

Industry-specific

QAD SOLUTIONS

Manufacturing Applications

MFG/PRO eB2 User Guide Volume 4A

Financials

System/Account Control
General Ledger
General Ledger Report Writer
Multiple Currency
Accounts Receivable
Accounts Payable
Evaluated Receipts Settlement
Costing
Cash Management
Converting a Database to the Euro



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MFG/PRO eB2
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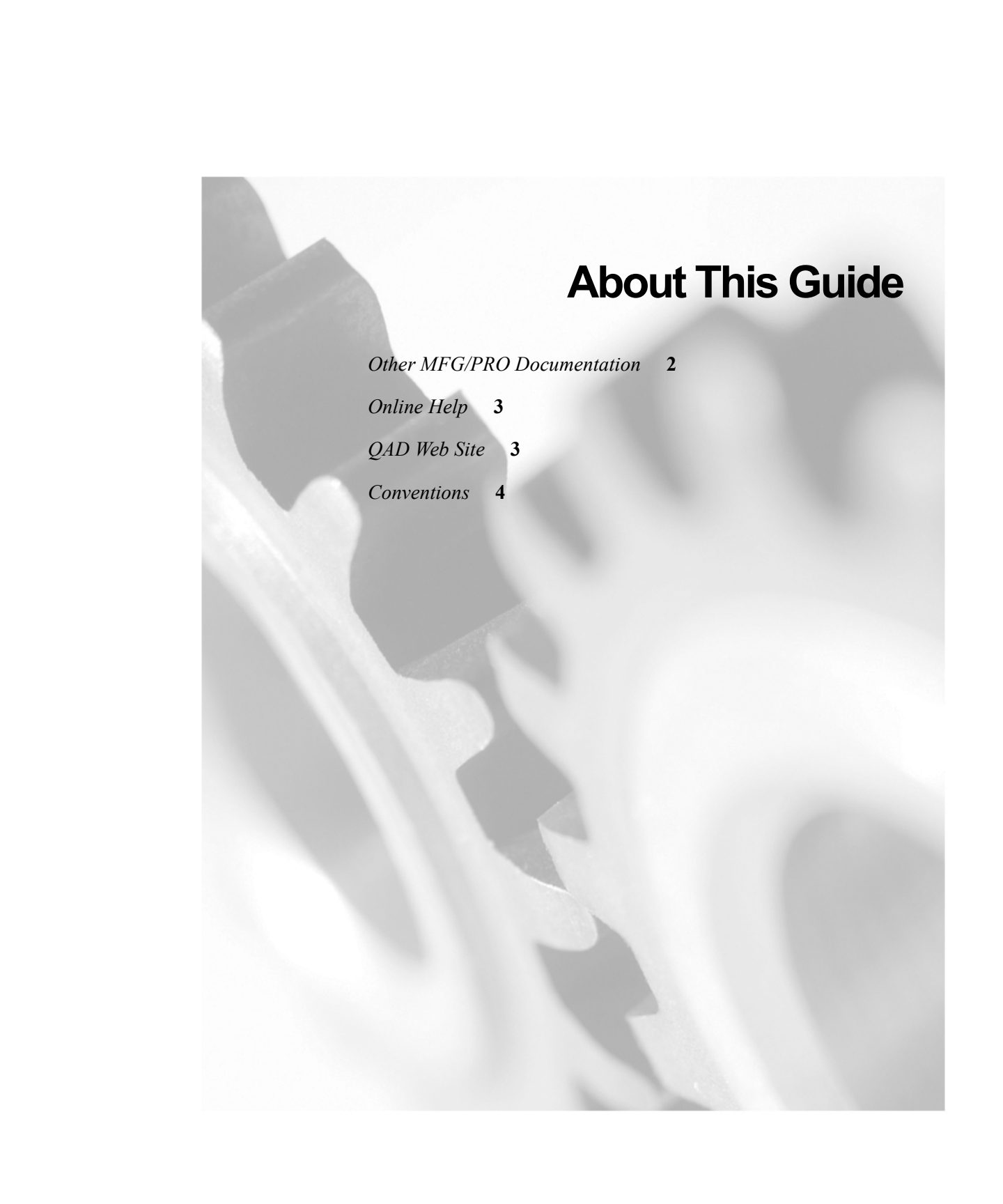
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This guide covers features of the MFG/PRO financial modules.

Other MFG/PRO Documentation

- For an overview of new features and software updates, see the *Release Bulletin*.
- For software installation instructions, refer to the appropriate installation guide for your system.
- For conversion information, refer to the *Conversion Guide*.
- For instructions on navigating and using the QAD Desktop interface, see *User Guide: QAD Desktop*.
- For instructions on navigating the MFG/PRO Windows and character environments, refer to *User Guide Volume 1: Introduction*.
- For information on using MFG/PRO, refer to the *User Guides*.
- For technical details, refer to *Entity Diagrams* and *Database Definitions*.
- For information on using features that let MFG/PRO work with external applications, see the *External Interface Guides*. Each book in this set describes a separate interface such as the Warehousing application program interface (API) and Q/LinQ, the tool set for building and using data exchange tools.
- To view documents online in PDF format, see the *Documents on CD* and *Supplemental Documents on CD*. The CD-ROM media includes complete instructions for loading the documents on a Windows network server and making them accessible to client computers.

Note MFG/PRO installation guides are not included on a CD. Printed copies are packaged with your software. Electronic copies of the latest versions are available on the QAD Web site.

Online Help

MFG/PRO has an extensive online help system. Help is available for most fields found on a screen. Procedure help is available for most programs that update the database. Most inquiries, reports, and browses do not have procedure help.

For information on using the help system in the different MFG/PRO environments, refer to *User Guide Volume 1: Introduction* and *User Guide: QAD Desktop*.

QAD Web Site

QAD's Web site provides a wide variety of information about the company and its products. You can access the Web site at:

<http://www.qad.com>

For MFG/PRO users with a QAD Web account, product documentation is available for viewing or downloading at:

<http://support.qad.com/documentation/>

You can register for a QAD Web account by accessing the Web site and clicking the Accounts link at the top of the screen. Your customer ID number is required. Access to certain areas is dependent on the type of agreement you have with QAD.

Most user documentation is available in two formats:

- Portable document format (PDF). PDF files can be downloaded from the QAD Web site to your computer. You can view them with the free Adobe Acrobat Reader. A link for downloading this program is also available on the QAD Web site.
- HTML. You can view user documentation through your Web browser. The documents include search tools for easily locating topics of interest.

Features also include an online solution database to help MFG/PRO users answer questions about setting up and using the product. Additionally, the QAD Web site has information about training classes and other services that can help you learn about MFG/PRO.

Conventions

MFG/PRO is available in several interfaces: Desktop (Web browser), Windows, and character. To standardize presentation, the documentation uses the following conventions:

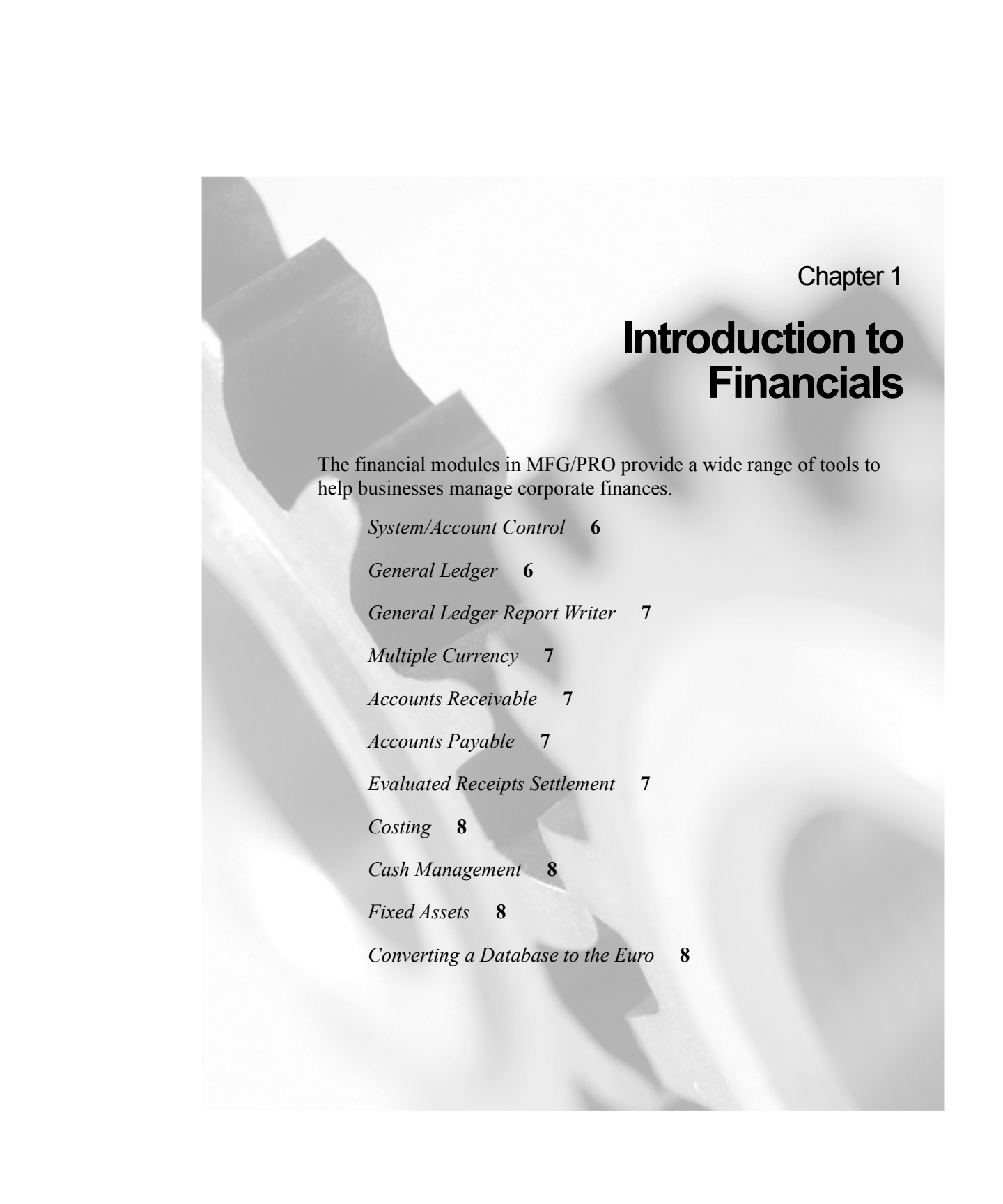
- MFG/PRO screen captures show the Desktop interface.
- References to keyboard commands are generic. For example, choose Go refers to:
 - The forward arrow in Desktop
 - F2 in the Windows interface
 - F1 in the character interface

In the character and Windows interfaces, the Progress status line at the bottom of a program window lists the main UI-specific keyboard commands used in that program. In Desktop, alternate commands are listed in the right-click context menu.

For complete keyboard command summaries for each MFG/PRO interface, refer to the appropriate chapters of *User Guide Volume 1: Introduction* and *User Guide: QAD Desktop*.

This document uses the text or typographic conventions listed in the following table.

If you see:	It means:
<code>monospaced text</code>	A command or file name.
<i>italicized monospaced text</i>	A variable name for a value you enter as part of an operating system command; for example, <i>YourCDROMDir</i> .
indented command line	A long command that you enter as one line, although it appears in the text as two lines.
Note	Alerts the reader to exceptions or special conditions.
Important	Alerts the reader to critical information.
Warning	Used in situations where you can overwrite or corrupt data, unless you follow the instructions.



Chapter 1

Introduction to Financials

The financial modules in MFG/PRO provide a wide range of tools to help businesses manage corporate finances.

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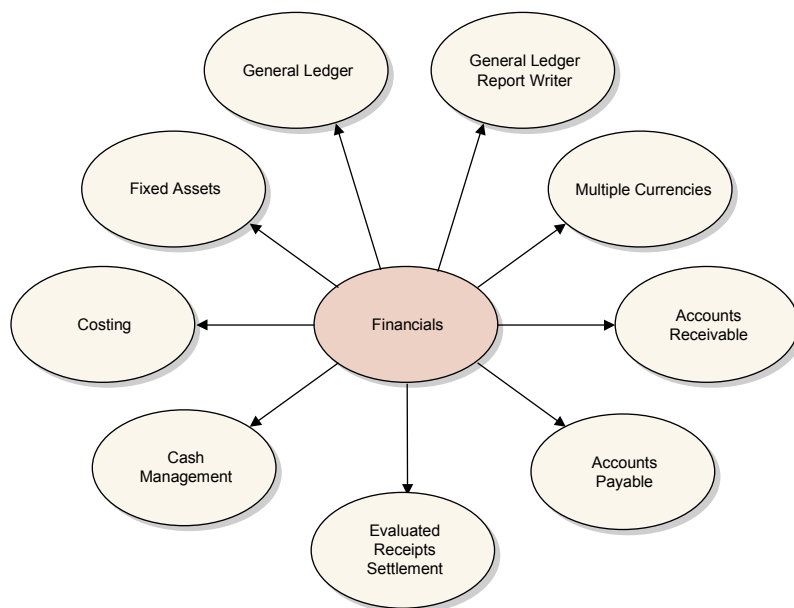
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Figure 1.1 illustrates the range of functions available with MFG/PRO financials.

Fig. 1.1
Financials



System/Account Control

♦ See Chapter 2, “System/Account Control,” on page 9.

System/Account Control sets up default accounts used throughout the system and other system-wide control settings.

General Ledger

♦ See Chapter 3, “General Ledger,” on page 19.

General Ledger (GL) tracks financial transactions, monitors account balances, and produces financial statements and comparisons. You can produce detailed or summary GL reports that include a single entity or a range of entities.

General Ledger also lets you define daybooks for user-defined grouping and ordering of GL transactions.

General Ledger Report Writer

GL Report Writer produces full financial statements fulfilling statutory reporting requirements. Reporting is based on user-defined hierarchies on any segment of the general ledger.

♦ See Chapter 4, “General Ledger Report Writer,” on page 75.

Multiple Currency

Multiple Currency processes transactions in non-base currencies. You can define currencies, maintain exchange rates, and set up bank codes.

If your company is located in the European Monetary Union (EMU) or does business with companies in the EMU, you can also define features to accommodate the common currency of the EMU—the euro.

♦ See Chapter 5, “Multiple Currency,” on page 117.

Accounts Receivable

Accounts Receivable (AR) monitors customer balances, supports credit management, produces statements and agings, and records customer payments. Use AR to issue drafts on invoices, record approvals, sell at a discount, and close or cancel drafts.

♦ See Chapter 6, “Accounts Receivable,” on page 149 for details.

Accounts Payable

Accounts Payable (AP) manages supplier accounts, monitors outstanding payables, and processes payments to suppliers. Supplier invoices are matched against purchase-order receiving history (three-way match).

♦ See Chapter 7, “Accounts Payable,” on page 173.

Evaluated Receipts Settlement

Use Evaluated Receipts Settlement (ERS) to record a pending payment to a supplier without an invoice. ERS records liabilities to the supplier automatically, based on quantities received at the unit price you negotiate with the supplier.

♦ See Chapter 8, “Evaluated Receipts Settlement,” on page 219.

Costing

- ◆ See Chapter 9, “Costing,” on page 235.

The Costing chapter discusses how costs are applied and accounted for in MFG/PRO. It provides information for setting up and using costing features with the Cost Management module, as well as using standard MFG/PRO functions.

Cash Management

- ◆ See Chapter 10, “Cash Management,” on page 297.

Cash Management provides combined cash requirements and projection reports for planning purposes. It also supports input of AP, AR, and miscellaneous cash transactions in a cash book to perform daily bank statement reconciliations.

Fixed Assets

- ◆ See *User Guide Volume 4B: Financials*.

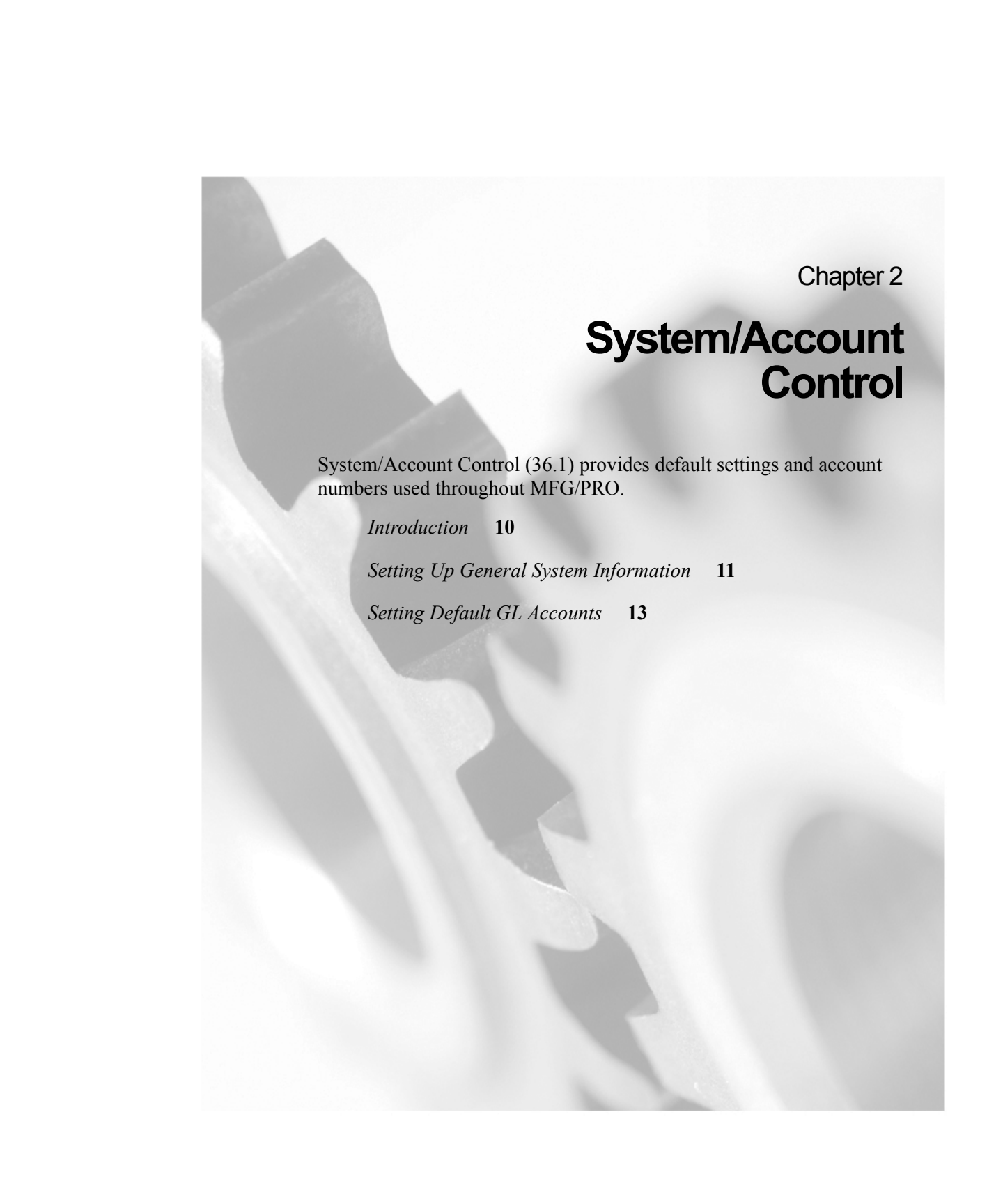
Use Fixed Assets to set up, maintain, transfer, and retire your company’s fixed assets. The Fixed Asset depreciation system is integrated with the General Ledger module.

Often, depreciation is calculated one way for internal reporting and another way for tax purposes. Using Fixed Assets, you can set up asset records specifying how depreciation will be calculated for each kind of reporting. Depreciation is calculated using either equations or tables. Conventions can be used in conjunction with equations for depreciation calculations in the first, last, and disposal years of an asset’s life.

Converting a Database to the Euro

- ◆ See Appendix A, “Converting a Database to the Euro,” on page 313.

For companies located within the European Monetary Union (EMU) who have existing databases, the system provides procedures for converting the base currency and historical information to the common currency—the euro.

The background of the page is a grayscale image of several interlocking gears. The gears are of different sizes and are positioned in a way that they appear to be meshing together. The lighting creates highlights and shadows on the teeth of the gears, giving them a three-dimensional appearance. The overall tone is technical and industrial.

Chapter 2

System/Account Control

System/Account Control (36.1) provides default settings and account numbers used throughout MFG/PRO.

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Setting Up General System Information **11**

Setting Default GL Accounts **13**

Introduction

Set up System/Account Control (36.1) before entering any information into the system. This is a special control program used by all modules of MFG/PRO. It defines vital system parameters such as base currency and default general ledger (GL) accounts.

The financial organization and the project team are usually responsible for entering the data in this program. After System/Account Control is configured, some values such as the system entity and base currency should never be changed. The system does not update other records in the database if you change these values.

This control program is located on the Manager Functions (36) menu. Other related functions are discussed in *User Guide Volume 9: Manager Functions*. Since most of the setup in System/Account Control requires financial expertise, it is discussed with other financial modules.

If changes must be made to these settings, either existing Progress utilities, such as `utcurr.p`, or specially developed Progress utilities should be used to update existing transactions. The `utcurr.p` utility lets you rename a currency code from one name to another. For example, if your code for Canadian dollars was CND and you want to begin using the ISO standard code CAD, you can rename all occurrences of CND to CAD.

◆ See Appendix A, “Converting a Database to the Euro,” on page 313.

Important Do not confuse renaming a currency code with converting the base currency. MFG/PRO supports converting the base currency of the database to the euro.

It is critical to set up this control program correctly, because the system automatically propagates this data to other tables as data records are created.

Example When you designate a system account for accounts receivable, this account becomes the default AR account for new customers. The customer AR account becomes the default account on sales orders for these customers. The sales order AR account defaults to the invoice and travels with it until the transaction is posted to the general ledger. If you fail to designate an account or enter the wrong one, other data can be affected.

System/Account Control has two sections.

- General settings for the database, including entity, system base currency, server time zone, and validations
- Multiple frames that display default accounts, sub-accounts, and cost centers used by various programs in the system

Setting Up General System Information

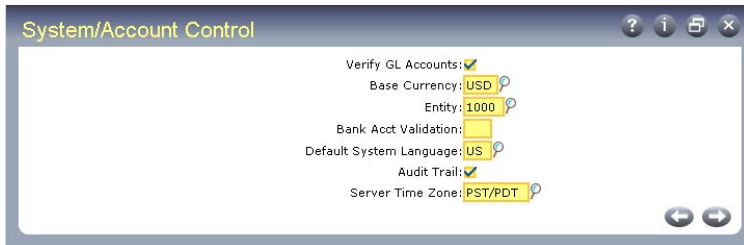


Fig. 2.1
System/Account
Control (36.1),
General Settings

Verify GL Accounts. Specify whether the system should validate general ledger (GL) accounts and effective dates for transactions created in modules other than General Ledger. Accounts are verified in the GL module regardless of the value entered in this field.

When Yes, the system validates the following:

- Each account, sub-account, cost center, and project code entered for a transaction must be defined in the appropriate GL setup function with the Active field set to Yes.
- The components of the account number must be valid in combination with each other, based on the ranges specified in the GL setup functions.
- The transaction effective date must be within an open GL calendar period.

Base Currency. Enter the default company currency used for financial reports. Financial statements, such as balance sheets and income statements, always print amounts in the base currency. Other reports may specify base or some other currency.

Base currency determines the default for new address records, such as customers and suppliers. This field is required even if transactions take place in multiple currencies. The code you enter must be an active currency code defined in Currency Maintenance (26.1).

Tip
Set this field to No while implementing the General Ledger module.

▶ See Chapter 5, “Multiple Currency,” on page 117.

See “Defining Entities” on page 25.

Tip

If you have not already set up the entity code in the General Ledger module, the system gives you a warning but allows you to proceed.

Entity. Enter the code for the default system entity. In accounting, an entity is any business or part of a business that submits reports of its activities to tax authorities, stockholders, or other people outside the business. Many large businesses consist of more than one entity. Since MFG/PRO supports businesses with multiple companies, all transactions are associated in some way with an entity code that identifies the part of the business that generated the transaction.

The system distinguishes between the entity used for most database activities—the system entity—and the default entity used in the General Ledger module—the primary entity. This lets you manage transactions for different entities within a single database.

Enter the code for the company that will generate most of the non-GL transactions in the database. Usually, you can override the default entity during transaction entry. Once set, the system entity should not be changed.

In the General Ledger module, the default entity is defined as the primary entity in Entity Code Maintenance (25.3.1.1). The code for the system entity is often the same as the primary entity. The primary entity should not be changed once it is set.

During a single log-in session, you can switch from the primary entity to some other GL entity using Current Entity Change (25.1). This is a convenient way to set the default entity when running reports or transactions. This switch does not affect transaction processing outside of the General Ledger module.

If your business consists of only one company, you only need one entity code. The system entity is the same as the primary entity in the General Ledger module. Even when a business consists of a group of companies, the system entity and the primary GL entity are almost always the same.

Important Do not reset Base Currency or Entity after you begin processing in your production database.

Bank Account Validation. Enter 11 or 12 to activate 11- or 12-digit bank account validation for electronic funds transfers to European giro accounts. Otherwise, leave blank. Account validation affects Supplier Maintenance (2.3.1), Bank Maintenance (26.13, 27.6.1, or 28.9.1), Customer/Supplier Bank Maintenance (2.21.1), and the Payment Selection Register (28.9.6).

Default System Language. Enter the default language you want the system to use.

Audit Trail. Enter Yes to have the system store audit detail information for a subset of critical master tables. Review these details with the Master Data Audit Detail Report (36.17.2). If No, you can still retrieve summary-level audit information with Master Data Audit Report (36.17.1).

▶ See *User Guide Volume 9: Manager Functions* for information on auditing.

Auditing of changes to unposted GL transactions is based on a similar field in General Ledger Control.

▶ See “GL Transaction Audit Trail” on page 41.

Server Time Zone. Enter the system’s default time zone. This is the time zone of the server machine running your MFG/PRO database. This time zone defaults to User Maintenance (36.3.18) when you define a new user.

If you are using the optional Service/Support Management (SSM) module and enable multiple time zones (MTZ) in Service Management Control (11.24), this field is controlled by SSM. Either the Multiple Time Zone Startup Utility (11.21.22.24) or the Server Time Zone Change Utility (11.21.22.22) sets this time zone in SSM.

▶ See *User Guide Volume 8A: Service/Support Management*.

If you try to change this field when it is set from SSM, an error message displays. If multiple time zone is disabled in SSM, you can change the field in System/Account Control.

Setting Default GL Accounts

The second section of System/Account Control defines default GL accounts, sub-accounts, and cost centers that are accessed by many maintenance functions.

Each account is identified by an account code, an optional sub-account code, and an optional cost center code. General Ledger Control (25.24) determines whether sub-accounts and cost center codes are used in the general ledger.

▶ See “General Ledger Control” on page 39.

These accounts determine the defaults when you add static data such as currencies, customers, suppliers, banks, product lines, and departments. Later, they appear as defaults on some transactions.

Since these are only default accounts, none of the static data or transactions that reference them are changed when these accounts are modified in System/Account Control. Use Account Code Maintenance (25.3.13) to set up GL accounts separately, before or after defining the default system accounts.

Note A few accounts in System/Account Control are updated directly, such as Sales Freight Accrued and Applied. These accounts typically cannot be modified in the transactions that reference them.

Follow these guidelines for system accounts.

- Know how the system uses them. Many are used in transactions that the software creates automatically.
- Assign every account a value, even though it may never be used. This ensures that transactions are not created with a blank account number.

Table 2.1 lists all of the accounts set up in System/Account Control. The Type column indicates how the account is used. In general ledger, the account types for Income and Expense do not correspond precisely with income and expense accounts. The Use column indicates transactions created with the account.

See *User Guide*
Volume 2B:
Distribution.

If you are using either of the optional consignment modules—Customer Consignment Inventory or Supplier Consignment Inventory—you can also define consignment accounts.

Table 2.1
Default System
Accounts

	Account	Type	Use
Currency Accounts	Unrealized Exchange Gain	Expense	AR, AP, Cash
	Unrealized Exchange Loss	Expense	AR, AP, Cash
	Realized Exchange Gain	Expense	AR, AP
	Realized Exchange Loss	Expense	AR, AP
	Exchange Rounding	Expense	Not currently used

Table 2.1 — *Default System Accounts* — (Page 1 of 4)

	Account	Type	Use
Intercompany Accounts	Accounts Payable (Debit)	Asset	AP Transactions
	Accounts Payable (Credit)	Liability	AP Transactions
	Accounts Receivable (Debit)	Asset	AR Transactions
	Accounts Receivable (Credit)	Liability	AR Transactions
	Fixed Assets (Debit)	Asset	Fixed Assets Transactions
	Fixed Assets (Credit)	Liability	Fixed Assets Transactions
	Inventory Control (Debit)	Asset	Inventory Transactions
	Inventory Control (Credit)	Liability	Inventory Transactions
Sales Accounts	Receivables (AR)	Asset	Invoice Post, AR
	Sales	Income	Invoice Post
	Sales Discount	Expense	Invoice Post
	Sales Tax 1	Liability	Invoice Post
	Sales Tax 2	Liability	Invoice Post
	Sales Tax 3	Liability	Invoice Post
	Sales Terms (Credit)	Expense	AR Payment
	Sales Cash	Asset	AR Payments, AP Checks
	Sales Returns	Expense	Inventory Receipt–Sales Order Return
	Sales Finance	Income	AR
	COGS Material	Expense	SO Shipment
	COGS Labor	Expense	SO Shipment
	COGS Burden (Variable)	Expense	SO Shipment
	COGS Overhead (Fixed)	Expense	SO Shipment
	COGS Subcontract	Expense	SO Shipment
	Sales Freight Accrued	Liability	Invoice Post
	Sales Freight Applied	Income	Invoice Post
	Terms Late Interest	Income	Invoice Post
Accounts Payable	Payables (AP)	Liability	Vouchers, Checks
	AP Discount	Income	Checks
	Expensed Item Receipts	Expense	Vouchers
	Expensed Item Usage Var	Expense	Vouchers
	Expensed Item Rate Var	Expense	Vouchers

Table 2.1 — Default System Accounts — (Page 2 of 4)

	Account	Type	Use
Department	Cost of Production	Expense	Non-Prod Labor, SFC Transfer
	Labor (Absorbed)	Expense	SFC, Repetitive, WO Close
	Burden (Absorbed)	Expense	SFC, Repetitive, WO Close
Product Line	Inventory	Asset	Inventory Transactions
	PO Receipts (Accrued AP)	Liability	PO Receipt, Voucher
	Purchases	Expense	PO Receipt (Non-Inventory)
	Overhead Appl	Expense	PO Receipt
	Scrap	Expense	WO Receipt
	Work-in-Process	Asset	WO, Backflush, Repetitive
	Inv Discrep	Expense	Inventory Counts
	Cost Revalue	Expense	GL Cost Change
	Floor Stock	Expense	WO Close
Variances	PO Price Var	Expense	PO Receipt
	AP Usage Var	Expense	Voucher
	AP Rate Var	Expense	Voucher
	Method Variance	Expense	WO Close
	Transfer Variance	Expense	Multisite Transaction
	Material Usage Var	Expense	WO Close
	Material Rate Var	Expense	WO Issue, WO Close
	Labor Usage Var	Expense	SFC, Repetitive, WO Receipt
	Labor Rate Var	Expense	SFC, Repetitive
	Burden Usage Var	Expense	SFC, Repetitive, WO Receipt
	Burden Rate Var	Expense	SFC, Repetitive
	Subcontract Usage Var	Expense	WO Close
	Subcontract Rate Var	Expense	WO Close
	Mixed Var	Expense	WO Close for joint orders (co-products, by-products)

Table 2.1 — *Default System Accounts* — (Page 3 of 4)

	Account	Type	Use
Service	Service Labor	Expense	Call and Project Activity Recording
	Service Overhead	Expense	Call Activity Recording
	Service Expense	Expense	Call and Project Activity Recording
	Expense Due	Expense	Invoice Post
	Service Returns	Expense	Call Activity Recording
	Deferred Revenue	Liability	Contract Maintenance
	Accrued Revenue	Asset	Contract Maintenance
Consignment	SO Consigned In-Transit	Asset	SO Shipment
	SO Consigned Inventory	Asset	Inventory Transactions
	SO Consigned Offset	Liability	AR Deferral
	PO Consigned Inventory	Asset	Inventory Transactions
	PO Consigned Offset	Liability	AR Deferral

Table 2.1 — *Default System Accounts* — (Page 4 of 4)

General Ledger

The general ledger is a system of accounts used to record and report on the value of assets, liabilities, equities, revenues, and expenses.

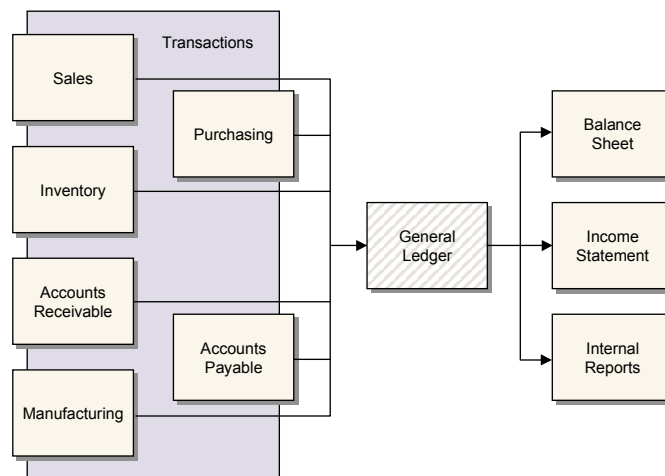
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Introduction

Generally accepted accounting practice requires that a company's financial information be periodically compiled in two financial statements: a balance sheet and an income statement. The balance sheet provides a summary of a company's resources, liabilities, and equity at a given point in time. The income statement shows profit or loss for a given time period. The amount of detail presented in these statements often varies according to the audience.

In order to satisfy these reporting requirements, a general ledger (GL) is used.

Fig. 3.1
General Ledger



To set up a general ledger, you first determine what kinds of information must appear on the financial statements. Financial statement elements, such as product line, can either have their own headings, or be grouped with similar elements under larger headings, such as sales. These report headings are called format positions. Format positions let you specify different levels of detail for different reports and audiences.

Next, you set up a chart of accounts. Accounts show values for financial elements such as cash, inventory, and sales, that change as a result of transactions. An account shows the value of an element at a particular point in time. Account balances provide the content for financial statements.

Although account balances are updated by transactions, an update does not always occur at the time of its corresponding transaction, since all parts of the transaction may not occur simultaneously. Instead, transactions are typically verified by management, then *posted*. Posting transactions actually changes account balances. Once posted, a transaction becomes a permanent part of your financial records and cannot be modified directly. Account balances can, however, be changed using adjusting entries.

For more detailed financial reporting, you can use sub-accounts, cost centers, and projects. Balances in sub-accounts and cost centers can be listed separately or summarized under account codes.

To ensure that account components are used correctly, define valid account ranges for sub-accounts; account and sub-account ranges for cost centers; and account, sub-account, and cost center ranges for projects. Then set Verify GL Accounts to Yes in System/Account Control.

Businesses with multiple companies can use MFG/PRO to prepare consolidated reports showing the impact of each company's activities on the business's overall financial position.

MFG/PRO also supports multinational companies by tracking gains and losses due to currency fluctuations, and translating currencies for consolidated reports.

Tip

Project detail is not listed on most standard financial reports.

♦ See Chapter 5, "Multiple Currency," on page 117.

General Ledger Flow

Before making changes to the general ledger, the system collects all transactions in an unposted transaction table. You can review transactions to ensure that amounts, accounts, and dates are correct. Once transactions are verified, post them to update GL account balances.

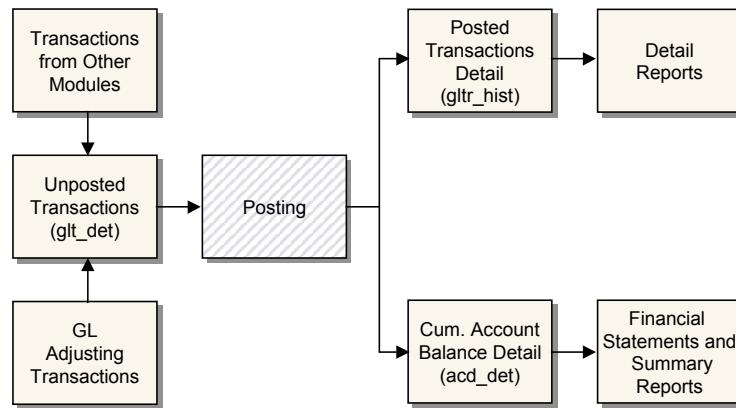
At the end of each GL period, the GL calendar for each transaction type is closed to new activity. You cannot close a calendar period if unposted transactions exist. Transactions are generally posted daily, although some companies post weekly or monthly.

♦ See "Period Closing by GL Transaction Type" on page 27.

Posting transactions debit and credit amounts from the unposted-transaction table to the posted-transaction table. Posted transaction detail remains in the system for detailed reporting. It can be consolidated at year end. During posting, the transaction detail is used to update cumulative account balance detail records for the period, used for generating financial statements and summary reports.

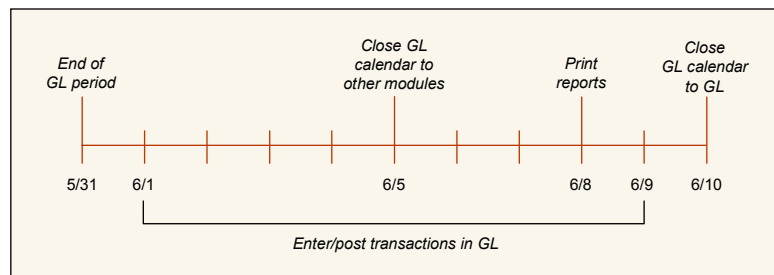
Once transactions are posted, you cannot change or correct them directly. Use adjusting, correction, or retroactive transactions to make any required changes.

Fig. 3.2
General Ledger
Processing Flow



Most companies print a trial balance summary or detail report before printing statements. The trial balance lists the title and amount for all accounts, making it easier to spot errors and make adjusting entries before printing formal statements.

Fig. 3.3
Timing of GL
Activities



After all reports are printed, you can close the GL calendar period to the general ledger. At period-end, you can consolidate transactions for the period to conserve space in the database. At the end of the fiscal year, the GL calendar is also closed for the year, and the year-end close updates the retained earnings for the current year's net profit or loss.

In multiple entity environments, procedures vary depending on the number of databases. If all entities are in the same database, consolidated reports are printed for the range of entities. If there are also multiple databases, each entity prepares its own financial statements and then exports transactions to an ASCII file. This file is imported by a database at the parent company for consolidated reporting. The imported transactions are then evaluated and posted.

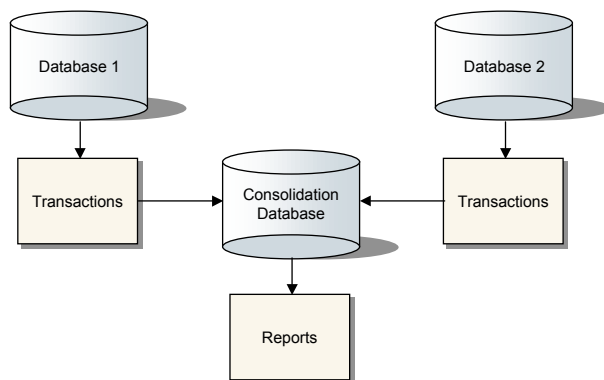


Fig. 3.4
Transaction Export/
Import

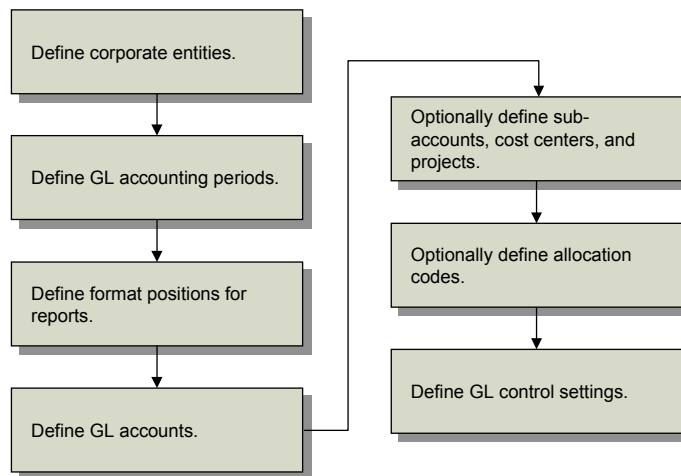
In multiple currency companies, unrealized exchange gains and losses are calculated and posted prior to running reports. If transactions are consolidated from other databases, the transaction is imported and maintained in terms of the currencies in the consolidation account and database.

▶ See
“Consolidating
Multicurrency
Transactions” on
page 142 for
more details.

Setting Up the General Ledger

Before you can process transactions and produce financial statements, use the programs on the General Ledger Setup Menu to define GL elements. Figure 3.5 illustrates the steps to take in setting up the general ledger.

Fig. 3.5
GL Setup Work
Flow



- Use Entity Code Maintenance (25.3.1.1) to define corporate entities.
- Use GL Calendar Maintenance (25.3.4) to define the accounting periods.
- Use Format Position Maintenance (25.3.7) to define format positions for reports.
- Use Account Code Maintenance (25.3.13) to create a chart of accounts.
- For additional levels of reporting, use Sub-Account Code Maintenance (25.3.17), Cost Center Maintenance (25.3.20), and Project Code Maintenance (25.3.11) to define sub-accounts, cost centers, and projects.
- To simplify data entry, use Allocation Code Maintenance (25.3.23) to define codes that automatically apportion amounts between several accounts, sub-accounts, cost centers, and projects.
- Set up GL defaults in General Ledger Control (25.24).

Defining Entities

An entity is an independent financial unit used for financial reporting. It generates a separate balance sheet and income statement, plans budgets, and is assessed for taxes. Since MFG/PRO supports businesses with multiple companies, all transactions are posted by entity.

Each site must be associated with an entity in Site Maintenance (1.1.13). Financial activities are maintained and monitored by site or by groups of sites. When GL transactions are created, they post to a specific entity, account, sub-account, cost center, and project. The entity to use on a transaction is determined based on site. Any transaction can reference more than one site and possibly more than one entity.

Use Entity Code Maintenance (25.3.1.1) to set up entity codes. Even single-entity companies must set up a code. For most transactions, the default entity is the system entity specified in System/Account Control (36.1). For transactions entered in the general ledger, the default entity is usually the primary GL entity specified in Entity Code Maintenance. During a session, you can switch from the primary entity to another GL entity.

A company address code must be assigned to each entity. The company address is printed on draft payments and, in the United States, the address is used for 1099 tax reporting. Voucher amounts from an entity are only included in 1099-MISC tax reports when the address is set up for tax reporting in Company Address Maintenance (2.12).

♦ See *User Guide Volume 6: Master Data* for details on company addresses.

Multiple Entities

You can maintain multiple entities in one database if they share the same base currency, chart of accounts, and tax structure. Use Entity Security Maintenance (36.3.13) to restrict user access to designated entities. While users can print reports or review inquiries for any entity, they can enter transactions, post, maintain budgets and engage in other update activities only for nonsecured ones.

♦ See *User Guide Volume 9: Manager Functions* for details on entity security.

Since reports can be printed for ranges of entity codes, you should develop a coding scheme that lets you display entity information in a meaningful manner. For example, to see separate financial statements for companies in several countries, you could assign a different range of entity codes for each country.

▶ See “Consolidating Multicurrency Transactions” on page 142.

▶ See “Using Multiple Entities” on page 66 for an example.

Note The currency associated with an entity is used for consolidation. During transaction import, currency translation occurs when the entity currency is not the same as the base currency of the consolidation database.

For multiple-entity transactions, set up intercompany debit and credit accounts to track amounts for any transactions between entities. Each entity can have its own set of intercompany accounts for four types of transactions:

- Accounts Receivable
- Accounts Payable
- Fixed Assets
- Inventory Control

When a transaction references more than one entity, the system automatically creates the required intercompany balancing entries using these accounts.

Separating intercompany transactions by entity and module lets you reconcile intercompany balances by comparing the debit and credit balances for each entity. You can also identify missing transactions and timing discrepancies.

You can specify default intercompany accounts in System/Account Control (36.1). The default accounts are used by Entity Code Maintenance to simplify the setup of intercompany accounts when multiple entities are maintained in one database.

Use Intercompany Accounts Inquiry (25.3.1.3) to display the debit and credit intercompany accounts, sub-accounts, and cost centers for all entities and modules or for a specific entity or module. Use Intercompany Accounts Report (25.3.1.4) to review the debit and credit intercompany accounts, sub-accounts, and cost centers assigned to a range of entities or modules.

Base Currency

Before processing transactions, you must define the base currency in Currency Maintenance (26.1) and specify it in System/Account Control (36.1). This currency becomes the default for transactions, although

transactions can be created in any currency. The base currency is also the default for all financial reporting for the database, including tax reporting. Do not change the base currency once it is in use.

