items and separately convert cumulative amounts that are based on those same items. This can occur during conversion of historical data to the Euro.

CMGAIP4 Error Codes and Their Meanings

The table below summarizes the CMGAIP4 error codes and their meanings.

Code	Meaning
Blank	No error
01	Source currency invalid
02	Source currency inactive
03	Target currency invalid
04	Target currency inactive
05	Rate type invalid
06	Rate type inactive
07	Effective date invalid
08	No exchange rate found
10	Update to ER specified, but no changed data input This message means that a user updated the exchange rate record leaving the rate blank.
11	ER record retrieved but not from requested period The ER record is the exchange rate record.
12	Date on ER record retrieved is outside range permitted by rate controls – ER will be returned The ER record is the exchange rate record.
13	Requested rate control not found
14	Invalid currency group

Code	Meaning
15	Source amount not correct decimal position
16	Rate override not allowed
17	Rate override tolerance exceeded
18	Target amount tolerance exceeded
19	Invalid parameter
20	Currency not in currency group
21	Currency group not subset of main currency group
22	Main currency group invalid
23	Subset currency group invalid
24	Triangulation currency invalid
27	Source triangulation exchange rate not found
28	Target triangulation exchange rate not found
70	Invalid request value received
90	CM entity control record not found
91	Error occurred in CM period end generator (CMGPEG)

Infinium GL Exceptions to the CMGAIP4 Process

The volume of amount conversion processing required by Infinium GL means that it is more efficient for Infinium GL to use its own programs for straightforward conversions rather than calling Infinium CM. Therefore, Infinium GL uses the following processing:

- In the case of simple conversions, Infinium GL retrieves only the exchange rate from Infinium CM and provides its own amount conversion programs for the amount calculations.
- In the case of conversions involving triangulation, Infinium GL uses the same processes as other applications and uses the CMGDTER interface program to display the two exchange rates at the user's request.