GL Calendar

The GL calendar makes it possible to store transactions and print comparative reports for different periods. Calendars also determine which periods are active. Transactions are entered with a GL effective date. This date—and not the transaction date, although they are often the same—determines which GL calendar period the transaction affects. Even after year-end close, transactions remain in the system, and reports can be printed by effective date.

The GL calendar supports up to 999 combinations of fiscal periods within one fiscal year. Periods are defined by entering start and end dates. If you skip a date, you cannot post transactions with that effective date.

Tip
All dates must belong to a GL calendar period.

Period Closing by GL Transaction Type

Use GL Calendar Maintenance (25.3.4) to close GL accounting periods by GL transaction type. To close an accounting period for one or more specific transaction types, set the corresponding fields in GL Calendar Maintenance to Yes.

Some GL transaction types are created by more than one module. For example, sales order shipments, purchase order receipts, and work order issues and receipts all create type IC transactions. Some modules also use multiple transaction types. For example, Sales Orders/Invoices can create type IC for shipments and type SO for posted invoices. Closing type IC transactions blocks those transactions only, including additional shipments. However, you can still post SO invoices.

If needed, set the GL field to Yes to close all other transaction types. Note that the column label GL represents all types of transactions created by the GL module, such as FX, XX, XY, JL, RV, RA, and YA.

If Verify GL Accounts is Yes in System/Account Control (36.1), the system validates the effective date when you create a transaction. If No, the system does not validate the date until you post the transaction.

Tip
You cannot close a transaction type if unposted transactions for that type exist in the period.

Note With a few exceptions, the effective date check is not entity-sensitive. The effective date check is performed against the database primary entity only. The exception is fixed-assets transactions.

Suppressing the Reopening of GL Calendar Periods

▶ See “Suppress Reopen Closed Periods” on page 41.

The value of Suppress Reopen GL Periods in General Ledger Control (25.24) determines whether closed periods can be reopened in GL Calendar Maintenance.

When this is No, you can reopen any calendar period to transaction activity until the fiscal year has been closed. After Transaction Year-End Close (25.13.12) is executed, a calendar period cannot be reopened. To reopen a period, reset the Closed field to No. You can, for example, set up an entire calendar at the beginning of the year and set all periods to Closed except the current one.

If Suppress Reopen GL Periods is Yes, calendar periods cannot be reopened after they have been closed. This option provides tighter control of GL functions and may be needed to support regulatory requirements.

Format Positions

A typical balance sheet or income statement has a hierarchy of headings, subheadings, and totals. If the report is for internal use, GL accounts can also be identified at lower levels. Use Format Position Maintenance (25.3.7) to define these hierarchical structures. Format positions are headings for grouping and summarizing account balances. They specify:

- The level of detail appearing on a financial statement for a specific audience. For example, an income statement for management might show total sales by product line, department, or corporate entity. An income statement for stockholders might simply show total sales.
- Which financial statement data is to appear on.
- The order in which information appears.
- The relationship between different account balances. For example, a format position for Current Assets might summarize account balances for Cash, Accounts Receivable, and Inventory.

In the following sample balance sheet, accounts 1040 and 1050 are assigned to a format position for Cash. The system automatically totals this format position into Total Cash. Format positions Cash, Receivables, and Other Current Assets sum into Total Current Assets. You do not need to set up a format position for Total Current Assets.

If Suppress Header and Suppress Total are No in Format Position Maintenance, the system automatically displays the label and total.

Table 3.1
Format Positions

Current Assets			
CASH			
1040	Cash in Bank–Bank A	\$2,000.00	
1050	Cash in Bank–Bank B	1,000.00	
Total Cash		\$3,000.00	
RECEIVABLES			
1400	Accounts Receivable	3,000.00	
1500	Notes Receivable	4,000.00	
Total Receivables		\$7,000.00	
OTHER CURRENT ASSETS		\$8,000.00	
Total Current Assets		\$18,000.00	

Use Account Code Maintenance (25.3.13) to set up an account and its format positions. These positions specify an unlimited number of reporting points, or levels, for the account balance. Reporting points make it possible to print reports with different levels of detail. In the previous example, cash account 1040 is assigned to format position Cash. This determines the reporting level.

Table 3.2
Format Position
Example

Level	Format Position	Description
3	10010	Cash
2	10100	Current Assets
1	10000	Assets

When printing a report, select level 4 to see each current asset account. Select level 3, 2, or 1 for a summary. Income statements are formatted and assigned reporting levels in the same way. For example, a sales account is assigned to format position 50000.

Table 3.3

Sales Account
Format Position
Example

Level	Format Position	Description
5	50000	Sales
4	60000	Gross Margin
3	80000	Income from Operations
2	82000	Profit (Loss) Before Tax
1	90000	Net Profit (Loss)

When printing an income statement for stockholders, a level 3 report is usually sufficient. However, if you need information for a department, run the report by cost center and specify level 5 to see sales for account 3000.

You can also create blank format positions to insert levels. For blank format positions, suppress headers and totals, as shown for format position 10100 in Figure 3.6.

When defining format positions for financial statements, it is helpful to use your most current and detailed financial statements as models. On balance sheets, define format positions for Assets, Liabilities, and Equity, then the format positions that directly sum into these, such as Current Assets, Current Liabilities, and so on down through every level. On income statements, it is often easiest to work up from Net Profit (Loss) at the end of the report.

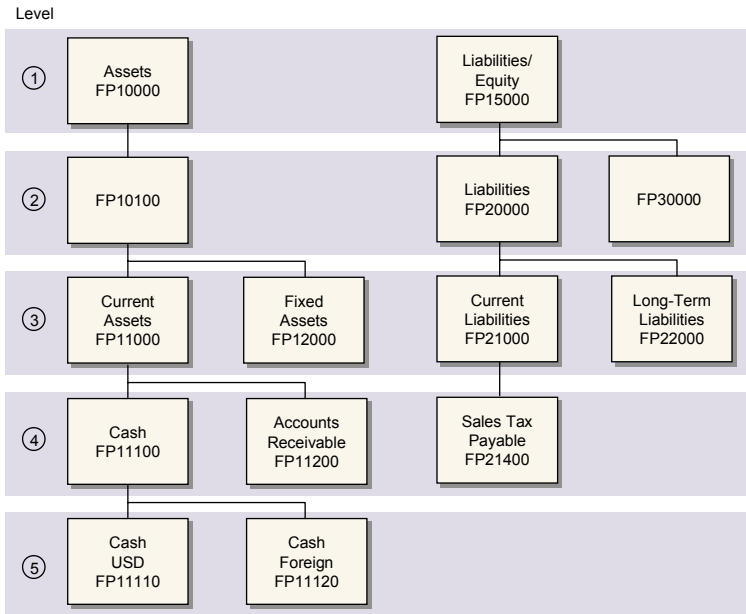


Fig. 3.6
Example Format
Positions for
Balance Sheet

Use Financial Statement Proforma (25.15.12) to print sample financial statements. Sample statements allow you to verify that format positions are set up correctly.

Chart of Accounts

When setting up account numbers, account codes are required. The other three components of an account number are optional, depending on your business needs. The use of sub-accounts and cost centers in the GL module is specified in General Ledger Control.

- Account codes track company-wide assets, liabilities, equities, expenses and revenues. Examples include Cash, Sales, Inventory, and Salaries. Use Account Code Maintenance (25.3.13) to define GL accounts.
- Sub-accounts break down activity in an account code, providing further detail in financial statements. Examples include a sub-account for Sales Divisions 1 and 2. Use Sub-Account Code Maintenance (25.3.17) to associate valid account ranges with a sub-account.

- Cost center codes break down activity and track expenses in accounts and sub-accounts, providing further detail in financial statements. Examples include profit centers and departments. Use Cost Center Code Maintenance (25.3.20) to associate valid account and sub-account ranges with a cost center.
- Project codes provide project-specific reporting. Project codes are not available for all GL transactions. Use Project Code Maintenance (25.3.11) to associate valid account, sub-account, and cost center ranges with a project.

Accounts

Use Account Code Maintenance (25.3.13) to define GL accounts. Accounts track the effect of transactions or other events on company-wide assets, liabilities, equities, expenses, and revenues.

Format positions are usually composed of one or more accounts. Accounts are used for top-level reporting for an entire entity. Transactions are posted to accounts, but not to format positions.

See Chapter 2, “System/Account Control,” on page 9.

The system verifies account codes when transactions are entered in other modules if Verify GL Accounts is Yes in System/Account Control. Set this field to Yes after you define the account structure.

Fig. 3.7
Account Code Maintenance
(25.3.13)

The screenshot shows the 'Account Code Maintenance' window. At the top, it displays 'Account: 1060'. Below this, the 'Description' is 'CASH - PAYROLL'. The 'Type' is 'A', 'Currency' is 'USD', and 'Format Position' is '11110'. A table below shows the hierarchy of the account structure:

Format Position	Description	Level
11110	CASH - USD	Level 5
11100	CASH	Level 4
11000	CURRENT ASSETS	Level 3
10100		Level 2
10000	ASSETS	Level 1

At the bottom of the window, there are checkboxes for 'Sub-Module Entries Only' (unchecked), 'Statistical Account' (unchecked), and 'Active' (checked). The 'Curr Translation Index' is set to 1.

Account. Enter the code for this account. When assigning account codes, it is important to be consistent with the number of characters used. Like most codes, accounts are sorted lexically on reports. For example, the three numbers 10, 78, and 205 appear in the order 10, 205, and 78.

Type. All accounts are classified by their function on financial statements. Choices are:

- A (Asset). Economic resources owned by a company, such as cash, a building, or investments. Appears on balance sheet and custom reports.
- L (Liability/Retained Earnings). Amounts a company owes to other parties. Appears on balance sheet and custom reports.
- I (Income) or E (Expense). These accounts appear on income statements and custom reports. Types I and E do not strictly correspond to the accounting definition of income and expense accounts. The system assumes that anything with an account type of I is related to sales. These account totals, when added together, represent 100% of sales. All other income statement accounts must be coded as type E, including those that would otherwise be considered other income.
- M (Memo). Used to report reference information such as the number of employees or the size of a building. Never used in calculations.
- S (Statistical). Used to record amounts to be totaled on custom reports. Appears on income statements and balance sheets but are not totaled.

Currency. Defaults to the system base currency. You can enter non-base currencies for balance sheet accounts, types A (asset) or L (liability). The system uses a currency translation index to import currency transactions from other databases.

Format Position. Enter a code identifying where to print this account on financial statements. The system displays the related sums-into format positions so you can verify that this account will print in the proper position.

Sub-Module Entries Only. If Yes, you cannot create transactions for this account using GL functions. This prevents inconsistencies between General Ledger account balance reports and reports in Inventory Control, Accounts Receivable, Accounts Payable, and other modules that use General Ledger control accounts.

Statistical Account. Specify a related account of type S (statistical). This account records amounts to be totaled on custom reports.

Cur Translation Index. Enter a value between 1 and 5 indicating the exchange rate that should be used during Transaction Import (25.19.15) when translating non-base currency amounts. Possible exchange rate values are:

- 1: Current
- 2: Weighted average
- 3: Simple average
- 4: Historical
- 5: User-defined

▶ See
“Consolidating
Multicurrency
Transactions” on
page 142.

Current and average rates are calculated based on rates entered in Exchange Rate Maintenance (26.4). Historical rates are based on the date of the exported transactions and retrieved from Exchange Rate Maintenance in the importing database. User-defined rates are maintained using Translation Exchange Rate Maintenance (25.19.1).

Accounts translated at the current rate (index 1) need to be revalued to the new current rate each calendar period. This is done using Imported Transaction Revaluation (25.19.17). All other accounts are revalued using Foreign Exchange Revaluation (25.19.13). For your convenience, you can also access Foreign Exchange Revaluation in the General Ledger Transactions menu (25.13.9).

Do not delete accounts after MFG/PRO has been implemented. Accounts can be added at any time, but need to be set up before you can process against them. If Verify GL Accounts is Yes in System/Account Control, transactions can be posted only to active accounts. Inactive accounts with transaction history cannot be deleted.

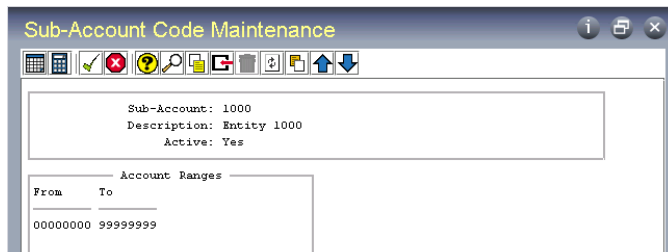
For miscellaneous reports, transactions can reference sub-accounts, cost centers, and projects in addition to account codes. On balance sheets and income statements, sub-account and cost center amounts can be summarized by account.

Sub-Accounts

Use Sub-Account Code Maintenance (25.3.17) to define sub-accounts and associate them with valid account ranges. Most financial reports can be printed for sub-accounts in either detail or summary form. Sub-accounts can be associated with multiple ranges of accounts.

Sub-account codes can be verified when transactions are entered in other modules by setting Verify GL Accounts to Yes in System/Account Control. Do this after you define the account structure.

▶ See Chapter 2, “System/Account Control,” on page 9.



From	To
00000000	99999999

Fig. 3.8
Sub-Account Code Maintenance (25.3.17)

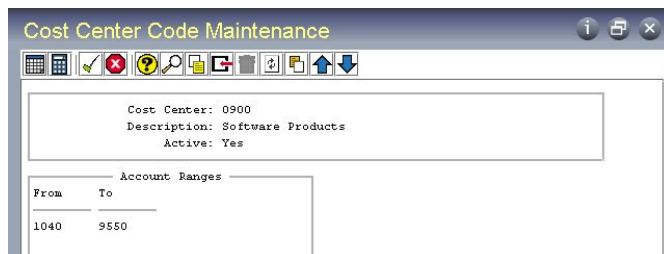
Cost Centers

Use Cost Center Code Maintenance (25.3.20) to set up cost centers and associate them with valid account and sub-account ranges. Use cost centers to report account or sub-account activity by department. Most financial reports can be printed for cost centers in either detail or summary form.

Cost center codes can be verified when transactions are entered in other modules by setting Verify GL Accounts to Yes in System/Account Control. Do this after you define your account structure.

▶ See Chapter 2, “System/Account Control,” on page 9.

Fig. 3.9
Cost Center Code
Maintenance
(25.3.20)



Account Ranges	
From	To
1040	9550

Projects

Use Project Code Maintenance (25.3.11) to define project codes and associate them with valid account, sub-account, and cost center ranges. Projects are unique activities that incur expenses.

Project codes are not available for all GL transactions. You can enter a project code on sales quotes, orders, invoices, accounts receivable memos, purchase orders, accounts payable vouchers, distribution orders, work orders, cumulative orders, quality orders, and non-productive labor feedback. You can also specify a project in the Service/Support Management module on calls, contracts, return material authorizations, and returns to supplier. In the Project Realization Management module, you can define a project as a series of related tasks delivered to a customer.

GL transactions created for these documents reference the project code and post to a specific entity, account, sub-account, cost center, and project. Set up budgets for a project and compare actual revenues and expenses to budgeted amounts. After a project is complete, mark it as inactive. This prevents further expenses from being recorded against it.

Project codes are not available for SO trailer costs, volume discounts, AP accounts, and AR accounts.

Note Project codes are not intended for tracking inventory or subcontract purchases. These purchase costs are tied to a project based on actual work order issues and operation feedback.

Project detail is not listed on most standard financial reports. However, several GL summary and detail reports are available to review project activity.

Never delete or deactivate the blank project code. The system uses it in programs where you do not enter project codes.

If Verify GL Accounts is Yes in System/Account Control, project codes are verified when transactions are entered in other modules. If the project appears with other account components, it is validated in combination with these. Otherwise, the system only validates that the project exists and is active.

See Chapter 2, “System/Account Control,” on page 9.

In some programs, projects are specified before the system determines other account components. In these cases, the system validates the project with other account components only during GL transaction post. To prevent errors during transaction post, you should ensure that projects are valid for all possible account, sub-account, and cost center ranges.

The screenshot shows a window titled "Project Code Maintenance". Inside, the following information is displayed:

- Project: 2234
- Description: Advertising Campaign
- Project Type:
- Status Code:
- Active: Yes
- Begin Date: 07/01/02
- Date Revised:
- Original Completion Date: 09/01/02
- Actual Completion Date:
- Revised Completion Date:
- Comments: No

Below this information is a section titled "Account Ranges" with a table:

From	To
1040	1065
2000	2000

Fig. 3.10
Project Code
Maintenance
(25.3.11)

Allocation Codes

To simplify data entry, use Allocation Code Maintenance (25.3.23) to define codes that allocate fixed percentages of expenses to different accounts, sub-accounts, cost centers, and projects. You can specify an allocation code anywhere you can enter an account.

Transactions involving an amount allocated among several accounts can reference an allocation code rather than individual accounts, sub-accounts, cost centers, and projects. Transaction amounts are distributed automatically to allocation accounts when transactions are posted.

You can define nested allocation codes so that one allocation code references another. When the system calculates amounts, it explodes each level of allocation codes, multiplying the amount to be apportioned by the percentages at each level.

Fig. 3.11
Allocation Code
Maintenance
(25.3.23)

Account	Sub-Acct	CC	Project	Percent
4300				75.000
7400				25.000

Example When ABC Company posts utility expenses to Accounts Payable, a part of the expense is posted to cleaning costs. Cleaning costs are prorated among several accounts: 40% to Production, 50% to General Expense, 10% to Capitalization. Rather than enter multiple account codes for each transaction, ABC defines an allocation code for the group of accounts, allowing the data entry operator to enter one allocation code rather than three accounts.

Taking this example one step further, allocation codes can be nested. In the example above, 10% of cleaning cost is capitalized as improvements. This 10% is split evenly between accounts for general improvements and preventive maintenance. An allocation code is set up for capitalization. The accounts for general improvements and preventive maintenance each have an allocation percentage of 50%. However, only 5% of the total cleaning cost expense is posted to each account.

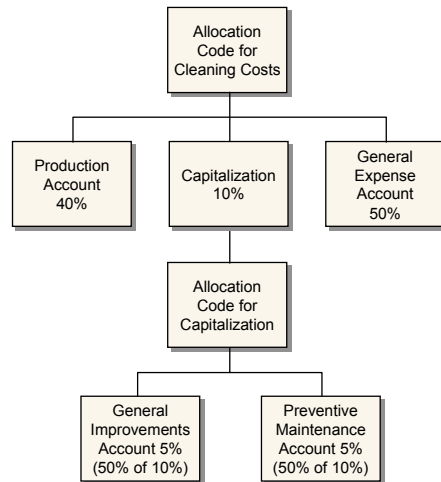


Fig. 3.12
Example Allocation Codes

General Ledger Control

Use General Ledger Control (25.24) to establish default settings that apply to all entities in the database.

Fig. 3.13
General Ledger Control (25.24)

Profit/Loss Account (BS). Records year-to-date earnings. You cannot post amounts to this account. The system recalculates this balance whenever a balance sheet is printed. At year-end close, the balance is posted to the retained earnings account.

See Chapter 5, “Multiple Currency,” on page 117.

Retained Earnings Account. Used by Transaction Year-End Close (25.13.12) to record retained earnings based on year-to-date profit or loss. The value of this account may be affected by Retroactive Transaction Maintenance (25.13.2), since GL transactions made to a closed year may affect profit (loss) for that year

Translation Adj Acct (BS)/(IS). Enter the balance sheet (BS) or income statement (IS) account affected by currency translation adjustments. This account is needed only if you are using multiple currencies and consolidating transactions. A sub-account and cost center cannot be used with this account.

Use Sub-Accounts/Use Cost Centers. Enter Yes to have the system prompt for these during data entry in the GL module. Otherwise, enter No. This field has no effect outside the General Ledger module.

Balanced Entities. Indicates whether the entity on both sides of a GL transaction must be the same. When Yes, the following transaction is not posted:

Debit Cash (entity 1000)

Credit Sales (entity 2000)

When Balanced Entities is Yes, the system automatically creates balancing entries to the intercompany debit and credit accounts for inventory, AR, AP, and fixed assets specified in Entity Code Maintenance (25.3.1.1).

This field applies only if you are maintaining multiple entities within one database. If you have multiple entities and Balanced Entities is No, the balance sheet printed for an individual entity may not balance even though consolidated statements for all entities do.

Allow Changes to Module Transactions. Enter Yes to allow GL transactions from MFG/PRO modules to be modified in Standard Transaction Maintenance (25.13.1). Enter No to allow only unbalanced or unpostable transactions to be modified.

Continuous Page Numbers for Post Audit. In some countries, continuous page numbers must be used for posting audit trails. Enter Yes to require continuous page numbers. Otherwise, enter No.

Last Page Number for Post Audit. This field is active only when Continuous Page Numbers for Post Audit is Yes. This number is updated with each audit trail printed. For example, if the audit trail printed today ended on page 7, the next audit trail must begin on page 8.

Daily/Continuous Reference Sequence. Enter Daily to have the numbering of GL transactions reset daily. For continuous numbering, enter Continuous, which prevents entry of external reference numbers during transaction entry.

GL Transaction Audit Trail. This field determines whether the system maintains an audit trail of changes to unposted GL records.

No (default): An audit trail is not created.

Yes: Audit records are created when an unposted GL transaction is modified or deleted. Audit records indicate the field name, old value, new value, user ID, and date and time associated with the change.

Tip
The Audit Trail field in System/Account Control controls auditing in modules outside the General Ledger only.

Programs creating audit records include:

- Standard Transaction Maintenance (25.13.1)
- Retroactive Transaction Maintenance (25.13.2)
- Reversing Transaction Maintenance (25.13.3)
- GL Transaction Delete/Archive (36.23.2)

Review history data using Master Data Audit Detail Report (36.17.2).

Suppress Reopen Closed Periods. Indicate whether closed GL periods can be reopened:

No: Previously closed calendar periods can be reopened using GL Calendar Maintenance.

Yes: Once a calendar period has been closed in GL Calendar Maintenance, it cannot be reopened.

Calendar periods can be reopened only when the associated fiscal year is open. Use Transaction Year-End Close (25.13.12) to close fiscal years.

Security

▶ Security is discussed in *User Guide Volume 9: Manager Functions*.

Use Menu Security Maintenance (36.3.1) to restrict access to specified menus and programs. The following programs are typically restricted:

- GL Calendar Maintenance (25.3.4)
- Retroactive Transaction Maintenance (25.13.2)
- Transaction Consolidation (25.13.11)
- Transaction Year-End Close (25.13.12)
- GL Transaction Delete/Archive (36.23.2), used for deleting unposted transactions

Using Field Security Maintenance (36.3.4), you can allow users access to programs, while restricting their ability to modify fields within those programs.

▶ See “Defining Entities” on page 25 for details.

Use Entity Security Maintenance (36.3.13) to restrict a user’s ability to update GL records for specified entities. This feature works in the General Ledger and Fixed Assets modules and selected other financial programs.

Setting Up GL Daybooks

Daybooks, also known as journals, are specialized, user-defined views of the general ledger. Create daybooks to group GL transactions to satisfy legal reporting requirements or for organizing GL reporting in a manner consistent with common business practices. Daybooks are generally used in Eastern and Central European countries.

Multiple daybooks can exist at any time. Create daybooks at the beginning of a fiscal period, ideally at the start of a new year.

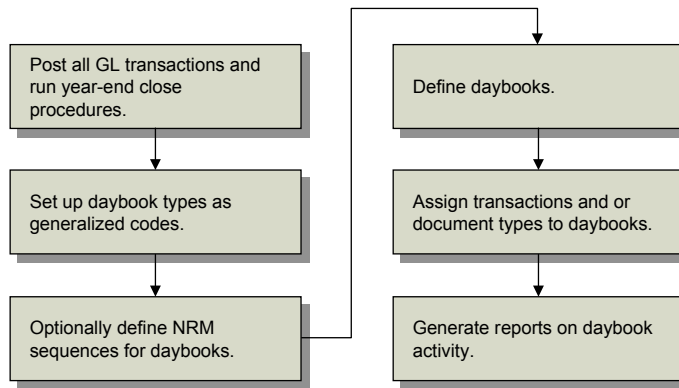


Fig. 3.14
GL Daybook Work Flow

Transactions can be grouped in daybooks several ways.

- **Transaction–Document Type Daybook.** You can create daybooks that group transactions by document type and a related transaction type, such as IC–ISS-TR for Inventory Transfer or IC–RCT-PO for Purchase Order. One daybook can be used to group transactions by one or more transaction/document types, such as a daybook for all IC–ISS-TR and IC–RCT-PO transactions.
- **Transaction Type Daybook.** You can create daybooks that group transactions by type, such as IC for inventory control, AR for Accounts Receivable, or AP for Accounts Payable. One daybook can be used to group transactions by one or more transaction types, such as a daybook for all AR and AP transactions.
- **System Daybook.** You can create a system daybook to group transactions that are not assigned to any other daybook.

Note It is not mandatory to create a system daybook. However, without one, any posted transactions that do not qualify for a daybook cannot be reported using daybook reports.

The system adds entries to daybooks sequentially. Daybook entry sequencing is controlled using Number Range Maintenance (36.2.21.1).

Once daybooks are defined, you can use the Daybook field as a selection criterion on many GL reports and inquiries. Daybook information can also generated using daybook reports and inquiries.

▶ See *User Guide Volume 9: Manager Functions* for information on number range management.

Table 3.4 lists the various daybook functions.

Table 3.4
Daybook Menu
(25.8)

Menu No.	Menu Item	Program
25.8.1	Daybook Maintenance	gldymt.p
25.8.2	Daybook Browse	glbr016.p
25.8.4	Default Daybook Maintenance	gldydfmt.p
25.8.5	Default Daybook Browse	glbr015.p
25.8.13	Daybook Report Official	gldyrp01.p
25.8.14	Daybook Report Trial	gldyrp02.p
25.8.16	Central Daybook Report Official	gldyrp03.p
25.8.17	Central Daybook Report Trial	gldyrp04.p
25.8.19	Daybook GL Transaction Inquiry by Account	gldyiq1.p
25.8.20	Daybook Transaction Register	gldyreg.p
25.8.21	Daybook Inquiry with Drill-Down	gldyiq2.p

Creating and Modifying Daybooks

Before creating daybooks, use Generalized Codes Maintenance (36.2.13) to define 2-character daybook types for field `dy_type`. Daybook types help categorize your daybooks for reporting purposes. Several daybooks can have the same daybook type, such as a type for all daybooks organizing AP transactions.

Do not confuse daybook types with transaction types. GL transaction types are predefined in the system. Daybook types are user-defined.

Use Daybook Maintenance (25.8.1) to create, modify, and delete daybooks. Take care when modifying daybook type, next page, and central next page. These changes can significantly affect the results of daybook reports.

Daybooks can be deleted only when no unposted or posted GL transactions have been assigned to them and if the daybook is not a default for transaction and/or document types.

Fig. 3.15
Daybook
Maintenance
(25.8.1)

Important You should always create a system daybook that serves as a default daybook for GL transactions that are not assigned to any other.

Use Default Daybook Maintenance (25.8.4) to associate daybooks with a transaction/document type or transaction type. Use Number Range Maintenance (36.2.21.1) to control the sequence numbers for daybook entries.

Assigning GL Transactions to Daybooks

MFG/PRO groups GL transactions into daybooks by transaction type or transaction/document type. Each time you generate a GL transaction, the system initially assigns the transaction to the default daybook for this transaction. If no default daybook has been specified, the transaction is assigned to the system daybook. If no system daybook exists, the transaction is not assigned to any daybook.

Use Default Daybook Maintenance (25.8.4) to control the assignment of GL transactions to daybooks, or to modify the daybook code for transactions.

Fig. 3.16
Default Daybook
Maintenance
(25.8.4)

For the system daybook, leave the Transaction Type and Document Type fields blank.

You can specify an alternate daybook for GL transactions created in the following programs:

- Standard Transaction Maint (25.13.1)
- Retroactive Transaction Maint (25.13.2)
- Reversing Transaction Maint (25.13.3)
- Transaction Copy (25.13.4)
- Transaction Consolidation (25.13.11)
- DR/CR Memo Maintenance (27.1)
- Payment Maintenance (27.6.4)
- Draft Approval (27.6.20)
- Draft Discounting (27.6.22)
- Finance Charge Calculation (27.12)
- Voucher Maintenance (28.1)
- Payment–Automatic Checks (28.9.9)
- Payment–Manual Checks (28.9.10)

To change the daybook code in any of these programs, enter a new code in the Daybook field. The Daybook field initially displays the default daybook for this transaction.

Fig. 3.17
Daybook Field in
Transaction
Consolidation
(25.13.11)

The screenshot shows the 'Transaction Consolidation' window. On the left, there are fields for 'Effective Date:', 'Entity:' (with value '1000'), 'Account:', 'Sub-Account:', 'Cost Center:', 'Transaction Type:', 'Daybook:', 'Audit Trail Report:' (checked), 'Consolidate Invoices:' (unchecked), 'Archive:' (unchecked), and 'Archive File:'. On the right, under 'Primary Entity', there are 'To:' fields. An arrow points from the text 'Daybook field' to the 'Daybook:' field.

Reviewing Daybook Entries

See Figure 3.28 on page 60.

Only posted transactions can be viewed in inquiries and daybook reports. Use Inquiry By Account with Drill-Down (25.13.20) to review daybook entries and generate reports.

Use Daybook Report Trial (25.8.14) or Daybook Report Official (25.8.13) to review GL account data for each daybook in summary form.

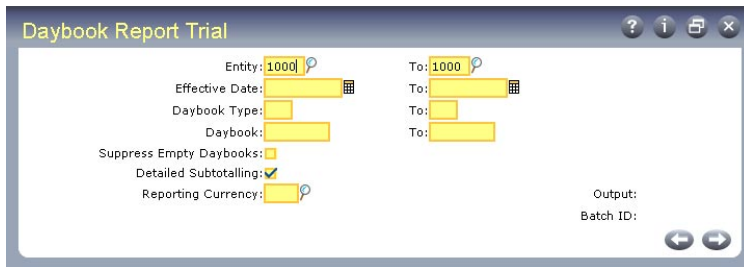


Fig. 3.18
Daybook Report
Trial (25.8.14)

Each report shows the following:

- Effective date
- Entry number
- GL account, sub-account, cost center, and project
- Debit activity
- Credit activity

Daybook reports also display the official page number, daybook type, daybook code, and daybook description. However, only the Official Daybook Report updates the official page number.

Correction transactions are also displayed in daybook reports. Negative amounts appearing in the debit or credit columns indicate that these entries are correction transactions. Post transactions for the specified daybook or daybook range before running reports or an inquiry.

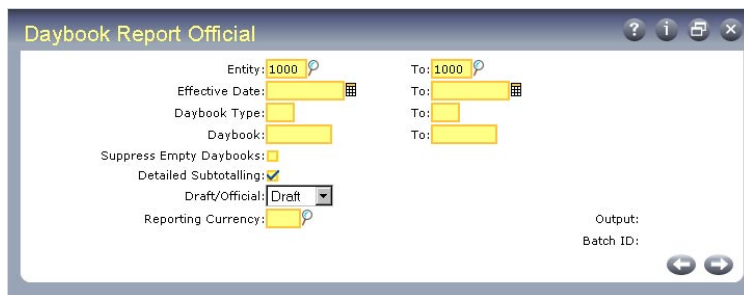


Fig. 3.19
Daybook Report
Official (25.8.13)

To review GL account data for each daybook in summary form, use Central Daybook Report Trial (25.8.17) or Central Daybook Report Official (25.8.16).

Processing GL Transactions

A transaction is a record of the financial effects of business activity. Transactions enter the general ledger in one of four ways:

- Activities in other modules create journal entries that are subsequently posted to the General Ledger module.
- Posted transactions from other databases are imported by a consolidation database.
- Adjusting transactions are recorded in the GL journal. Examples of adjusting transactions are corrections to posted transactions and reversing entries.
- Standard transactions are entered in the general ledger to record miscellaneous activity such as bank charges, loans, or acquisitions.

All of these originate as unposted transactions. They do not affect GL balances and are not included on financial statements until posted in Transaction Post (25.13.7). For your convenience, you can also access Transaction Post from the Transaction Import/Export menu (25.19.16).

Transactions from Other Modules

Most GL transactions originate from purchasing, sales, and other activities outside the GL. Usually, these transactions automatically update the GL unposted transaction table as they occur. In a few instances, you must execute a separate program to create unposted transactions. For example, Invoice Post (7.13.4) generates GL transactions for invoices.

Use Unposted Transaction Inquiry (25.13.13) and Register (25.13.14) to review unposted transactions prior to posting. Use Standard Transaction Maintenance (25.13.1) to correct errors in account balances and transaction amounts. In order to modify these amounts, the Allow Changes to Module Transactions field in General Ledger Control (25.24) must be Yes.

Once posted, transactions cannot be modified. Whenever a transaction is created, the system automatically assigns it a 14-character GL reference number with the following format.

```
<transaction type><yr><mm><dd><transaction number>
```

For example, in Figure 3.20, transaction IC9905210037 is the 37th transaction created in the Inventory Control module on May 21, 1999.

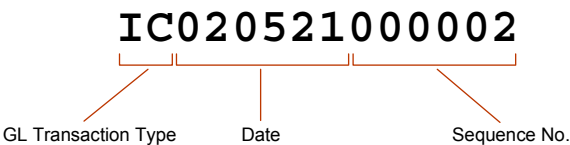


Fig. 3.20
GL Transaction
Reference Code

Table 3.5 lists type codes used to distinguish transactions created in other modules.

Type	Module
AP	Accounts Payable
AR	Accounts Receivable
FA	Fixed Assets
IC	Transactions that update inventory balances such as inventory issues and receipts, sales order shipments, purchase order receipts, work orders, repetitive labor reporting
PO	Purchasing
SO	Sales Orders/Invoices. Transaction created by Invoice Post (7.13.4)
WO	Work Orders. Transaction created by Work Order Accounting Close (16.21)

Table 3.5
Transaction Type
Codes

Often, other modules are implemented before general ledger. Activities in these modules create unposted transactions. Before entering GL account balances during GL implementation, you must delete unposted transactions from other modules so they do not post and overstate GL balances. Use GL Transaction Delete/Archive (36.23.2) to print a report identifying transactions to be deleted. To actually delete transactions, set Delete to Yes.

Creating GL Transactions

The following transactions are created in the general ledger. All are used to keep the ledger in balance, and to correct errors. The GL reference type is indicated in parentheses.

Table 3.6
General Ledger
Transactions

Transaction Type	Usage
Standard (JL)	Used to: • Correct unposted transactions from other modules. • Enter beginning balances during implementation. • Enter values for memo and statistical accounts.
Retroactive (RA)	Used to make adjustments to a closed fiscal year. Rarely used.
Transaction Copy (JL/RV)	Used to create templates for standard and reversing transactions from posted transactions for multiple depreciation entries.
Reversing (RV)	Used to record accrual entries. Automatically creates the reversing entries for the first day of the next period.
Consolidated (CS)	Posted transactions from closed periods condensed to save disk space.
Year-End Close (YR)	A one-sided entry that updates retained earnings from the year's net profit/loss.
Year-End Adjustment (YA)	Used to make year-end adjustment transactions effective on the last day of the previous fiscal year. The last GL period of the previous year must still be open.
Foreign Exchange Revaluation (FX)	Used to revalue amounts in non-base currency accounts based on the exchange rate in effect at the end of an accounting period. Foreign Exchange Revaluation (25.13.9 or 25.19.13) creates transactions for unrealized gains or losses that are posted to the unrealized exchange rate gain and loss accounts associated with the currency in Currency Maintenance (26.1).
Transaction Import (XX)	Designates imported transactions in the consolidation database created by Transaction Import (25.19.15).
Imported Transaction Revaluation (XY)	Designates revalued imported transactions created by Imported Transaction Revaluation (25.19.17).

Two elements common to all GL transactions are control totals and multiple lines.

When entering a transaction, you can specify a control total to verify data entry. The control total is the sum of the debit amounts on the transaction, expressed in terms of the specified currency. The system displays a warning if the amounts entered do not match the control total. If debit and credit amounts for a transaction do not cancel out, the unbalanced amount is displayed in the Total field. When you access an existing transaction, the control total defaults to the sum of the debits, and the system displays any unbalanced amounts.

Transaction amounts are distributed on multiple lines. For each debit and credit, enter the following:

- Entity
- Account or allocation code, sub-account, cost center, and project
- Transaction description
- Amount
- Currency

Note When the transaction or account currency is not the same as the base currency and effective exchange rates are not found in Exchange Rate Maintenance, the system prompts you to specify a rate to use.

Enter credit amounts as negative numbers. The system does not use the account's normal balance to determine whether the amount should be positive or negative.

Standard Transactions

Standard transactions are used to:

- Enter GL account balances from your previous system during implementation.
- Enter miscellaneous GL transactions.
- Correct unposted transactions.
- Create adjusting entries for posted transactions.
- Update values in memo and statistical accounts.

Use Standard Transaction Maintenance (25.13.1) to modify unposted transaction amounts in accounts, sub-accounts, cost centers, and projects.

Fig. 3.21
Standard
Transaction
Maintenance
(25.13.1)

Standard Transaction Maint

GL Reference: JL990909000001 Primary Entity Type: JL Effective: 07/18/02 Period: 7/2002

Currency: USD Control: 500.00 Base Total: 0.00

Daybook: Entry Number:

Correction: ☒ Yes indicates COA.

Line	Account	Project	Enty	Description	Cur	Amount
1			1000			

Posted transactions cannot be changed. To correct errors in posted transactions, use adjusting transactions or correction of accounting (COA) transactions. Adjusting and COA transactions must be in the same fiscal year as the transaction being adjusted. If the period is closed, you must first reopen the GL period in GL Calendar Maintenance (25.3.4).

For a COA transaction, set Correction to Yes. If the amount is positive, the credit activity is updated with a positive amount. If the sign is negative, the debit activity is updated with a negative amount.

Use Retroactive Transaction Maintenance (25.13.2) to make amendments to closed fiscal year transactions. You can enter these amendments as adjusting transactions or COA transactions.

Correction of Accounting Operations

The COA operation is one way to correct posted GL transactions. This operation is a common business practice and legal requirement in many Eastern European countries. Another common method for correcting posted transactions is to make adjusting entries.

The COA operation is preferred in some countries because it provides a clearer view of how debit and credit activity are affected by corrections. This operation corrects posted GL transactions by generating new transactions that reverse previous debit and credit activity. For example, if an account is credited 100 erroneously, a correction transaction for -100 is entered to reverse the credit. An adjusting entry would debit the account in the amount of 100.

Table 3.7 illustrates how this operation can be used.

No.	Account	Trans DR Amt	Trans CR Amt	Acct Bal	Total DR Activity	Total CR Activity
1	1040–Cash	0	100	100 CR	0	100
2	5100–Purchases Expensed	100	0	100 DR	100	0
3	1040–Cash	0	–100	0	0	0
4	5100–Purchases Expensed	–100	0	0	0	0

Table 3.7
Effect of COA
Operation

In the original transaction (No. 1 and 2), 100 was debited incorrectly to Account 5100–Purchases Expensed and credited incorrectly to Account 1040–Cash. In the new transaction (No. 3 and 4), the 5100–Purchases Expensed account is debited with –100 and the 1040–Cash account is credited with –100. As a result, the debit and credit activity for both accounts now equals 0.

You can create COA transactions in the following programs:

- Standard Transaction Maintenance (25.13.1)
- Reversing Transaction Maintenance (25.13.3)
- Retroactive Transaction Maintenance (25.13.2)

Use Unposted Transaction Inquiry (25.13.13) to review and verify COA transactions before posting. Use Transaction by Account Inquiry (25.13.18) or Transaction by Reference Inquiry (25.13.19) to view posted correction transactions.

Reversing Transactions

In accrual accounting, revenue is recognized when earned rather than when received. Expense is recognized when benefits associated with the payable are received rather than when payment is due. The portion of a revenue or expense that is incurred but not yet realized is considered an accrual.

Examples of unrecorded revenues include goods and services provided in advance of invoicing. Examples of unrecorded expenses include depreciation and prepaid rent. At the end of an accounting period, adjusting transactions are used to apportion accrued amounts to the correct period, or to account for amounts not realized until the next accounting period. To do this, use Reversing Transaction Maintenance (25.13.3).

Fig. 3.22
Reversing
Transaction
Maintenance
(25.13.3)

Line	Account	Project	Enty	Description	Cur	Amount
1			1000		USD	0.00

Example A company prepays rent for a year. A rent period runs from December 15 to January 15. Enter a transaction effective December 31, debiting rent expense and crediting prepaid rent to account for the rent expense incurred prior to year-end. The system creates a reversing entry effective January 1 to debit prepaid rent and credit rent expense.

Year-End Adjustments

GL transactions primarily affect the current fiscal year. However, year-end adjustments require that you must change transactions made in the previous year. Such entries are effective on the last day of the previous fiscal year. This means that they appear on reports for the adjustment year, even though they are entered in the current year.

Use Year End Adjustment Transaction (25.13.5) to create and maintain year-end adjustment transactions, identified with a transaction type of YA.

Year End Adjustment Transaction

Primary Entity

GL Reference: YA99110900001 Type: YA Year: 2002 Effective: 12/31/02

Currency: USD Control: 0.00 Base Total: 0.00

Daybook: Entry Number: Correction: ☐

Line	Account	Project	Enty	Description	Cur	Amount
1			1000			

Fig. 3.23
Year End
Adjustment
Transaction
(25.13.5)

You can only create year-end adjustment transactions when the following conditions are true:

- Each calendar period for the specified year and entity has been closed to transactions from modules other than General Ledger.
- All of the GL periods for the specified year and entity are closed except for the last one, which must be open.
- The year has not been closed with Transaction Year-End Close (25.13.12).

Transaction Post

Use Transaction Post (25.13.7 or 25.19.16) to update GL account balances and transfer valid unposted GL transactions to the GL history table. The history table is the source of information for printing financial statements. Unposted transaction amounts are not summarized on statements.

You can post by entity or by transaction type, such as AR, AP, or WO. The latter is useful when one department closes its books before another.

To be posted, transactions must:

- Reference active accounts, sub-accounts, cost centers, and projects that are valid in combination with each other
- Be balanced, with debits equaling credits
- Be balanced within entities when Balanced Entities is Yes in General Ledger Control
- Occur in an open accounting period

See page 40.

Transactions that do not meet these criteria are considered unbalanced and remain in the unposted transaction table. To identify unbalanced transactions for correction, use Unposted Transaction Inquiry (25.13.13) or Register (25.13.14).

If a transaction post is interrupted, causing unbalanced lines to post, use the utility `uxtrdel.p` to remove the transaction, then reenter the transaction using Standard Transaction Maintenance (25.13.1).

Transactions can be selected for posting by ending effective date and/or transaction type. Any transactions that reference allocation codes are exploded to appropriate accounts during posting.

Example If you post USD 100.00 to allocation code Utilities, with 30% going to department 100 and 70% going to department 200, two account postings are made.

The audit trail lists all entries, posted and unposted. Transactions that do not balance are marked as unbalanced. Always review unbalanced transactions, correct any errors, and repost. Look for invalid account, sub-account, cost center, and project combinations, as well as effective dates in closed GL periods.

In some programs, projects are specified before the system determines other account components. In these cases, the system validates the project with other account components only during GL transaction post. To prevent errors during transaction post, you should ensure that projects are valid for all possible account, sub-account, and cost center ranges.

Transaction Copy

Use Transaction Copy (25.13.4) to copy a posted transaction and to create a transaction with a new GL reference code and effective date. This is especially useful for setting up templates for recurring entries such as depreciation. You can enter a transaction with zero amounts as the template, then copy and modify the transaction as needed.

If you use
daybooks,
select
transactions
by daybook
code.

Transaction Copy

Primary Entity

GL Reference to Copy: J1920612000001New GL Reference: J1020722000003

Daybook:Entry Number:

New Effective Date: 07/22/2002Period: 7/2002Correction: ☐

New Reversal Date:Period:

Output: page

Fig. 3.24
Transaction Copy
(25.13.4)

Account Balance Inquiry

Use Account Balance Inquiry (25.13.17) to display GL account balances for a specified account and range of sub-accounts, cost centers, and entities. For each account, the system stores debit and credit activity separately.

Corrections of accounting transactions are also displayed. Corrected amounts appear with a negative sign in either the credit column or the debit column.

Account Balance Inquiry

Primary Entity

Account: 1200ACCOUNTS RECEIVABLE

Sub-Account:To:

Cost Center:To:

Entity: 1000To: 1000

Year: 2002Reporting Currency:

Output: terminal

The system
entity displays
by default.

Fig. 3.25
Account Balance
Inquiry, Selection
Criteria (25.13.17)

After you enter selection criteria, the first screen displays account balances in base currency.

Fig. 3.26
Account Balance
Inquiry, Output

25.13.17 Account Balance Inquiry 08/08/02

Account: 1200 Primary Entity
Sub-Account: To: ACCOUNTS RECEIVABLE
Cost Center: To:
Entity: 1000 To: 1000
Year: 2002 Reporting Currency: Output: page

1200-ACCOUNTS RECEIVABLE (USD)

Period	Per Activity (DR)	Per Activity (CR)	Accumulated Balance	Curr
Begin Bal:			819,728.00	USD
01/2002	0.00	0.00	819,728.00	
02/2002	0.00	0.00	819,728.00	
03/2002	0.00	0.00	819,728.00	
04/2002	0.00	0.00	819,728.00	
05/2002	0.00	0.00	819,728.00	
06/2002	0.00	0.00	819,728.00	
07/2002	0.00	0.00	819,728.00	
08/2002	0.00	0.00	819,728.00	
09/2002	0.00	0.00	819,728.00	
10/2002	0.00	0.00	819,728.00	
11/2002	0.00	0.00	819,728.00	
12/2002	0.00	0.00	819,728.00	
End Bal:	0.00	0.00	819,728.00	

The second screen displays either:

- Account balances in the account currency, if the account currency is not the same as the base currency
- Account balances in the reporting currency, if a reporting currency is specified

If a reporting currency is not specified, the second screen displays account balances in the account currency, if the account currency is not the same as the base currency. If a reporting currency is specified, the second screen displays in the reporting currency.

Transaction by Account Inquiry

Use Transaction by Account Inquiry (25.13.18) to review and analyze accounts. You can:

- Select transactions posted to an account using a variety of selection criteria.
- Display transaction information such as foreign currency and/or audit trail.
- Define how you want to sort the selected transactions.
- Define whether the system should display subtotals.
- Display various grand totals for the inquiry.

Figure 3.27 illustrates the first frame of Transaction by Account Inquiry.

Fig. 3.27
Transaction by
Account Inquiry
(25.13.18)

Use this screen to specify an entity and account, choose processing options, and specify detailed selection criteria.

Display Foreign Currency. Enter Yes to display additional foreign currency information such as exchange rate, foreign currency amount, and the currency code.

Display Detailed Audit Trail. Enter Yes to have the system display an additional line for each transaction containing a description, project code, address code, document number, and document type.

You can set both Display Foreign Currency and Display Detailed Audit Trail to Yes. The system displays two additional lines for each transaction.

Sort By. Possible values are:

- Eff (effective), the default
- Date
- Bat (batch)
- Sub (sub-account)
- CC (cost center)
- Proj (project)
- Addr (address)

Display Sub-Totals. Enter No, Only, or WD (with details).

- If No, the system does not display subtotals for each Sort By value.
- If Only, the system only displays subtotals for the Sort By option you entered for the inquiry. The transactions themselves are not shown. This option is convenient if you want a breakdown of an account balance, but do not want to see transaction detail.
- If WD, the system displays subtotals with transaction detail.

Transaction Drill-Down

Use Inquiry by Acct with Drill-Down (25.13.20) to review summarized and detailed transaction information. The inquiry displays a list of GL transactions for a specified account.

Fig. 3.28
Inquiry by Account
with Drill-Down
(25.13.20)

Inquiry by Acct with Drill-Down							
Primary Entity							
Enty	Account	Sub-Acct	CC	Project	Daybook	TT	Eff Date
1000	2100					ap	
GL Reference	Eff Date	Batch	Document	Do	Amount		
▶ AP920617000001	06/17/1992	1000	1000	VO	1,200.00cr		
▶ AP920617000001	06/17/1992	1000	1001	VO	2.26cr		
▶ AP920617000002	06/17/1992	1000	1001	VO	13.88cr		
▶ AP920617000003	06/17/1992	1000	1001	VO	16,125.91cr		

Select a transaction to see details about its source. This inquiry lets you drill down on data related to three columns, using the Pivot command:

GL Reference. Choose this field to have the system display the entire GL transaction, including all accounts and amounts posted.

Batch. Choose this field to have the system show detailed batch information. For example, if a batch is a group of AR payments, the system displays all the payments entered in the batch.

Document. Choose this field to have the system display information detailing the source document. For example, if this is an AR payment, the system displays the distribution of that payment.

Managing Budgets

Budgets are used to allocate company resources and to establish spending limits for departments, projects, divisions, and the entire company.

Creating Budgets

Use Budget Maintenance (25.5.1) to create budgets for any accounting period in the fiscal year.

Budgets can be entered for an entire format position or for an account, sub-account, cost center, and project combination. There are four ways to enter budgets:

- With fixed amounts for each GL period. If the normal balance for an account or format position is a credit balance, enter the budget with negative values.
- With amounts calculated for each period based on a percentage of the balance of a specific format position, account, sub-account, cost center, or project. Budgets maintained in this way must be recalculated after posting transactions, but before printing financial reports that include budget information.
- With amounts distributed evenly over calendar periods. To do this, set Auto Spread to Yes and By Percentage to No.
- With different percentages assigned to each calendar period. To do this, set Auto Spread to Yes and By Percentage to Yes, then enter the percentages for each period.

Tip
Use Budget Calculation (25.5.7).

Used to track budget amounts

Used to calculate budget amounts

The screenshot shows the 'Budget Maintenance' window with the following fields and values:

- Entity: 1000
- Budget Code: TRAVEL
- Account: 7200
- Format Position: 0
- Year: 2002
- Base Account: 3000
- Base Fmt Pos: 0
- Default Percentage: .000
- Auto Spread: ☐
- Sub-Account: (empty)
- Cost Ctr: (empty)
- By Percentage: ☐
- Yearly Budget: 0.00

Fig. 3.29
Budget Maintenance (25.5.1)

Entity. Enter the entity for this budget.

Budget Code. Enter an eight-character code for this budget.

Account, Sub-Account, Cost Center, and Project. Enter the account, sub-account, cost center, and project codes used to track budget amounts for this budget code at this entity.

Format Position. If you did not enter an account, sub-account, cost center, and project to track budget amounts, enter the format position to track budget amounts. A format position consists of a group of accounts.

Year. Enter the year for this budget. The default is the current calendar year.

Base Account, Sub-Account, and Cost Center. Enter the base account, sub-account, and cost center used to calculate budget amounts for this budget code at this entity.

Base Fmt Pos, Sub-Account, and Cost Center. If you did not enter a base account, sub-account, and cost center to calculate budget amounts, enter the format position used to calculate budget amounts for this budget code at this entity. You can optionally specify a sub-account and cost center associated with the format position.

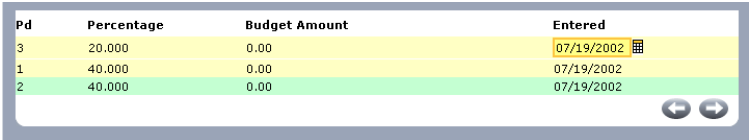
Default Percentage. Enter the budget percentage to use as the default percentage in each fiscal period.

Auto Spread. Enter Yes if the yearly budget is to be spread automatically over all fiscal periods. Enter No to enter either the budget percentage or amount for each fiscal period manually.

By Percentage. Enter Yes if the budget amount for each fiscal period is calculated as a percentage of the yearly budget.

When Auto Spread is Yes and By Percentage is set to No, the system calculates the budget amount for each period by dividing the yearly budget equally over all periods in the fiscal year. If By Percentage is set to Yes, you are prompted to enter a percentage in each period. The system uses this percentage to calculate the budget amount for the period.

Yearly Budget. Enter the total budget amount for this format position or account in this fiscal year.



Pd	Percentage	Budget Amount	Entered
3	20.000	0.00	07/19/2002
1	40.000	0.00	07/19/2002
2	40.000	0.00	07/19/2002

Fig. 3.30
Budget
Maintenance
(25.5.1)

- Pd.* Enter the fiscal period for the budget percentage or amount.
- Percentage.* Enter the percentage to calculate the budget amount for this fiscal period. The total sum of the percentages for all the periods should equal 100%.
- Budget Amount.* If you enter a percentage for the period, the system calculates the budget amount by dividing the yearly budget amount by the percentage. Leave blank if budgets are based on actual results.

Copying and Deleting Budgets

You can maintain multiple budgets under different budget codes. Use Budget Copy (25.5.5) to copy this year’s budget to the next year. Budgets can also be maintained for multiple entities. When budgets are no longer needed, delete them using Budget Delete (25.5.23).

Reporting Budgets

Budgeted values can be displayed in balance sheets and income statements. Comparative reports for balance sheet, income statement, and cost center and project activity are also useful for comparing actual results with budgets. Set Use Budgets to Yes to have these reports compare actual activity with specified budget codes.

Fig. 3.31
Balance Sheet
Comparative
(25.15.9)

Set to Yes to compare actual activity with budgets.

Generating Standard Statements/Reports

MFG/PRO provides a variety of financial reports.

- Transaction reports (25.13)
- Financial statements and other standard reports (25.15)
- Custom reports (25.17)
- Reports associated with transaction import/export (25.19)

Reports can be printed in summary or detail. Detail reports includes all transaction activity. You can run reports for a range of entities, sub-accounts, or cost centers. Comparative reports can be printed that compare actual performance to budget, budget to budget, or actual to actual, over similar or different periods. Variances can also be printed.

Several transaction reports can be printed in either base currency or the currency of the account. Reports in base currency convert non-base amounts to base before printing.

▶ See “Reporting Currency and Currency Translation” on page 133.

You can also specify a reporting currency. This lets you view financial documents in a currency other than the document or the base currency. This feature is intended to support companies located within the European Monetary Union (EMU) during the transition to the euro. It is not a replacement for consolidation.

Complete transaction detail is maintained in GL history. This is not deleted at the close of the period or fiscal year. You can print comparative reports at any time. You may choose to consolidate detail for previous years if space is a constraint.

Table 3.8 lists the standard GL reports (25.15).

Report	Description
Account Balance Summary (25.15.1) and Detail (25.15.2)	Summary shows GL account balances by period. Detail also shows individual transactions. Both show the sub-account and cost center.
Trial Balance Summary (25.15.4) and Detail (25.15.5)	Summary shows beginning and ending balances and activity to date for each GL period. Detail also shows individual transactions. Both show the sub-account and cost center.
Trial Balance Budget (25.15.6)	Summary showing actual ending balance, budget, and variance for each GL account. Also shown are the sub-account and cost center.
Balance Sheet (25.15.8)	Lists assets and liabilities as of a specific date.
GL Account Sheet Report (25.15.10)	Lets you verify the accuracy of entries in a GL account over a specified time period. Shows starting account balance, transaction detail, and totals per GL period.
GL Statement of Account (25.15.11)	A primary document used by auditors in some countries (especially Italy) to reconcile GL entries to relevant sub-ledgers.
Income Statement (25.15.13)	Lists revenues and expense accounts for a specific period.
Cost Center Activity (25.15.18)	Lists cost center balances.
Project Activity (25.15.21), (25.15.22)	Summary lists project activity over a period. Detail also lists individual transactions.
Comparative (25.15.9), (25.15.14), (25.15.19), (25.15.23)	Available for the balance sheet, income statement, and cost center and project activity. Used to compare actual figures to budgeted amounts. The income statement comparative can also print in 4- or 12-column mode to compare activity by quarter or month.

Table 3.8
Standard General
Ledger Reports

Generating Custom Reports

You can create an unlimited number of custom reports using programs in the Custom Reports Menu (25.17). Custom reports are created by defining format positions, and then assigning accounts, sub-accounts, cost centers, and projects to them. Format positions used for custom reports may or may not be related to format positions required for setting up the General Ledger module.

Custom reports are formatted much like balance sheets and income statements. Format positions control the order in which GL accounts appear on the report, how they are totaled, and where page breaks occur. You can use the same format position codes on more than one custom report.

Using Multiple Entities

As noted earlier, the flow of GL activities is somewhat different for companies whose financial reporting spans several entities. In these situations, transactions are usually exported and imported between entities. The processing flow varies slightly depending on the number of databases in the system, and whether account numbering is consistent across databases.

▶ See
“Consolidating
Multicurrency
Transactions” on
page 142.

If the entities are in different databases and have different currencies, additional setup is required. Multicurrency issues are discussed in Chapter 5.

Example: Multiple Entities, One Database

A business in Los Angeles consists of two distinct companies: a manufacturing operation and a field-service office. Transactions for both companies are stored in the same database. Each company prints its own financial statements, and the business also prepares consolidated reports.

In each company, transaction processing and end-of-period reporting are the same as for a single-entity company. After each entity prints its reports, financial statements are printed for the range of entities.

Usually, financial statements are also prepared for each entity. In order to do this, transactions must balance within each entity as well as between entities. However, some situations can result in unbalanced transactions.

For example, if one company transfers inventory to another company in the business, the transaction is balanced between entities, but unbalanced within each entity. Set the Balanced Entities field of General Ledger Control (25.24) to Yes to have the system automatically create adjusting transactions for appropriate intercompany accounts. If set to No, only consolidated statements can be generated, since individual entities may not balance.

Example Entity 2000 receives an item from Entity 1000. Balanced Entities is No. You can see the accounting results in Figure 3.32.

Entity 1000	
Inventory	
200	

Entity 2000	
Inventory	
200	

Fig. 3.32
Unbalanced
Transactions

When Balanced Entities is Yes, the system automatically creates the required balancing entries for each entity using the intercompany debit and credit accounts defined in Entity Code Maintenance (25.3.1.1).

Entity 1000			
Inventory		Intercompany Inventory (Debit)	
200		200	

Entity 2000			
Inventory		Intercompany Inventory (Credit)	
200			200

Fig. 3.33
Balanced
Transactions

Storing multiple entities in one database is not always possible. Company sites are not always close enough that one database can be used for both, and separate databases are often required for security purposes. If an employee has access to a GL function, all entities can be accessed unless the entity is protected in Entity Security Maintenance (36.3.13). You may want to create a separate database to be used only for consolidated corporate reporting.

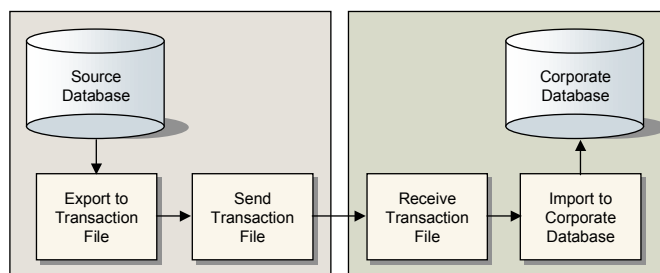
Example: Multiple Entities, Multiple Databases

In this example, each entity has its own database. If separate databases are involved, transactions from each entity must be transferred to one place before financial statements can be run for the entire business. However, each entity can now have its own chart of accounts.

After printing its own financial statements, each entity exports transaction records for the period to an ASCII file using Transaction Export (25.19.14). The export file is generated from GL history and lists transaction data by account. Transaction amounts for accounts in non-base currency are listed in both the account and system base currency.

To preserve database space, Transaction Export is normally set to consolidate transactions. Consolidation summarizes an account's transactions into one transaction showing the final account balance.

Fig. 3.34
Transaction Import/
Export



Once transactions have been exported, they cannot be reexported. Be sure to back up your system before running Transaction Export. Year-end close transactions (type YR) and retroactive transactions (type RA) cannot be exported. The year-end close procedure must be executed on both databases to close the fiscal year. If a retroactive transaction is entered on the source database, it must be manually entered on the corporate database.

The consolidation entity then imports each ASCII file using Transaction Import (25.19.15) and prepares financial reports as usual. There are several possible levels of multi-database consolidation. For example, reports can be printed at the country or regional level and then at a multinational level.

Example: Multiple Charts of Accounts

The previous example assumed that the chart of accounts was consistent for all entities and databases in the system. This is not always feasible. For example, in France the government requires all companies to use the same account codes. Still, you may want to continue using your own chart of accounts for corporate reporting.

In this case, you must set up account cross-references using From-Account Cross-Reference Maintenance (25.19.4) before transferring transactions between databases. These references are set up in the consolidation or receiving database.

Example Consolidation database 40000 has accounts 1100, 2200, and 3300. Exporting database 30000 calls the equivalent accounts 1000, 2000, and 3000. In database 30000, you set up an account cross-reference from 1000 to 1100, from 2000 to 2200, and from 3000 to 3300.

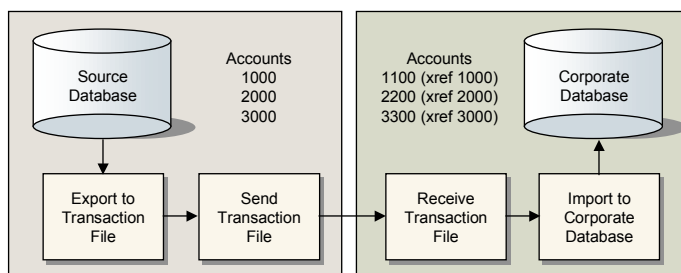


Fig. 3.35
Account
Cross-References

Consolidated Reports

Once transaction information is imported and posted for all entities, you can create consolidated reports. To print these reports, enter an entity range as the report selection criteria. You can produce statements for all entities, a group of entities, or a single entity. You can also print an audit trail report of GL transactions that are or will be consolidated.

Closing GL Periods and Years

Special accounting procedures must be followed during the close of calendar periods. The year-end close represents a special case.

Period-End Procedure

Before starting period-end processing in the General Ledger module, check that all transaction processing in other modules is complete. This includes creating unposted GL transactions for sales order invoices and shipments (7.13.4) and work orders (16.21).

Period-end processing in the General Ledger module includes the following steps in all databases:

- Use Transaction Post (25.13.7 or 25.19.16) to post transactions from other modules.
- Use GL Calendar Maintenance (25.3.4) to close the calendar to other modules.
- Use Standard Transaction Maintenance (25.13.1) to correct unbalanced transactions that did not post.
- Enter and post adjusting transactions in the General Ledger module using Reversing Transaction Maintenance (25.13.3). Copy transactions using Transaction Copy (25.13.4).
- Create adjusting transactions for unrealized exchange gain/loss using Foreign Exchange Revaluation (25.13.9 or 25.19.13).
- Use Transaction Post (25.13.7 or 25.19.16) to post unrealized gain/loss transactions.
- Print and review trial balance using Trial Balance Summary (25.15.4).
- Generate and review reports from Balance Sheet (25.15.8) and Income Statement (25.15.13).
- Print and review any custom reports from Custom Report Print (25.17.13).
- Enter and post corrections as required and reprint reports. Use the Year-End Adjustment Transaction (25.13.5), if needed.
- Optionally print Transaction Register (25.13.21).

- Use GL Calendar Maintenance (25.3.4) to close GL calendar to the general ledger.
- For multiple entities only, use Transaction Export (25.19.14) to generate an ASCII file.

In consolidation databases only, you must:

- Use Transaction Import (25.19.15) to import transactions from other databases.
- Use Transaction Post (25.13.7 or 25.19.16) to post imported transactions.
- Run Foreign Exchange Revaluation (25.13.9 or 25.19.13).
- Use Transaction Post (25.13.7 or 25.19.16) to post FX transactions.
- Enter corrections if necessary from Standard Transaction Maintenance (25.13.1).
- Run Imported Transaction Revaluation (25.19.17).
- Enter corrections if necessary from Standard Transaction Maintenance (25.13.1).
- Use Transaction Post (25.13.7 or 25.19.16) to post XY transactions.
- Optionally print Transaction Register (25.13.21).
- Use GL Calendar Maintenance (25.3.4) to close GL calendar to the general ledger.

Year-End Close

The year-end procedure is as follows:

- Complete all period-end processing.
- Print annual financial statements and reports.
- Make corrections if necessary. Use the Year-End Adjustment Transaction (25.13.5), if needed.
- Back up the databases.
- Use GL Calendar Maintenance (25.3.4) to close the GL calendar to the month (25.3.4).

- Close the year in Transaction Year-End Close (25.13.12). The year-end close creates a one-sided transaction (type YR) to update the retained earnings account from net profit/loss. It also closes the GL calendar for all periods in the year. Typically, this function is not performed until year-end financial statements have been audited.

Prior fiscal years must be closed before financial statements will print correctly for the current year. If you print a balance or trial balance for a fiscal year when the previous fiscal year is not closed, reports will be out of balance. This is because retained earnings have not been updated to reflect the prior year's net profit/loss.

Important Always back up the database before closing the fiscal year. Once a year is closed, it cannot be reopened. Any adjustments to a closed year can only be made through Retroactive Transaction Maintenance (25.13.2). You should define menu security for this program.

Transaction Consolidation

Detailed transactions can be kept on the system for as long as you need them, as disk space allows, without affecting the speed of report processing. At some point, you may need to consolidate past transactions to save on disk space, usually after closing the fiscal year.

Use Transaction Consolidation (25.13.11) to combine posted transactions of each period by entity, account, sub-account, cost center, and transaction type. Each transaction is assigned a GL reference number beginning with CS. The effective date of the transaction becomes the ending effective date specified by the consolidation request.

Limit consolidations to transactions within a range of effective dates (usually a GL period), entities, or transaction types. This lets you consolidate both halves of the transaction. Although you can specify a range of accounts, sub-accounts, or cost centers, doing so can create partially consolidated transactions that appear unbalanced by cost center or type. For example, if you specify a range of accounts, only the credit half of the transaction may be consolidated.

Important Always back up your database before consolidating. The system does not keep an audit trail for the consolidation process, and there is no way to restore data to its original state if errors should occur. You should define menu security for this program.

Budget Delete

To preserve database space, use Budget Delete (25.5.23) to delete budgets at the end of the fiscal year. Budgets can be deleted by budget code, entity, account, and other criteria.

Retroactive Transactions

Once a fiscal year is closed, it cannot be reopened. Any adjustments to a closed year can only be made through Retroactive Transaction Maintenance (25.13.2). This function creates type RA transactions that adjust retained earnings.

Although this function is on the menu, it is almost always impractical to use it and remain within generally accepted accounting principles. For example, in March you create a retroactive transaction for October of the previous year. You would have to reprint every financial statement and report from October to March, and withdraw every copy of the old reports in circulation. An easier and usually more acceptable practice is to make the adjustment in the current year.

Chapter 4

General Ledger Report Writer

The General Ledger (GL) Report Writer enables you to produce full financial statements fulfilling statutory reporting requirements. Reporting is based on user-defined hierarchies on any GL segment.

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<i>Defining Reports</i>	103
<i>Running Reports</i>	109
<i>Checking Reports for Errors</i>	112
<i>Managing Report Images</i>	114

Introduction

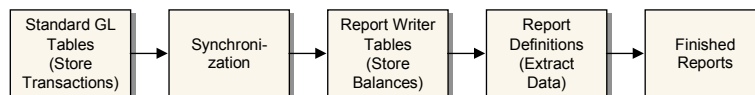
Most companies need to produce financial reports. The structure and complexity of these reports is determined by the user, who may have to meet a wide range of reporting needs, both internally and externally. For example, a detailed financial statement may be required to satisfy statutory reporting regulations, while internal management requires an abbreviated report of the same statement.

GL Report Writer lets you define and execute financial statements not addressed by the standard financial reporting system. The function uses GL analysis codes as a basis for data collection. GL analysis codes are used to group accounts, sub-accounts, cost centers, entities, projects, and even other analysis codes. This gives you the flexibility to define your financial reports based on the criteria you set.

The GL Report Writer uses its own set of database tables, based on account balance information from standard general ledger tables. The GL Report Writer tables store financial balances, rather than individual GL transactions. The system retrieves pre-calculated information rather than making calculations when running the report. As a result, the system generates reports faster.

Figure 4.1 illustrates the flow of information from the GL transaction tables to the GL Report Writer tables and to the reports you create.

Fig. 4.1
GL Report Writer
Information Flow



Implementing GL Report Writer

Implement GL Report Writer in several steps. Some of these are optional. Figure 4.2 summarizes the implementation task flow.

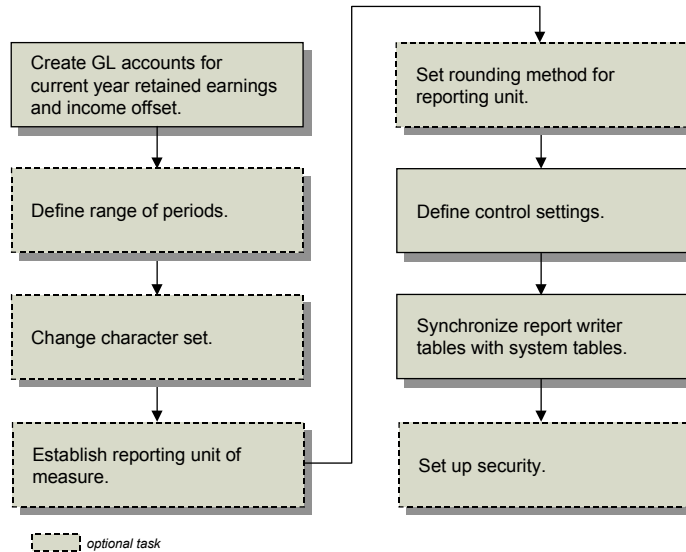


Fig. 4.2
Implementation
Tasks

Important These steps assume you have completely implemented the General Ledger module.

Create GL Accounts

GL transactions are stored individually in one set of tables. However, the report writer tables store balances. The GL Report Writer needs the accounts for each period to be balanced.

For periods to balance correctly when the two sets of tables are synchronized, the system offsets the income statement accounts using current year income offset and the balance sheet accounts using current year retained earnings.

Make sure these accounts are set up in the general ledger. Do not post any transactions to these accounts. They are used only by GL Report Writer and do not affect standard GL accounting tables.

- 1 Use Account Code Maintenance (25.3.13) to set up the Current Year Income Offset account. Complete the fields as follows.
 - Type: Liability
 - Format Position: Zero
 - Submodule Entries Only: No
 - Active: Yes
- 2 For Current Year Retained Earnings, use your existing profit and loss account or set up a new account using the same settings as Current Year Income Offset.
- 3 Use GL Account Security Maintenance (36.3.9) to prevent posting to these accounts.

When you produce a trial balance with GL Report Writer, include Current Year Income Offset and Current Year Retained Earnings.

Set Range of Periods

You can set up the report definitions using quarters rather than a range of periods. Use Quarter Maintenance (25.21.23) to specify the Period Start and Period End values for each quarter in a given year. For consistency, start with the first year in the GL calendar and complete all the years up to the present.

The year and periods must be defined in the GL calendar. Once you have quarters set up, you can reference them in Column Group Maintenance (25.21.7). Define new quarters as needed.

You can implement this feature at any time. There is no restriction on how many periods a quarter can encompass.

Quarters are used for reporting. They have no other effect.

Alter the Character Set

Use User Language Detail Maintenance (25.21.12.12) to modify the characters used as codes in certain fields.

Example A field gives you the choices A, B, C, but you want the letter S instead of B.

You can change both the character set of the codes and the label description for the field. Changes affect all applicable fields.

Define Reporting Units

Create reporting unit codes to define which units and rounding methods a report should use for a given section. Use reporting unit codes in rows, columns, the report record itself, or as a run-time override.

A reporting unit code includes two elements:

- A scale unit to convert report amounts to the desired reporting units. The system does this by dividing the original amount by the scale unit.
- A rounding method to indicate how the amount is rounded after being transformed to the desired units.

The system automatically creates three codes the first time you run Reporting Unit Code Maintenance (25.21.12.5).

Reporting Unit Code	Scale Unit	Rounding Method
W (whole units)	1.00	1 (ones)
T (thousands)	1,000	1 (ones)
M (millions)	1,000,000	1 (ones)

Table 4.1
System-Generated
Reporting Unit
Codes

Define any necessary rounding methods in Rounding Method Maintenance (25.21.12.1) before creating reporting unit codes in Reporting Unit Code Maintenance.

Rounding Method

The rounding method specifies how system-calculated amounts are rounded to the nearest tenth, hundredth, and so on. Different regulatory environments often require different rounding methods. In one country, amounts are rounded to the nearest tenth, but in another, to the nearest hundredth.

See *User Guide Volume 9: Manager Functions* for information on rounding methods.

As part of a report’s definition, you can select a rounding method for each reporting unit code. The system provides three standard rounding methods. You can modify these or add to them with Rounding Method Maintenance (25.21.12.1).

Set Up Control Settings

In GL Report Writer Control (25.21.24), specify the two accounts required to synchronize the database tables.

- Current Year Income Offset account number
- Current Year Retained Earnings account number

You can also change the current period. The system uses the current year and current period on reports that define a period relative to the current period, such as six months prior to the current month.

Fig. 4.3
GL Report Writer
Control (25.21.24)

The screenshot shows the 'GL Report Writer Control' window with the following settings:

- Format: -->,>>,>>,>>,>>9.99
- Rounding Difference: 0
- Precedence: Column
- Row Width: 36
- Column Width: 20
- Current Year: 2002
- Current Period: 07
- Current Year Retained Earnings: 2900
- Current Year Income Offset: 2999
- Analysis Code Comments: ☐
- Report Comments: ☐
- Next Report Run ID: 82
- Row Group Comments: ☐
- Column Group Comments: ☐

A callout box points to the 'Current Year Retained Earnings' and 'Current Year Income Offset' fields with the text: "You can accept defaults for all but these two fields. They must be valid account numbers."

Synchronize Tables

Use Synchronize G/L Data (25.21.21) to load financial data into the GL Report Writer tables. These tables are the source for reports you create.

Tip
Typically, synchronize data daily after each transaction post.

You must run the synchronization to initialize the report writer tables. Then run it regularly to keep it up to date. The first time you run Synchronize G/L Data, the system creates new records and indexes in the report writer tables.

During a regular maintenance run, the synchronization recalculates account balances. If the balances have changed, the report writer tables are updated. If a new GL item has been added—such as a new account—the synchronization checks the analysis codes tables and updates them as needed.

To speed the daily run time of synchronization, you can perform a special run with dates specified to the end of the year. This special run will set up records and indexes for future periods so that daily synchronization can

quickly update those records. Otherwise, the synchronization must create new records each time. You should perform this special synchronization at the beginning of the year.

Fig. 4.4
Synchronize G/L
Data (25.21.21)

- 1 For the initial synchronization run, enter the last period of the year in Actual Period and Balance Period.
- 2 Accept the default No for the Recalculate and Delete fields.
- 3 Enter the batch ID. You can use the same batch ID used for Transaction Post—but make sure Transaction Post runs before Synchronize G/L Data. Use Batch Request Detail Maintenance (36.14.3) to set the Priority field to zero or any number less than the priority of Transaction Post.

Set Security

Consider setting menu security for several menu items.

- GL Report Writer Control (25.21.24)
- Synchronize G/L Data (25.21.21)
- Quarter Maintenance (25.21.23)
- Rounding Method Maintenance (25.21.12.1)
- Reporting Unit Code Maintenance (25.21.12.5)
- User Language Detail Maintenance (25.21.12.12)
- Modify Maintenance Security (25.21.12.15)

♦ See *User Guide Volume 9: Manager Functions* for information on security.

The system lets you build security into each row, column, analysis code, and report record. Therefore, security is unnecessary for these components. However, you can also establish security for these menu items.

Use Modify Maintenance Security (25.21.12.15) to add or remove IDs from the list of users who are authorized to modify a given report component. Enter the item code in the appropriate field, then enter a new security list for the item.

Setting Up Report Components

A report definition is made up of data retrieval specifications or queries. The easiest query would be one GL item for one period. For example, you can define a report on account 1040 for period 1.

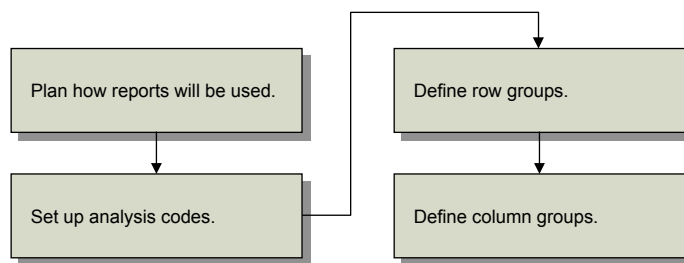
A report has three main components:

- Row groups: GL items
- Column groups: periods
- Report records: an optional global query

You can specify either a single GL item or an analysis code—a group of items. GL items include accounts, sub-accounts, cost centers, projects, and entities. You can also use analysis codes to set up controlling hierarchies. These let you sort report data into several different iterations.

Before actually defining a report, first decide how you want to use the reports and then set up the components you will need.

Fig. 4.5
Work Flow for
Setting Up Report
Components



Planning Reports

If report components are correctly defined, they can be combined in different ways to create multiple variations of a report. Table 4.2 summarizes some planning considerations.

Consider	Example	Note
What distinct group of items do you need?	All sales accounts.	Create analysis codes for these groups. Show a total figure for the items in the analysis code or a detailed list.
What combinations of items do you need?	All sales accounts for cost centers 100, 200, and 300.	Specify any combination of account, sub-account, cost center, project, or entity.
Do you need multiple iterations of a report?	One report iteration for each entity.	Set up a controlling hierarchy to sort data into several different iterations.
Do you need calculations?		Enter formulas within rows and columns.
What names do you want for the report components?		Enter any name for each report component, including the same name for all components.

Table 4.2
Report Writer
Planning
Considerations

Analysis Codes

Use GL analysis codes to group GL items of a given type (accounts, sub-accounts, cost centers, projects, or entities). An analysis code can also link other analysis codes together into a larger structure. Use this feature when your report must summarize data in a unique way, such as a controlling hierarchy.

▶ See “Using Controlling Hierarchies” on page 106.

Analysis codes have various effects on reports. When used in a row, the GL items within an analysis code can appear as lines on the report—provided you choose to explode the analysis code. Otherwise, the system uses the analysis code mainly as data retrieval criteria. For example, if you do not explode the analysis code in a row, it generates one summary figure for all the items within it.

The system checks analysis codes during synchronization and updates them if necessary. If an analysis code specifies accounts between 2000 and 2999 and you add account 2301 to the chart of accounts, the system adds that account to the analysis code.

Fig. 4.6

Analysis Code
Maintenance
(25.21.1)

Different
screens display
based on
whether Link To
is Item or Code.

G/L Type. Enter either accounts, cost centers, sub-accounts, projects, or entities.

Analysis Code. Enter an eight-character alphanumeric code.

Link To. Enter Item to select one or more GL account numbers or Code to link to other analysis codes.

Status. Enter Test or Live. Initially enter Test, then change to Live once you have successfully generated a report with this analysis code. This is for reference only and has no effect on report processing.

Comments. Enter Yes to add notes.

Security Groups. Leave blank to grant access to all users. Add security groups to limit access. If you add security groups, make sure to add your own user ID. Use commas to separate multiple user IDs.

Tip

Use Modify
Maintenance
Security to override
the security block.

There are two ways to use Analysis Code Maintenance: linking GL items or linking together other analysis codes.

Link Analysis Codes to GL Items

Set Link To to Item to create an analysis code linking together GL items.

G/L Code	Description
1035	Unreal Exch Gain - USD
* 1036	Unreal Exch Loss - USD
1037	Real Exch Gain - USD
1038	Real Exch Loss - USD
1039	Exchange Rounding - USD
* 1040	CASH
* 1041	CASH - CANADIAN DOLLARS
* 1042	CASH - FRENCH FRANCS
* 1043	CASH - SWISS FRANCS
* 1044	CASH - NEW ZEALAND

Fig. 4.7
Analysis Code
Maintenance, Item
Selection

From/To G/L Code. Enter a GL code or range of codes, such as accounts or cost centers, depending on the type of GL analysis code you defined.

Wildcard. Enter a string of characters and a wildcard character (period or asterisk). A period (.) matches any character for that position. For example, .400 matches 3400, 4400, 5400, 6400. An asterisk (*) matches any string of characters (including none) for that position. For example, 35* matches 3510, 350, 35950.

Tip
To use Wildcard,
leave these fields
blank.

Further refine your selection by adding or removing individual items, shown in the G/L Item Selector frame. An asterisk indicates that an item is selected.

Link Analysis Codes Together

Set Link To to Code to link analysis codes. This lets you summarize data in a variety of ways.

Example Management wants to see the results for regions 1 and 2. You have analysis codes built for the cost centers in each region. Rather than linking to the cost centers in regions 1 and 2, simply link the analysis codes you have already set up for those regions.

Fig. 4.8
Analysis Code
Maintenance, Code
Selection

The screenshot shows the 'Analysis Code Maintenance' window. At the top, it displays 'Analysis Code: ljm' and 'G/L Type: A Status: Test'. Below this, there are two main tables. The left table has columns 'Link Code' and 'Seq'. The right table has columns 'Level', 'Code', 'Description', and 'Link To'. At the bottom, there is a selection area with 'xj-all' and '1.0' highlighted. Arrows point from the text 'Link Code' and 'Sequence' to these highlighted fields.

Link Code	Seq
xj-all	1.0

Level	Code	Description	Link To
.2	xj-all	test eco	ITEM

xj-all	1.0

Link Code Sequence

Link Code. Enter the analysis codes you want to link to. Add a new analysis code to the one you are defining, or select a code already attached and change its sequence order or delete it. The display frame on the upper left shows the analysis codes you have linked to and their sequence order. The right frame displays the structure of each analysis code and shows whether it links to GL items or to other analysis codes. If the link is to a code, the analysis codes linked within it display.

Seq. Enter the sequence order for the analysis code selected in Link Code. Use a decimal figure to insert a code between two existing ones. Sequence numbers are reset to integers after inserting or deleting a code. The top left frame shows the existing sequence of the analysis codes you have linked together. The right frame shows the same structure in more detail, including the GL items for each analysis code.

Viewing Analysis Codes

Three programs display information on analysis codes.

Menu No.	Name	Function
25.21.2	Analysis Code Inquiry	Shows the exploded view of one analysis code.
25.21.13.1	Analysis Code Listing	Shows the exploded view of one or more analysis codes.
25.21.3	Where Used Inquiry	Shows which analysis codes reference a specific GL item.

Table 4.3
Tools for Checking
Analysis Codes

Renaming Analysis Codes

An analysis code’s name cannot be the same as a GL item code regardless of GL type. A GL item can be added that conflicts with an existing analysis code. Because the GL item cannot be eliminated or renamed, use Rename Analysis Code (25.21.12.13) to change the name of the existing analysis code.

Row Groups

A row group is a set of data retrieval specifications that the system uses to create the lines of the report. Row groups are reusable. You can combine them with various column groups to produce different reports using Report Maintenance.

Plan the general organization of the rows in advance because you cannot move them once they are created. However, you can insert rows or delete them as needed. Any changes you make to a row group will update the reports that use it.

You can define three types of row groups.

- Text Rows. Text rows print one or more lines within the row labels column.
- Data Rows. These rows set up the data retrieval specifications. Create a data row for each segment of data you want on the report. You can specify either a single GL item (such as account 1000) or an analysis code. Analysis codes define a group of similar GL items (for

See “Analysis Codes” on page 83.

example, all inventory accounts). If you use an analysis code, you can explode the detail, causing the GL items within the analysis code to appear on the report.

- **Calculation Rows.** These rows perform an operation on one or more rows. Calculation rows can only refer to rows above them.

Use Row Group Maintenance (25.21.5) to establish a row group.

Fig. 4.9
Row Group
Maintenance
(25.21.5)

The screenshot shows the 'Row Group Maintenance' window with the following fields and values:

- Row Group: mkr
- Copy Code:
- Description: testing
- Row Width: 36
- Control Report By:
- Using Analysis Code:
- Continuous Page Numbers: Yes
- Originator: mkr
- Modified By: mkr
- Date Created: 07/25/02
- Modified Date: 07/25/02
- Status: Test
- Comments: No
- Security Groups:

Row Group. Enter up to eight characters to uniquely identify the row group.

Copy Code. Enter a row group code to create a new code based on the one specified. All rows within the row group are copied. This field is editable only when the record is new. You can copy only row groups to which you have access.

Description. Enter a brief description of the new row group (up to 24 characters).

Row Width. Enter the width, in characters, of the column that will show the row labels for this row group on your reports. Accept the default from GL Report Writer Control or assign a new row width.

Control Report By. Optionally, enter the GL code to which the controlling hierarchy analysis code applies. This determines the type of analysis code selected in the Using Analysis Code. You can assign a controlling hierarchy in Row Group Maintenance (25.21.5) or Report Maintenance (25.21.9).

See “Using Controlling Hierarchies” on page 106.

Using Analysis Code. Specify the analysis code used to set up a controlling hierarchy. The controlling hierarchy feature is optional.

Continuous Page Numbers. Enter No to restart page numbers for each controlling hierarchy group.

Status. Select Test or Live. The field is for information only, and has no effect on how report components operate. Use test to develop your row groups, and change the status to live when you have run the report successfully.

Comments. Enter Yes to view the comments screen.

Security Groups. Leave blank to grant access to all users. Adding security groups in this field limits access to the listed users. If you add security groups, be sure to add your own user ID. Use a comma to separate user IDs.

Fig. 4.10
Row Group
Maintenance,
Second Screen

Row. Enter a four-character unique identifier for this row.

Type. Enter the function of the row—Text, Data, or Calculation. Once you complete the process for defining a row, you cannot change its type.

Indent. Enter the number of characters the row label will be indented on the report.

Label. Enter an alphanumeric row label. Can be blank. For text rows, the label appears before the text. For data and calculation rows, the label appears alongside the row figures. If the row includes exploded lines of detail, the system uses the names of the GL items as labels, and the label appears on the total and title lines. The width of the label is controlled by the Row Width field.

▶ See “Row Width”
on page 88.

Creating Text Rows

If you enter T for Type on the second screen of Row Group Maintenance, a Text Row frame displays.

Fig. 4.11
Row Group
Maintenance, Text
Row

See “Row Width”
on page 88.

Text. Enter the text to appear after the row label. All text will appear within the width assigned for row labels. Any words that extend beyond the row width will wrap onto the next line. However, if a single word extends beyond the row width, the system will cut off the letters that do not fit.

Lines To Skip. Enter the number of blank lines to be printed after this row. If the row is exploded, the specified number of lines will be printed after the Total line.

Creating Data Rows

If you enter D for Type on the second screen of Row Group Maintenance, the Data Query Specifications frame displays.

Fig. 4.12
Row Group
Maintenance, Data
Query
Specifications

AC/GL Code	Description	Expl	Order	Sub Ind
Acct: Item		No		
CC: Item		No		
Sub: Item		No		
Proj: Item		No		
Enty: Item		No		

Show Codes: No

AC/GL. Indicate whether the query specification type is an analysis code or a GL item. Specify either a single GL item or a group of items defined by an analysis code.

Code. Enter the GL item code or analysis code.

Expl. Set to Yes to explode a corresponding analysis code. If No, the report summarizes all analysis code components as one number. An exploded analysis code shows each of its components in a separate line. An explode field can be affected by the combined settings of other explode fields and the Order field. For example, if an analysis code is not exploded in a row, the explode fields for analysis codes with Order values lower than its own will be forced to the default No.

Order. Set a priority level, if more than one type of GL item is specified for this row.

Data Rows and Multiple GL Types

Within data rows, you can sort data with a combination of GL types. For example, specify sales revenue accounts for cost center 100 or for project 555 or both.

The results depend on the sorting order you specified in the Order field of the Data Query Specifications frame and whether you have any exploded analysis codes. The lower the order number, the higher the level.

Example The order of a sales account analysis code and a cost center is:

```
Cost Center 100           Order 1
Sales Acct. Analysis Code Order 2
```

The cost center is on a higher level than the sales account analysis code. The system retrieves the figures for the accounts based on cost center. If the order is switched, the system then retrieves figures for the cost center based on each sales account.

Either way, the total figure for the row is the same. You only see a difference if you choose to explode the items in the sales account analysis code.

Figure 4.13 shows an example of exploded items and an exploded row. On the left are the data query specifications and the possible combinations of the specified items. On the right, the resulting lines on the report are a row explosion.

Fig. 4.13
Row Explosion

Data Query Specifications				
	<u>Code</u>	<u>Description</u>	<u>Explode</u>	<u>Order</u>
Acct:	A	Accounts A1, A2, A3	Yes	3
CC:	C	Cost Ctrs C1, C2	Yes	2
SubA:				
Proj:				
Enty:	E	Entities E1, E2	Yes	1

Exploded Items			Exploded Row
Entities (Order 1)	Cost Centers (Order 2)	Accounts (Order 3)	Row Label
E1	C1	A1 A2 A3	E1-Title
			C1-Title
			A1
	C2	A1 A2 A3	A2
			A3
			C1-Subtotal
E2	C1	A1 A2 A3	C2-Title
			A1
			A2
	C2	A1 A2 A3	A3
			C2-Subtotal
			E1-Subtotal
			E2-Title
			C1-Title
			A1
			A2
			A3
			C1-Subtotal
			C2-Title
			A1
			A2
			A3
			C2-Subtotal
			E2-Subtotal
			Row Total

To see the row explosion for your report, go to Report Content Listing (25.21.13.6). The indentations in the finished report come from the Sub Indent field, which you specify for each GL type in the specifications.

If you deactivate the explosion for one of the lower levels, the system summarizes it in the next higher level. Figure 4.14 illustrates how the report looks with the explosion set to No for the account analysis code.

Data Query Specifications				
	Code	Description	Explode	Order
Acct:	A	Accounts A1, A2, A3	No	3
CC:	C	Cost Ctrs C1, C2	Yes	2
SubA:				
Proj:				
Enty:	E	Entities E1, E2	Yes	1

Exploded Items			Exploded Row
Entities (Order 1)	Cost Centers (Order 2)	Accounts (Order 3)	Row Label
E1	C1	A1	E1--Title
		A2	C1 (A1 + A2 + A3)
		A3	C2 (A1 + A2 + A3)
			E1--Subtotal
E2	C2	A1	E2--Title
		A2	C1 (A1 + A2 + A3)
		A3	C2 (A1 + A2 + A3)
			E2--Subtotal
			Row Total

Fig. 4.14
Unexploded Rows

If the sort order is different, you get a different result, as shown in Figure 4.14. In this case, the order changed between account and cost center, so the cost centers now summarize into each account.

This figure also shows what happens when a particular combination of GL items does not exist in the GL settings (no match). The resulting report leaves out items that do not have a proper match.

Fig. 4.15
Different Sorting
Order

Data Query Specifications				
	<u>Code</u>	<u>Description</u>	<u>Explode</u>	<u>Order</u>
Acct:	A	Accounts A1, A2, A3	Yes	2
CC:	C	Cost Ctrs C1, C2	Yes	3
SubA:				
Proj:				
Enty:	E	Entities E1, E2	Yes	1

Exploded Items

Entities (Order 1)	Accounts (Order 3)	Cost Centers (Order 2)
E1	A1	C1
		C2 (no match)
	A2	C1
		C2
	A3	C1
		C2
E2	A1	C1
		C2 (no match)
	A2	C1
		C2
	A3	C1
		C2

Exploded Row

Row Label	
E1-Title	
C1	
A1-Subtotal	
A2-Title	
C1	
C2	
A2-Subtotal	
A3-Title	
C1	
C2	
A3-Subtotal	
E1-Subtotal	
E2-Title	
A1-Title	
C1	
C2	
A1-Subtotal	
A2-Title	
C2	
A2-Subtotal	
A3-Title	
C1	
C2	
A3-Subtotal	
E2-Subtotal	
Row Total	

Creating a Calculation Row

If you enter C for Type on the second screen of Row Group Maintenance, a Calculation Row frame displays.

Fig. 4.16
Row Group
Maintenance,
Calculation Row

Calculation Row	

Retain Sign: No

Tip
Formulas can use only +, -, *, and / as operators.

Formula. Enter the formula for the calculation; for example, calculate the sum of rows 10 and 20 with the formula R10 + R20.

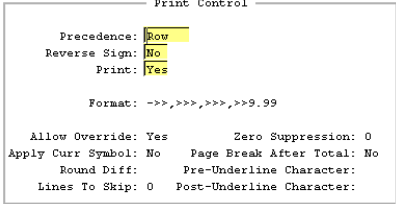
Retain Sign. Set to Yes to retain value of sign even if Reverse Sign for the row group is Yes in the Print Control frame. For example, credit balances are stored as negative numbers. The reverse sign option is useful to show a credit balance (such as sales) as a positive number on the report.

The Calculation Row frame is followed by the Print Control frame. Print Control sets up the row format.

Print Control in Rows

The last step in defining a row group is to complete the Print Control frame.

Because both rows and columns can perform calculations and can have different formats and rounding methods, you must specify which calculation, format, and rounding method to use in the cell where the row and column meet. If there is a conflict between a row and column, the system looks at the Precedence field in Print Control for the row to determine which to use.



Print Control

Precedence: Row
Reverse Sign: No
Print: Yes

Format: ->>, >>>, >>>, >>>, >>>9.99

Allow Override: Yes Zero Suppression: 0
Apply Curr Symbol: No Page Break After Total: No
Round Diff: Pre-Underline Character:
Lines To Skip: 0 Post-Underline Character:

Fig. 4.17
Row Group
Maintenance, Print
Control

Precedence. Set to Row to allow row settings and calculations to override column settings. If set to Column, column settings and calculations will override row settings. This field defaults from GL Report Writer Control (25.21.24). Conflicts can occur over format or rounding if both the row and column in a report prohibit an override.

Tip
Prohibit overrides
by setting Allow
Override to No.

Reverse Sign. Set to Yes to retain the sign assignment for this row. For example, credit balances are stored as negative numbers. The reverse sign option is useful to show a credit balance (such as sales) as a positive number on the report. Formulas that reference a row where Reverse Sign is Yes will operate on the number with the reversed sign.

Print. Change to No to suppress printing of this row.

Format. Set the format for numeric quantities printed in this row. This field accepts any valid numeric format, as defined in the Progress language. The default format is taken from the Format field in GL Report Writer Control (25.21.24). The default format can be overridden by setting Allow Override to No.

Allow Override. This field indicates whether row definition settings can be overridden by values set in Report Maintenance (25.21.9) or Run Report (25.21.17). In general, use the default Yes for all rows and columns so that you can reuse them in various report iterations. If this field is No for both row and column, the system uses the setting in Precedence.

Apply Curr Symbol. Enter Yes to have the report include the currency symbol for this row. For exploded rows, the symbol appears on every line produced on the report.

▶ See “Rounding Method” on page 79.

Rounding. Identify the rounding method used on this report. The code is used to convert units, such as millions to thousands, and round the report amounts. Reporting unit codes are defined in Reporting Unit Code Maintenance (25.21.12.5).

Lines To Skip. Enter the number of blank lines to be printed after this row. If the row is exploded, the specified number of lines will be printed after the TOTAL line. The default is zero.

Zero Suppression. This field controls printing from rows when every column in the row evaluates to zero, and when the zero suppression setting on the row allows the report to take control. Enter one of the mnemonics shown in the language detail pop-up window.

Page Break After Total. Enter Yes to force a page break after this row. If the row is exploded, the page break occurs after the TOTAL line.

Pre-Underline Character and Post-Underline Character. Enter a character to be used for underlining the Total and Subtotal lines. The default is blank, designating no underline. Because the underline option is character-based, the system prints an additional line containing the specified underline characters.

Column Groups

Columns combine with rows to define a report. Like rows, columns set up data selection criteria and can use analysis codes for data retrieval. The column group is reusable. You can combine it with various row groups to produce several different reports using Report Maintenance (25.21.9).

Plan the general organization of the columns in advance because you cannot move them once they are created. However, you can insert columns or delete them as needed. Any changes you make to a column group updates the reports that use it.

You can define three types of column groups.

- **Actual Columns.** These columns set up specifications for data retrieval. For example, a column can specify current period ending balances for all cost centers.
- **Budget Columns.** These are similar to actual columns but include budget instead of actual data. Optionally, you can set the column to report actual data when it is available.
- **Calculation Columns.** Calculation columns perform operations on other columns or report cells (intersections between a row and column).

Use Column Group Maintenance (25.21.7) to set up columns in a report.

The screenshot shows a window titled "Column Group Maintenance". It contains several input fields and a status section. The fields are as follows:

Column Group: mkr	
Copy Code:	
Description: testing	
Originator: mkr	Date Created: 07/25/02
Modified By: mkr	Modified Date: 07/25/02
Status: Test	
Comments: No	

Fig. 4.18
Column Group
Maintenance
(25.21.7)

See page 88.

The first screen of Column Group Maintenance is nearly identical to Row Group Maintenance, and the fields operate the same way.

Fig. 4.19
Column Group
Maintenance,
Second Screen

Column. Enter a four-character unique identifier for this column.

Type. Enter the function of the column—Actual, Budget, or Calculation. Once you complete the process for defining a column, you cannot change its type.

Column Width. Enter a numeric value between 0 and 99 as the column width on the report. The value is in fixed-width characters.

Description. Enter a brief description of this column.

Creating an Actual Column

If you enter A for Type on the second screen of Column Group Maintenance, an Actual or Budget Query Specifications frame displays.

Fig. 4.20
Column Group
Maintenance,
Actual or Budget
Query
Specifications

AC/GL. Indicate whether the query specification type is an analysis code or a GL item. The choices are Item or Code. Specify either a single GL item or a group of items defined by an analysis code.

Code. Enter the GL item code or the analysis code.

Year. The period bucket from which data is extracted.

Period/To. A period bucket within the year defined by Year.

Quarter. Define a quarter instead of specifying a range of periods in Period/To. The quarter definition determines which periods are used. You can use this field only if Period/To are blank.

Activity. Enter the type of balance the column will use—Activity, Beginning, Ending, Year to Date, Period, Debit, Credit, Debit YTD, or Credit YTD. If you are using a range of periods or a quarter, you must use Activity or Period.

Balance sheet accounts show cumulative information from the beginning of the database. Income statement accounts show balances from the beginning of the year or period.

After you complete the Actual or Budget Query Specifications frame, the Print Control frame displays.

▶ See “Actual Column Time Periods” on page 99.

▶ See page 101.

Actual Column Time Periods

There are several ways to define the accounting time period. You can enter a specific year and period, a year/period relative to the current reporting year/period, a range of periods, or quarters.

To keep the column group from becoming outdated, use relative periods instead of a specific period. A relative period is n number of periods before or after the current period. The current period is determined when you run the report. Zero indicates the current year/period, –n indicates a prior year/period, and +n indicates a year/period in the future. Some examples are shown in Table 4.4.

Time Period	Year Field	Period Field	To Field
Current Period	0	0	-
Current Period, 1990	1990	0	-
Sixth Period, Any Year	0	6	-
Last Period	0	–1	-
Current Period, Last Year	–1	zero	-
Current Year, Periods 1-6	0	1	6

Table 4.4
Example Time
Period Data

Tip
Quarters must be set up in Quarter Maintenance.

If you need to specify a range of periods, use either the Period/To fields or the Quarter field. The order of the range does not matter. For example, you could specify periods 1 to 3 or 3 to 1.

In general, you should use the activity balance type (in the Activity field) for period ranges and quarters. You would not want to use Ending balance, for example, because the system would find the total of the ending balances for each period in the range.

You cannot use relative periods in a range to avoid a range including more than one year. You can get the same information by calculating the difference between two columns. In Table 4.5, Column 10 (current period, last year) and Column 20 (current period, this year) do not appear on the report because the Print field is set to No. Only Column 30 (a calculation column) appears.

Table 4.5
Example Data for Calculations

	Column 10	Column 20	Column 30
Column Type	A	A	C
Relative Year	-1	0	-
Relative Period	0	0	-
Activity	Ending	Beginning	-
Print Yes/No	No	No	Yes
Formula	-	-	C10-C20

Creating a Budget Column

See page 98.

If you enter B for Type on the second screen of Column Group Maintenance, the same frame you use to define an actual column displays. For a budget column, complete two additional fields.

Tip
Set up budget codes in Budget Maintenance (25.5.1).

Budget Code. The budget code defines a specific set of budget amounts for a given entity or year. You can store multiple budgets in the system by assigning different budget codes. Most reports and inquiries can be selected using the budget code. This code is required to retrieve the desired set of budgets. Make sure the value in Year for this column matches the year of the selected budget code.

Roll Budgets. Enter Yes to have the system use actual figures in this column if they are available. For example, if a column is set up for period five and you process the report in period four, there would probably be no actuals for that column and the report would include budget figures. When you run the same report in period five, the column would then include the actual figures.

To determine whether actual data is available, the system uses Current Year and Current Period from GL Report Writer Control (25.21.24).

After you complete the Actual or Budget Query Specifications frame, the Print Control frame displays.

Creating a Calculation Column

Calculation columns let you perform operations on any preceding columns.

If you enter C for Type in the second screen of Column Group Maintenance, a Calculation Column frame appears. It is identical in appearance and function to the Calculation Row frame.

See “Creating a Calculation Row” on page 94.

Print Control for Columns

All column types have printing instructions, defined in the final frame of Column Group Maintenance—Print Control. In case of conflict between a row and column, the system uses the Precedence field in Print Controls for the row to determine which value to use.

See “Print Control in Rows” on page 95.

```

Print Control
-----
Print: Yes
Round Diff:
Format: ->>, >>>, >>>, >>>, >>9.99

Allow Override: Yes
Currency: Base      Currency Symbol:

Column Label:
  
```

Fig. 4.21
Column Group
Maintenance, Print
Control

Print. Leave as Yes to print this column on the report. If No, printing of this column is suppressed and all remaining print options are void.

♦ See “Rounding Method” on page 79.

Rounding. Enter the rounding method used on this report. You can enter this code as a reporting unit code in any of the report definition components—Report Maintenance, Run Report, Row Group Maintenance, or Column Group Maintenance. The code is used to convert units, such as millions to thousands, and round the report amounts. Defined in Reporting Unit Code Maintenance (25.21.12.5).

Format. Set the default format for numeric quantities printed in this column. Defaults from GL Report Writer Control (25.21.24). The field accepts any valid Progress numeric format. To allow override of this default in Report Maintenance or Run Report, set Allow Override to Yes.

Allow Override. Set to Yes to allow Format default to be overridden. If No for both row and column, the system uses the setting for one or the other, depending on the value for Precedence you set in Print Control for the row.

Currency. Enter Base to use the system base currency defined in System/Account Control. Enter Foreign to use a non-base currency associated with a specific GL account in Account Code Maintenance. The GL Report Writer tables store account balances using both the base currency and the currency set up for the account. This field determines which value is retrieved for the report.

Note The system does not check your data retrieval specifications to see that the currency is all the same. Make sure the report specifications are set up correctly to avoid mixing different currencies within the cells on the report.

Currency Symbol. Optionally, enter the currency symbol the report will display for this column. For exploded rows, the symbol appears on every line produced on the report. The default is blank.

Column Label. Enter text for the column label, which will be printed at the top of each page where this column appears. Default format is flush left. To create centered text, enter the label as [label]. To make the text flush right, enter [label. In addition, you can enter one or more keywords. The system substitutes the actual text. For example, <BY> shows the year you specified for the column.

Keyword	Substitution
<BP>	Period
<BY>	Column year
<BP1>	Lower boundary of the period range
<BP2>	Upper boundary of the period range
<BQ>	Column quarter
<Bucket>	Column year and period (or period range or quarter)

Defining Reports

Begin defining a report by establishing analysis codes, row groups, and column groups. Once these have been defined, use Report Maintenance (25.21.9) to define what should appear on the report and how the report should look. Once you have completed the definition, you can run the report.

See “Setting Up Report Components” on page 82.

The screenshot shows a window titled "Report Maintenance" with a standard Windows-style title bar (minimize, maximize, close buttons). The window is divided into several sections. The top section contains fields for "Report: ye2002", "Copy Code:", and "Description:". Below this is a section for metadata: "Originator: mkr", "Modified By: mkr", "Status: Test" (with a dropdown arrow), "Date Created: 07/24/2002", and "Modified Date: 07/24/2002". There is also a "Comments:" field with a small icon. The bottom section contains two large, empty yellow rectangular boxes labeled "Maintenance Security Groups:" and "Report Security Groups:". At the bottom right of the window are two small circular buttons with left and right arrows.

Fig. 4.22
Report
Maintenance
(25.21.9)

Report. Enter a unique report name.

Copy Code. Optionally, enter the name of an existing report that you want to base your new report on. The system copies the entire definition of this report. Then you can modify it as needed.

Description. Enter a brief description of what the report does.

Status. Enter Test or Live. Initially enter test, then change to live once you have successfully generated a report. This field is for reference and has no effect on system processing.

Tip

If you use these fields, make sure to add your own user ID.

Fig. 4.23

Report Maintenance, Second Frame

Comments. Enter Yes to add notes.

Maintenance Security Groups. Leave blank to let all users modify the report definition. Add security groups to limit access.

Report Security Groups. Leave blank to let all users run this report. Add security groups to limit access.

Use these fields to set up a controlling hierarchy.

See “Using Controlling Hierarchies” on page 106.

The only required fields on this screen are Row Group and Column Group. The other fields let you set up a controlling hierarchy for the report and control the report format.

Control Report By. Enter the type of GL code—account, sub-account, cost center, project, or entity—to which the controlling hierarchy analysis code applies. This field activates the controlling hierarchy feature and determines the type of analysis code you can select in Using Analysis Code.

See “Analysis Codes” on page 83.

Using Analysis Code. Specify the analysis code used to set up a controlling hierarchy.

Continuous Page Numbers. Enter No to restart page numbers for each controlling hierarchy group.

Row Group. The code that uniquely identifies a row group.

Column Group. The code that uniquely identifies a column group.

Row Labels Before Column. Enter a valid column number from the selected column group to specify where the row labels will print. Labels will print to the left of this column. To print the labels to the right of the last column in the group, enter 9999. Enter LAST to right-justify the labels.

Format. Enter the global format for cells that allow format override. The system defaults from the format specified in GL Report Writer Control.

Zero Suppression. This field controls printing from rows when every column in the row evaluates to zero, and when the zero suppression setting on the row allows the report to take control. Enter one of the mnemonics shown in the language detail pop-up window.

Rounding. The rounding method for this report.

Top, Bottom Margin. Enter the number of lines to leave blank at the top and bottom of each page.

Left, Right Margin. Enter the number of spaces to leave blank at the left and right sides of each page.

Change Global Query Specs. Enter Yes to display the optional Global Query Specifications screen. If there is no data in the optional screen, the default is No. Otherwise, the default is Yes.

▶ See “Using Global Queries” on page 107.

Edit Report Title, Footer. Enter Yes to display the report title and footer screens.

▶ See “Titles and Footers” on page 108.

Edit Page, Report Footer. Enter Yes to display the page and report footer screens.

Printer Template. The printer definition used to validate report parameters. Enter a defined printer.

Using Controlling Hierarchies

A controlling hierarchy is an overall data retrieval specification, set up in Row Group or Report Maintenance. This feature produces several iterations of a report, one for each GL item in the controlling hierarchy analysis code. It also produces summary iterations.

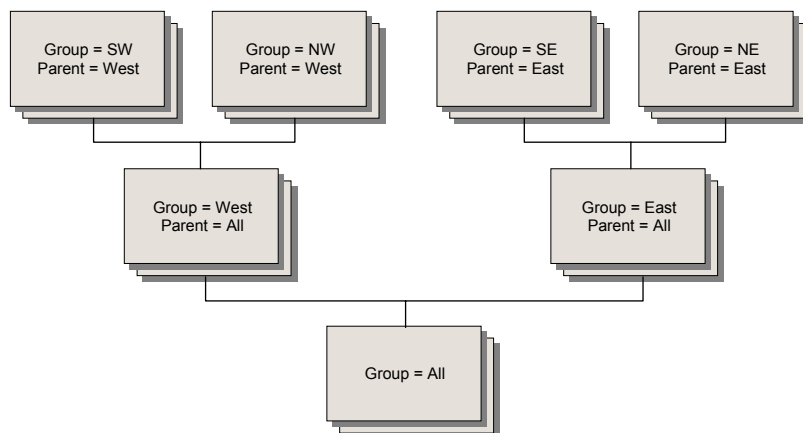
Controlling hierarchies enable you to sort report data into several different iterations. They are especially useful for consolidated reports with a hierarchy of financial divisions.

You define the controlling hierarchy structure with an analysis code. For each GL item in this analysis code, the system will produce a separate iteration that includes that GL item in the data retrieval specifications. The system also produces one or more summary iterations, according to the structure of the analysis code.

Example In Figure 4.24, controlling hierarchy analysis code All links analysis codes West and East, representing western and eastern entities, respectively. Analysis code West is parent to analysis codes SW and NW. Analysis code East is parent to analysis codes SE and NE.

The system prints iterations for each entity, plus one for western entities, one for eastern entities, and one for all entities. Notice that for each iteration there is a group name, which is the controlling GL item or analysis code. There is also a parent name, which refers to the group name of the next level iteration. If requested, this information will appear in the report title.

Fig. 4.24
Report for
Multilevel Entries



Set up a controlling hierarchy in two steps.

- 1 Create an appropriate analysis code.

Note The system prohibits you from using an analysis code of the same type as those used in the row group, column, or report global specifications.

- 2 In either Report Maintenance or Row Group Maintenance, select the appropriate GL type in the Control Report By field and select the controlling hierarchy analysis code in the Using Analysis Code field.

Tip
Use Report Maintenance so you can reuse the row group in other reports.

Using Global Queries

Optionally, you can enter additional data specifications by choosing Yes in the Change Global Query Specs field of Report Maintenance. The specifications you enter combine with those in the row group and, if any, in the column group.

Typically, you would use this feature to enter a GL item that applies to several accounts, such as an entity. For example, you may deliberately leave out the entity in your row and column groups so that they can be applied to a variety of reports. Global queries are also useful to make variations of existing reports.

In the Global Query Specifications window (which appears after you accept the first screen), enter GL items or analysis codes—just as with data rows. The system prohibits you from entering specifications for GL types already used in the row group or column group.

The screenshot shows the 'Report Maintenance' window with the title bar 'Report Maintenance'. Below the title bar, there are two fields: 'Report: ye2002' and 'Status: Test'. The main area is titled 'Global Query Specifications'. It contains a table with two columns: 'AC/GL Code' and 'Description'. Under 'AC/GL Code', there are four rows of input fields: 'Account:', 'Cost Center:', 'Sub-Account:', and 'Project:'. Each of these has a dropdown menu with 'Item' selected. To the right of each dropdown is a yellow rectangular button with a magnifying glass icon. The 'Entity:' field is also present but is not highlighted. At the bottom right of the window, there are two circular arrows (refresh and back) and a right arrow.

Fig. 4.25
Report Maintenance, Global Query Specifications

Titles and Footers

Enter or modify titles and footers for the report by choosing Yes in the second frame of Report Maintenance in the Edit Report Title, Edit Page Footer, or Edit Report Footer fields. Page footers place text at the bottom of each page, while the report footer creates text on the last page only. You can also add one or two lines of comments to the title and footers when you run the report.

The default text format for titles and footers is flush left. To create centered text, enter the label as [label]. For flush-right text, enter [label.

To use one of the keywords in Table 4.6, enter the keyword code. The system substitutes the actual text.

Table 4.6
Keywords for Titles
and Footers

Keyword	Substituted Text
<COMPANY>	Company name defined for standard reports.
<DATE>	Date the report was created in Run Report.
<GDESC>	Used for controlling hierarchy. Shows the description of the analysis code affiliated with a given iteration (see also GROUP).
<GRIDPAGE>	Page number, with dashes for secondary pages (secondary pages arise when the columns do not fit on one page and must roll onto a new page).
<GROUP>	Used for controlling hierarchy. Shows the ID name for the analysis code affiliated with a given iteration (see also PARENT).
<PAGE>	Page number.
<PAGES>	Total number of pages.
<PERIOD>	Current period as entered in Run Report.
<PARENT>	Used for controlling hierarchy. Shows the ID name for the next level analysis code affiliated with a given iteration (see also GROUP).
<RDESC>	Report description as entered in Report Maintenance.
<REPORT>	Report ID name as entered in Report Maintenance.
<RUNID>	ID name assigned when you ran the report.
<STATUS>	Either Test or Live, as entered in Report Maintenance.
<TIME>	Time the report was created in Run Report.
<UND*>	Creates a line of * or any character you enter. For example, <UND-> will use the dash (–) character instead.
<USERID>	ID of who created the report in Run Report.
<YEAR>	Year the report was created in Run Report.

Report Base Period Maintenance

Use Report Base Period Maintenance (25.21.15) to update the current (base) period set up in GL Report Writer Control. If you need to change the current period but do not have security access to GL Report Writer Control (25.21.24), this procedure updates the control program.

In general, the current period is for reports that define a period relative to it (such as the previous period). Normally, the system uses the current period and year specified in Run Report (25.21.17). However, batched reports take it from the control program. Before you execute a batch of reports, you should check the current period and change it. The system uses the current period and year to determine whether to use actual figures or budget figures in columns set up with rolling budgets.

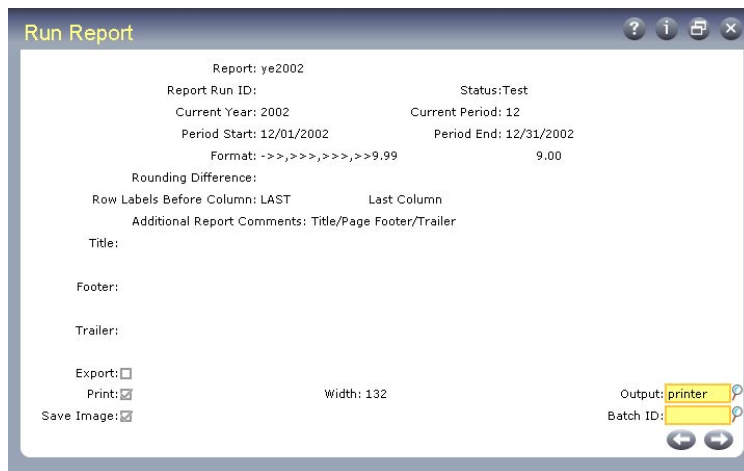
The program affects the Current Year and Current Period fields in GL Report Writer Control. Changes will also appear as the default in Run Report.

Running Reports

Run Report (25.21.17) generates a report based on a report definition set up in Report Maintenance. The process retrieves data, calculates formulas, performs rounding, and applies formatting to create a report image.

Important After posting general ledger and before running any reports, be sure to run Synchronize G/L Data.

Fig. 4.26



Report. Enter the name of a valid defined report.

Report Run ID, Status. System-generated values, based on Report. This is the report that will be run.

Current Year and Current Period. Enter a specific year/period in these fields, or, if running the report in batch mode, enter zero. The system uses these fields to determine the year and period of columns that were set up relative to the current year/period.

However, for reports run in the batch mode, the system defaults to Current Year/Period from GL Report Writer Control (25.21.24). Also, the system uses these fields for columns set up with a rolling budget, unless the columns were set up with a specific year/period.

Period Start and Period End. The fiscal period's start and end dates. When they are created, GL transactions have an effective date. The system determines the fiscal period to which this transaction applies by finding these dates in the calendar's period start/end range. Fiscal periods cannot overlap.

Each calendar period starts and ends on a specified date. Calendar periods can be monthly, quarterly, or any combination. Monthly calendar numbers usually correspond to the month number (1-12). The period number can also represent the week or day number that the period starts/ends. For example, period 1 may span July 1 to July

31, or it may span July 15 to August 15. If you miss any days (such as February 29), the system will not let you post transactions on that date.

Format. Specify the global format for report cells that allow override. Numeric cells will have this format if Allow Override is set to Yes in both their row and column definitions. This field accepts any valid numeric format, as defined in the Progress language.

Rounding Difference. The rounding method used on this report.

Row Labels Before Column. This field determines where the row labels will appear, relative to the column you specify. You can define the column number or specify the Last column.

Title, Footer, Trailer. Optionally, add one or two additional text lines to your report title, footer, or trailer. The text you enter will be printed above the text specified in Report Maintenance.

▶ See “Titles and Footers” on page 108.

Export. Enter Yes to export the report to an ASCII file. Exporting is used to send a report to a file that can be read with any software product that reads ASCII delimited format.

Print. Enter Yes to format the report for printing at your printer.

Save Image. Enter Yes to save the report image after output. The report image can be used to reproduce all or part of a report output, without executing the report again.

▶ See “Managing Report Images” on page 114.

Width. Enter the printer width in characters. The system uses Width to determine how many report columns will fit on a given page. Columns that do not fit on a page will overflow to the next page. The default is 132.

Output. The output may be a printer, terminal (character), window (GUI), or file name. Normally, a report prints 132 characters across the page. On a standard screen, the report will wrap. If your screen supports compressed print mode, modify the printer settings in Printer Setup Maintenance (36.13.2).

Batch ID. Enter a batch ID to queue the report for later processing.

♦ See “Column Groups” on page 97.

To run the same reports on a regular basis, create a permanent batch. This requires that the column period buckets have relative data references. Use Run Report with the year and period set to zero. GL Report Writer then uses year and period values from GL Control.

Checking Reports for Errors

Run Report checks the report definition for inconsistencies or possible errors. If errors are found, an error message is displayed and the report is not executed. Use report checking tools to identify errors:

- Report Validation Listing (25.21.13.5)
- Report Content Listing (25.21.13.6)
- Report Exceptions Listing (25.21.13.7)

Invalid Formulas

Use Report Validation Listing (25.21.13.5) to uncover errors in row, column, and cell calculations. Invalid formulas contain references to nonexistent rows, columns, or cells or contain faulty syntax.

Content Detail

Report Content Listing (25.21.13.6) previews the format of the fully exploded row group, displaying the total and subtotal levels. The system executes the hierarchy explosion program to explode all row and column group analysis codes.

Redundant Components or Omissions

Use Report Exceptions Listing (25.21.13.7) to uncover redundant data retrieval and omitted GL items.

Fig. 4.27
Report Exceptions
Listing (25.21.13.7)

Redundancy Check

This option lists rows that contain the exact combination of GL items when exploded (account, cost center, sub-account, project, and entity). Enter Yes in Print Duplicates to perform a redundancy check.

Component Omissions Check

Use this check to find GL items that have been omitted from a report definition. Perform this check in one of three ways: using a master analysis code, a report type, or a range of GL items (only one option at a time). Enter Yes in Print Omissions to perform an omissions check.

When Yes is entered in Print Omissions, the Exceptions Report highlights any GL items with posted activity that are missing from the specified report definition in accordance with the selection criteria entered.

Master Analysis Code. Enter a master analysis code previously defined in Analysis Code Maintenance. The listing indicates GL items found in the master code but not found on the report definition.

Report Type. Balance sheets and income statements are checked using this option. Enter 1 or 2 in the Report Type field. The verification process in Table 4.7 uses the GL account type, as defined in Account Code Maintenance.

Table 4.7
Report Types

Report Type	Effect
1 (Balance Sheet)	Indicates balance sheet accounts in the Chart of Accounts that are missing from the report definition.
2 (Income Statement)	Indicates accounts of type I and E that are not found in the report definition.

GL Items. Enter a GL item range and run the listing. The result is a list of GL items not in the report definition.

Managing Report Images

When you run a report, the system stores the results as a report image. Enter Yes in the Save Image field in Run Report (25.21.17) to create and store a report image. Save the report image if you want to print or export all or part of the report later.

Each report image has a unique run ID assigned by the system. To find a particular report image, record the report's run time and run ID. Use the programs on the Output Manager Menu (25.21.19) to use the report image.

- **Print Report Image (25.21.19.1)** prints a report image. To print a range of pages, specify the page numbers. If the report image contains a controlling hierarchy, use Page Number Inquiry (25.21.19) to find the sequential page numbers corresponding to the group page numbers.
- **Export Report Image (25.21.19.3)** copies a report image into ASCII format. With the resulting file, you can import the information into other software, such as spreadsheets. To export, enter a file name in the Output field. The system saves it under your user log-in directory.
- **Page Number Inquiry (25.21.19.5)** shows an equivalent page number for reports numbered with repeating pages. A report can have repeating page numbers only if it involves a controlling hierarchy. Report Maintenance determines whether a report will have repeating

page numbers. If Continuous Page Numbers field is No, the page numbers will begin at page one for each iteration required by the controlling hierarchy.

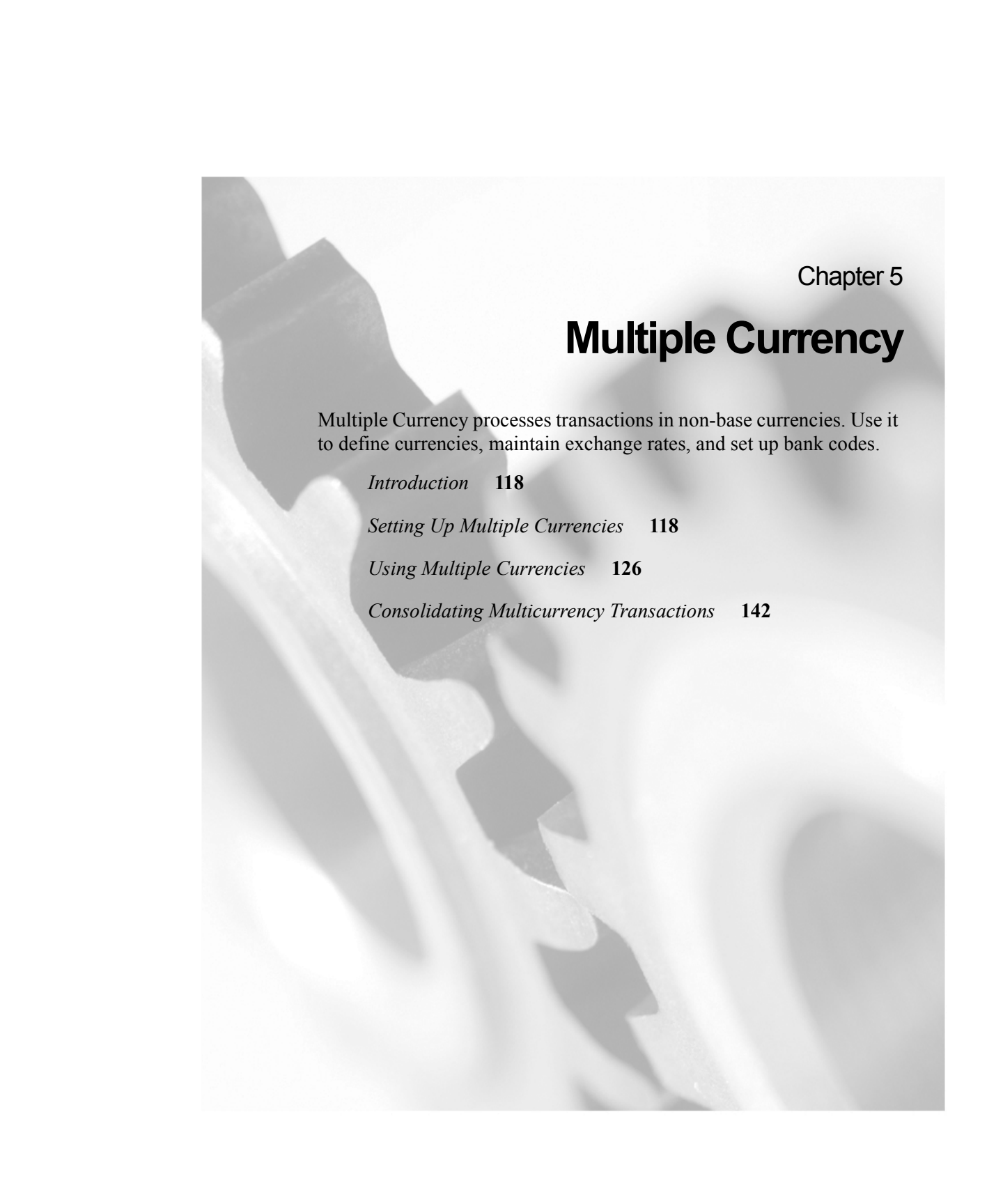
The system calculates the equivalent page number and displays it in the last field (corresponds to report page).

- Report Output Filter (25.21.19.13) enables you to suppress output of columns, lines, or report iterations (groups) from a report image before printing or exporting it. You can use this feature several times to generate different versions of a report. The system maintains the original image so you can later reselect portions you suppressed.

When you select a report image, the system displays the selection of lines first, then columns, and, finally, controlling hierarchy groups. Initially, all items are selected (indicated by an asterisk). You can change the selection as needed.

- Use Image Delete/Archive (25.21.19.23) to delete the report image information associated with specific runs of a report. Identify report images by the run ID. Set Delete to Yes to remove the report image from the database. With Delete set to Yes, the Archive option is activated. Set Archive to Yes to store the report image to an ASCII file and then delete the image from the database.

The stored file name has the format `xxYYMMDD.hst`, where `xx` is the record type and `YYMMDD` is the date you ran delete/archive. If the file does not exist, it is created. If the file already exists from a previous delete/archive run, the system appends the report image to this file.

The background of the page features a grayscale image of several interlocking gears. The gears are of different sizes and are positioned in a way that they appear to be meshing together. The lighting creates highlights and shadows on the teeth of the gears, giving them a three-dimensional appearance. The overall tone is technical and industrial.

Chapter 5

Multiple Currency

Multiple Currency processes transactions in non-base currencies. Use it to define currencies, maintain exchange rates, and set up bank codes.

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Consolidating Multicurrency Transactions **142**

Introduction

It is common today for business organizations to purchase goods from and sell goods to companies outside their own national borders. As a result, accommodating foreign currencies and establishing exchange rates is a common business practice.

The Multiple Currency module provides a full set of functions that enables your system to support monetary amounts expressed in either the system base currency or in a non-base (foreign) currency. Foreign currencies can be used with purchase orders, sales quotations, sales orders, price lists, accounts receivable, accounts payable, and customer services. In general ledger, foreign currencies can be used when entering transactions or setting up balance sheet accounts for assets and liabilities.

Use Multiple Currency to define currencies, maintain exchange rates, and set up bank codes. You must define one currency as your system base currency, and specify it in System/Account Control. You can define as many other currency codes as your company uses.

Exchange rates are expressed as a two-part ratio representing the calculation required to convert one currency amount to another. Currency codes and exchange rates are used for orders, transactions, and GL accounts.

◆ See Appendix A, “Converting a Database to the Euro,” on page 313.

If your company is located in a country that is joining the European Monetary Union (EMU) or does business with companies that are joining the EMU, you can also define features to accommodate the process of transitioning to the euro, the common currency of the EMU.

Setting Up Multiple Currencies

Every MFG/PRO database must have at least one currency defined and specified as the base currency in System/Account Control. Other setup is required if you use foreign currencies.

Note If you are going to do business with a nation joining the EMU, you must also set up the euro and designate EMU currencies.

Figure 5.1 represents a typical multiple currency work flow.

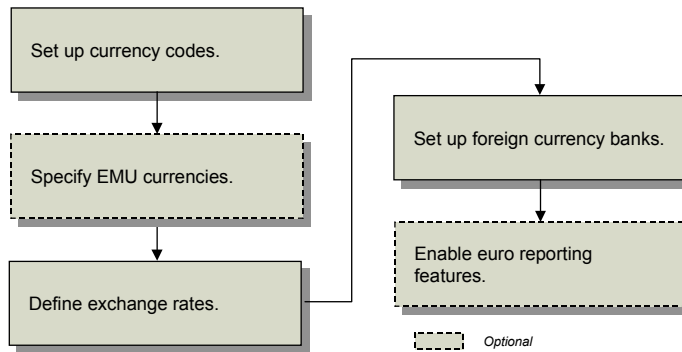


Fig. 5.1
Multiple Currency
Setup Work Flow

Note The two optional steps are needed only when countries are transitioning to the euro.

▶ See Appendix A, "Converting a Database to the Euro," on page 313.

Defining Currency Codes

Currency codes identify specific monetary units. Use Currency Maintenance (26.1) to set up currency codes, select rounding methods, and activate your base currency and any other currencies your company uses. For non-base currencies, you can also specify unrealized and realized exchange gain and loss accounts.

Once defined, a currency code cannot be deleted or deactivated if:

- It is specified as the base currency in System/Account Control.
- It is referenced in a current or future exchange rate relationship in Exchange Rate Maintenance (26.4).
- It is specified as the euro or as an EMU member currency in EMU Currency Maintenance (26.19).

Fig. 5.2
Currency
Maintenance (26.1)

Currency. Enter a code identifying a currency. Many companies use international banking standard codes such as USD for US dollars and JPY for Japanese Yen. If you need to separate buy rates from sell rates, you must define multiple currency codes and use the appropriate one on accounts payable and accounts receivable transactions.

Description. Enter up to 24 characters describing this currency code. This description displays on various reports and inquiries. Descriptions typically include the name of the country and monetary unit, such as Japanese yen or New Zealand dollars.

Rounding Method. Indicate which method the system should use to round calculated amounts in this currency. Three system-defined methods are available. You can use Rounding Method Maintenance (36.2.9) to change the rounding threshold but not the rounding unit.

- 0 (Ones, Rounding Unit 1.00, Rounding Threshold 0.5)
- 1 (Tenths, Rounding Unit 0.10, Rounding Threshold 0.05)
- 2 (Hundredths, Rounding Unit 0.01, Rounding Threshold 0.005)

If your business environment requires additional methods, use Rounding Method Maintenance to define them.

The second frame does not display when you enter the code specified as the base currency in System/Account Control. These accounts only apply to non-base currencies.

▶ See *User Guide Volume 9: Manager Functions*, for information on rounding.

If Verify GL Accounts is Yes in System/Account Control, you can only specify:

- Valid and active GL accounts, sub-accounts, and cost centers defined with the appropriate GL setup functions
- Account components that are valid in combination with each other, based on the ranges specified in the GL setup functions

Each account defaults from the corresponding account in System/Account Control. The following accounts are normally considered expense accounts maintained in your system base currency.

▶ See Chapter 2, “System/Account Control,” on page 9 for details.

Note Only account code is required; sub-accounts and cost centers are optional based on your own reporting requirements.

Unrealized Exchange Gain Acct, Sub-Acct, and CC. Enter the GL account, sub-account, and cost center codes that record unrealized exchange gains for this currency. Unrealized gains occur before the settlement of an open asset or liability item when a potential for further exchange rate fluctuation exists. Unrealized exchange gains affect only non-base currency accounts, primarily AR, AP, and cash.

Unrealized Exchange Loss Acct, Sub-Acct, and CC. Enter the GL account, sub-account, and cost center codes that record unrealized exchange losses for this currency. Unrealized losses occur before the settlement of an open asset or liability item when a potential for further exchange rate fluctuation exists. Unrealized exchange losses affect only non-base currency accounts, primarily AR, AP, and cash.

Realized Exchange Gain Acct, Sub-Acct, and CC. Enter the GL account, sub-account, and cost center codes that record realized exchange gains for this currency. Realized gains primarily affect cash transactions in AP and AR.

- In AP, a realized gain occurs if the base currency value of the supplier invoice decreases between the voucher date and payment effective date.
- In AR, a realized gain occurs if the base currency value of the customer invoice increases between the invoice date and the payment date.

Realized Exchange Loss Acct, Sub-Acct, and CC. Enter the GL account, sub-account, and cost center codes that record realized exchange losses for this currency. Realized losses primarily affect cash transactions in AP and AR.

- In AP, a realized loss occurs if the base currency value of the supplier invoice increases between the voucher date and payment effective date.
- In AR, a realized loss occurs if the base currency value of the customer invoice decreases between the invoice date and the payment date.

Exchange Rounding Acct, Sub-Acct, and CC. Enter the GL account, sub-account, and cost center codes that record the rounding differences from exchange rate conversion for this currency. These fields are not currently used.

Active. Enter Yes if this currency is active. Enter No if it is not active. Only active currencies can be specified when defining the base currency in System/Account Control, setting up exchange rates in Exchange Rate Maintenance, and defining the euro and its member currencies in EMU Maintenance.

Defining Exchange Rates

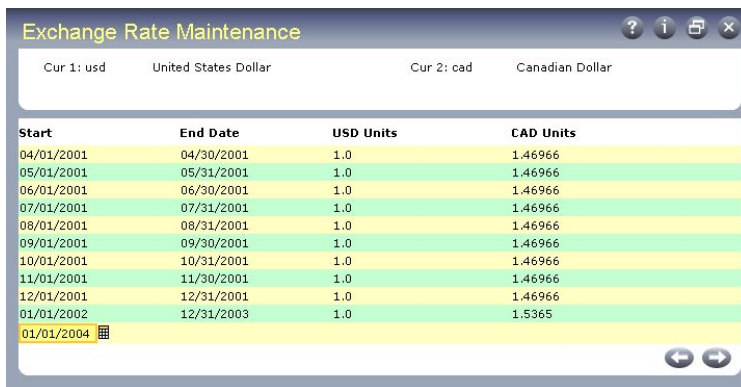
Exchange rates represent the calculation required to convert one currency amount to another. In MFG/PRO, they are expressed as a two-part ratio.

Use Exchange Rate Maintenance (26.4) to set up currency exchange rate relationships. These are required if your company is processing transactions in non-base currencies.

Exchange rates are defined as a relationship between two currencies. One of the currencies in the relationship must be the base currency. The system always stores both sides of the relationship to avoid rounding errors. As a result, converted amounts are not affected by the direction of the relationship. You can retrieve and update relationships without regard to the direction of the relationship.

Example You create a new exchange rate starting on 01/01/02 defining USD 1.0 = JPY 120. Later, you need to change this rate. Now you enter the same start date of 01/01/02, but specify JPY as the first currency. The system displays JPY 120 on the left and the USD 1.0 on the right and allows you to update them, even though they were originally entered the opposite way.

You can modify or delete exchange rates as needed. However, if you specify a rate effective on or before the current date, the system warns you that the rate may have been referenced on a transaction. You must confirm your action before it is completed.



The screenshot shows a window titled "Exchange Rate Maintenance". At the top, it displays "Cur 1: usd United States Dollar" and "Cur 2: cad Canadian Dollar". Below this is a table with the following data:

Start	End Date	USD Units	CAD Units
04/01/2001	04/30/2001	1.0	1.46966
05/01/2001	05/31/2001	1.0	1.46966
06/01/2001	06/30/2001	1.0	1.46966
07/01/2001	07/31/2001	1.0	1.46966
08/01/2001	08/31/2001	1.0	1.46966
09/01/2001	09/30/2001	1.0	1.46966
10/01/2001	10/31/2001	1.0	1.46966
11/01/2001	11/30/2001	1.0	1.46966
12/01/2001	12/31/2001	1.0	1.46966
01/01/2002	12/31/2003	1.0	1.5365
01/01/2004			

Fig. 5.3
Exchange Rate
Maintenance (26.4)

Cur 1. Enter the first currency of the exchange rate relationship. It must be an active currency defined in Currency Maintenance, and cannot be the same as Cur 2.

One of the currencies in the exchange rate relationship must be the base currency.

Note If a country is transitioning to the euro, the other currency must be the base currency or the euro.

When you update an existing relationship, you can enter either currency in this field.

Cur 2. Enter the second currency of the exchange rate relationship. The same rules apply to it as to Cur 1.

See Appendix A, "Converting a Database to the Euro," on page 313.

After you enter two currency codes and press Go, the system displays all existing exchange rates for this currency exchange relationship. The cursor is placed on the last line so you can add a new entry or update an existing one by specifying a start date.

Tip

Date gaps are allowed for a currency exchange relationship.

Start. Enter the start date of the currency exchange relationship. The effective period of an entry cannot overlap with another entry for the same relationship. The exchange rate relationship is used as the default for all transactions during the specified time period.

This field defaults to one day after the end date of the last exchange rate entry. If this is the first entry, the default is today's date.

End. Enter the end date of the currency exchange relationship. The effective period of an entry cannot overlap with another entry for the same relationship. The exchange rate relationship is used as the default for all transactions during the specified time period. This field defaults to the date entered in Start.

XXX Units. Enter the number of units of Cur 1 that equal Cur 2. The exchange rate relationship determines the default for all transactions during the specified time period and is used to convert funds from the transaction currency to the base currency or the euro.

YYY Units. Enter the number of units of Cur 2 that equal Cur 1. The exchange rate relationship determines the default for all transactions during the specified time period and is used to convert funds from the transaction currency to the base currency or the euro.

Setting Up Foreign Currency Banks

Use Bank Maintenance (26.13) to set up bank codes. Bank Maintenance records information about your company's bank accounts, primarily information controlling where amounts are posted in the General Ledger and how payments are processed.

The banks you set up in the Multiple Currency module are the same as those defined in AR Bank Maintenance (27.6.1) and AP Bank Maintenance (28.9.1). This program appears on multiple menus, since you may need to define banks in all of these functions.

These banks are distinct from bank addresses defined in Customer/Supplier Bank Maintenance (2.21.1). An address list type is used to distinguish them:

- Banks created with 2.21.1 have a list type of C/S_Bank.
- Those created with 26.13, 26.6.1, and 28.9.1 have a list type of Our_Bank.

Bank codes are not the same as bank accounts. You can assign several bank codes to the same bank account. To maintain separate balances by currency and bank account, assign GL account codes for cash and payments to each bank.

Assign a two-character code to each bank. The system sorts these codes alphanumerically. One strategy for setting up bank codes is to use a different number range for each account. At least one bank code must be defined before using AR, AP, or cash management functions.

See *User Guide Volume 6: Master Data* for details on addresses.

The screenshot shows the 'Bank Maintenance' window. At the top, it displays 'Bank: AA' and 'Description: US Bank Account #8293-01'. Below this, there is a section titled 'Checking Accounts'. This section contains several fields with values and magnifying glass icons for search: 'Next Check: 000001', 'Currency: USD', 'Bank Acct 1: 8293-01', 'Bank Acct 2: ' (empty), 'Entity: 1000', 'Cash Account: 1040', and 'Payment in Process Acct: 2110'. There are also three empty fields on the right side of the 'Checking Accounts' section. At the bottom right, there are navigation arrows.

Fig. 5.4
Bank Maintenance
(26.13)

After defining standard address information, specify information related to bank accounts. Each bank must be associated with an entity. All cash disbursements post to this entity and the associated cash account. The Payment in Process account is used for AP functions to track cash in transit. The cash and payment in process accounts must be in the system base currency or the bank currency. Draft accounts are only needed if Use Draft Management is Yes in Accounts Payable Control (28.24).

Tax IDs and electronic data interchange (EDI) information can be specified in an additional frame. This information can be used for custom reporting and may be required for legal reporting in some countries.

Using Multiple Currencies

Multiple currencies are supported for purchase orders, sales quotations, sales orders, accounts receivable, accounts payable, and service/support management.

You can associate a currency code with customers and suppliers. This is the code they normally use for business transactions and sets the default on new orders entered in the system.

Multicurrency Transactions

When a foreign currency is specified for an order, the system displays both components of the exchange rate relationship defined in Exchange Rate Maintenance (26.4) for the effective date of the transaction. You can accept or override the exchange rate manually with a *spot rate*. A spot rate is an exchange rate you enter for a transaction that does not have a fixed exchange rate.

If an exchange rate is not defined, an error displays and the relevant exchange rates must be set up in Exchange Rate Maintenance before you can continue. Exchange rates are stored and displayed as a two-part ratio.

Figure 5.5 illustrates an exchange rate relationship for a non-base currency sales order. Other transactions, such as vouchers and sales quotes, are similar to this transaction.

Sales Order Maintenance

Order: so10323 Sold-To: 1502000 Bill To: 1502000 Ship-To: 1502000

Sold-To		Ship-To	
Carlesi Company		Carlesi Company	
Vittorio Square		Vittorio Square	
67 Industriale		67 Industriale	
Rome		Rome	
Italy		Italy	
00143		00143	

Exchange Rate: EUR 1.05563 = USD 1.0

Fixed Rate: ☐

Perform Date: Project: Credit Terms: 2/10-25

Pricing Date: Credit Terms Interest %: 0.00

Purchase Order: Reprice: ☐

Remarks: Entered By: mkr

Fig. 5.5
Sales Order
Maintenance
(7.1.1)

For a non-base currency transaction, you can indicate that the exchange rate relationship is fixed. When Fixed Rate is Yes, the system does not look for a more current exchange rate relationship at the next step in the transaction business cycle. Instead, the system uses the fixed rate for all calculations.

When Fixed Rate is No, the system looks for the current exchange rate at later points in the transaction life cycle. Amounts are updated based on the current exchange rate, which may result in exchange rate variances. For non-fixed sales orders, invoices, calls, contracts, or return material authorizations, the exchange rate is updated at invoice post. For purchase orders, exchange rate is updated during PO receipt and vouchering.

The exchange rate is used to convert the amount from the transaction currency to the base currency. The exchange rate is also used to calculate gains or losses on exchange. These occur when the rate entered on a document is not the same as the rate in effect at the next step in the transaction business cycle.

When one of the currencies in a transaction is an EMU member currency defined in EMU Currency Maintenance (26.19), special processing occurs.

♦ See “Defining Control Settings” on page 329.

Exchange Rate Fluctuation

▶ See “Defining Exchange Rates” on page 122 for more details.

The value of foreign currency transactions usually fluctuates relative to the system base currency. The exchange rate normally defaults from the rate entered in Exchange Rate Maintenance (26.4) for the transaction effective date. Sometimes, a spot rate is entered if a transaction is negotiated for a particular exchange rate.

According to common accounting practices, a document’s current value cannot be considered the document’s actual value and stored in the financial records. Because the current value is based on a fluctuating exchange rate, it can change on a daily basis. The difference between the current and historical values of open documents is seen as *unrealized gain* or *unrealized loss*.

Only when a document is closed does the current value take precedence over the historical value, and update the general ledger. This happens, for example, when a customer pays an invoice and the money due is paid into a base currency bank account. The difference between current and historical values is seen as *realized gain* or *realized loss*.

Since amounts on financial statements are always expressed in the system base currency, you need to periodically revalue non-base amounts in terms of the base currency before running financial reports. You must also account for exchange gains and losses that occur at different stages of transaction processing.

Table 5.1 lists areas in which currency fluctuations affect accounts, transactions, and, ultimately, financial reporting.

Table 5.1
Effects of
Exchange Rate
Fluctuations

Module	Effect
Accounts Payable	Exchange rate fluctuates between the PO receipt and the voucher date.
	Exchange rate fluctuates between the voucher date and the date the voucher is paid.

Module	Effect
Accounts Receivable	Exchange rate fluctuates between the date the invoice is posted and the date customer payment is received.
General Ledger	Within a database, transactions are posted in non-base currencies. Throughout the year, the value of these posted transactions can fluctuate with the exchange rate. When transactions are imported from other databases, account currencies are not always consistent between databases. The values of the imported transactions can fluctuate relative to the system base currency of the consolidation database, affecting reports in current and in future periods.

Within a database, exchange gains and losses fall into three categories.

- Purchase cost
- Unrealized
- Realized

Exchange gains and losses affect only amounts in non-base currencies. Purchase cost gains and losses affect only AP accounts. Realized and unrealized gains and losses primarily affect non-base currency AP, AR, and cash accounts.

Purchase Cost

Purchase cost gains and losses arise from currency fluctuations from the time of PO entry to PO receipt. The system automatically posts purchase cost gains/losses to the Purchase Price Variance (PPV) account defaulted from the product line of the PO items. This account is normally reported on the income statement. The PO amount in non-base currency remains constant, but the base currency value of the PO changes relative to the exchange rate.

Unrealized Gains/Losses

Time usually separates the creation of a transaction from the realization of a gain or loss. For example, time between PO receipt to AP voucher or from AP voucher to a GL revaluation can cause unrealized exchange rate gains or losses. Consequently, there must be a way of accounting for anticipated or unrealized gains and losses.

An unrealized gain or loss affects only non-base currency accounts, primarily AR, AP, and cash. These account balances are maintained at their historical exchange rates. A true gain or loss is not realized on these amounts until cash is received for a receivable or when cash is paid for a payable.

Foreign Exchange (FX) Revaluation (25.13.9) must be run every period to calculate the value of the non-base currency in terms of the system base currency and make any adjusting transactions for unrealized gains or losses.

▶ See “Defining Currency Codes” on page 119 for more details.

Postings are made to unrealized exchange gain or loss account associated with the non-base currency in Currency Maintenance (26.1).

Realized Gains/Losses

Realized gains and losses primarily affect cash transactions in Accounts Payable and Accounts Receivable when you pay or receive more or less cash than expected.

- In Accounts Payable, a realized gain or loss occurs if the base currency value of the supplier invoice changes between the voucher date and the payment effective date.
- In Accounts Receivable, a realized gain or loss occurs if the base currency value of the customer invoice changes between the invoice date and the payment date.

▶ See “Defining Currency Codes” on page 119 for more details.

For realized gains and losses, the system creates transactions for the realized exchange gain or loss account identified by currency in Currency Maintenance (26.1). This account is normally reported on the income statement.

Purchasing Example

Table 5.2 illustrates how the exchange rate can fluctuate at various transaction points in the life cycle of a purchase order.

Activity	Exchange Rate	Order Currency	Base Currency	Exchange Rate Effects
Enter PO	USD 1 = MXP 8	MXP 200	USD 25	
Receive PO items	USD 1 = MXP 10	MXP 200	USD 20	USD 5 gain to PPV
Voucher PO	USD 1 = MXP 11	MXP 200	USD 18.18	USD 1.82 unrealized gain
Revalue PO	USD 1 = MXP 12	MXP 200	USD 16.67	USD 1.51 unrealized gain
Pay voucher	USD 1 = MXP 12	MXP 200	USD 16.67	USD 1.51 realized gain

Table 5.2
PO Exchange Rate Fluctuation

An American company buys items from a Mexican company. The date the PO is entered, the purchase order amount is 200 Mexican pesos (MXP) or 25 US dollars (USD) and the exchange rate is USD 1 = MXP 8.

On the date that the items are received, the exchange rate is USD 1 = MXP 10. At this exchange rate, the company would spend only USD 20 to pay the invoice of MXP 200. The system automatically creates a gain of USD 5 to the purchase price variance (PPV) account defaulted from the product line of the PO items.

On the date the PO is vouchered, the exchange rate is USD 1 = MXP 11. At this exchange rate, the American company still pays MXP 200, but it is now worth USD 18.18. The system automatically creates a gain transaction for USD 1.82. This gain has not yet been realized since the exchange rate can still fluctuate before the voucher is paid.

This PO is not due until the next financial period, but the American company needs to value the PO at the current exchange rate for financial statement reporting. When the American company runs its financial reports, the exchange rate has changed to USD 1 = MXP 12. The PO amount needs to be reported at USD 16.67, its current value. The company uses Foreign Exchange (FX) Revaluation (25.13.9) to revalue foreign accounts and calculate the value of MXP in terms of USD. This program must be run every period.

Foreign Exchange Revaluation converts the Mexican PO amount to USD 16.67 and calculates the unrealized gain of USD 1.51. A transaction is created to update the unrealized exchange gain account specified in Currency Maintenance. This account is normally reported on the income statement.

On the day the American company pays the voucher, the exchange rate is USD 1 = MXP 12. The company still pays the Mexican supplier MXP 200, but at today's exchange rate, MXP 200 is worth USD 16.67. The American company has a realized gain of USD 1.51.

There is still an unrealized gain of USD 1.51 in the system. To make the correct adjustments, the FX revaluation is run for the second period. This creates a realized gain transaction for the exchange gain account specified in Currency Maintenance. It also reconciles the realized gain transaction against the unrealized gain created in the previous period.

Sales Example

Table 5.3 illustrates how the exchange rate can fluctuate at various transaction points in the life cycle of a sales order.

Table 5.3
SO Exchange Rate
Fluctuation

Activity	Exchange Rate	Order Currency	Base Currency	Exchange Rate Effects
Enter Sales Order	USD 1 = CAD 2	CAD 150	USD 75	
Post Invoice	USD 1 = CAD 1.5	CAD 150	USD 100	USD 25 unrealized gain
Receive Payment	USD 1 = CAD 1.25	CAD 150	USD 120	USD 20 realized gain

An American company sells supplies to a Canadian company. The date the sales order is entered, the invoice amount is 150 Canadian dollars (CAD) or 75 US dollars (USD) and the exchange rate of USD 1 = CAD 2.

On the date the invoice is posted, the exchange rate is USD 1 = CAD 1.5. At this exchange rate, the American company will still get CAD 150 from its customer, but the invoice is now worth USD 100. The American company has an unrealized gain of USD 25. This loss has not yet been realized since the exchange rate can still fluctuate before the invoice is paid.

On the day the American company receives payment for the invoice, the exchange rate is USD 1 = CAD 1.25. At this exchange rate, an invoice of CAD 150 is worth USD 120. The American company reports a realized gain of USD 20.

Reporting Currency

Most reports let you specify a reporting currency. When specified, a financial document can be reported in a currency other than the document or the base currency.

Do not confuse this reporting currency with the currency specified as a selection criterion.

- A number of reports, browses, and inquiries let you specify a currency code to use for selecting documents included in the report. This currency controls which records display.
- The reporting currency is different. When specified, the system takes the standard report output and converts this into a currency of your choice.

Reporting currency provides important benefits for companies with an EMU base currency. See Appendix A, “Converting a Database to the Euro,” for a discussion of reporting currency in the context of EMU currencies.

▶ See “Reporting Currency” on page 393.

Reporting Currency and Currency Translation

The reporting currency feature is not restricted to the euro or an EMU currency. You can specify any currency as the reporting currency. However, for companies with non-EMU base currencies, this feature has limited use.

For example, running financial reports by specifying a reporting currency is not an acceptable alternative for the currency translation that occurs during transaction consolidation. An EMU company that also needs to generate financial statements in USD must continue to use Transaction Export and Import so that the EMU currency can be properly translated to USD.

▶ For details, see “Consolidating Multicurrency Transactions” on page 142.

During Transaction Import (25.19.15), the system converts transaction amounts from the exporting database into the base currency of the importing database. When it does this, it uses different exchange rates as appropriate for each account with activity to be translated.

When you specify a reporting currency, the system takes all of the selected base currency amounts and displays them in the reporting currency, based on a single exchange rate between the reporting currency and the base currency.

Important These results are an approximation that is not suitable for official reporting.

Document Values

The reporting currency feature involves a number of factors:

- The way standard MFG/PRO stores foreign currency documents.
- How amounts held in foreign currency documents are converted into your database's base currency.
- How the system determines which exchange rate to use in reporting currency conversions.

Financial documents in foreign currencies are stored as a combination of the relevant foreign currency amount (the *document amount*) and the document exchange rate (the *historical rate*).

The document amount is converted into a base currency amount using the historical rate of exchange. This resulting base currency amount is known as the document's *historical value*. This value is stored in the general ledger and is shown as the document's actual value in your financial records, until a document is finally closed.

Over time, exchange rates can fluctuate. The exchange rate valid today is known as the *current rate*. This exchange rate is used to calculate the *current value* of a financial document, which is not necessarily the same as that document's historical value.

Table 5.4 illustrates the different values that can be associated with a financial document. In this example:

- The base currency of the company is the euro (EUR).
- The document is a foreign currency invoice, opened in US dollars (USD).
- The document amount is \$1000.
- The document exchange rate—the historical rate—is USD 1 = EUR 1.12.
- The invoice's effective date is January 1, 2002.

Date	Current Rate	Historical Value EUR	Current Value EUR
01/01/02	USD 1 = EUR 1.12	1120	1120
01/02/02	USD 1 = EUR 1.19	1120	1190
01/03/02	USD 1 = EUR 1.02	1120	1020
01/04/02	USD 1 = EUR 1.08	1120	1080
01/05/02	USD 1 = EUR 1.12	1120	1120
01/06/02	USD 1 = EUR 1.21	1120	1210

Table 5.4
Document Values

As illustrated in Table 5.4, the historical and current values of the same document are not necessarily the same, and can vary from day to day, owing to fluctuations in the exchange rate.

Reported Values

When reporting a financial document in a currency other than the base or document currency, the system needs to know if it should use the document's actual amount, its historical value, or its current value as the starting point in the reporting currency conversion. The value used depends on how the reporting currency conversion is to be performed, either from:

- An accounting perspective
- A current value perspective

From an accounting perspective, the document's historical value must be used as the starting point for the reporting currency conversion. Neither the document amount nor the current values are viable options at this point, because they are not reflected in the AR balance in the general ledger.

From a current value perspective, the actual document amount is used as the starting point for the reporting currency conversion.

When selecting the reporting currency option, you can specify if the accounting or the current value perspective should be used when calculating the document's reported values.

See "Reporting Currency" on page 138.

Selection Currency

A number of reports, browses, and inquiries already provide the ability to specify a currency code, known as the *selection currency*. This value is used only as selection criteria. By default, reports and inquiries show all transactions. When a specific currency is specified, only transactions in the currency are included.

AR Aging as of Effective Date (27.18) offers this currency selection option. Figure 5.6 illustrates this program.

Note Other reports and inquiries that offer the selection currency feature are similar to this one.

Fig. 5.6
AR Aging as of
Effective Date
(27.18)

Specify a
currency for
selecting
documents to
be reported.

AR Aging as of Effective Date

Bill To: [Field]
Customer Type: [Field]
Reference: [Field]
Salesperson: [Field]
Account: [Field]
Sub-Account: [Field]
Cost Center: [Field]
Entity: [Field]
List Type: [Field]
Age by Date (DUE, EFF, INV): DUE
Effective Date: 07/22/2002
Summary/Detail: Detail
Currency: [Field]
Reporting Currency: [Field]
Show Customer PO: [Field]
Show Payment Detail: [Field]
Show Invoice Comments: [Field]
Show Master Comments: [Field]
Type: AR
Language: [Field]
Column Days: 30 [2]: 60 [3]: 90
Output: Batch ID

If the Currency field is blank (the default), the historical values of all open AR items are included in the report. These historical values are shown in the database's base currency, regardless of the currency of the relevant documents.

If you enter a value in the Currency field, only open AR items stated in that currency are included in the report. In this case, the document amounts are shown in the report. These are shown in the documents' original currency, which matches that specified in the Currency field. Any open AR items in currencies other than the one specified are not included in the report.

The output from such reports is known as the *standard report amount*, regardless of whether it is the original document amount, expressed in the original currency, or the document's historical value, expressed in the base currency.

Table 5.5 shows the different values that can be associated with three example sub-ledger foreign currency documents. The euro (EUR) is the base currency.

Document Currency	Document Amount
JPY	1,000.00
USD	1,150.00
EUR	2,500.00

Table 5.5
Example Financial Documents

The setting of the Currency field determines which documents are included on the report. If you enter USD in the Currency field in AR Aging as of Effective Date (27.18), only the document stated in US dollars is included in the report. Its document amount of 1,150 US dollars would be shown on the report in its original currency of US dollars. The other two documents would not be included in the report since they are not in US dollars.

If the Currency field is blank, all three documents are included in the report. In this case, the historical value of these documents expressed in euros (the base currency) is shown on the report. The reported amount of the same US dollar document in this instance would be EUR 1380, that document's historical value based on a document exchange rate of USD 1 = EUR 1.2.

Reporting Currency

The reporting currency option allows the reported value of selected financial documents to be converted to any currency you choose. This conversion always starts with the standard report amount. This standard report amount is then converted into the reporting currency of your choice.

The resulting report or inquiry shows the reported values of these documents in that selected currency, and always identifies the actual currency used as the reporting currency.

Fig. 5.7
AR Aging as of
Effective Date
(27.18)

The screenshot shows the 'AR Aging as of Effective Date' window. It includes fields for Bill To, Customer Type, Reference, Salesperson, Account, Sub-Account, Cost Center, Entity, and List Type. There are also 'To:' fields for each of these. The 'Age by Date (DUE, EFF, INV):' is set to 'DUE'. The 'Effective Date' is 07/22/2002. The 'Summary/Detail' is set to 'Detail'. The 'Currency' field is highlighted with a callout line and the text 'Currency for converting report amounts for display.'. The 'Reporting Currency' field is also highlighted. Other fields include 'Show Customer PO:', 'Show Payment Detail:', 'Show Invoice Comments:', 'Show Master Comments:', 'Type: AR', 'Language:', 'Column Days: 30', '[2]: 60', '[3]: 90', 'Output:', and 'Batch ID:'.

To use the reporting currency feature, specify a value in the Reporting Currency field. This indicates the currency into which the standard report amount is to be converted.

The system determines the exchange rate to be used from values defined in Exchange Rate Maintenance. It uses the exchange rate valid for today's date or the rate for the effective date specified on the report.

The reporting currency conversion can be carried out according to either the accounting or the current value perspective.

- For the accounting perspective, specify a Reporting Currency, but leave the Currency field blank.
- For current value perspective, specify currencies in both the Reporting Currency and the Currency fields.

Table 5.6 shows the same three sample sub-ledger foreign currency documents used in Table 5.5 on page 137. These samples illustrate how the same document can have different reported values, depending on the method used for the reporting currency conversion.

Document Currency	Document Amount	Historical Value EUR	Current Value EUR
JPY	1,000.00	9.33	8.61
USD	1,150.00	1,357.22	1292.28
EUR	2,500.00	2,500.00	2,500.00

Table 5.6
Foreign Currency Documents

If the company wants to report these documents in US dollars, two different reporting currency values can be obtained for each document, depending on whether the accounting or the current value perspective is used.

When the reporting currency is converted according to an accounting perspective, each document's historical value is used as the starting point. The following calculation is used to determine the reported value:

$$\text{Reported Value} = \text{Historical Value} / \text{Current Rate}$$

For the document shown in US dollars in the table, assuming a current exchange ratio of .83, this conversion gives a reported value of USD 1,097.19:

$$\text{EUR } 1357.22 / 1.237 = \text{USD } 1,097.19$$

When the reporting currency is converted according to the current value perspective, the document amount is used as the starting point. From this perspective, the reported value of the same US dollar document is USD 1,150. This amount is the same as the document amount, since this document is already expressed in the currency chosen as the reporting currency (US dollars).

If any currencies in transition to the euro are involved in the transaction, the reporting currency conversion is carried out in compliance with euro currency conversion processing rules. This means that triangulation must be used. Conversions between two national currencies must be done by first converting to the euro and then converting into the other national currency.

See
“Triangulation”
on page 317 for
more details.

Example Reporting Currency Conversion Processes

The following examples illustrate the reporting currency conversion.

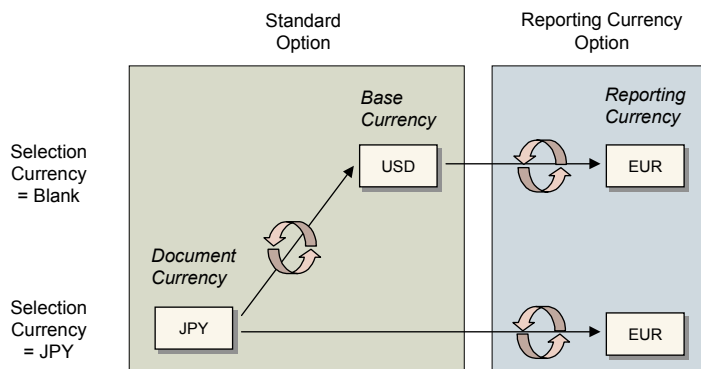
Example 1

In this example:

- The base currency is US dollars.
- The currency of the document to be included in the report is Japanese yen.
- The reporting currency is the euro.

Depending on the selection currency, the standard report amount can be in either the original Japanese yen (JPY) or can be converted to the base currency. Either amount is then converted to the euro (the reporting currency).

Fig. 5.8
Different
Document and
Reporting
Currencies



This example uses non-EMU currencies. Therefore, the conversion is performed in accordance with standard currency conversion procedures.

See “Reporting Currency” on page 393.

Appendix A includes examples for currencies in transition to the euro.

Example 2

When the reporting currency is the same as the document currency and no selection currency is specified, the reported amount can sometimes differ from the original amount.

When no selection currency is specified, the system converts the original document amount into a base currency amount. This is then converted into the reporting currency (the same base currency).

Figure 5.9 illustrates the conversion flow for such a transaction.

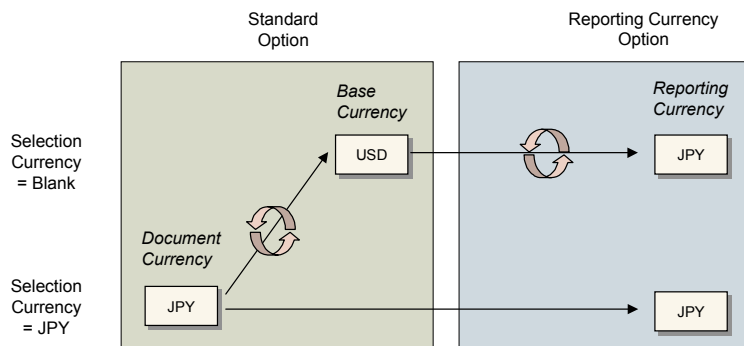


Fig. 5.9
Same Document
and Reporting
Currency

In Figure 5.9, the base currency is US dollars and both the document and reporting currency are Japanese yen. When no selection currency is specified, the document is converted:

- First to US dollars, the base currency
- Then into the reporting currency, Japanese yen

Potential differences between the original document amount and the reported amount in this case can be caused by a combination of factors.

- Rounding differences can be introduced as a result of the reporting currency conversion.
- Different exchange rates are used at different points in the conversion.

The first conversion from the original document currency (the Japanese yen), to the base currency (the US dollar), uses the historical exchange rate stored in the document. The reporting currency conversion uses either the exchange rate entered into the appropriate report, browse, or inquiry, or the current exchange rate.

Rounding

When calculating the reporting currency value, the system uses standard currency dependent rounding (CDR) to round reported amounts. Amounts are rounded according to the settings of the reporting currency.

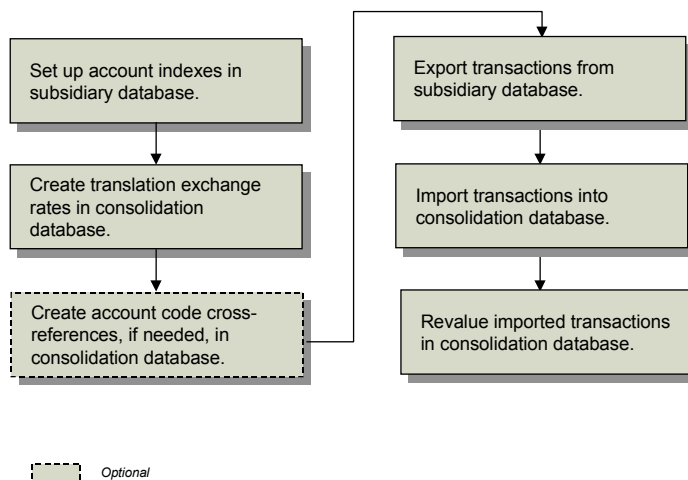
Consolidating Multicurrency Transactions

See “Using Multiple Entities” on page 66 for details on consolidation.

Consolidation is typically used when multiple entities must report financial statements in one currency. When entities have different base currencies, consolidation must take into account currency conversions.

Figure 5.10 represents a typical consolidation work flow involving currency translation.

Fig. 5.10
Consolidation
Setup Work Flow



Currency Translation

In companies with multiple entities or databases, a number of currencies can be used for transactions, with charts of accounts in the different entities including the appropriate non-base currency accounts. However, for consolidated financial reporting, all transactions must be valued in the same currency. In MFG/PRO, this is done when transactions are imported by the consolidation database. The translation converts the imported transaction amounts to the base currency in the consolidation database.

Example A U.S. company has subsidiaries in France and Mexico. The French and Mexican databases each maintain accounts in currencies other than their entity base currencies. When the consolidation database imports transactions from the French and Mexican entities, it translates transaction amounts to USD. Since account codes in the U.S. database are different, that database first cross-references the accounts, then translates the currencies.

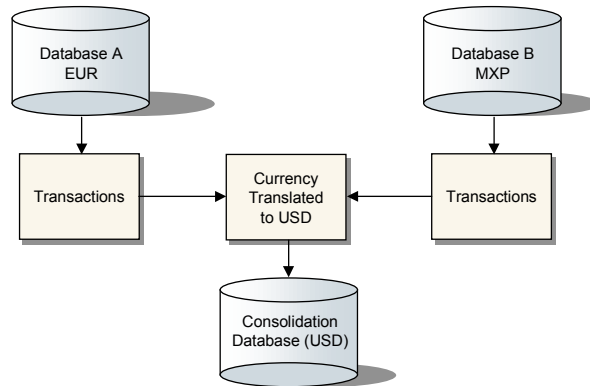


Fig. 5.11
Currency Translation

Table 5.7 illustrates currency translation for Database A, which has an entity base currency of EUR. For non-base currency accounts that are not in the same currency as the receiving account, the system translates the base currency value of the account. For example, in Table 5.7, when account 3000 is translated to account 3300, MXP is first revalued to EUR (the entity base currency), and the translation is from EUR to USD.

Accounts	Currency	Bank Accounts	Currency	Translation
1000	EUR	1200	USD	EUR to USD
2000	USD	2200	USD	None (USD)
3000	EUR	3300	MXP	EUR to USD
4000	MXP	4400	MXP	EUR to USD
5000	EUR	5500	USD	EUR to USD

Table 5.7
Currency Translation for Database A (EUR)

Translation adjustments can be posted to either a balance sheet or income statement account. The financial statement used to report translation adjustments is specified in Entity Code Maintenance (25.3.1.1). The account is specified in General Ledger Control (25.24). Translation adjustments cannot be reported by sub-account or cost center.

Account Indexes

Whenever you export and import between multiple currency databases, you must specify one of the following currency translation indexes for each account in Account Code Maintenance (25.3.13).

Table 5.8
Currency
Translation Indexes

Index	Description
Current (1)	The system recalculates the value of transactions based on current exchange rates. Transactions are first revalued during Transaction Import and periodically updated by Imported Transaction Revaluation (25.19.17).
Weighted Average (2)	The system determines a set value for a transaction by averaging the rates for all dates in the range of transaction effective dates. For example, if transactions are imported for the month of January, the system adds up the rates for each date (January 1, January 2, and so on) and then divides by 31.
Simple Average (3)	The system determines a set value for a transaction by averaging the rates for the first and last dates in the range of transaction effective dates. For example, if transactions are imported for the month of January, the system averages the rates for January 1 and January 31.
Historical (4)	The system imports transactions at the exchange rate effective on the date of the transaction. Transaction Import (25.19.15) uses the original transaction date for the exchange rate calculation.
User-Defined (5)	All imported transactions are revalued at a set rate for the accounting period. User-defined rates for currency translations are set up by account in Translation Exchange Rate Maintenance (25.19.1). The exchange rate relationship is used to convert the amount from the account currency to the base currency.

Currency translation indexes are used in two ways.

- During Transaction Export (25.19.14), the index in the source database determines the exchange rate to use when translating transactions during import.
- They also determine whether transactions are included in Imported Transaction Revaluation (25.19.17).

Translation Exchange Rate Maintenance

Use Translation Exchange Rate Maintenance (25.19.1) to set up user-defined rates by account and calendar period. These exchange rates are used only for accounts set up in Account Code Maintenance (25.3.13) with currency translation index set to 5, user-defined. Each account must have an exchange rate set up in Translation Exchange Rate Maintenance before Transaction Import is run.

Year	Pd	EUR Units	USD Units	Accept
2002	2	1.05563	1.0	☒

Fig. 5.12
Translation
Exchange Rate
Maintenance
(25.19.1)

During import, amounts for this account are translated to base currency using the rate specified. A balancing entry is created in the currency Translation Adjustment account specified in General Ledger Control (25.24).

The exchange rates used for currency translation are usually dictated by reporting requirements in the country of the consolidating entity. In consolidation databases, imported transactions can be valued at historical rates or revalued for current exchange rates.

Transaction Export

Use Transaction Export (25.19.14) to send financial information to a parent company for consolidation. This is usually done after each calendar period is closed. Transaction Export writes posted GL transactions to an ASCII file, which can be loaded into another database for consolidation.

Fig. 5.13
Transaction Export
(25.19.14)

The screenshot shows the 'Transaction Export' window. It has a title bar with standard window controls. The main area is titled 'Primary Entity'. It contains several input fields: 'Entity: 1000', 'Account:', 'Sub-Account:', 'Cost Center:', 'Project:', 'Daybook:', 'Effective Date: 01/01/2002', and 'To: 07/22/2002'. There are also checkboxes for 'Consolidate Transactions:' (checked), 'Print Audit Trail:' (checked), and a 'Transfer File:' field containing '10000722.trx'. An 'Output:' section at the bottom right has two arrow buttons.

Transactions can be written to the ASCII file in detail or consolidated. For most accounts, consolidated transactions suffice. Only accounts such as fixed assets maintained in a foreign currency at historical rates cannot be consolidated for export. These accounts are identified in Account Code Maintenance with currency translation index 4, historical, and should be exported first by specifying an account range.

Transaction Import

Use Transaction Import (25.19.15) in a consolidation database to load GL transactions exported from another entity. Transaction Import is used by parent companies that consolidate financial information from one or more divisions or subsidiaries.

Fig. 5.14
Transaction Import
(25.19.15)

The screenshot shows the 'Transaction Import' window. It has a title bar with standard window controls. The main area is titled 'Primary Entity'. It contains several input fields: 'Entity: 1000', 'Transfer File Name: 10000722.trx', and 'Currency: USD'. There are also checkboxes for 'Allow Errors:', 'Print Audit Trail:', and 'Currency Translation:'. Below these are fields for 'Records Loaded:' and 'Errors:'. An 'Output:' section at the bottom right has two arrow buttons.

Transaction Import loads GL transactions from an ASCII file previously created by running Transaction Export in the exporting entity's database.

See "Transaction Export" on page 146 for more details.

Exported accounts with amounts expressed in a non-base currency need to be translated to the currency of the consolidation database. For example, if a Swiss parent company is consolidating an Italian subsidiary, euro amounts need to be converted to Swiss francs. The exchange rate used is determined by the Curr Translation Index specified in Account Code Maintenance for each account in the exporting database.

Not all accounts are translated. For example, an Italian bank account can be kept stated in a euro amount even in the consolidation database.

If the currency translation index for an account is 5, user-defined, the system looks for a valid exchange rate specified in Translation Exchange Rate Maintenance. The exchange rate relationship is used to convert the amount from the account currency to the base currency. If none is found, the rate stored with the imported transaction is used. This may not be correct, since currencies may be different. A warning displays in Transaction Import if this occurs.

See "Translation Exchange Rate Maintenance" on page 145 for more details.

Imported Transaction Revaluation

Use Imported Transaction Revaluation (25.19.17) to revalue, at the current exchange rate, foreign currency amounts imported from another entity. Most amounts remain the same once imported, but the values of some imported transactions fluctuate. For example, accounts with a currency translation index of 1, current, can fluctuate.

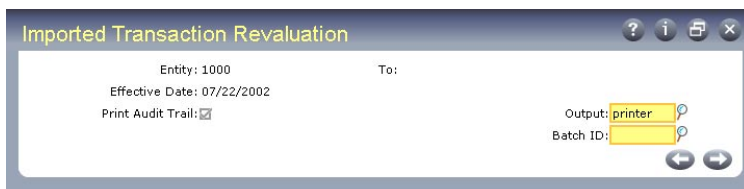


Fig. 5.15
Imported
Transaction
Revaluation
(25.19.17)

At period-end, run Imported Transaction Revaluation to revalue transactions previously imported for accounts with a currency translation index of 1 or whose currency is the base currency of the consolidation database. This ensures that these amounts are reported at the newest exchange rates.

The system posts the currency translation adjustments created by Imported Transaction Revaluation to either the balance sheet or income statement, as specified in General Ledger Control (25.24).

Example The base and account currency for Database A is EUR. The base and account currency for Database B is USD. Table 5.9 lists a typical transaction revaluation.

Table 5.9
Transaction
Revaluation

Date	Action
May 15	Import/translate currency from EUR to USD, exchange rate 1:8.
May 31	Print reports for Database B.
June 20	Run Imported Transaction Revaluation, exchange rate 1:9.
June 30	Print reports for Database B.

Accounts Receivable

The Accounts Receivable (AR) module enables you to create DR/CR memos, process payments, calculate finance charges, keep track of customer balances, and issue drafts and dunning letters.

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Introduction

In accounting, a receivable is any financial claim that a business has against individuals or other organizations. Accounts receivables are financial claims resulting from sales transactions. When a company sells goods or services, it has a claim on the customer for payment. Typically, you communicate this claim to the customer on an invoice, a document that states what items were sold and the amount due.

Usually the customer sends the correct payment and you credit it directly to the invoice. However, customers sometimes pay too much or too little, qualify for cash discounts, or pay late and incur finance charges.

The Accounts Receivable module lets you create debit/credit (DR/CR) memos, process payments, calculate finance charges, keep track of customer balances, issue drafts, and send dunning letters regarding overdue accounts.

AR Banks

Use Bank Maintenance (27.6.1) to define at least one bank to receive customer payments. Create a separate bank code for each currency in which you plan to receive cash.

♦ See “Setting Up Foreign Currency Banks” on page 124 for more details on banks.

Note Bank Maintenance (27.6.1) in AR is the same as Multiple Currency Bank Maintenance (26.13) and AP Bank Maintenance (28.9.1). This program is duplicated for convenience, since you may need to define banks in any of these functions.

Assign a two-character code to each bank. The system sorts these codes alphanumerically. When you record payments, the bank defaults to the first bank code the system finds in the customer’s currency. Some AR reports also sort by bank code.

Bank codes are not the same as bank accounts. You can assign several bank codes to the same bank account. To maintain separate balances by currency and bank account, assign GL account codes for cash and currency to each bank.

Payments in Multiple Currencies

You can receive payments for invoices and DR/CR memos in non-base currencies. Which currencies are valid depends on the currency of the bank receiving the payment and whether the currency is a member of the European Monetary Union (EMU). Euro transparency and triangulation are supported in AR payments.

See “Accounts Receivable Transparency” on page 391.

Multiple Sites/Entities

A site is an independent unit—usually a warehouse or a group of warehouses at a physically distinct location—used for inventory control and planning. The system associates a site with a GL entity, which usually represents a company or business. The entity represents an independent unit for financial reporting. Accounts receivable transactions are tied to the site and entity through the site specified on the sales order.

You can specify multiple GL accounts on all AR transactions. When transactions involve different entities, the system automatically calculates balancing entries and posts them to the intercompany accounts specified in Entity Code Maintenance (25.3.1.1).

Managing GL Transactions

All accounts receivable transactions create GL transactions. Table 6.1 lists transactions in the AR cycle.

Function	Debit	Credit
Shipping	Cost of Goods	Inventory
Invoicing	Accounts Receivable	Sales Taxes and other Charges
DR/CR Memos	Accounts Receivable	User-Selected Accounts
Finance Charge	Accounts Receivable	Sales Finance
Payments Applied	Cash Sales Discounts Realized Exchange Loss	Accounts Receivable Realized Exchange Gain
Payments–Unapplied	Cash	AR Account from Customer Maintenance

Table 6.1
GL Transaction
Summary

Function	Debit	Credit
Payments–Non-AR	Cash	Sales Account from System/ Account Control
Apply Unapplied Payment	User-Selected Account Sales Discounts Realized Exchange Loss	AR Account from Invoice Realized Exchange Gain

Note All exchange rate gains and losses are posted to the accounts associated with the currency in Currency Maintenance (26.1).

As elsewhere in MFG/PRO, invoicing and accounts receivable activities create transactions by site and by entity.

- Invoice post credits sales, taxes, and other charges and debits accounts receivable for the site (entity) that shipped the order.
- DR/CR memos post the AR amount to the entity entered on the first part of DR/CR Memo Maintenance (27.1). Other accounts, such as sales, freight, and taxes, are entered on the memo distribution lines. You can specify a different entity on each line. The system creates intercompany balancing entries automatically.
- Finance charges debit the AR account for the customer and credit Sales Finance as specified in System/Account Control (36.1).
- Payments can also reference multiple entities. The system debits the cash to the entity specified and credits the AR amount based on the entity from the invoice or memo. Once again, intercompany entries are created.

Tip
The user executing this function must have access to the AR entity.

Special cases exist when you are processing unapplied and non-AR payments. In these cases, you need to specify the account to be credited. The payment account defaults from the customer AR account or the sales account from System/Account Control, but you can override these defaults.

Transaction Types

The system stores all accounts receivable transactions in the same table and uses a type code to distinguish how they are processed. The type code determines what information appears on reports and whether you can change or add information to an existing transaction. The type codes are:

- I (Invoice)
- M (Debit/credit memo)
- F (Finance charge)
- D (Draft)
- P (Payment)
- A (Applied unapplied payment)

Type code P is a generic code that the system assigns to all payments. Since payments may or may not be applied to customer receivables, the system identifies specific kinds of payments with three additional type codes.

See “Processing Payments” on page 158.

Code	Description
blank	Payment applied to customer receivables
N	Non-AR payment such as a tax refund
U	Unapplied payment, such as prepayment for a future invoice

Table 6.2
Type Codes for
Specific Kinds
of Payments

When an unapplied payment is applied to a customer receivable, the system automatically creates a record with a transaction code of A (applied).

Summarization Level

The AR Summarization Level field in Accounts Receivable Control determines the level of detail used by the system when AR transactions are posted to the general ledger. Transactions can be created in three ways:

- Level 1 creates detailed AR transactions by entity, account, sub-account, cost center, and project code, with one GL distribution line for each AR transaction.

See “Batch Control” on page 155.

- Level 2 creates AR transactions summarized by batch, account, sub-account, cost center, and project.
- Level 3 creates detailed individual AR transactions with separate GL references for each document.

Note When Summarization Level 1 or 2 is selected, the system always summarizes the AR amount of the transaction for posting. The same is true for the cash portion of a batch.

Summarization Example

Two DR/CR memos are processed in one batch using DR/CR Memo Maintenance (27.1). The document numbers are Memo1 and Memo2. The GL accounts affected are 1200 and 3000. The following transactions are created based on the summarization level in effect.

Level 1: Detailed

Account	Document	GL Reference	Debit	Credit
1200		Ref1	200	
3000	Memo1	Ref1		–100
3000	Memo2	Ref1		–100

Level 2: Summarized by Batch

Account	Document	GL Reference	Debit	Credit
1200		Ref1	200	
3000		Ref1		–200

Level 3: Separate GL Entries for Each Document

Account	Document	GL Reference	Debit	Credit
1200	Memo1	Ref1	100	
3000	Memo1	Ref1		–100
1200	Memo2	Ref2	100	
3000	Memo2	Ref2		–100

Implementation Issues

When you first implement MFG/PRO, create detailed journal entries by setting Summarization Level to 1. You can verify that each transaction is being processed correctly with the right account numbers and identify any mistakes.

Once you are confident that entries are being made correctly, change to level 2. This method takes less space and is easier to handle in the GL. Greater detail is always available by printing transaction registers in the original module.

Use level 3 if you have a requirement for detailed journals in AR and also need separate GL transactions per document.

Batch Control

Transactions are typically processed as a group of records, such as posted invoices. These groups are identified with a batch ID number, which either you or the system assigns. The system uses the batch ID to consolidate transactions when posting to the general ledger. You can also use control totals to double-check your entries. Control totals are optional.

When entering transactions with DR/CR Memo Maintenance (27.1) or Payment Maintenance (27.6.4), an error message displays when the sum of the distribution line amounts does not equal the control total. The message shows the control amount entered, the actual distribution total, and the difference. You can choose to:

- Accept. The system sets the transaction control field to the sum of the distribution line amounts. All data is retained and tables are updated.
- Edit. The system returns to the first frame of the transaction. You retain the data you entered and can correct either the control amount and/or the distribution line amounts.
- Cancel. You lose the data you entered, and no tables are updated.

For each batch, the system records the batch ID, control total, batch amount entered, user ID, and date. Whenever someone updates the batch, the system updates this information. To verify data entry, print the DR/CR Memo Register (27.3) after each batch, in detail or summary format.

The system also tracks unused and out-of-balance batches. Use AR Batch Report (27.19) to check for these. If you have a batch that is out of balance, either the batch entry or control total is incorrect. Use DR/CR Memo Maintenance (27.1) to correct an out-of-balance batch. Unused batches usually result when a batch was skipped or accidentally misplaced.

Period-End Procedures

AR-GL Transactions Report (27.21) lists all unposted GL transactions created by AR activity. Print this report before posting the transactions to the general ledger. At month-end close, you can use the following reports to find transactions corresponding to those printed on the GL reports.

- DR/CR Memo Register (27.3)
- Payment Register (27.6.6)
- Payment Application Register (27.6.10)

When printing the reports, set Print GL Detail to Yes. GL transactions print in sequence by entity, account number, sub-account number, cost center, and project.

Before posting transactions, use Invoice Numbering Report (27.22) to determine if any numbers are missing from your invoice number sequence. If you find missing numbers, you can make any necessary corrections.

Issuing DR/CR Memos

Use debit/credit (DR/CR) memos to record miscellaneous amounts such as credits or to write off bad debts. DR/CR memos can also be used to load customers' opening balances when you begin running MFG/PRO. Receivables and finance charges are debits, while payments and discounts are credits. DR/CR memos only update records for the Accounts Receivable and General Ledger modules.

Important Do not use DR/CR memos to record corrections or adjustments affecting inventory, sales history, or commissions.

Use DR/CR Memo Maintenance (27.1) to create a DR/CR memo, which always has a transaction type of M (memo).

Fig. 6.1
DR/CR Memo
Maintenance (27.1)

You can specify a tax effective date for the system to use in determining which tax rates apply to the transaction. When you enter a tax date, the system calculates the taxes based on the rate for the ship-to address for tax effective date. If you do not enter a tax date, the tax defaults from the effective date for the invoice (if referenced) or the DR/CR memo. The tax rate defaults from the rate for the ship-to address for that date.

When multiple currencies are used, the AR account on the header must be in the base currency or the transaction currency.

When entering a DR/CR memo, you can record commission percentages for up to four salespersons. This information then appears on the salesperson commission reports but does not update sales history.

Each invoice, memo, or finance charge can have an expected payment date associated with it, specified in the Expt Date field. This date indicates when you actually expect to receive payment rather than the date payment is due. You can update it here or in Customer Credit Review/Update (27.10).

On each distribution line, enter the account, sub-account, cost center, entity, taxable setting or code, description, and amount.

If you are entering a credit memo, enter a negative amount by specifying a minus sign (–) in front of the number. Credit memos decrease the customer balance but remain open until they are applied to a specific customer invoice or debit memo.

► For more information on taxes, see *User Guide Volume 6: Master Data*.

The system automatically calculates the taxes. You can record additional tax information using the View/Edit Tax Detail option.

Use one of the following programs to display information on DR/CR memos:

- DR/CR Memo Inquiry (27.2)
- DR/CR Memo Register (27.3)
- DR/CR Memo Report (27.4)
- DR/CR Memo Print (27.15)

Processing Payments

Use Payment Maintenance (27.6.4) to record customer payments and apply them to an open item, such as an invoice, or to record miscellaneous cash receipts, such as tax refunds. There are three types of payments:

- **Applied.** Use this to record cash from a customer in payment of specific invoices, memos, or finance charges.
- **Unapplied.** Use this to record cash received from a customer that does not apply to specific invoices, memos, or finance charges—for example, a prepayment for a future invoice or an overpayment.
- **Non-AR Receipt.** Use this to record cash received that is not paying any invoice, memo, or finance charge—for example, tax refunds or rebates.

Payment Maintenance

Batch: 1343Control: 1,000.000Total: 0.000

Check: 072502Bill To: 001PEI Computers Ltd.
Currency: USDType: P
Check Control: 0.00Amount: 0.00
Date: 07/25/2002Batch: 1343
Effective: 07/25/2002Daybook:
Bank: AAAccount: 1040
US Bank Account #8293-01Disc Acct: 3910
Remark:
Auto Apply:☐

Payment Maintenance

Check: 072502Check Control: 1,000.00Amount: 0.00
Bill To: 001PEI Computers Ltd.Unapplied: 1,000.00

Payment Application Detail					
Reference	T	N/U Ref	Due Date	Balance	Cash Amount

Payment Application Maintenance

Ref:Type:Entity:
N/U Ref:Amount to Apply:
Account:Cash Amount:
Tax:Discount:

Fig. 6.2
Payment
Maintenance
(27.6.4)

Applied Payments

Apply a customer’s payment by entering the reference numbers of the invoices, memos, or finance charges for the payment in the Reference field of the payment distribution line. The T (type) field defaults to I (Invoice).

After entering the reference number, the system prompts you to enter the amount to apply. You enter the entire amount paid, including any discount taken.

You can also apply one payment to multiple invoices, memos, and finance charges by setting Auto Apply (in the first frame) to Yes. When set to Yes, the system displays the Invoice/Memo Selection frame.

Note You can also apply payments to multiple distribution lines by specifying an asterisk (*) in the Reference field of the Payment Application Detail frame.

Fig. 6.3
Payment
Maintenance,
Invoice/Memo
Selection

Payment Maintenance

Batch: 1343 Control: 1,000.000 Total: 0.000

Invoice/Memo Selection

Reference: To:
Date: To:
Due Date: To:
Select All (*):

This feature lets you retrieve open items by reference, transaction date, and due date range. If you leave all selection criteria blank, the system retrieves all open items for the customer bill-to address. The system retrieves items until the transaction control total is reached and partially applies the last payment if the sum of the items exceeds the control total.

Note The system does not select open items unless the control total is greater than zero.

Select All determines the default status of the retrieved open items. Set Select All to Yes if most or all of the retrieved open items are covered by this payment. Set Select All to No if you want to manually select items for payment.

The Automatic Payment Selection screen displays next. Here the system displays all the retrieved open items. Selected items are marked with an asterisk (*) in the Sel column. The oldest open items are displayed first. Items due on the same date are displayed in ascending reference number order.

Fig. 6.4
Payment
Maintenance,
Automatic Payment
Selection

Payment Maintenance

Check: 100257 Check Control: 2,000.00 Amt: 0.00
Bill To: 10010001 Westwood Reliable Unapplied: 2,000.00

Automatic Payment Selection

Sel	Reference	T	Due Date	Balance	Applied Amount	Discount
▶	10003	I	07/12/1992	2,733.60	0.00	0.00
▶	1002	m	08/29/2002	1,616.25	0.00	0.00
▶	1001	M	09/05/2002	113.14	0.00	0.00

Select or deselect items as needed. Every time you select/deselect an item, the system automatically updates the two totals in the upper right corner of the screen. In the Total field, the system displays the current applied amount. In the Unapplied field, it displays the current unapplied amount, based on the check control minus the total applied.

Once you are satisfied with the selected items, choose Go to process them and move to the Payment Application Detail screen.

If necessary, you can manually adjust the previously selected open items. Do this, for example, when the customer does not pay the full open amount. You can also add open items and record unapplied and non-AR amounts.

Unapplied Payments and Non-AR Receipts

You can use Payment Maintenance to record payments that do not correspond to a specific invoice. To do this, leave the Ref field blank and enter U (Unapplied) or N (Non-AR) in the T (type) field.

Each unapplied and non-AR payment is stored with both the check number and the N/U reference. Multiple unapplied or non-AR payment amounts can be entered for one check, each differentiated by the N/U reference. Each individual reference can specify a different entity, account, amount, and discount.

Unapplied payments decrease the customer's balance. The system does not mark the transactions as closed until you apply the payment to a specific invoice, memo, or finance charge.

Apply unapplied payments to a specific invoice, memo, or finance charge using Unapplied Payment Application (27.6.9). Specify the unapplied payment reference number (Unapplied Ref) and enter the reference numbers of the items (Reference) to which it applies. The system creates an audit trail by adding a DR/CR memo with a new reference number and the transaction type Applied. The system also creates a GL transaction to record any currency gain/loss.

You may want to accumulate prepayments in a GL liability account. To do this, identify the prepayment account when you enter the unapplied payment in Payment Maintenance. When you apply the payment, the system moves the amount from the prepayment account to the AR account of the invoice.

Returned Payments

If a payment is returned for a customer with a closed account, you must adjust the accounts receivable to reopen the account balance. The system provides two ways to do this.

If you are in the same accounting period, delete the payment using Payment Maintenance (27.6.4). The system reinstates the customer's original balance and reverses the incorrect GL entry. However, be aware that the system does not keep an audit trail showing you deleted the payment.

When you delete a payment, the customer's last payment date is updated to the latest available check date or entered date from the customer's prior payments. If you delete the only payment for a customer, the last payment date is set to ? (question mark) and is updated on the next payment from the customer.

You can also handle a returned payment by recording a DR/CR memo in DR/CR Memo Maintenance (27.1) for the returned amount and enter the reason in the Remark field. This allows the system to preserve the audit trail and GL transactions for the customer.

Underpayments

When a customer underpays, you can either leave the balance open or write it off. You can write off the amount using Payment Maintenance (27.6.4).

- 1 Apply the payment to the invoice as usual and enter the amount not paid in Discount. Do this on the same payment distribution line as the payment.
- 2 If you have a GL account for bad debts, change the Disc Acct field to the GL bad debts account number.

Writing off the amount in this manner does not leave an audit trail. If you want to keep an audit trail, use DR/CR Memo Maintenance (27.1).

Overpayments

When a customer overpays, enter the overpayment amount as an unapplied type of payment in Payment Maintenance (27.6.4). When you enter the payment distribution line for the overpayment, leave the Ref field blank and enter U (for unapplied) in the T (type) field. Enter the overpayment as a separate payment distribution line.

The overpayment amount remains on the customer's balance and statement until you apply it to a future invoice or memo.

Applying Credits to Debits

When a customer has an outstanding credit, they typically subtract it from the total amount they owe before they send you payments. You need to apply the credit to the invoice. This brings both the customer's balance and the invoice balance to zero.

Example You have a customer who owes you 1,000.00 US dollars (USD). They have a credit balance of USD 50.00, and when they send you a payment they only send USD 950.00. How you proceed depends on how you handled the credit.

If the outstanding credit was handled as an unapplied payment—that is, was the result of an overpayment:

- 1 Apply the payment to the open item in Payment Maintenance (27.6.4).
- 2 Use Unapplied Payment Application (27.6.9) to apply the customer's credit balance to the remainder of the open item.

If the outstanding credit was handled as a debit/credit memo:

- 1 In Payment Maintenance (27.6.4), enter the check amount sent by the customer.

In the example above, this would be \$950.00.

- 2 In the payment distribution line frame, use the lookup on the Reference field to select the credit memo.
- 3 Process the credit memo.
This closes the credit memo and increases the unapplied amount. In the example above, the unapplied amount would be increased by \$50.00.
- 4 Process the invoice for the full amount.

In some situations, customers do not owe you anything—their debits equal their credits. Perhaps you billed them by mistake or they returned the goods for credit. To close out both invoices, process a zero payment and apply it to both as shown below. This sets the amount open to zero on both invoices.

Table 6.3
Zero Payment

Action	Ref.	Type	Amount	Open	Check
Post invoice for \$2000	10001	I	2,000	0	6012
Post \$2000 credit invoice for returned goods	10002	I	-2,000	0	6012
Process zero payment, and apply to both invoices	6012	P	0	0	

Processing Drafts

Drafts are similar to regular checks but, unlike checks, include a due date. A check is payable immediately, but a draft is payable only on or after the due date. Process drafts using the Customer Payments/Drafts menu (27.6).

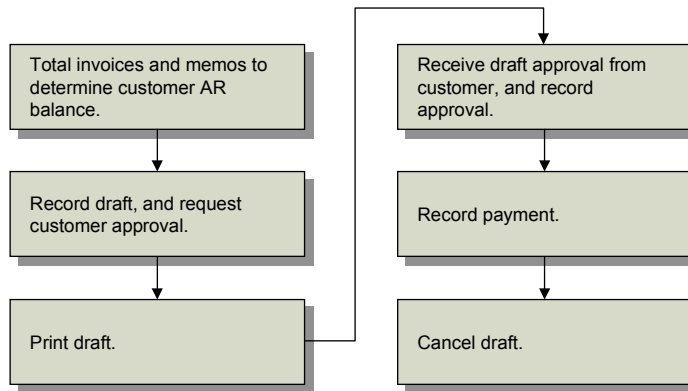


Fig. 6.5
Draft Processing
Flow

Begin the draft process by creating the draft in Draft Maintenance (27.6.13).

Review the draft information with the following programs.

- Draft Inquiry (27.6.14)
- Draft Report (27.6.15)
- Draft Summary Register (27.6.16)

When you are ready to send the draft to the customer, print it with Draft Print (27.6.18). The customer reviews the draft and, if satisfactory, approves the draft.

Next, record the draft in Draft Approval (27.6.20). The system creates a GL transaction to move amounts from accounts receivable to drafts receivable. The system closes the invoices referenced on the draft.

If you need to modify an approved draft or if a customer defaults, use Approved Draft Reversal (27.6.24). This creates the necessary GL reversing transactions and reopens the invoices referenced on the draft.

When a draft is sold to a third party at a discount, you can discount the draft using Draft Discounting (27.6.22). This transaction records the cash receipt and discount amount but does not close the draft. The system leaves the draft amount in a bank clearing account as a liability in the event the customer defaults.

Once the customer pays the draft, record the payment in Payment Maintenance (27.6.4). This closes the draft. You can now delete and/or archive the draft and its associated invoices.

Tip
If the customer initiates the draft, record it first in Draft Maintenance (27.6.13).

The system treats an open draft like an open invoice or memo. Draft amounts appear on all accounts receivable inquiries and reports, including agings. Drafts also appear on projected cash flow reports in the Cash Management module.

Managing Open Accounts

A number of related functions are available for managing open accounts:

- Aging Reports
- Customer Credit Review/Update
- DR/CR Memo Maintenance
- Customer Account Statement Print

Aging Reports

Use aging reports to monitor a customer's payment history and track overdue amounts. You can run the reports in detail or summary format.

- Detail reports print all open items, the aging period totals, and the total outstanding balances for each selected customer.
- Summary reports print only the aging period totals and the total outstanding balances for each selected customer.

When you have multiple payments against an invoice or memo, the system aggregates the amounts by period and shows the total in the report currency. Multiple checks that sum to the total print on separate lines below the total.

- Use AR Aging by Due Date Report (27.16) to run agings by due date.
- Use AR Aging by Invoice Date Report (27.17) to run agings by invoice date.
- Use AR Aging as of Effective Date (27.18) to re-create an aging as of a previous date. The system looks at each record and checks the effective date. If some records have been deleted/archived, it cannot re-create balances.

Tip
This report can take a long time to run.

♦ See "Reporting Currency" on page 133.

Note If you specify a non-base reporting currency in any of these reports, an exchange rate pop-up enables you to override the default rate for the report effective date.

If your orders always have credit terms of net 30 from invoice date, you can run agings by due date or invoice date with identical results. The due date is always 30 days after the invoice date.

If you use a variety of credit terms such as end of month, end of fortnight, or end of week, use AR Aging by Due Date Report (27.16). For example, if credit terms are stated Net 30 EOM, all invoices would have due dates falling 30 days after the last day of the month, whether the invoice date was the 1st or the 31st of the month. On the AR Aging by Due Date Report, amounts subject to credit terms with multiple due dates are split out according to the dating sequence and placed in the appropriate aging time buckets.

◆ See *User Guide Volume 6: Master Data* for information on credit terms.

Customer Credit Review/Update

When you are trying to collect overdue amounts, you may want to record comments for a specific memo, invoice, or finance charge.

Example A customer has disputed an amount, and you want to record the details of the dispute. Or a customer is late in paying, and you want to record the reason. This information would then be available the next time you contact the customer.

Use Customer Credit Review/Update (27.10) to enter comments. You can print these comments on aging reports to assist you with collection activities. When the transaction is closed and deleted/archived, the system also deletes the comments.

Contested Amounts

If a customer disputes a billing, you can mark the invoice or DR/CR memo as contested. Do this in DR/CR Memo Maintenance (27.1) by setting Contested to Yes. Contested amounts may optionally be excluded from aging reports. They are included in the customer's open balance but are not subject to finance charges.

Statements

Use Customer Account Statement Print (27.14) to print statements for a customer. However, before you can do this, set Statement to Yes in Customer Maintenance (2.1.1).

The statements list all open invoices, memos, finance charges, and payments. Specify From Date and set Outstanding Balance to No to print activity from that date on. To get a complete history of open invoices, leave From Date blank.

Fig. 6.6
Customer Account
Statement

Quality Products Company Manufacturing Division 9000 World Way Los Angeles, CA 98000 U.S.A.				STATEMENT		
				Print Date: 04/20/XX	Page: 1	
Bill To: 10010002						
Mississauga Hallmark Square I Shopping Center Mississauga, Ont. N0I H2E Canada						
<u>Date</u>	<u>Ref.</u>	<u>Type</u>	<u>Due Date</u>	<u>Amt.</u>	<u>Amt. Open</u>	<u>Cur</u>
02/15/XX	2201	Invoice	03/31/XX	1,000.00	1,000.00	CDN
03/28/XX	2201	Payment	03/31/XX	1,000.00	0.00	CDN
04/15/XX	3532	Invoice	05/30/XX	2,500.00	2,500.00	CDN
				Total Amount Open: 2,500.00		
				Payments Unapplied: 0.00		
Total Contested: 0.00				CDN Total: 2,500.00		
<u>Current</u>	<u>Past Due 1</u>	<u>Past Due 30</u>	<u>Past Due 60</u>			
2,500.00	0.00	0.00	0.00			

Using Dunning Letters

When customers are behind on payments, you can generate dunning letters to remind them of accounts past due.

Dunning letters are actual letters, not statements. Use Master Comment Maintenance (2.1.12) to set up the text of the letters, reflecting the number of days the customer’s payment is overdue. Assign each letter a

master reference code. When you want to print dunning letters, enter the appropriate reference codes. You can select different dunning letters depending on the number of days the customer is overdue.

The printed letters include the customer name and address, the form letter text, and all overdue invoices, memos, and finance charges, based on the value of Age Date and other selection criteria.

This function can also put selected customers and their sales orders on credit hold based on the number of days late. You can also exclude customers with outstanding balances by specifying a minimum amount past due.

Quality Pencil Co.
9000 World Way
Los Angeles, CA 90000

Worldwide Business Supply
8000 Central Avenue
Anaheim, CA 98002

Attention: Mr. Axel Tummers

***** FIRST NOTICE *****

This is a reminder that your account balance is more than 30 days overdue. Please submit payment for all overdue items as listed below. If you have any questions, contact Jane Foster at (805) 684-6614.

Ref	Due	Days Late	Order	PO	Amt
70231	8/25	35	2007	4615-2	10,000
80089	8/30	30	4210	4731-5	200
Total					10,200

Quality Pencil Co.
9000 World Way
Los Angeles, CA 90000

Worldwide Business Supply
8000 Central Avenue
Anaheim, CA 98002

Attention: Mr. Axel Tummers

***** SECOND NOTICE *****

Your account balance is overdue by more than 60 days. If payment is not received within 10 days of this notice, all shipments will be suspended. If you have any questions, contact Jane Foster at (805) 684-6614.

Ref	Due	Days Late	Order	PO	Amt
70231	8/25	65	2007	4615-2	10,000
80089	8/30	60	4210	4731-5	200
Total					10,200

Fig. 6.7
Dunning Letter

Print dunning letters using Customer Dunning Letter Print (27.11). Specify a single customer or a range of customers.

Important Dun Letter must be Yes in Customer Maintenance (2.1.1) for a customer to receive dunning letters. If it is not, the system does not create a letter even if the customer has an outstanding balance.

Fig. 6.8
Customer Dunning
Letter Print (27.11)

Customer Dunning Letter Print

Bill To:

Dun Level:

0

Age Date:

Minimum Amount Past Due:

0.00

 USD

Company Address:

10000000

Sort By:

C

Show Salesperson:

Show Aged Totals:

Master Comments

To:

To:

99

Statement Cycle:

Language ID:

Region:

Customer/Region/Salesperson

Increment Dunning Levels:

Totals in Base Currency Only:

Days

Late	Level	Dunning Letter Reference	Type	Hold	Status
1	0				
30	0				
60	0				
90	0				
120	0				
9999		Maximum Days Late to Print Documents			

Output:

Batch ID:

Dunning Levels

Use dunning levels to choose the appropriate dunning letter and to track the number of times each AR item has appeared on a dunning letter. You can select a particular dunning letter by AR days late only, by dunning level only, or by a combination of days late and level.

Selecting with Days Late and Dunning Levels

Appropriate dunning letters are selected using dunning level as one of the selection criteria for the letter. The system checks the days late for the open receivables being considered for the dunning letter. Only those open receivables with days late less than the maximum days late specified are considered.

These receivables are separated into buckets as designated in the Days Late fields. These buckets have default values, but you can modify them as needed. For example, buckets can be 30 (days late), 45, 60, 75, 90, or 120.

Unapplied payments are applied to the oldest bucket first. This can result in a \$0 open receivable balance, causing the report to use the next bucket for the selection criteria.

Once receivables are bucketed by days late, the dunning level of each receivable in the bucket is then validated against the dunning level defined for the bucket. For example, if the dunning level for the 30 to 60 days late bucket is 3, each open receivable in the bucket must have a dunning level of at least 3.

The standard dunning letter prints unless another letter is specified in the Master Comment field in Customer Dunning Letter Print (27.11).

Selecting with Only Dunning Levels

If you want to select a dunning letter based only on the dunning level, you must enter 1 in all of the Days Late fields in Customer Dunning Letter Print. The Days Late field must be set to 1 (one) for every line that has a level. Leave the maximum days late to print the document set at the default 9999.

Note Zero is not used because that is interpreted as the end of the selection criteria, and the report stops.

Reporting Dunning Levels

Dunning levels display on various reports:

- AR Aging by Due Date (27.16)
- AR Aging by Invoice Date (27.17)
- AR Aging by Effective Date (27.18)
- Customer Credit Inquiry (27.8)
- Customer Credit Report (27.9)
- Customer Credit Review (27.10)
- DR/CR Memo Inquiry (27.2)

Calculating Finance Charges

Use Finance Charge Calculation (27.12) to calculate finance charges for customers with overdue amounts.

Tip

The program only calculates finance charges for customers with Finance Chg set to Yes in Customer Maintenance (2.1.1).

The system can calculate finance charges for a single customer or a range of customers. You can also specify a single statement cycle or a range of statement cycles. The system can calculate finance charges on just open invoices and memos, or you can include unpaid finance charges that are overdue by setting Include Previous Finance Chgs to Yes. The system applies the exchange rate as of the date of the calculation.

You can select a detail or summary report. The detail report shows detail information for all transactions selected for finance charges. The summary report shows the transactions totals only.

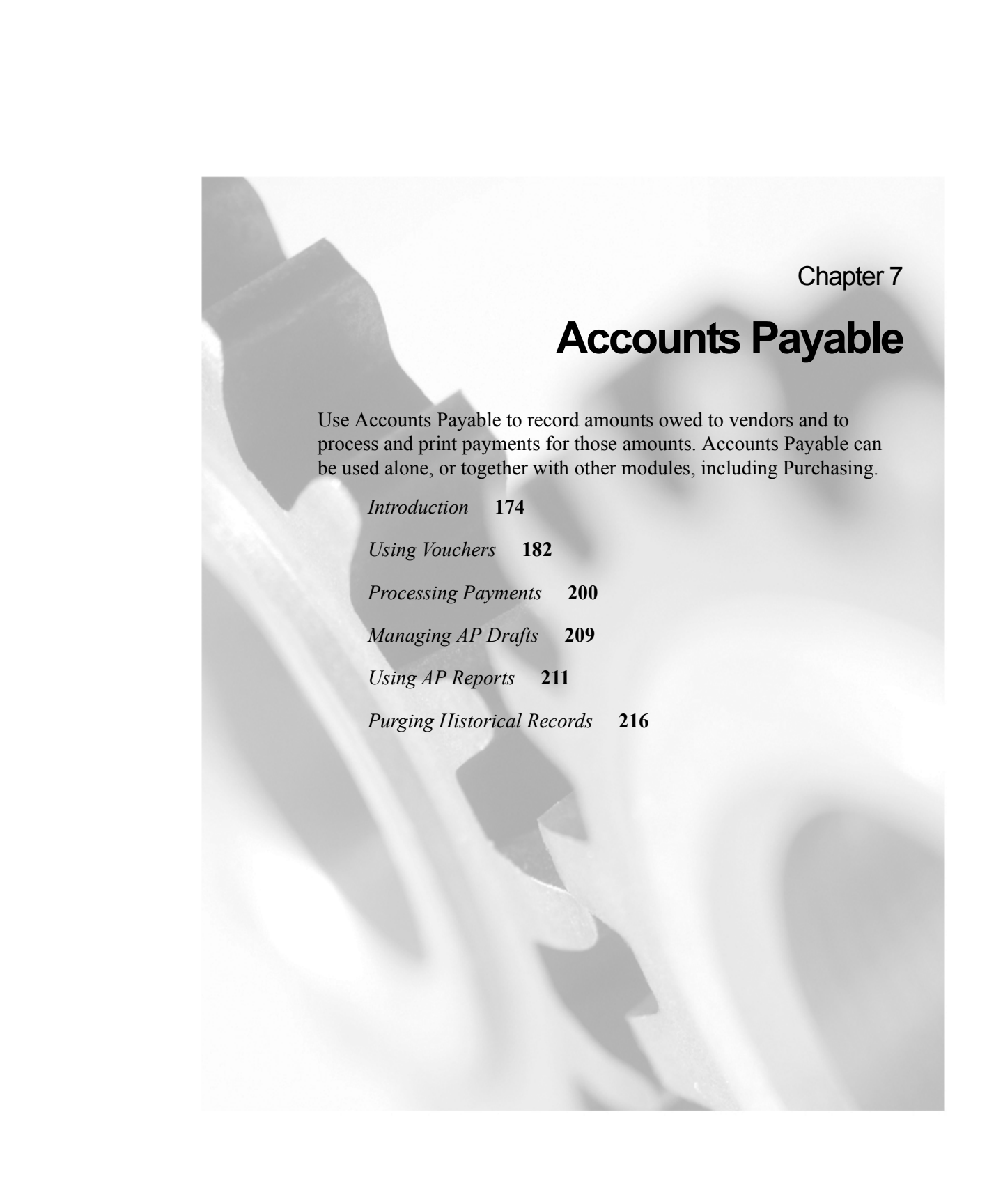
The Finance Charge Calculation does not let you preview finance charges before actually calculating and assessing them.

Purging Historical Records

The system keeps all of invoicing and accounts receivable information online for an unlimited amount of time. There is no automatic purge at month or year end. To delete accounts receivable information, use Closed AR Delete/Archive (27.23).

The system only deletes AR transactions that are totally paid and payments that are totally applied. It also deletes non-AR payments. The system does not delete unapplied payments.

Run the program without actually deleting any records by setting Delete to No. Then review the resulting report before setting Delete to Yes and running the program again.

The background of the page features a grayscale image of several interlocking gears. The gears are of different sizes and are positioned in a way that creates a sense of depth and mechanical complexity. The lighting is soft, highlighting the teeth of the gears and creating subtle shadows.

Chapter 7

Accounts Payable

Use Accounts Payable to record amounts owed to vendors and to process and print payments for those amounts. Accounts Payable can be used alone, or together with other modules, including Purchasing.

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Managing AP Drafts **209**

Using AP Reports **211**

Purging Historical Records **216**

Introduction

When your company buys goods or services, it incurs an obligation to pay the supplier. The supplier sends you an invoice to communicate your obligation to pay. This document states what items were sold and the amount due. The invoice also states credit terms such as the payment due date and cash discounts the company offers for early payment.

Frequently, especially for expensive items, it is not feasible for you to pay the entire invoice amount in advance or upon delivery. The supplier allows you to buy on credit, make installment payments, or pay the final amount by a specified future date.

Whenever you buy something now and pay for it later, you incur a liability. Most of the payables transactions processed in MFG/PRO are considered accounts payable liabilities resulting from purchasing transactions with suppliers.

To maximize cash flow, it is usually in your best interest to delay payment as long as possible. When you buy on credit, you are, in effect, enjoying an interest-free loan until payment is due. Instead of paying the supplier, you can use the cash for other things. However, it is important to pay suppliers on time to avoid finance charges and to preserve your company's credit standing.

Therefore, effective accounts payable management simultaneously optimizes cash flow and maintains satisfactory relationships with creditors. The two elements that make this possible are vouchers and aging reports.

Vouchers convey authority to pay an invoice and record all relevant details on the nature of the liability and the payment. This information is especially critical for invoices arising from purchase orders for inventory items. The voucher verifies invoiced items and quantities against the purchase order and receiving records before processing payment. Vouchers can be used to process any invoice whenever it is more convenient to generate payments in the system or when the balance will not be paid off immediately.

Aging reports identify outstanding amounts so that payments can be prioritized based on the voucher date or the invoice due date.

Accounts Payable Flow

You can use Accounts Payable to process both inventory items and other types of payments.

Inventory Items

For inventory items you buy for manufacturing, the starting point for payment processing is the purchase order. The purchase order is a contract that confirms your intent to buy. It lists items, quantities, and prices, along with any related charges such as taxes and freight.

◆ See *User Guide Volume 2A: Distribution* for more information on purchasing.

On receipt, your receiving department issues a receiver to confirm the received items and quantities against the purchase order.

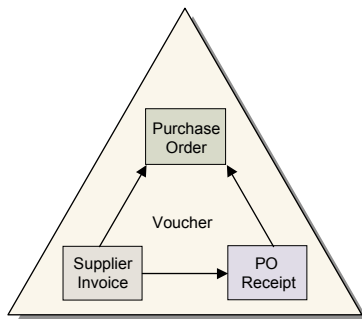
The supplier sends you an invoice to confirm your liability to pay for the items under the conditions specified on the purchase order. Before you can pay the invoice, you verify that the items you received are what you originally ordered, and that the supplier has charged you the correct price. To do this, you record a voucher in Accounts Payable.

The voucher references your purchase order and the supplier invoice. The system retrieves the receivers associated with the purchase order so that you can record invoice lines against them. If the invoiced items and quantities match the receiver, the receiver is closed.

The system compares what you enter for the invoice to the receiver and the purchase order and displays a warning if there is a discrepancy. For example, the supplier may have invoiced you at the wrong price or you may not have received all the items that were invoiced. This kind of discrepancy is called a variance; investigate it before you pay the invoice.

◆ See “Variance Calculations” on page 195 for details.

Fig. 7.1
Three-Way
AP Matching



See “Voucher Registration” on page 183 for details.

You can record vouchers as unconfirmed. This is called voucher registration and occurs when the invoice arrives. Confirm the voucher later when the PO lines are received or when the amount is approved for payment.

Other Payments

You can also use Accounts Payable to record non-AP payments created outside of MFG/PRO for items such as petty cash expenditures, bank fees, and catering. This allows you to track the payment in the general ledger.

The accounts payable flow is slightly different for processing payments on purchases that are not received into inventory. Some payments, such as drop shipments, may have a purchase order and invoice but no receiver. Others, such as airline tickets, may have only an invoice. For these kinds of items, you can enter a voucher for processing the payment. You must, however, use procedures external to MFG/PRO to verify that items, quantities, and prices are correct. After each batch, the voucher register is printed to verify voucher entry, and corrections are made if necessary.

Processing Payments

Vouchers are then selected for payment, either by due date, discount date, or manually. Usually, you run an aging report to determine which balances are oldest. Then print the payment selection register to show the vouchers selected for payment and make needed corrections.

Once vouchers are selected, payments are processed by printing checks, recording manual checks, or creating a printed report or ASCII file for electronic funds transfer. The payment register is printed as a record of payments made. To confirm electronic funds transfers, you can print a payment specification report and send it to the supplier.

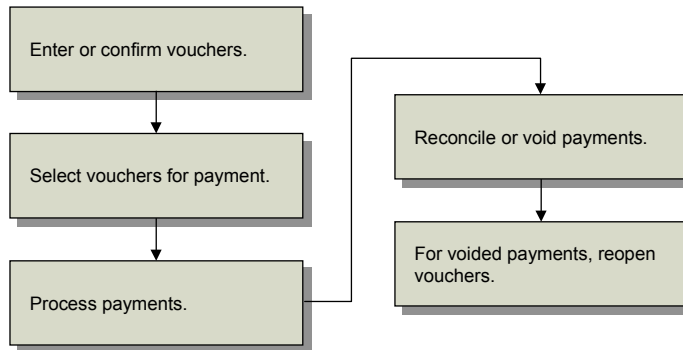


Fig. 7.2
AP Processing
Flow

After payment, the supplier balance is decreased, but the payment is not immediately marked as closed. Both the payment and original vouchers remain in the system until the payment is cleared by the bank. If the payment does not clear or must be voided for any reason, the system automatically reopens the voucher.

Vouchering is usually done daily. Automatic payments are usually processed weekly. Manual payments are recorded as needed. Less frequently, often at the end of each year, closed AP history is purged from the system and optionally archived.

General Ledger Effects

All accounts payable transactions except unconfirmed vouchers create GL journal transactions. Table 7.1 summarizes the AP transactions.

You can choose not to update your cash balance until the payment clears the bank by posting payments to a payment in process (PIP) account, also called a cash in transit account. Specify this option in Accounts Payable Control. When you reconcile payments against the bank statement with Check Cancellation Maintenance (28.9.13), the system automatically credits the AP cash account.

Table 7.1
GL Transaction
Summary

Vouchers (confirmed only)		
Inventory/Subcontract Items	DR	PO Receipts PO Price Variance Unrealized Exchange Loss Sales Tax
	CR	Accounts Payable Unrealized Exchange Gain
	DR	Purchases Sales Tax
	CR	Accounts Payable
Memo (Non-Inventory) Items	DR	Purchases Sales Tax
	CR	Accounts Payable
	DR	Purchases Sales Tax
	CR	Accounts Payable
Miscellaneous (Non-AP) Items	DR	Purchases Sales Tax
	CR	Accounts Payable
	DR	Purchases Sales Tax
	CR	Accounts Payable
Payments	DR	Accounts Payable Realized Exchange Loss
	CR	Cash AP Discounts Realized Exchange Gain

Summarization Level

See page 153 for details and examples.

The AP Summarization Level field in Accounts Payable Control determines the level of detail used by the system when AP transactions are posted to the general ledger. AP summarization level is just the same as AR summarization level.

Batch Control

You generally process transactions in groups, such as vouchers or payments for a number of invoices. To improve processing, the system assigns each group of vouchers, payments, check cancellations, and voids to a batch. The batch ID can be system-assigned based on the Next Batch field in Accounts Payable Control (28.24) or user-created.

The batch ID consolidates transactions when posting in summary to the general ledger. Use control totals to double-check transaction entries. If the total of what you have entered does not equal the control total, the system displays a warning so you can go back and look for the error. This

is only a warning. You are allowed to proceed even if your batch totals are incorrect. Entering a control total is optional but highly recommended. To verify data entry, print the register report after each batch.

For each batch, the system records the batch ID, control total, batch amount entered, user ID, and date. Updating the batch updates this information.

The system also tracks unused and out-of-balance batches. Usually, companies that maintain rigid batch control print the AP Batch Report (28.17.8) daily. Investigate out-of-balance batches because either the batch entry or the control total is wrong. If the control total is wrong, change it in Voucher Maintenance (28.1).

Also investigate unused batches. When tight batch controls are in place, batch numbers are assigned to each set of documents. If an ID does not exist in the system, the batch may have been skipped or accidentally misplaced.

Supplier Data

Much of the information on purchase orders and vouchers defaults from supplier records maintained in Supplier Maintenance (2.3.1) and Supplier Remit-to Maintenance (2.3.13), including:

- Remit-to address
- Credit terms
- Supplier discount
- Taxable status
- Bank information—bank, account type, account number, effective dates

The supplier record also indicates whether the supplier is on payment hold and how you usually send payment. The system updates the Prepayment field whenever you print a prepayment for the supplier.

Banks

Accounts payable processing uses two kinds of bank accounts: your company's bank and your suppliers' banks.

AP Banks

You must define at least one bank account in Bank Maintenance (28.9.1) to process supplier payments. Create a separate bank account for each currency in which you make payments. These banks represent your banks, and are distinct from the bank addresses defined in Customer/Supplier Bank Maintenance (2.21.1).

▶ See “Setting Up Foreign Currency Banks” on page 124 for more details on your banks.

Note Bank Maintenance (28.9.1) in AP is the same as Multiple Currency Bank Maintenance (26.13) and AR Bank Maintenance (27.6.1). This program is duplicated for convenience, since you may need to define banks in any of these functions.

You can set up multiple bank codes for each account to distinguish manual and automatic payments, electronic funds transfer, and so forth. When you record vouchers, the bank defaults to the first bank code in the currency of the supplier. Payment selection functions and some AP reports sort by bank.

Supplier Banks

Tip
Define customer/supplier banks in 2.21.1.

For each supplier, use Supplier Maintenance (2.3.1) to designate a default bank code for making payments. Each supplier can have an unlimited number of bank accounts.

Most European countries support two payment clearing systems:

- Commercial banks
- Post offices (Giro accounts)

Most companies have a bank account in each system. To reduce processing time, the supplier's default account should be in the same clearing system as the bank you use for payments.

When using electronic funds transfer in Europe, allow the system to verify that these bank accounts are entered correctly by setting Bank Acct Validation to 11 or 12 in System/Account Control (36.1).

Note To verify account codes, the system adds up all the digits in the account number and divides them by the number specified. If there is no remainder, the account is valid.

Multiple Currencies

If you are using the Multiple Currency module, you can process vouchers and payments in currencies other than the system base currency.

▶ See Chapter 5, “Multiple Currency,” on page 117.

Normally, all of the purchase orders attached to a voucher must have the same currency. The same exchange rate and exchange rate status (fixed rate or spot rate) must also be used. In addition, if the voucher has a non-base currency, it must match the purchase order currency.

However, when currencies are members of the European Monetary Union (EMU), Voucher Maintenance supports euro transparency.

▶ See “Setting Up Multiple Currencies” on page 118.

- You can associate purchase orders in any combination of different EMU currencies with the same voucher.
- You can enter any EMU currency or the euro for the voucher currency, even if it differs from the EMU or euro currency of the purchase orders.

For AP payments, base currency vouchers must be paid from a base currency bank. For a non-base currency voucher, the bank must be either base or the same currency as the voucher. If you enter a base currency bank, the system changes the check form to 3, indicating an electronic funds transfer.

Note This is unlike payments in accounts receivable. AR payments can be received in any currency, depending on the combination of base and bank currencies.

▶ See “AR Banks” on page 150.

Multiple Sites/Entities

A site is an independent unit—usually a warehouse or a group of warehouses at a physically distinct location—used for inventory control and planning. The system associates a site with a GL entity, which usually represents a company or business. The entity is an independent unit for financial reporting. Accounts payable transactions are tied to a site and entity through the site specified in the purchase order header. On vouchers not associated with purchase orders, the default entity is the system entity.

Multiple GL entities can be specified on all AP transactions. The system automatically calculates balancing entries and posts them to the Intercompany Accounts Payable debit and credit accounts specified in Entity Code Maintenance (25.3.1.1).

Multiple Databases

▶ See *User Guide Volume 2A: Distribution*.

In a distributed purchasing environment, purchase orders can be created in one database and items received in another. Vouchers must be created at the database where their associated purchase orders originated.

When the databases are connected and running, the system copies applicable inventory, cost, and tax data from the receiving database to the purchasing database and considers this data when generating vouchers.

When you create a voucher for a purchase order that was received at a remote database, invoiced and open line quantities are updated at the inventory database based on the invoice quantities entered on the voucher. In addition, the system compares the PO receiver, which was copied to the central database during PO receipt, with the supplier invoice data and records any variances in the inventory database as appropriate.

Using Vouchers

Most vouchers cover supplier invoices from purchase orders. In a voucher system, the system verifies invoiced items against the purchase order and receiving records. By entering a voucher, you also ensure that the payment correctly updates supplier balances and GL accounts.

▶ See *User Guide Volume 6: Master Data*.

Note If you are using the optional Logistics Accounting module, you can also use Voucher Maintenance to match the accruals for logistics charges to the logistics supplier invoice for payment. To do this, do not specify a purchase order number and enter a logistics supplier. Vouchering charges from logistics suppliers is discussed in the chapter on Logistics Accounting in *User Guide Volume 6: Master Data*.

Use vouchers to control who receives payment, how much they receive, and when payment is sent. Before authorizing payment, you can verify:

- Purchase amount was authorized by the purchase order.
- Supplier sent the correct item quantities.
- Supplier invoiced you for the correct amount.

Do not select a voucher for payment if there is a problem in one of these areas. Enter disputed amounts as the hold amount in Voucher Maintenance (28.1). Hold amounts are not selected for payment until you remove the hold in Voucher Maintenance or Voucher Confirmation—Manual (28.7).

Enter your own voucher numbers or use system-assigned consecutive numbers. In Accounts Payable Control (28.24), set External Voucher References Allowed to Yes to assign your own numbers. To use system-assigned numbers, set this to No.

Voucher Registration

Many companies record the voucher as soon as they receive an invoice, even when the purchased items have not been received. This helps prevent loss and eases tracking.

Another use for voucher registration is to pre-record vouchers for fixed expenses. For example, enter a year's worth of vouchers for monthly rent payments at the beginning of the year. AP voucher registration lets you do this without unwanted GL consequences.

Initially, enter the voucher as unconfirmed in Voucher Maintenance (28.1). When the PO lines are received or the invoice approved, record the receiver lines (if any) and confirm the voucher.

- Use Voucher Confirmation—Manual (28.7) to confirm vouchers one at a time.
- Use Voucher Confirmation—Automatic (28.6) to confirm them in batch.

You can select only confirmed vouchers for payment. To identify unconfirmed vouchers, run Voucher Register (28.3.1), setting Print Confirmed to No and Print Unconfirmed to Yes.

Voucher registration is optional. To disable it, set Enter Vouchers Confirmed to Yes in Accounts Payable Control (28.24).

Supplier Credits

Tip
Use vouchers to record beginning supplier balances.

Supplier credits (or debit vouchers) are entered as vouchers with negative amounts. The system automatically deducts credits from open supplier balances and the next automatic check.

When a supplier issues you a credit for returned items, enter this as a purchase order return (5.13.7). This creates a negative receiver to credit inventory.

Supplier holds are applied only to debit vouchers and only if the hold is greater than the voucher amount in Voucher Confirmation—Manual (28.7). Credit vouchers do not search for supplier holds.

Miscellaneous Expenses

You can also use vouchers for:

- Miscellaneous expenses such as utilities, commissions, and rent
- Entering supplier balances during implementation
- Processing credits such as prepayments, rebates, discounts, and RTS receivers

To process vouchers that do not reference purchase orders, you must specify a supplier code.

To create a voucher for an organization not defined as a supplier in Supplier Maintenance, use a miscellaneous creditor. Referencing a miscellaneous creditor on a voucher automatically displays a remit-to frame for manually entering address information to print on the voucher and associated check.

To identify a supplier as a miscellaneous creditor, create a record with the following values in Supplier Maintenance (2.3.1).

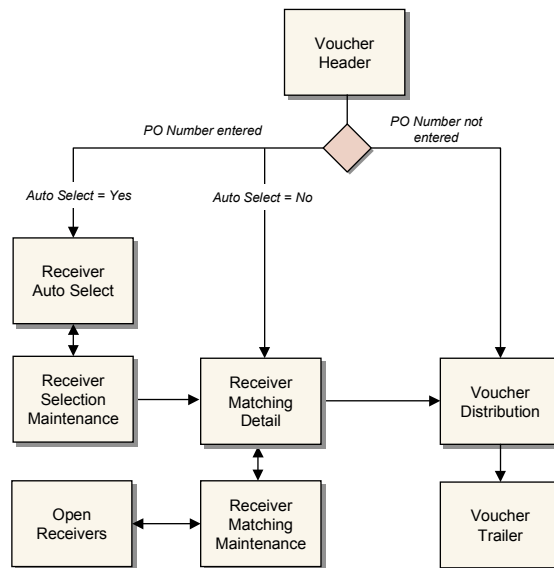
Misc Creditor: Yes
 Check Form: Must be 1 or 2.
 Credit Terms: Leave blank.
 Tax Report: No

Voucher Maintenance

Figure 7.3 shows three ways to navigate through Voucher Maintenance (28.1). The actual processing path depends on whether you enter purchase orders and on how you set Auto Select in the header.

See “Auto Select” on page 189.

Fig. 7.3
 Voucher
 Maintenance
 Transaction Flow



Voucher Maintenance Header

The voucher header lets you enter a supplier bank and one or more purchase orders.

Fig. 7.4
Voucher
Maintenance (28.1)

Order. After entering a purchase order number, press Enter to add another number or press End to continue to the next frame. You can enter any number of purchase orders for the same supplier. However, only the last three numbers entered display on the screen.

See “Setting Up Multiple Currencies” on page 118.

Normally, all purchase orders for one voucher must be in the same currency and have the same exchange rate and exchange rate status (fixed rate or spot rate). However, if EMU currencies are involved, euro transparency is fully supported.

Supplier. Enter the identifier of the supplier with which this payment is associated.

When this supplier is defined as a miscellaneous creditor in Supplier Maintenance (2.3.1), a remit-to frame displays for manually entering address information to print on the voucher and associated check.

For vouchers that reference miscellaneous creditors:

- Check Form must be 1 or 2.
- Credit Terms defaults to blank and must be entered manually, if required.
- Separate Check defaults to Yes and cannot be updated.

Tax Date. The tax date is optional. If you enter a tax date, the system calculates taxes based on the rate for the ship-to address for the tax effective date, if a rate is defined. If you do not enter a tax date, the system defaults the tax date and rate on vouchers as follows.

- If a PO is referenced, the tax date defaults from the PO.
- If a PO is not referenced, the tax date defaults from the voucher effective date.

Bank. Enter the supplier bank. Defaults, in alphabetical order, to the first supplier bank defined for this supplier. The user executing the function must have access to the entity associated with this bank.

Terms. When an invoice is vouchered, the system calculates invoice discount/due dates and amounts based on credit terms, and generates agings. These can be calculated based on the invoice date, end of month (EOM), end of fortnight, or end of week. You can also specify a base date as the start date for due date calculations.

▶ For more information on credit terms, see *User Guide Volume 6: Master Data*.

Dated terms specify the intervals that portions of an invoice are payable. Vouchers with dated terms are selected for partial payment as each amount becomes eligible.

The system automatically calculates early payment discounts if an amount is paid within the discount period for the dated term. Non-discountable amounts such as freight are prorated and applied to each payment date until they are consumed.

Invoice, Discount, and Due Dates. You can either enter the invoice date from the supplier's invoice or allow the invoice date to default from the system date.

If you enter the actual invoice date, the system uses it, along with the credit terms, to calculate the discount and due dates. However, if you take the system date as the invoice date, you must manually calculate and enter the discount and due dates based on the actual invoice date.

See Chapter 10, “Cash Management,” on page 297.

Payment selection can retrieve vouchers for payment by either discount or due date. Aging reports can also use either date to age supplier balances.

Expected Date. The expected date is the date you actually expect to pay the invoice. This is used in Cash Management to project cash requirements based on your payment policies.

GL Accounts. On the voucher header, the AP debit account and the credit account for early payment discounts default from the purchase order or the supplier. These accounts must be in the base or the transaction currency.

Voucher Types. Vouchers can be classified by optional type codes set up in Generalized Codes Maintenance (36.2.13). Use the type code to select groups of vouchers for reporting, which allows you to track your cash requirements for different types of expenses. For example, set up type EX for miscellaneous expenses or PO for purchases of raw materials or components.

Separate Check. Enter Yes if this invoice needs a separate check, even when other amounts are being paid to that supplier.

Check Form. The check form code specifies how payment is transferred to the creditor. The check form defaults from the supplier. A batch of payments can also be processed by check form. Four check forms are currently supported:

- Standard check format for printed checks
- Alternate format for printed checks
- Electronic funds transfer requests printed and manually sent to the bank, either by mail, fax, or telephone
- Electronic funds transfer requests sent to the bank in the form of an ASCII file

Fig. 7.5
Voucher
Maintenance,
Second Header
Frame

Prepayment Amount: 0.00
 Hold Amount: 0.00
 Non-Disc Amt: 0.00
 Daybook:

Voucher Logistics Charges: ☐
 Include Blank Suppliers: ☐
 Auto Select: ☐

Navigation buttons: back, forward

Prepayment Amount. Vouchers can also be recorded for supplier prepayments, even though no invoice yet exists. To voucher a prepayment, record a positive amount in Prepayment Amount and debit the prepaid expense account in the distribution. Later, when you voucher the invoice, enter a corresponding negative prepayment amount and credit prepaid expense.

During voucher entry, the system displays the supplier's total prepayment balance. Before applying a prepayment, review the Supplier Prepayment Inquiry (28.15) with Prepay Only set to Yes to determine the amount to apply to a particular invoice.

Hold Amt. This field displays the most recent hold amount. To change the hold amount or remove the hold, enter a value in the trailer.

▶ See "Voucher Trailer Frame" on page 194.

Non-Discountable Amounts. Early payment discounts normally apply only to line items, not to trailer charges such as freight, duty, and taxes. The non-discountable amount is deducted from the voucher total before the discount is calculated.

Voucher Logistics Charges. This field is available only when the Logistics Accounting module is used. Enter Yes to voucher logistics charges. Enter No to voucher expenses.

▶ See *User Guide Volume 6: Master Data* for details on logistics charges.

Include Blank Suppliers. This field is available only when the Logistics Accounting module is used and Match Blank Suppliers is Yes in Logistics Accounting Control (2.15.24). Indicate whether to display pending vouchers with blank supplier fields for selection. Otherwise, only pending vouchers for the specified supplier are displayed.

Auto Select. If Yes, Automatic Selection displays and lets you select multiple receivers automatically. If No, you bypass the automatic selection frame and continue to the Receiver Matching Detail frame, where you select receivers to voucher and record the actual invoice quantities and prices.

Document Control

The system displays a message when the sum of the distribution line amounts is not equal to the control amount of the transaction. The message shows the control amount entered, the actual distribution total, and the difference. You can choose to:

- **Accept.** The system sets the transaction control field to the sum of the distribution line amounts. All data is retained and tables are updated.
- **Edit.** The system returns to the first frame of the transaction. You retain the data you entered and can correct either the control amount and/or the distribution line amounts.
- **Cancel.** You lose the data you entered, and no tables are updated.

Automatic Selection Frame

With Auto Select set to Yes in the voucher header, the Automatic Selection frame appears. You can select multiple open receivers for vouchering.

▶ See *User Guide Volume 6: Master Data* for details on logistics charges.

Note The same frame is used when logistics charges are selected for vouchering. When vouchering receivers, the Order, Ship-From, and Logistics Charge Code fields are disabled since they only apply to logistics charges.

Fig. 7.6
Voucher Maintenance,
Automatic Selection

Date/To. Enter a range of dates used to select receivers.

External Ref/To. Enter a range of external references such as packing slip numbers or carrier shipment references.

Internal Ref/To. Enter a range of internal references such as receivers or shipper IDs.

Ship-To/To. Enter a range of ship-to addresses or sites.

Item Number/To. Enter a range of item numbers.

Buyer. Enter a code identifying the person responsible for planning and ordering items.

Approved By. Enter a code identifying the person who approved this purchase.

There are two processing options:

Voucher Open Qty. If Yes, in the Receiver Matching Detail frame, the Invoice Qty defaults to the uninvoiced receipt quantity, and the Invoice Cost defaults to the purchase order net unit cost. If No, both fields default to zero.

Tip
Set the default in Accounts Payable Control (28.24).

Entering Yes can speed up data entry. If all PO lines are invoiced correctly, you do not have to enter the receiver lines on the voucher. When this field is No or you make any changes to the invoice quantity, you must process receivers individually.

Select All. If Yes, all retrieved receivers are tagged with an asterisk (*) on the next screen. If No, the retrieved receivers are not selected. In both cases, you can manually override the default selection from the Receiver Selection Maintenance screen.

Press Go to retrieve all receivers that meet the specified criteria and continue the selection process.

Receiver Selection Maintenance Frame

The Receiver Selection Maintenance frame displays the receivers matching the selection criteria in a scrolling window. If you specified Yes to Select All, an asterisk (*) appears next to each receiver in the Sel column.

Sel	Order	Int Ref	Ln	Item Number	Supplier Item	UM	Open Quantity
▶ *	PO1034	RC1054	1	22-100		EA	50.0
▶ *	PO1035	RC1055	1	22-100		EA	50.0
▶ *	PO1059	RC1071	1	22-100		EA	500.0

Fig. 7.7
Voucher Maintenance, Receiver Selection Maintenance

Select or deselect receivers as needed. The system automatically updates the total of currently selected receivers displayed in the upper right corner of the screen.

Press Go to process the selected receivers and move to the next frame.

Receiver Matching Detail Frame

Receiver Matching Detail consists of two frames. The top frame displays all the receivers you selected in Receiver Selection Maintenance. In the bottom frame, you can edit data related to the selected receivers for this supplier. If you did not select receivers in the previous frame, you must add them manually.

Fig. 7.8
Voucher
Maintenance,
Receiver Matching
Detail

Receiver	Ln	PO Nbr	Item Number	Supplier Item	Invoice Qty
RC1054	1	PO1034	22-100		50.0
RC1055	1	PO1035	22-100		50.0
RC1071	1	PO1059	22-100		500.0

Receiver Matching Maintenance			
Receiver: RC1054	PO Line: 1	Tax: no	Date: 07/09/2002
Item: 22-100	EA	Type:	Close Line: ☐
Open Qty: 50.0	PO Cost: 1.00	Ext Open: 50.00	
Inv Qty: 50.0	Inv Cost: 1.00	Ext Inv: 50.00	
Packing : 50.0	GL Cost: 1.50	Ext Rate Var: 0.00	
Rcpt Qty: 50.0	Ext PPV: 0.00	Ext Usage Var: 0.00	

The receiver is not closed until you voucher the entire receipt quantity or close the receiver line. If there are any variances, the system displays them. If the invoice extended price (invoice quantity * unit price) exceeds the purchase order extended price, you can designate the excess as a hold payment amount.

Use the fields in Receiver Matching Maintenance to maintain invoice quantity and cost information for receivers shown in Receiver Matching Detail. This frame displays the packing list quantity from the PO receipt to help resolve discrepancies between the quantity received and the quantity invoiced.

Distribution Frame

The system also calculates and displays distribution amounts for the accrual accounts and purchase price variance. Distribution lines are recorded automatically based on the receiver quantities and the invoice cost. These system-calculated lines are marked as type R. Normally, they post to PO receipt and PPV accounts. These entries cannot be changed. Multiple entities can be listed if items were received into multiple sites with different entities.

Distribution lines can reference a specific account, sub-account, and cost center code or an allocation code. Allocation codes let you post amounts to a group of accounts by entering one code.

You can manually enter additional distribution amounts for add-on (trailer) charges such as freight, duty, or service, since these amounts are not always on the purchase order. For vouchers without a purchase order, you must enter all distribution amounts manually.

When you press End, the system calculates any taxes automatically and redisplay the Distribution frame before proceeding to the trailer frame.

See “Allocation Codes” on page 37 for more details.

Ln	Account	Sub-Acct	CC	Project	Enty	Tax	Description	Amount	T
1	2200		0100		1000	y	PO RECEI	600.00	R
2									

Fig. 7.9
Voucher Maintenance, Distribution

Tax Distribution

When you enter distribution lines on a voucher, the system calculates tax on taxable lines. Tax rates default from the purchase order. However, calculated tax amounts can be adjusted manually as required.

You can record and modify tax information using View/Edit Tax Detail. If tax information changes, you are prompted to recalculate the tax amounts.

For more information on taxes, see *User Guide Volume 6: Master Data*.

Voucher Trailer Frame

Fig. 7.10
Voucher
Maintenance,
Trailer

Batch / Voucher			
Batch: 1016	Batch Ctrl: 600.000	Tot: 600.000	
Voucher: 10025	USD Ctrl: 600.00	Total: 600.00	

Hold Amount:	0.00
Confirmed:	☒
Assigned-To:	

Hold Amt. Enter an amount on this voucher that should not be paid. This amount is typically under dispute, such as an incorrect billing. Hold amount must be less than or equal to the voucher total.

You cannot select this amount for payment either automatically or manually, and you cannot record a manual check including this amount.

Remove a hold by setting hold amount to zero before reentering a voucher in the same session, since the hold amount does not clear automatically. Hold amount is set automatically in two situations: the supplier invoice does not match the receiver or the supplier is on payment hold. In these cases, it can be modified.

Confirmed. Vouchers are usually recorded upon receipt of the invoice. At that time, they are normally entered as confirmed so that they update the general ledger and can be selected for payment. You can also record vouchers as unconfirmed.

You cannot change the supplier code or amount on a confirmed voucher if the Enter Vouchers Confirmed field in Accounts Payable Control is No.

Assigned-To. Enter the employee code for the person responsible for confirming the voucher. This employee must be defined in Employee Maintenance (2.7.1). To review vouchers assigned to employees, use Voucher Register By Assigned-To (28.3.2). This field provides efficient tracking for unconfirmed vouchers.

Tip
Set the default in Accounts Payable Control (28.24).

Tip
Make Assigned-To a required field by setting Use Authorized by Field in Accounts Payable Control to Yes.

Variance Calculations

During voucher entry, the system calculates a variance if what was ordered or received does not match what was invoiced. Purchase price variances are calculated when purchase orders are received. AP rate and usage variances are calculated when receivers are vouchered.

The system includes tax on the difference between purchase and invoice prices when calculating item cost if you are using average costing in Voucher Maintenance (28.1).

Tracking purchasing variances is important for evaluating buyer performance. If your company consistently pays more than the item GL cost, your buyer should be negotiating lower prices or sourcing other suppliers.

Tracking AP variances is important for evaluating supplier performance. If the supplier consistently overcharges you or ships incorrect quantities, you may want to complain or even find another supplier.

▶ See “Purchasing Accounts” on page 284 for more details.

- Purchase Price Variance is the difference between the unit cost on the purchase order and the GL unit cost in the item master, excluding GL this-level overhead. It affects inventory items only.

$$PO \text{ Unit Cost} - (GL \text{ Unit Cost} - \text{Overhead}) * PO \text{ Qty Received}$$

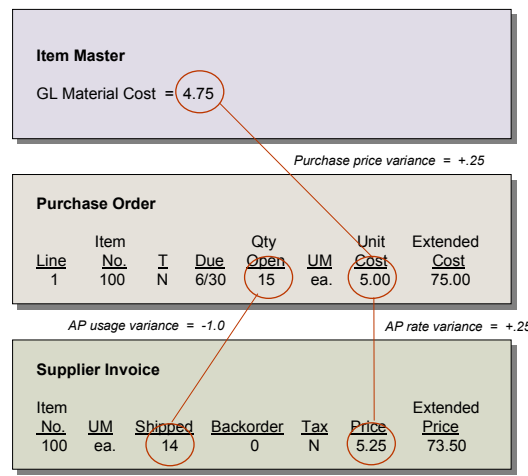
- AP Rate Variance is the difference between the unit costs on the purchase order and the invoice.

$$(Invoice \text{ Unit Cost} - PO \text{ Unit Cost}) * Invoice \text{ Quantity}$$

- AP Usage Variance is the difference between the quantity on the purchase order and the invoice, which occurs if you close a receiver with a quantity still open or with an invoice quantity greater than the PO receipt quantity.

$$(Invoice \text{ Quantity} - PO \text{ Receipt Quantity}) * PO \text{ Unit Cost}$$

Fig. 7.11
Purchasing
Variances



The Voucher/Standard Cost Variance Report (28.17.1) identifies transactions with purchase price variances. The Voucher/PO Cost Variance Report (28.17.2) identifies transactions with AP rate and usage variances.

Variances in non-base currency vouchers are calculated using the purchase order spot rate or the default exchange rate for the voucher effective date. All variances are posted to the general ledger in system base currency.

♦ See “Exchange Rate Fluctuation” on page 128 for details.

Another kind of variance—realized gain or loss on exchange—is calculated when payments are generated involving multiple currencies. This variance is posted to the appropriate account associated with the non-base currency in Currency Maintenance (26.1).

Multiple Entity Vouchers

In some cases, a voucher distribution references multiple entities. If so, the system automatically creates the appropriate balancing entry against the Intercompany Accounts Payable debit or credit account specified in Entity Code Maintenance (25.3.1.1). The entity on the voucher header must match the entity on the payment when Multi-Entity Payments is No in Accounts Payable Control (28.24). When Multi-Entity Payments is Yes, you can use a bank associated with another entity to pay the voucher. For example, one bank can make payments to suppliers for vouchers from several different entities.

Multiple Database Vouchers

In a distributed purchasing environment, the items on a voucher may have been received at a remote database. Depending on the costing method in effect, you can apply variances to the inventory cost or to work in process (WIP). The system creates the appropriate GL transactions in the inventory database to reflect these variances.

Modifying a Voucher

If you make an incorrect entry, you can correct it until the voucher is paid or selected for payment. When making a change, remember the following:

- If you modify the credit terms on an existing voucher, also modify the due and discount dates, or enter a question mark (?) to clear the fields so the system can recalculate them.
- Item current costs are updated only when the voucher is first entered and are not updated by subsequent modifications.
- If the GL period is closed, you can only modify the voucher header.
- If distribution amounts for taxable lines are modified, you are prompted to recalculate taxes. Otherwise, the tax lines are not automatically recalculated. Update them manually.

Recurring Vouchers

Recurring vouchers simplify processing of routine payables such as rent. Like blanket POs, recurring vouchers are merely templates and do not have much of an effect until they are released. Recurring vouchers:

- Are not integrated with purchasing and cannot be verified against PO receipts.
- Cannot be paid.
- Do not appear on agings.
- Do not create GL transactions.

However, a voucher created by releasing a recurring voucher is just like any other voucher.

Use Recurring Voucher Maintenance (28.8.1) to create a recurring voucher. Several fields determine the life span of the recurring voucher and how often it is released.

Fig. 7.12
Recurring Voucher
Maintenance
(28.8.1)

The screenshot shows the 'Recurring Voucher Maintenance' window. At the top, it displays 'Batch: 401', 'Control: 1,000,000', and 'Total: 0.000'. Below this, it shows 'Reference: 072602', 'Control: 1,000.00', and 'Total: 0.00'. The 'Supplier' is '002 Toronto Computer Services' with address '75 Queens Road Toronto ONT'. The 'Remit-To' is also '002 Toronto Computer Services'. The 'Interval' is 'M' and 'Nbr Per Voucher' is '1'. The 'Start' date is '07/26/2002' and the 'Expire Date' is '08/26/2002'. The 'Ship-To' is '002 Toronto Computer Services'. The 'Order' is 'PO1015'. The 'Invoice' is blank. The 'Bank' is 'AA'. The 'Currency' is 'USD' and the 'Supp Bk' is 'BOA'. The 'Date' is '07/26/2002' and the 'Terms' are '2/10-30'. The 'Remark' is blank. The 'Last Release' is blank. The 'Confirmed' checkbox is checked. The 'Type' is '1'. The 'Check Form' is '1'. The 'Separate Ck' checkbox is unchecked. The 'Non-Disc Amt' is '0.00'. The 'Account' is '2100', the 'Discount Account' is '5200', and the 'Entity' is '1000'.

Tip
You cannot change Interval, Start, or Nbr Per Voucher after the first release.

Interval. Enter the frequency at which amounts associated with this recurring voucher are payable—month, week, or day.

Nbr Per Voucher. Enter the number of intervals that should occur between released vouchers. For example, if Interval is M (monthly), enter 1 for one voucher to be released each month.

Start. Enter the effective date of the first voucher released from the recurring voucher. Default is the system date.

Expire. Enter the expiration date of the recurring voucher. No more releases will be made after this date. Blank is not allowed.

Last Release. Enter the effective date of the last voucher released from this recurring voucher.

Recurring vouchers have an AP transaction type of RV.

Confirming Recurring Vouchers

Like regular vouchers, recurring vouchers can be entered as confirmed or unconfirmed. Optionally, use Voucher Confirmation–Manual (28.7) to confirm the recurring voucher. The automatic voucher confirmation function does not handle recurring vouchers.

Once a recurring voucher is confirmed, you cannot change the amount. No GL transactions are created upon confirmation. They are created only when the voucher is released and confirmed.

Tip
Set Vouchers Confirmed in Accounts Payable Control.

Releasing Recurring Vouchers

Release the recurring voucher in Recurring Voucher Release (28.8.4).

The vouchers created from the recurring voucher can also be either confirmed or unconfirmed, based on the setting of Release Recur VOs Confirmed in Accounts Payable Control.

Fig. 7.13
Recurring Voucher Release (28.8.4)

Release Up To. Vouchers are released if their effective date is less than or equal to this date. You can release more than one voucher from the same recurring voucher provided all are before this date.

Currency. Enter a currency code to release only vouchers in a particular currency. Leave blank if vouchers should be released regardless of currency.

Use Recurr Exch Rate. If Yes, all vouchers released in non-base currencies use the exchange rate from the recurring voucher. If No, the exchange rate defaults from Exchange Rate Maintenance (26.4) for the effective date of the released vouchers.

Once a recurring voucher has been released, you cannot change the interval, number of intervals per voucher, or start date. However, the expiration date can be changed at any time.

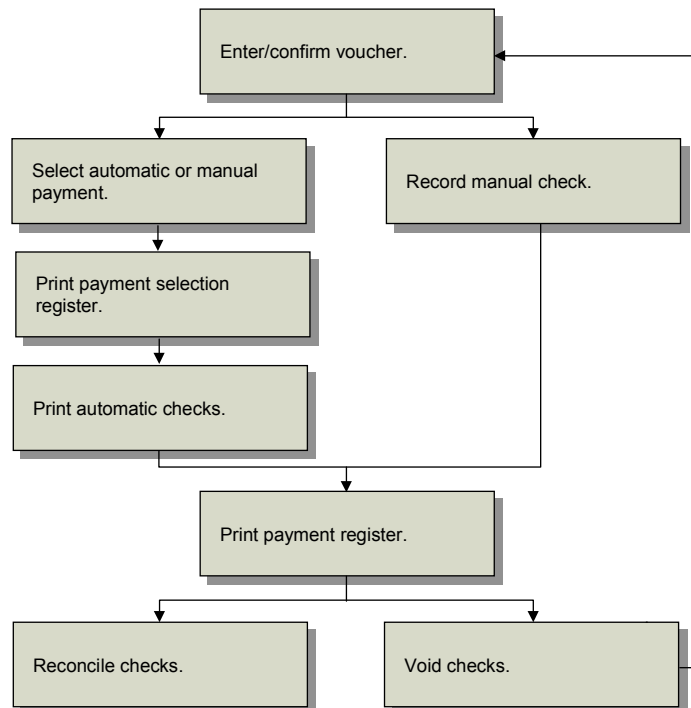
Once the last voucher is released, the recurring voucher is automatically closed. At this point, you cannot change it in Recurring Voucher Maintenance.

Processing Payments

You can pay a voucher immediately or later, depending on the circumstances and payment terms. You can also record payments that are not specifically related to a voucher.

The simplest case of payment processing is when you decide what to pay and then write a check or transfer money in person. Manual payments can also be applied to one or more vouchers, marking them closed when they are fully paid. If a discount was taken, this can also be recorded.

Fig. 7.14
AP Payment Flow



A more complex situation is when you have the system determine which vouchers should be paid and then print checks for selected suppliers and amounts. Start by having the system automatically select most of the vouchers you intend to pay. After reviewing the report of selected vouchers, make any modifications needed. Before processing payments, print the Payment Selection Register (28.9.6)—especially if you execute the automatic selection more than once.

You can print payments on standard check forms or to a file in the case of automatic bank transfers.

Automatic Payment Selection

In Payment Selection—Automatic (28.9.4), you can select open vouchers by due date, supplier code, and other criteria. Based on these criteria, the system recommends which vouchers should be paid. The report lists all vouchers selected for payment and totals the amounts.

Use this function to see what vouchers are due or to see what discounts are available by making some payments immediately.

You can run the automatic selection function several times, each time selecting a different range of vouchers to pay. For example, select all the vouchers for a particular supplier, then rerun it to select all vouchers for a particular due date. To keep previous payment selections, set Overwrite Old Selection to No.

Manual Payment Selection

In Payment Selection—Manual (28.9.5), select single vouchers for payment or override the choices the system made automatically. This is particularly useful when there is a cash shortage. For example, you can choose to send payments only to your most important suppliers. Manual selection also lets you override the amount to pay. For example, make a partial payment or take a discount that the system did not suggest.

Payment Selection Register

Payment Selection Register (28.9.6) lists all vouchers selected for payment and the total payments for each supplier, currency, and bank. It includes all vouchers that were automatically selected for payment and any changes/additions made in Payment Selection–Manual. Always run it before you print checks. Vouchers remain selected until they are paid.

Set Sort Vouchers by Amount to Yes to sort vouchers by amount in descending order. To sort by supplier in voucher sequence number, set to No.

A hash total is printed at the bottom of the report. This total can later be compared with the hash total on the audit trail for Payment–Automatic Checks (28.9.9) to verify that only approved payments have been printed.

Note Hash totals are a mathematical value derived by an algorithm that uses cross-checks to ensure that two sets of data are identical.

Generating Payments

Payment–Automatic Checks (28.9.9) generates payments for both printed checks and electronic funds transfers. Normally, the system creates one payment for each supplier, summarizing all amounts selected for payment, unless a voucher was defined with Separate Check set to Yes.

Checks are printed by bank code. Only payments for vouchers with that bank code are printed. The starting check number displays for the bank. It should match the first check number on your printed check forms.

You can enter two dates—the payment date and the date when the cash transaction becomes effective in the general ledger. Typically, these default from the system date.

You can start by printing a test check for printer alignment. Remember to reset the starting check number for the run. Checks spoiled during printing can be voided from within the automatic payments function. When you confirm the checks are printed correctly, the system updates supplier balances and closes the vouchers.

The check stub lists all of the vouchers and amounts in the payment. The supplier invoice number is also listed, making it easy for your supplier to process the receipt. If more than one stub is needed, the payment continues to the next check stub, marking the first check void.

On electronic funds transfers (EFTs), you can generate either a printed report (check form 3) or an ASCII file (check form 4) that can be transmitted electronically to the bank.

MISSION BAY DISTRIBUTORS 800 South Bay Drive San Diego, CA 90293		5017000 MISSION BAY DISTRIBUTORS	No. 200222	
<u>Voucher</u>	<u>Invoice</u>	<u>Gross Amount</u>	<u>Discount</u>	<u>Net Amount</u>
10000005		<u>\$10,300.00</u>	<u>\$0.00</u>	<u>\$10,300.00</u>
		\$10,300.00	\$0.00	\$10,300.00
				200222
			06/30/2002	USD \$10,300.00
TEN THOUSAND THREE HUNDRED DOLLARS AND NO CENTS				

Fig. 7.15
Sample Check

Supplier Bank Selection

After confirmed vouchers are selected for payment, the Payment Selection Register (28.9.6) verifies that the supplier bank from the voucher has a bank account with a type that matches the account type for the register. It also verifies that this account type is valid for the check date. This prevents you from paying vouchers on an EFT if, for example, none of the supplier banks accept EFTs.

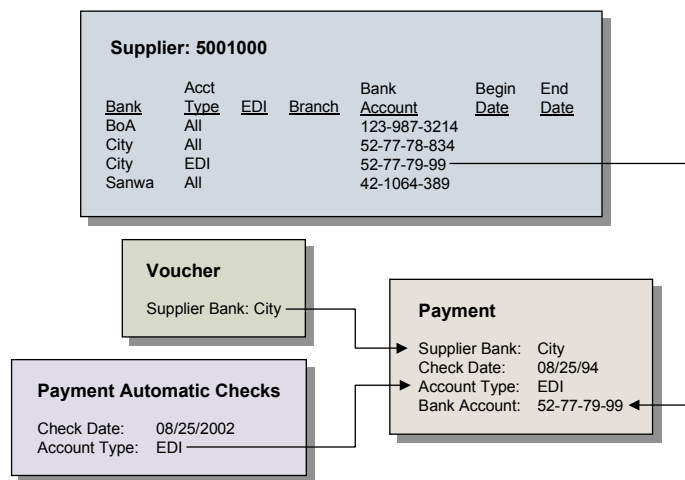
The system searches for a matching bank account as follows.

- If the system finds a match in the supplier record for the account type and check date, it uses this account for the EFT.
- If there is more than one match, the system uses the first bank account from the supplier record.

- If the system does not find a match, it looks for an account with type 1 (ALL) for the bank.
- If no match exists, the system excludes the voucher from the check run, and the voucher remains open. To prevent this, set up at least one type 1 bank account for each supplier.

Figure 7.16 summarizes the system's lookup process.

Fig. 7.16
Selection of
Supplier Bank
Account on
Payments



The Payment Selection Register marks payments with invalid bank accounts. This lets you make corrections before you create the EFT file.

When you use Payment–Automatic Checks (28.9.9) to create the EFT file, you once again specify the check form and account type. You can also override the check date if necessary. Again, the system validates this information against the supplier bank accounts. You cannot mix check formats or account types in the same payment run.

You must still customize the Payment Selection Register (28.9.6) and Payment–Automatic Checks (28.9.9) to generate an EFT output file in the format accepted by your bank.

Note For base currency vouchers, the bank must also be base currency. For non-base currency vouchers, the bank must be either base or the same currency as the voucher.

Reprinting and Voiding Payments

Sometimes, you discover after processing a batch of payments that some are incorrect. To redo a payment, first change its status to Void in Check Void Maintenance (28.9.15). This creates a reversing transaction in the general ledger and reopens the voucher so that it can be re-selected for payment processing.

Check Void Maintenance also validates the void effective date. The system displays an error if the period of the specified effective date is closed for the bank entity.

It is sometimes necessary to void a payment even after it has been sent to a supplier. Payments can be voided as long as they have not been reconciled. When a payment is voided in Check Void Maintenance (28.9.15), it remains in the system with an amount open of zero and a status of VOID. Both automatic and manual payments can be voided in the system.

♦ See Chapter 5, “Multiple Currency,” on page 117.

Recording Manual Checks

Use Payment–Manual Checks (28.9.10) to record payments that were processed outside of MFG/PRO. For example, you can record checks for invoices that were already vouchered. The system calculates the discount and closes the invoice, if it is fully paid. The system marks these payments as type MC.

On vouchered payments, the AP account and Amt to Apply values default from the voucher. The voucher balance is decreased by the amount of the payment. The AP account is debited, and the cash and discount accounts are credited.

When you enter payments, a message displays if the sum of the distribution line amounts is not equal to the batch control amount of the transaction. The message shows the batch control amount entered, the actual distribution amount, and the difference between them. You must choose to accept, edit, or cancel the transaction in order to proceed.

♦ See “Document Control” on page 189.

Fig. 7.17
Payment—Manual
Checks (28.9.10)

You can also use this function to record payments that are not vouchered, such as petty cash expenditures. The system automatically marks these payments as type non-AP. For these, you must record the expense account to debit for the payment.

Supplier Credits

To document that a vouchered amount was covered by one or more supplier credits (negative vouchers), record a zero payment. This updates the supplier balance and closes the voucher.

Multiple Entity Payments

For a company with several subsidiaries, making payments to suppliers from one or more central banks for vouchers from any entity in the database may be more convenient. The Multi-Entity Payments field in Accounts Payable Control (28.24) determines whether payments against a voucher can be made by banks associated with a different entity than the voucher.

When Multi-Entity Payments is No, the entity associated with the bank must match the entity on the voucher header. When Multi-Entity Payments is Yes, a bank at one entity can make payments for vouchers from different entities. When the bank making the payment is not associated with the entity on the voucher, the system automatically

creates the appropriate balancing entries using the Intercompany Accounts Payable debit and credit accounts defined in Entity Code Maintenance (25.3.1.1).

Check Cancellation Maintenance

Check Cancellation Maintenance (28.9.13) marks a check or a draft as closed and creates a GL transaction to post the payment amount, crediting cash and debiting cash in transit (payments in process account).

See “Managing AP Drafts” on page 209 for details on drafts.

Note You can edit the effective date for batches not posted to the general ledger. You cannot open or modify a posted batch.

You can enter transactions in multi-entry mode or single-entry mode. Set Multi Entry to No when you want to enter and reconcile individual checks or drafts.

Multi-entry mode enables you to reconcile ranges of payments. If Multi Entry is Yes, the system displays the Check/Draft Selection frame. You must enter a batch control total when you are in multi-entry mode.

Fig. 7.18
Check Cancellation
Maintenance
(28.9.13)

If you are processing cleared checks, you typically specify the check number of the first and last check appearing on your bank statement. If you are processing cleared drafts, you typically enter an appropriate due date range for the cleared drafts that appear on your bank statement.

Note Due Date appears only if Use Draft Management is Yes in AP Control (28.24).

If you leave all selection criteria blank, the system retrieves all open checks and drafts for the bank you are processing. Otherwise, once you press Go, the system retrieves only documents that meet your selection criteria.

Tip
Depending on criteria, the retrieval process can be time-consuming.

Once the system has retrieved all checks and drafts, it prompts you to display checks being reconciled. If you respond No, the system immediately clears all the selected checks and drafts. However, as a control, the system clears the payments only when the sum of all checks and drafts to be cleared is equal to the Batch Ctrl amount. If you respond Yes, the system displays the Multi-Entry Check Selection screen.

This screen displays all retrieved open checks and drafts in a scrolling window. Selected checks and drafts are marked with an asterisk (*) in the first column (Sel). Selecting or deselecting a check or draft automatically updates the Total displayed in the upper right corner of the screen.

If the sum of the distribution line amounts is not equal to the batch control amount of the transaction, the system displays a message. It shows the batch control amount entered, the actual distribution amount, and the difference between them.

▶ See “Document Control” on page 189 for more information.

You must choose to accept, edit, or cancel the transaction in order to proceed. Once you are satisfied with the selection and the Total value is the same as the Batch Ctrl value, confirm the transaction by pressing Go.

Payment Specification Report

Send this report to the supplier as a record of EFTs (check forms 3 and 4) that have been sent. To print this report, Pay Specification must be Yes in Supplier Maintenance (2.3.1). In this case, you are prompted to enter a printer, and the report is printed immediately after the checks.

Check Reconciliation

Once a check is processed by the bank, record it in Check Cancellation Maintenance (28.9.13). This marks the check as closed and sets the status to CANCEL. You can reconcile checks quickly by entering a range of check numbers and a batch total. If the batch and entered totals match, all checks in the range are canceled.

Reconcile checks regularly. Only checks that are void or reconciled—and the vouchers they paid—can be purged using the delete/archive function.

Managing AP Drafts

MFG/PRO supports the payment of vouchers using drafts. Drafts are similar to regular checks but, unlike checks, include a due date. A check is payable immediately, but a draft is payable only on or after the due date.

Because drafts and checks are similar, AP drafts have been implemented as regular checks with due dates. Drafts use check forms 5, 6, and 7.

Note Currently, these three check forms are functionally equivalent.

You can:

- Create drafts either manually or automatically.
- Customize formats for printed drafts.
- Reconcile drafts in the same way as other payments.
- Void unreconciled drafts if necessary.
- Track draft status as of a specific effective date.

The system automatically creates the necessary GL journal entries for drafts using the Draft Payable account to record the liability until the draft is cleared. At this time, Cash is affected.

Processing

Use the AP functions for processing checks or EFTs to process drafts. Some fields are activated only if Use Draft Management is Yes in Accounts Payable Control (28.24).

- In Voucher Maintenance (28.1), specify the code for the bank from which you are paying the draft and specify check form 5, 6, or 7. The bank code and check form default from the supplier.
- To select vouchers for payment by draft, use Payment Selection–Automatic (28.9.4), Payment Selection–Manual (28.9.5) and the Payment Selection Register (28.9.6).
- To pay the selected vouchers, use Payment–Automatic Checks (28.9.9). Specify check form 5, 6, or 7. To create a manual draft, use Payment–Manual Checks (28.9.10) and set Draft to Yes. For

drafts, Due Date is a required field because it identifies when the draft is payable. The due date you specify in the payment function overrides the due date from the voucher.

- To reconcile draft payments that have cleared at the bank, use Check Cancellation Maintenance (28.9.13).
- To void outstanding draft payments, use Check Void Maintenance (28.9.15).
- Payment Browse (28.9.11) and Payment Register (28.9.12) also support draft processing. Use the Draft Status Report (28.9.18) to track the status of drafts as of a specific effective date. This report lets you review the balance of the Draft Payable account in General Ledger at period end.

Printed drafts are very similar to printed checks. Currently, drafts print in the French format. However, you can customize this format if needed.

Draft Accounting

Table 7.2 summarizes the typical GL journal entries the system creates for drafts.

Table 7.2
GL Journal Entries
for Drafts

Program	GL Entry
Payments–Automatic Checks (28.9.9)	Debit Accounts Payable (from voucher) Credit Drafts Payable (from bank)
Payments–Manual Checks (28.9.10)	Debit Accounts Payable (from voucher) Credit Drafts Payable (from bank)
Check Cancellation Maintenance (28.9.13)	Debit Drafts Payable (from check) Credit Cash (from bank)
Check Void Maintenance (28.9.15)	Debit Drafts Payable (from check) Credit Accounts Payable (from voucher)

AP Draft Processing Setup

To implement AP draft processing, first update Accounts Payable Control (28.24) by setting Use Draft Management to Yes. This activates Due Date and other draft management fields throughout Accounts Payable.

Next, update Bank Maintenance (28.9.1). Four fields are related to draft management:

- Draft Payable Acct
- Next Check
- Bk Acct 1
- Description

You can use a separate numbering scheme for drafts and checks.

- If your company does not use Cash Book Maintenance (31.13) to reconcile bank statements, set up separate bank codes for drafts and checks.
- If your company does use Cash Book Maintenance, you must use the same bank code for both drafts and checks. Set up the numbering for the type of payment you handle most—drafts or checks—and process these as automatic payments. Process the other kind of payment as manual payments. The system prevents you from using the same payment number for both a draft and a check.

Optionally, update your supplier records with Supplier Maintenance (2.3.1). If you normally pay all vouchers using the same bank and payment method, specify the Bank Code and Check Form fields for each supplier. These values then default to Voucher Maintenance.

The address printed on a draft is the company address assigned to the entity making the payment. A company address code is assigned to each entity in Entity Code Maintenance (25.3.1.1). Define company addresses in Company Address Maintenance (2.12).

▶ See “Defining Entities” on page 25 for more details.

Using AP Reports

Aging Reports

Agings are normally run at each month-end prior to entering activity for the next month. Detailed agings print all open vouchers. Summarized agings print only the aging period totals and total outstanding balances for each supplier. Hold amounts are always marked as Hold. However, you can choose to exclude them from the supplier totals. Unconfirmed vouchers do not appear on aging reports.

Use one of the following reports:

- AP Aging by Voucher Date Report (28.17.4) displays agings by voucher date.
- AP Aging by Due Date Report (28.17.5) displays agings by payment due date.
- Aging as of Effective Date Report (28.17.6) takes much longer to process. It reviews all activity in the system and checks the date on each transaction to see whether to include it. If you must run an aging for a previous period and activity has already been entered for the current or next period, you can run this to print an aging as of period end.

▶ See “Reporting Currency” on page 133.

Note If you specify a non-base reporting currency in any of these reports, an exchange rate pop-up enables you to override the default rate for the report effective date.

Flexible aging periods lets you project cash requirements as well as review overdue accounts. For example, you could enter the aging periods -90, -60, and -30.

Audit Trails

Various reports can be used for auditing AP transactions:

- The Unposted AP-GL Transactions Report (28.21) lists all unposted GL transactions created by AP activity. Print this report before posting the transactions to GL.
- Print Voucher Register (28.3.1) at month-end close with Print GL Detail set to Yes. This report is useful for finding transactions that correspond to those printed on GL reports.
- Use Voucher Numbering Report (28.3.4) to determine if any numbers are missing from your voucher number sequence. If you find missing numbers, you can make any necessary corrections.
- Print Payment Register (28.9.12) at month-end close with Print GL Detail set to Yes to help find transactions that correspond to those printed on GL reports. This report includes the gain/loss account and amount, showing GL transactions impacted by payments.

To show accurate gain/loss when exchange rate changes occur between voucher and payment, the system uses the voucher amount entered in Voucher Maintenance (28.1).

On reports, two codes identify types of payments:

- MN: Manual payment (external payment recorded in MFG/PRO)
- AU: Automatic payment (vouchered and generated in MFG/PRO)

Three codes identify payment status:

- blank: Open payments (printed or in transit but not yet reconciled)
- CANCEL: Reconciled checks
- VOID: Voided checks

1099 Report

In the United States, the Internal Revenue Service (IRS) requires companies to submit an annual 1099 form on most amounts paid to suppliers. Use Supplier Activity (1099) Report (28.14) to provide information to the 1099 form. The 1099 report is printed only for suppliers with Tax Report set to Yes in Supplier Maintenance (2.3.1).

When running the report you can include all vendors by setting Include 1099 Suppliers Only to No.

1099-MISC Form and Reports

You can prepare the 1099-MISC form using AP functions. You can print the form directly, generate an ASCII file to send to the IRS, or print a report. However, before you can do any of this, the supplier must be set up correctly in Supplier Maintenance (2.3.1).

- Supplier must have a Type value (type code) if you plan on running by supplier type.
- Verify that the first line of the supplier address contains the necessary mailing information. The form has only one address line.

- The tax ID must be in one of two formats: social security number or federal tax ID.
- For a supplier with a social security number, the sort name must be in the format <last name><comma><space><first name>. The comma and space are mandatory; for example, Smith, Joan.

The payments included in these reports are selected by the company address or range of addresses that incurred the initial liability, as recorded on the vouchers that are matched to those payments. Even when a payment is processed at a different entity, the company address that incurred the liability is still legally regarded as having made the payment.

◆ See *User Guide Volume 6: Master Data* for details on company addresses.

Each company address in the selection range must be identified with only the company address list type; otherwise, an error displays. In addition, the address must be set up for tax reporting. In Company Address Maintenance (2.12), Tax Report must be Yes. Company addresses with Tax Report set to No are ignored by 1099-MISC reports.

◆ See “Defining Entities” on page 25.

Important To include voucher amounts from an entity on 1099 tax reports, the entity must be associated with a tax reporting address. If an entity is not associated with a tax reporting address, then voucher amounts from that entity are not included. Assign tax reporting addresses to entities in Entity Code Maintenance (25.3.1.1).

Tip
The voucher type is specified in Voucher Maintenance.

You can do 1099 reporting by voucher type. You can use a standard code for 1099 vouchers.

Use Voucher Type and Box to select specific payments for inclusion on the 1099-MISC form. The voucher type is the type code specified on the voucher. The box is the IRS category of supplier payments. You can include five types of supplier payments on the 1099-MISC form:

- Box 1 – Rents
- Box 2 – Royalties
- Box 6 – Medical and health care payments
- Box 7 – Non-employee compensation (NEC)
- Box 13 – Legal expenses

When specifying payments for inclusion, be aware of the following.

- A Voucher Type value is optional, but a Box value is mandatory.
- If a box number is specified but the voucher type is left blank, any payment not included in another specified type will be reported in that box. This includes manual and non-AP payments.

If your company is multinational, the 1099-MISC functions do not pick up supplier payments under the following circumstances:

- Your company is outside the US but makes payments to US suppliers.
- Your company is in the US but makes payments to non-US suppliers who do not have a social security number or US federal tax ID.

1099-MISC Report

On the 1099-MISC Report (28.20.1), the five Box columns are hard-coded. All appear on the report, even if you did not specify all five types of payments. If you specify a voucher type, it appears above the column.

1099-MISC Form

When using 1099-MISC Form Print (28.20.2), start by recording your company's address and federal tax ID as they should appear on the printed form.

Note Deluxe Business Forms and Supplies (telephone 612-631-8500 or, in the US only, 800-328-0304) provides 1099-MISC forms that meet the printing specifications of this program.

1099-MISC Magnetic Media Report

The IRS sends you information on their procedures for magnetic media transmissions. They also give you the control code. Before using 1099-MISC Magnetic Media Report (28.20.3), review the IRS information.

The 1099-MISC Magnetic Media Report consists of two screens. The following is an explanation of some of the fields:

Create Test File

Set this to Yes and allow the IRS to verify that your system is properly set up to process the 1099-MISC forms.

Transmitter Data. This is information on either the transmission service or your company, whoever is responsible for the transmission.

In the second screen, specify the supplier and supplier type range, company address range, and Voucher Type, Box, and Minimum Amount.

Tip

The directory you are in when you start up the database is the working directory.

You do not need to specify an output file. The system automatically sends the output to a magnetic media file, IRSTAX, in your working directory. As soon as the file is created, the cursor returns to the upper left corner of the screen.

Note Do not press Go at this point. If you do, the procedure is rerun and the supplier payments will be overstated because duplicate records are appended to the IRSTAX file. Should you inadvertently rerun the procedure, exit to the menu, return, and rerun from the beginning. This completely overwrites the old file.

If you have more than one selection of supplier payments to include in the file, change the criteria (supplier range and type, company address range, voucher type or box) to include the additional suppliers and rerun the procedure by pressing Go. If you do not have additional suppliers or payments to include, press End.

Purging Historical Records

MFG/PRO keeps all of your receipt and accounts payable information on line for an unlimited time. There is no automatic purge at month-end or year-end.

Sometimes a receiver is never matched with an invoice, perhaps because the PO number was never entered on the voucher. These receivers remain in the system unless you delete them with Uninvoiced Receipt Delete/Archive (28.22). After deleting receivers, create a GL journal entry to adjust the PO Receipts account.

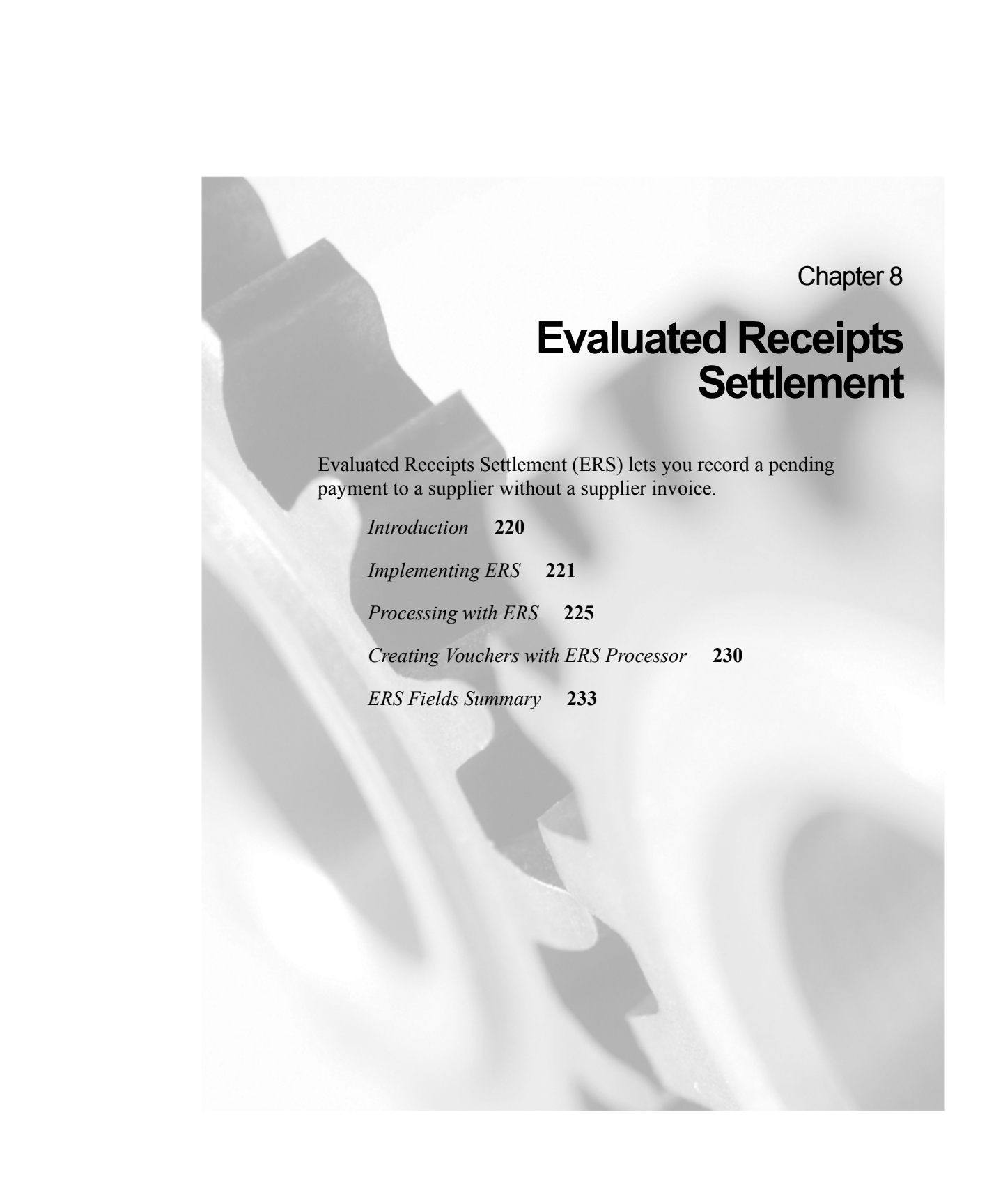
Closed AP Delete/Archive (28.23) deletes only items with an Amount Open equal to zero—that is, vouchers that are totally paid and payments that are totally applied. Manual and non-AP payments are also deleted.

You can select by date, supplier, bank, and payment number. This allows you to purge only obsolete information. Once deleted, this information is not available online.

First run this program with Delete set to No to print and verify the report. If it is acceptable, rerun the program with Delete set to Yes.

Always do a backup before performing the delete/archive. Deleted items can be unloaded to an archive file before they are deleted. Archive files should be backed up to tape and put in a safe storage place. Then, if you ever need this information, you can reload it into your database from the tape.

When deciding how frequently to run the delete/archive, consider how much data you are likely to have to restore. For example, if you need to retrieve data for one month but stored the previous year's history in one file, you must reload the entire file.

The background of the page features a grayscale image of several interlocking gears. The gears are of different sizes and are positioned in a way that creates a sense of depth and mechanical complexity. The lighting is soft, highlighting the teeth of the gears and creating subtle shadows.

Chapter 8

Evaluated Receipts Settlement

Evaluated Receipts Settlement (ERS) lets you record a pending payment to a supplier without a supplier invoice.

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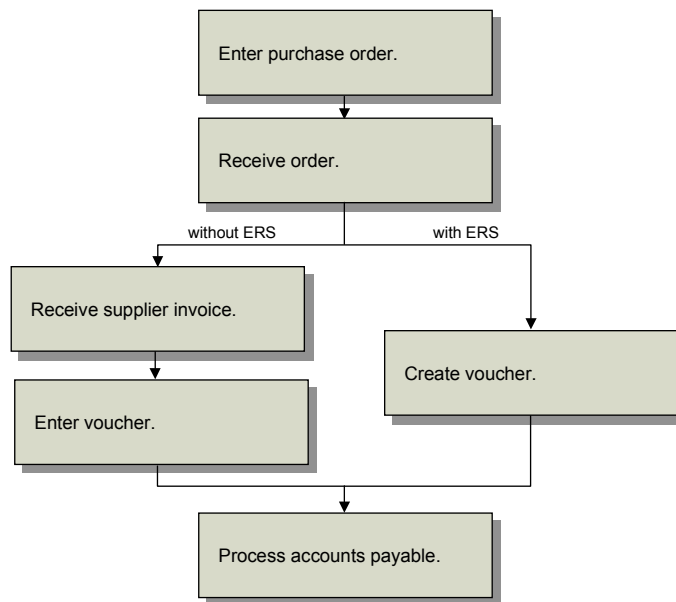
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Introduction

Use Evaluated Receipts Settlement (ERS) to record a pending payment to a supplier without an invoice. The system automatically records liabilities to the supplier based on quantities received at the unit price negotiated with the supplier in a purchase agreement.

Fig. 8.1
Processing with
ERS



ERS offers several benefits to customers and suppliers such as reduced clerical workload, lower costs, and reduced error rate. Several factors make an ERS system work efficiently.

- Trading partners must agree on price.
- Customers must issue purchase authorization.
- Suppliers must provide accurate shipping information.
- Customers must enter accurate receipts.

When a problem occurs, the department responsible for the related function—not accounts payable or accounts receivable—should solve it as soon as possible. For example, shipping/receiving should resolve problems with quantity, part number, or defects. Purchasing should resolve problems related to price discrepancies.

Implementing ERS

Implement ERS by setting control programs and adding required records. If you already have open purchase orders, you must also convert them to enable ERS processing. Figure 8.2 summarizes the process.

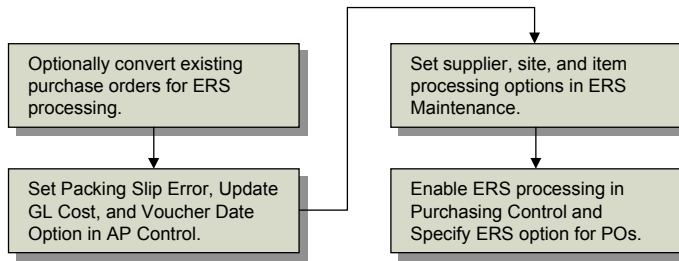


Fig. 8.2
ERS
Implementation
Process

Run ERS Conversion

If you decide to implement ERS in a new database, this step is not required. If you have existing open purchase orders and you want ERS processing to apply to them, you must execute a utility program to set the processing option.

Choose ERS Purchase Order Conversion (36.25.62) from the Miscellaneous Utilities menu.

The system prompts you to enable or disable ERS.

- Enter E to set ERS option 0—ERS enabled for all purchase orders.
- Enter D to set ERS option 1—ERS disabled for all purchase orders.

Set Up AP Control for ERS

Three fields in Accounts Payable Control (28.24) affect ERS processing.

Fig. 8.3
Accounts Payable
Control (28.24)

The screenshot shows the 'Accounts Payable Control' window with the following fields and values:

- Next Batch: 1016
- Next Voucher: 10022
- Next Journal: 000010
- Voucher Open Qty: 1
- AP Summarization Level: 1
- Ship-To: 10000001
- Default Bank: AA
- Check Form: 1
- Exchange Tolerance: 5.00%
- Enter Vouchers Confirmed: ☒
- Release Recur VOs Confirmed: ☐
- Use Payment In Process Acct: ☒
- Use Expensed Item Var Accts: ☒
- External Voucher References Allowed: ☒
- Use Authorized by Field: ☒
- Use Draft Management: ☒
- Multi-entity Payments: ☐
- ERS Packing Slip Error: ☐
- ERS Update GL Avg Cost: ☒
- ERS Voucher Date Option: 0

A bracket on the right side of the window groups the last three fields under the label 'ERS fields'.

ERS Packing Slip Error. Set the processing option to use when a received order has no packing slip number. If Yes, the system does not create a voucher when the packing slip number is missing. If No, the system creates a voucher using the receiver ID as the invoice number.

ERS Update GL Average Cost. Set a processing option for creating vouchers in an average cost environment. If Yes, the system updates the cost of an item at ERS processing time. Enter No if you do not want to update the cost.

ERS Voucher Date Option. Set an option for the voucher date.

0 (zero): Use the receipt date as the voucher date.

1: Use the ship date as the voucher date.

Set Up ERS for Suppliers, Sites, Items

When determining the ERS option for a purchase order line, the system looks for a corresponding ERS Maintenance record or combination of ERS Maintenance records, in the following order.

- Supplier/site/item record
- Supplier/site record

- Supplier/item record and a separate site record
- Supplier record and a separate site record

The system takes the ERS option from this record or combination. If ERS options in a record combination differ, the lower value is used. If no records or record combinations are found, the system sets the ERS option for the purchase order line to 1, disallowing ERS processing.

Use ERS Maintenance (28.10.1) to turn ERS processing on or off for any of the following combinations.

- Supplier, site, and item
- Supplier and site (leave Item Number field blank)
- Supplier and item (leave Site field blank)
- Supplier (leave Site and Item Number fields blank)
- Site (leave Supplier and Item Number fields blank)

Fig. 8.4
ERS Maintenance
(28.10.1)

ERS Option. Specify the kind of ERS processing to allow for this supplier/site/item combination.

- 1: Disallow ERS processing of this record.
- 2: Allow an unconfirmed voucher to be created for this record. This option adds a degree of security, since the voucher created is approved in a separate process.
- 3: Allow creation of a confirmed voucher for this record.

ERS Price List Option. Specify the effective date to use when accessing a price list.

- 1: Use the receipt date.
- 2: Use the ship date.
- 3: Use the order date, which varies by the order type.

Note For blanket orders, order date is the release date. For scheduled orders, order date refers to the scheduled order itself, not the various releases.

Activate ERS

Use Purchasing Control (5.24) to turn ERS on or off and to set the default processing option.

Fig. 8.5
Purchasing Control
(5.24)

Purchasing Control

Bill To: 10000000
Ship-To: 10000000
PO Prefix: PO
Next Purchase Order: 00001060
Receiver Prefix: RC
Next Receiver: 00001072
Sort PO By: Site
Receive All:
Price Table Required:
Disc Table Required:
Apprvd Reqs for POs:
Inspection Location: 888
Receiver Type: 1
Sequential Receiver:
Tolerance Percent: 10.00
Tolerance Cost: 100.00

Ln Format S/M: Single
PO Header Comments:
PO Line Comments:
Cancel Backorders:
Keep Booking History:
ERS Processing:
ERS Option: 1

Type: 0 - Do not print receivers
1 - Print for each shipment
2 - Print for each item/shipment
(Acceptance Limit For Overshipments)
(Acceptance Limit For Overshipments)

ERS fields

ERS Processing. Enter Yes to activate ERS. You can keep ERS inactive while setting up supplier, site, and item relationships in ERS Maintenance.

◆ See “ERS Fields Summary” on page 233.

When ERS is active, ERS fields appear in most screens relating to purchase orders, blanket orders, and scheduled orders.

ERS Option. Specify when the system determines the ERS option, which is set up in ERS Maintenance (28.10.1).

Blank: Determine the ERS option when the purchase order line is created.

0: Determine the ERS option at ERS processing time.

1: Disallow ERS processing.

Printing ERS Reports

Use ERS Report (28.10.3) to print reports on suppliers, sites, items, and ERS options.

Fig. 8.6
ERS Report
(28.10.3)

Processing with ERS

When ERS is set up and activated, it affects how you:

- Issue a purchase order
- Issue a blanket order
- Issue a scheduled order
- Receive purchased items

▶ See “ERS Fields Summary” on page 233 for a complete list of programs and fields affected by ERS.

Purchase Orders with ERS

Three fields in Purchase Order Maintenance affect ERS processing:

- Fixed Price
- ERS Option
- ERS Price List Option

▶ See *User Guide Volume 2A: Distribution* for more information on purchase orders.

PO Header

Fixed Price is part of the standard header in Purchase Order Maintenance (5.7), but it functions differently when you are using ERS. ERS Option and ERS Price List Option display in a pop-up only when ERS is active.

Fig. 8.7
Setting the PO
Header ERS Option

The screenshot shows the 'Purchase Order Maintenance' window. At the top, it displays 'Purchase Order: PO1032', 'Supplier: 5003000', and 'Ship-To: 10000'. Below this, there are two main sections: 'Supplier' and 'Ship To'. The 'Supplier' section lists 'West Coast Electronics' at '1120 Capacitor Road', 'Menlo Park, CA 94026', 'United States of America'. The 'Ship To' section lists 'Quality Products Inc., Manufacturing Division' at 'One World Way', 'San Diego, CA 92130', 'United States of America'. At the bottom, there are two dropdown menus: 'ERS Option:' with a value of '1' and 'ERS Price List Option:' with a value of '0'. Navigation buttons (back, forward, cancel) are at the bottom right.

Fixed Price. Sets the default for Fixed Price for line items. Defaults from Supplier Maintenance (2.3.1).

- If Yes, the ERS Processor takes the price from the purchase order.
- If No, the ERS Processor tries to determine a price by looking for an applicable price list. If no applicable price list is found, the system looks for a supplier/item quoted price. If none is found, the system looks for an item price.

ERS Option. Enter when the system should determine the ERS option for this order. Defaults from the ERS Option field of Purchasing Control (5.24). Becomes default for line items.

Blank (the default): Determine the ERS option at the time the purchase order line is created.

0: Determine the ERS option at ERS processing time.

1: Disallow ERS processing.

ERS Price List Option. Enter when the system should determine the ERS price list option for this order. The defaults is 0 (zero) and defaults to line items.

0: Determine the ERS price list option at ERS processing time.

1: Use receipt date as the effective date when accessing a price list.

2: Use the ship date.

3: Use the order date.

PO Lines

Purchase Order Maintenance

Purchase Order: 1001 Supplier: 5017000 Ln Format S/M: Single

Ln	Site	Req	Item Number	Qty Ordered	UM	Unit Cost	Disc%
1	10000		02-0005	10.0		2.00	0.00%

Qty Received: 0.0 Due Date: 07/31/2002 CRT Int: 0.00

Qty to Rel: 0.0 ERS Option: 0 project:

Single Lot: ☐ ERS Price List Option: 0 Type: M

Location: 200 Fixed Price: ☒ Inspect Req: ☐ xable: ☐

Revision: Status: Cmnts: ☐

Supplier Item: UM Conversion: 1.0000

Manufacturer: Stock UM Quantity: 10.0

Description: Item Not In Inventory Update Avg/Last Cost: ☒ Extended Net Cost: 20.00

Fig. 8.8
Setting the Line
ERS Option

Three fields
affect ERS
processing.

ERS Option. Specify when the system should determine the ERS option for this line item. Line-level value defaults from the same field on the header. You can change it to a value less than or equal to the ERS Option specified in ERS Maintenance.

- If ERS Option is blank in the header, the line-level field defaults from the ERS Option set in ERS Maintenance for this supplier/site/item combination—1 for no ERS, 2 for an unconfirmed voucher, 3 for a confirmed voucher.
- If the value in the header is 0, the value at the line level is also 0, indicating that the ERS option is to be determined at ERS processing time.
- If the value in the header field is 1, the value at the line level is also 1. ERS processing is not allowed.

The value you set for a line displays for that line the next time you access the order.

Note If ERS Maintenance (28.10.1) settings affecting a discrete purchase order are changed, you must manually update the order based on the new settings, unless the order line has an ERS option of 0.

ERS Price List Option. Enter when the system should determine the ERS price list option for this line item.

If ERS Price List Option in the order header is 1, 2, or 3, that value defaults here.

If the header is 0, processing is based on the ERS Option field of the order header.

- If ERS Option in the order header is blank, Price List Option for the line item defaults from Price List Option in the ERS Maintenance record for the supplier/site/item combination.
- If ERS Option field in the header is 0 or 1, Price List Option for the line item is 0, indicating that the price list option is to be determined at ERS processing time.

The value you set for a line displays that line the next time you access the order.

◆ See page 226.

Fixed Price. Defaults from header; you can change the value for each line item.

Blanket Orders with ERS

◆ See *User Guide Volume 2A: Distribution* for more information on blanket orders.

A blanket order is an agreement to purchase items at a specified price during a specified period, with exact delivery dates to be determined later. When an item on the blanket order is released, a purchase order is created, using the blanket order as a template.

◆ See “Purchase Orders with ERS” on page 225.

Create a blanket purchase order in Blanket Order Maintenance (5.3.1). Set ERS values for a blanket order just as you would for a discrete purchase order.

When items on a blanket order with ERS active are released, the purchase orders derive default ERS values from the blanket order.

Note If ERS Maintenance (28.10.1) settings affecting a blanket order are changed, you must manually update the blanket order based on the new settings. Purchase orders based on blanket orders must also be manually updated.

Scheduled Orders with ERS

A scheduled order is like a purchase order with line items that have multiple delivery dates. Line items also have short-term shipping schedules specifying exact quantities and delivery instructions, as well as long-term planning schedules showing upcoming orders.

Create a scheduled order in Scheduled Order Maintenance (5.5.1.13). Set ERS values for the scheduled order just as you would for a discrete purchase order.

Note If ERS Maintenance (28.10.1) settings affecting a scheduled order are changed, you must manually update the scheduled order based on the new settings.

▶ See *User Guide Volume 7: Release Management*.

▶ See “Purchase Orders with ERS” on page 225.

ERS-Eligible Shipper Receipts

Use PO Shipper Maintenance (5.13.14 or 5.5.5.5) or PO Fiscal Receiving (5.13.16) to create purchase order shippers. ERS processing does not take place until the shipper is received. Use PO Shipper Receipt (5.13.20 or 5.5.5.11) to receive shippers created in PO Shipper Maintenance or PO Fiscal Receiving.

▶ See *User Guide Volume 2A: Distribution* for more information on shipping.

Fig. 8.9
PO Shipper Maintenance (5.13.14)

Ship Date. Enter the date items are shipped.

Note PO Fiscal Receiving does not have a Ship Date field. If you are using shipping dates in ERS processing, use PO Shipper Maintenance to create purchase order shippers.

Receiving a Purchase Order with ERS

Receive purchase orders in Purchase Order Receipts (5.13.1).

Fig. 8.10
Purchase Order
Receipts (5.13.1)

Purchase Order Receipts

Order: 326 Supplier: 002 Status: Effective: 07/31/2002

Packing Slip: Move to Next Operation: ☒

Receiver: Toronto Computer Services Receive All: ☐

Comments: ☐

Ship Date:

▶ See “Set Up ERS for Suppliers, Sites, Items” on page 222.

▶ See “Set Up AP Control for ERS” on page 222.

Ship Date. Used when the ERS Price List Option specifies ship date as the effective date for a price list. If this option is active and the field is blank, date defaults from the receipt date.

Packing Slip. ERS uses the packing slip number as the invoice number for the voucher created by the ERS Processor. If you leave this field blank, processing depends on the setting in ERS Packing Slip Error in Accounts Payable Control:

- If Yes, the ERS Processor does not create a voucher and adds the order to a list of errors.
- If No, the ERS Processor creates a voucher with the receiver ID as the invoice number.

Creating Vouchers with ERS Processor

Use ERS Processor (28.10.13) to specify ranges of suppliers, sites, and received items for which you want to create payment vouchers. The ERS Processor can only process records created at sites you are authorized to access.

Fig. 8.11
ERS Processor
(28.10.13)

ERS Processor

Supplier: To: To: To: To: Output:

Site: To: To: To: To: Batch ID:

Receiver: To: To: To: To:

Receipt Date: To: To: To: To:

Print Audit Report: ☐

Create Vouchers: ☒

Print Audit Report. Enter Yes to have the ERS Processor print an audit report detailing which purchase orders were vouchered.

Create Vouchers. Enter Yes to have the ERS Processor create vouchers during the run. Enter No to have the ERS Processor perform a test run in which no vouchers are created.

The ERS Processor selects all receipts in the current database that have not been processed or were processed previously but had errors. It then determines whether a receipt is a purchase order and eligible for ERS processing. If the order is not eligible, it is not processed or listed on error or audit reports.

If an item's price is fixed, the ERS Processor takes the price from the purchase order. If the price is not fixed, the ERS Processor tries to determine a price by looking for an applicable price list. If no applicable price list is found, the system looks for a supplier/item quoted price. If none is found, the system looks for an item price.

The ERS Processor opens a voucher batch, creates the specified voucher records, and makes appropriate journal entries, just as if the vouchers were entered manually.

ERS Report

When run, the ERS Processor always generates a report detailing processing errors:

- No price is available for an item.
- Check forms are invalid.
- Purchase orders have already been vouchered.
- Credit terms are invalid.
- No packing slip number is entered on the receipt screen, and the ERS Packing Slip Error field of Accounts Payable Control (28.24) is set to Yes.

ERS Fields Summary

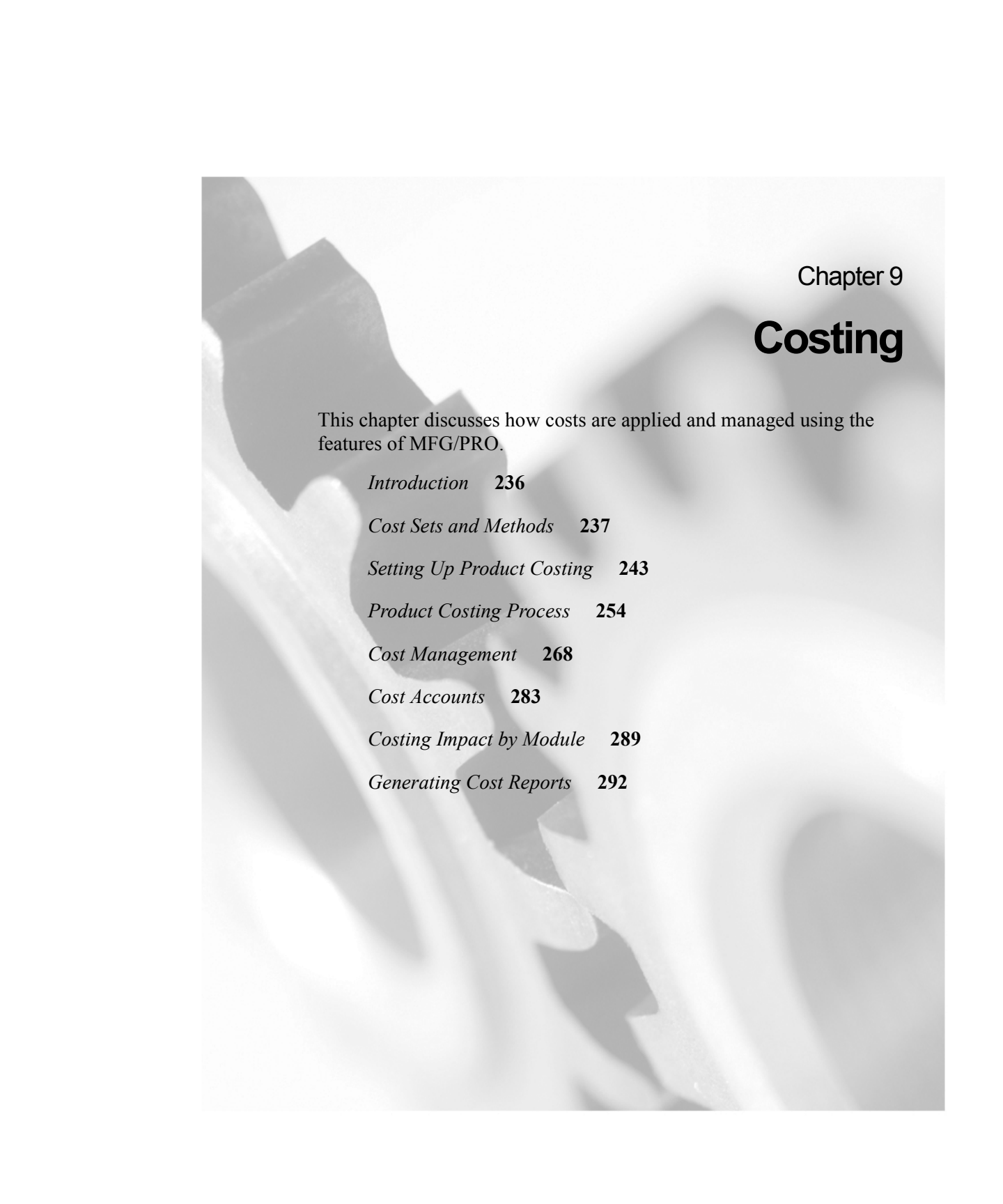
When ERS is activated, ERS fields appear in most screens relating to purchase orders, blanket orders, scheduled orders, and vouchers.

Table 8.1 lists the fields that display and the programs affected. In addition, some existing fields are used in special ways by ERS.

Table 8.1
ERS Fields
Summary

Field	Menu No.	Program
ERS Items Only	5.13.5	Purchase Receipt Report
ERS Only	28.3.1	Voucher Register
	28.4	Voucher Hold Inquiry
	28.5	Voucher Hold Register
ERS Option	1.1.14	Site Browse
	1.1.15	Site Report
	2.3.2	Supplier Browse
	2.3.4	Supplier Master Report
	5.3.1	Blanket Order Maintenance
	5.3.3	Blanket Order by Order Report
	5.5.1.13	Scheduled Order Maintenance
	5.5.1.14	Scheduled Order Inquiry
	5.5.1.15	Scheduled Order Report
	5.5.3.13	Schedule Report
	5.5.3.17	Schedule Authorization Report
	5.7	Purchase Order Maintenance
	5.8	Purchase Order Browse
	5.9.1	Purchase Orders by Order Report
	5.9.2	Purchase Orders by Supplier Report
	5.13.2	Purchase Receipt Document Print
	5.13.3	Purchase Receipt Cost Browse
	5.13.5	Purchase Receipt Report
	5.24	Purchasing Control
	28.10.1	ERS Maintenance
	28.10.2	ERS Browse
	28.10.3	ERS Report
	36.17.6	Control Report

Field	Menu No.	Program
ERS Packing Slip Error	28.24	Accounts Payable Control
	36.17.6	Control Report
ERS Price List Option	28.10.1	ERS Maintenance
	28.10.2	ERS Browse
	28.10.3	ERS Report
	5.3.1	Blanket Order Maintenance
	5.3.3	Blanket Order by Order Report
	5.5.1.13	Scheduled Order Maintenance
	5.5.1.14	Scheduled Order Inquiry
	5.5.1.15	Scheduled Order Report
	5.5.3.13	Schedule Report
	5.5.3.17	Schedule Authorization Report
	5.7	Purchase Order Maintenance
	5.8	Purchase Order Browse
	5.9.1	Purchase Orders by Order Report
	5.9.2	Purchase Orders by Supplier Report
	5.13.3	Purchase Receipt Cost Browse
ERS Processing	5.24	Purchasing Control
	36.24	Control Report
ERS Voucher	28.1	Voucher Maintenance
	28.2	Voucher Inquiry
	28.3	Voucher Register
ERS Voucher Date Option	28.24	Accounts Payable Control
	36.24	Control Report
Ship Date	5.5.5.5	PO Shipper Maintenance
	5.13.1	Purchase Order Receipts
	5.13.14	Shipper Maintenance
Update GL Average Cost	28.24	Accounts Payable Control
	36.24	Control Report

The background of the page features a grayscale image of several interlocking gears. The gears are of different sizes and are positioned in a way that creates a sense of depth and mechanical complexity. The lighting is soft, highlighting the teeth of the gears and casting gentle shadows.

Chapter 9

Costing

This chapter discusses how costs are applied and managed using the features of MFG/PRO.

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Introduction

A key factor influencing whether a company manufactures a product is the cost of making that product. Costs also determine the level of production output.

The cost of producing at a specific level of output depends not only on the price of needed resources—materials, labor, fuel, transportation, and so on—but also on the quantities of resources needed to produce that output. The level of output also depends on how the company uses fixed resources, such as the size of the plant, in combination with variable resources, such as labor, material, or equipment. It is important to know the total cost of production at varying levels of output along with per-unit costs.

Direct costs are all costs that can be traced to a single product. This includes the cost of all material and direct labor that go into that product, as well as the cost for any outside processing. All production costs other than direct costs are considered *indirect costs*, or overhead. Overhead costs are classified as either fixed or variable.

- Fixed overhead costs do not vary with changes in production output and cannot be avoided in the short term. These costs must be paid even if production output is zero. Some examples are rent, insurance premiums, and interest payments.
- Variable overhead costs, also called burden, change with the volume of production output. Variable costs can be controlled and altered in the short run by changing the level of production output. Some examples are supplies, power, fuel, and transportation costs.

Tracking these costs is important in determining product costs, total cost of production, inventory values, and productivity.

Cost Sets and Methods

Cost data is collected and calculated using cost sets and costing methods. A *cost set* is a collection of related cost data. A *costing method* defines how cost data in a cost set is calculated and maintained.

Cost Sets

There are two default cost sets for each site: general ledger (GL) and current.

- GL cost distinguishes costs used to value inventory and determine cost-of-goods sold from other costs such as current costs or planning costs.
- Current cost is normally based on recent production and/or purchases. Current costs are the actual costs from inventory receipts and work order labor transactions.

The system supports GL and current costs by item and site. Only one GL and one current cost set can be active for each site.

Standard MFG/PRO costing provides one GL and one current cost set for each site. GL cost sets and current cost sets must have the same name at all sites. For example, if the name for the GL cost set is *Standard*, it must be Standard for all of the sites. Use Item Cost Set Name Change (1.4.14) to change the name of a cost set as needed.

The Cost Management module lets you create and maintain additional GL and current cost sets for each site instead of the default ones. You can also use different names for current and GL cost sets at each site.

▶ See “Cost Management” on page 268.

You can use Cost Management functions to create an unlimited number of cost sets for:

- Maintaining different GL and current cost sets for each site
- Cost planning
- Cost simulations
- Historical cost comparisons

Cost Management also provides inquiries that display which sites use a particular cost set and the GL and current cost sets in effect at each site.

Costing Methods

Companies use costing methods for managing business as dictated by business conditions or, in some cases, law. Costing methods include:

- Standard
- Average
- Last
- Period

Standard Cost

Standard costs measure how much an item should cost. Standard costs are typically used for general ledger (GL) transactions and are not automatically updated by the system. The standard cost for an item is used as the basis for all inventory-related accounting transactions as they are processed. Actual expenses are tracked and measured against this standard.

Standard Cost Variances

Because the standard is only a target or estimate of item costs, the actual costs incurred rarely match the standard exactly. In order to account for the difference between standard and actual costs, variances are calculated and recorded.

Total variance is the difference between standard cost and actual cost. Total variance can result from a difference in purchase price, quantity used, or both. A *rate variance* occurs when the actual cost of a resource differs from the standard rate. A *usage variance* occurs when the actual quantity of the transaction differs from the standard quantity. For example, a variance occurs when components are issued for a different quantity than those defined on the standard bill of material (BOM), or when additional non-standard components are issued.

Average Cost

With average costing, costs are recalculated during item receipts and other inventory-related activities using a simple weighted-average calculation.

In this case, the following system activities can update item costs:

- Receiving inventory from a work order or repetitive schedule or using Receipts–Backward Exploded (3.12).
- Running the accounting close function for a work order or cumulative order to consider any costs posted after the last receipt.
- Transferring inventory between sites; for example, using distribution orders or inventory transfer functions.
- Receiving quantities from purchase orders or supplier schedules or returning items to a supplier using functions such as Purchase Order Returns (5.13.7).
- Entering a confirmed voucher for a purchase order receipt. This reverses the effect of the corresponding purchase order receipt and only applies when the Current Cost from AP field is Yes in Inventory Control (3.24).

To calculate average costs for materials, the following equation is used:

$$(Receipt\ Quantity * Receipt\ Cost) + (Item\ Quantity\ on\ Hand * Current\ Material\ Cost)$$

The result is then divided by the new quantity on hand (including the receipt) to determine the new average cost of the item.

For manufactured items, current labor, subcontract, and burden costs are calculated for each work order or repetitive operation using the following equation:

$$(Item\ Quantity\ Received / Cumulative\ Quantity\ Completed\ at\ the\ Operation) * Operation's\ Cumulative\ Work-In-Process\ (WIP)\ Cost$$

If you are using the Cost Management module, you can use the average costing method to calculate site-specific GL costs as well as current costs. Otherwise, the average costing method is only used for current costs.

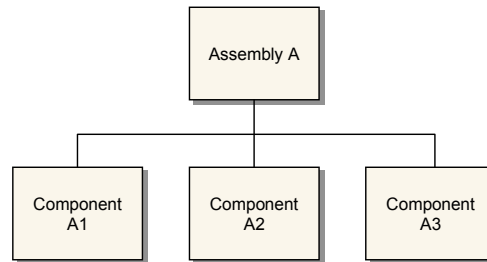
▶ See “Cost Management” on page 268.

The following example illustrates how average costs are calculated when receiving items on a work order.

Average Cost Example

Assembly A has three components: A1, A2, and A3.

Fig. 9.1
Assembly A
Product Structure



A quantity of 20 is received for an assembly A work order. First, the labor, burden, and subcontract cost categories are calculated. Table 9.1 uses labor as an example.

Table 9.1
Operation Costing,
Labor

Operation	Cum. Qty. Completed	Cum. WIP Labor Cost	Work Order Receipt Cost Calculation
10	100	\$100	$20/100 * \$100 = \$20$
20	75	\$150	$20/75 * \$150 = \$40$
30	50	\$20	$20/50 * \$20 = \$8$
40	40	\$50	$20/40 * \$50 = \$25$

Next, material cost is calculated.

Table 9.2
Operation Costing,
Material

Component	Qty. Per Assembly	Unit Cost	Work Order Receipt Cost Calculation
A1	1	\$5.00	$20 * \$5.00 = \$100$
A2	1	\$1.00	$20 * \$1.00 = \$20$
A3	2	\$1.00	$40 * \$1.00 = \$40$

New cost is:

$$(93 + 160) / 20 = \$12.65$$

For a quantity of 10 in stock at \$12.00 each, the new average cost for each assembly A would be:

$$(10 * \$12.00) + (20 * \$12.65) / 10 + 20 = \$12.43$$

Last Cost

The last cost method is only used for current costs and is not available for costing in the general ledger. Costs are updated each time the item is received. For example, an item's material cost is updated to the purchase order (PO) cost each time a PO is received.

Period Cost

Period costing omits the valuation of inventory transactions and uses the values of the incoming and outgoing GL transactions from accounts payable and invoicing functions. Costs are expensed in the period in which they are incurred.

The valuation of inventory and cost-of-goods sold (COGS) is calculated from physical inventory counts, and from purchase and sales transactions. Period costs are determined by tracking the beginning inventory balance, adding purchased material and value-added costs (labor), and then deducting the ending inventory. The GL handles all tracking and reporting. No perpetual inventory records are maintained. Accounting records are updated periodically.

To use period costing, all inventory-related transactions created automatically by the system are turned off so that issues, transfers, and receipt transactions do not create GL transactions. The valuation of inventory and cost-of-goods sold is calculated from physical inventory counts and purchase and sales transactions.

Period costing is a method not commonly used for financial valuation. It requires manual entry of transactions and does not take advantage of automatic entries created by the system.

Using Costing Methods with Cost Sets

In standard MFG/PRO costing, only the standard cost method is used for GL purposes. If you are using the Cost Management module, you can use either the average or standard cost method for GL costs.

The current cost set is used to track the running average or the last cost in determining next year's standard cost or for providing a record of recent actual costs.

Costing methods that can be used with the current cost set are:

- Average. Whenever an item is received, the new average cost is calculated and stored in the cost set.
- Last. Each receipt sets the current cost to the last cost of that item. In the case of purchased items, this is the purchase or invoice price.
- None. Current costs are not maintained by the system; they must be maintained manually.

Cost Set Categories

Five categories of costs are tracked for each cost set. These categories maintain cost for both this-level and lower-level costs. *This-level cost* is the cost added at the current stage of manufacturing or the cost of a purchased item. *Lower-level cost* represents cost added at prior stages of manufacturing.

A purchased item has this-level material and, optionally, material overhead cost, but no lower-level costs. A manufactured item has this-level labor, subcontract, burden, and overhead cost, but normally no material cost. A manufactured item has lower-level material cost for components and any subassemblies, and possibly lower-level labor, burden, subcontract, and overhead from the cost of making any lower-level subassemblies.

The various cost set categories are the following:

- Material. The total cost of purchased material. For purchased items, material costs are maintained for each item or item and site. For manufactured items, lower-level material costs are maintained by rolling up the product structure costs.
- Labor. The cost of direct labor applied to an item. Labor cost is calculated from labor rates, setup time, and run hours at each operation of a product's routing.
- Burden. The total variable overhead cost for an item, based on burden rates for labor and/or machines.

- **Overhead.** The fixed overhead cost, if any, for an item. For purchased items, overhead can be assigned to cover the expense of purchase operations, which can then be recovered as fixed overhead on all purchased items based on a percentage of their cost. Overhead cost can be maintained for each item, or by assigning it as a percentage of other cost categories.
- **Subcontract.** The cost of outside processing as entered in the routing operation for manufactured items.

Setting Up Product Costing

Figure 9.2 shows steps for setting up product costing. Each step is discussed in detail in the following sections.

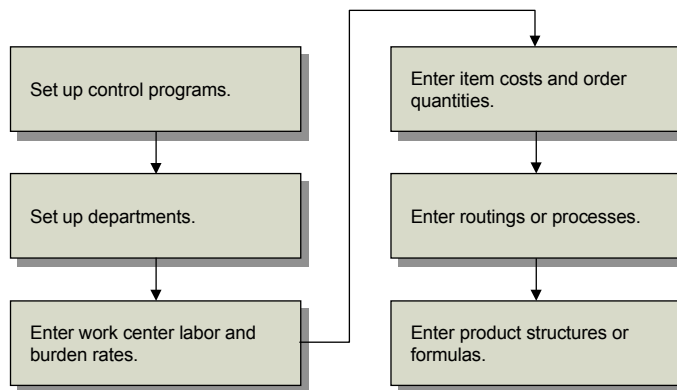


Fig. 9.2
Setting Up Product
Costing

Defining Inventory Control Settings

Use Inventory Control (3.24) to specify how current costs are maintained.

Fig. 9.3
Inventory Control
(3.24)

The screenshot shows the 'Inventory Control' window with the following settings:

- Issue Days:** 7
- Item Tolerances:**

Class	Tolerance	Class	Tolerance
Class A: 3.00%	300.00	Class C: 5.00%	500.00
Class B: 4.00%	400.00	All Others: 5.00%	500.00
- Accounting:**
 - Current Cost (AVG/LAST/NONE): last
 - Sum LL Costs Into Matl Cost: ☐
 - Current Cost from AP: ☒
 - Create GL Transactions: ☒
 - Transfer Clearing Acct: 5030
 - Summarized Journal: ☐
 - Journal Reference Method: 0
 - Mirror Accounting: ☐
 - Default Site: 10000

Current Cost. Current material, labor, and burden costs are maintained as either Average, Last, or None. Because this setting is database wide, all current costs for any site in the database are maintained using the selected costing method.

Sum LL Costs Into Material Cost. Cost-of-goods sold amounts are usually maintained separately for each cost component—material, labor, burden, overhead, and subcontract. However, some companies consider the material cost for an end item to include all costs associated with purchasing or manufacturing components, as well as any direct material costs. To report all lower-level costs as material costs (as if all components were bought from outside suppliers), set this field to Yes.

Current Cost from AP. To update the current material cost at vouchering, set this field to Yes. When the invoice price differs from the purchase order price, the current material cost is adjusted.

Create GL Transactions. Indicate whether GL transactions are to be created by inventory activities. This field does not impact memo-item transactions.

Yes: All inventory issues, receipts, count adjustments, and transfers create GL transactions reflecting the change in inventory asset balances. In addition, any transactions that affect work-in-process inventory create GL transactions, including work order issues and receipts.

No: GL transactions are not created by any of these activities.

Companies using perpetual inventory accounting should set this field to Yes, taking advantage of the automatic journal transactions created by the system.

Companies using periodic inventory accounting normally set this to No. Entries are made manually.

Transfer Clearing Account. Specify the GL account code used to track transfers within the same company (entity). This field cannot be blank when multiple sites are defined. In a single-site environment, the Purchases account is used when this field is blank.

Mirror Accounting. If set to Yes, mirror accounts are used. Whenever an inventory transaction is processed, the system checks to see if mirror accounts are set up in Mirror Table Maintenance (3.20). If they are, the mirror GL transaction is created automatically. If set to No, mirror accounts are not used.

Tip
Mirror accounting is used in some European countries.

Defining Work Order Control Settings

If you are reporting labor in the Shop Floor Control module, use Work Order Control (16.24) to specify when variances in labor and burden rate and usage are posted. You can choose to calculate and post variances only when a work order is received, or calculate and post variances whenever shop floor labor feedback transactions are entered.

▶ See *User Guide Volume 3: Manufacturing* for more information on work orders.

Post variances at SFC. Indicate when labor and burden rate and usage variances are calculated and posted.

No: Variances are calculated and posted only when the work order is received. This reduces the number of variance transactions posted to the general ledger, particularly if many shop floor labor transactions are processed before material receipts are recorded.

Yes: Labor and burden rate and usage variances are posted whenever shop floor labor feedback transactions are entered.

Setting Up Departments

▶ See *User Guide Volume 3: Manufacturing* for more information on departments.

A department groups similar work centers. Set up departments so that you can review labor capacity and costing in a meaningful way.

Use Department Maintenance (14.1) to define departments and set up labor capacity and GL accounts for each department. Labor, burden, and cost of production are posted to the GL by department. Capacity Resource Planning (CRP) uses labor capacity to calculate capacity and load by department.

Setting Up Work Centers

▶ See *User Guide Volume 3: Manufacturing* for more information on work centers.

A work center identifies a group of resources (people, machines, production lines, and so on) that are capable of doing the same processes. Labor and burden rates are specified at the work-center level.

Use Work Center Maintenance (14.5) to define labor and burden rates. The fields that are of particular importance from a costing perspective are the following:

Machines/Op. Used in calculating burden costs. This value indicates the number of machines at this work center that can work at the same time to process a given operation. The setup labor rate is multiplied by this number to determine the machine burden from setup cost.

Machine Burden Rate. Used in calculating burden costs. This is the burden rate per hour applicable to machine run time and setup at this work center. Standard machine burden cost at the operation is calculated as:

*(Setup Time / Order Quantity * Routing Machines per Op + Run Time) * Work Center Machine Burden Rate*

Setup Rate. The standard hourly labor rate for personnel who perform setup functions in the work center. Used in calculating labor and labor burden.

Labor Rate. The standard hourly labor rate for personnel who run operations at this work center. Used in calculating labor and labor burden.

Labor Burden Rate or Percentage. The labor burden rate or percentage per hour applicable to both setup and run time at this work center. Used in calculating labor burden.

Defining Item Costs

Use Item Cost Maintenance (1.4.9) to enter cost information for purchased material directly into either the current or GL cost sets. Use Item-Site Cost Maintenance (1.4.18) if you have multiple sites. You can also enter material, labor, and burden costs for manufactured items if product structures or routings have not been entered.

▶ See *User Guide Volume 6: Master Data* for more information on items and sites.

You can use Item Master Maintenance (1.4.1) to enter all data pertaining to an item, including cost, inventory, shipping, and item planning data.

Note Other than overhead cost, you should not enter costs manually for manufactured items, only purchased items. If you do enter costs for manufactured items, you cannot use the roll-up functions to update these costs.

The site associated with an item in Item Master Maintenance (1.4.1) is considered the primary site. However, you can create different cost records for any site. Use the item-site programs to enter and maintain data for items at sites other than the primary site.

If you are using the Cost Management module, one site can be used as the source for GL costs of items held in inventory at multiple sites. This eliminates the need to set up duplicate GL cost records for the same items at all sites. When GL costs are updated at the source site, the system automatically updates costs at the linked sites.

▶ See “Cost Linking” on page 275.

Entering Item Costs

- 1 In Item Cost Maintenance (1.4.9), Item-Site Cost Maintenance (1.4.18), or Item Master Maintenance (1.4.1), enter the item number and move through the screens until you reach the Current Cost Data frame.

It is recommended that you initially enter costs in the current cost set so that the GL is not affected. If you change the GL cost set and have inventory on hand, inventory is revalued in the GL.

2 Enter purchased material costs in the this-level field of the current cost set.

3 Enter the overhead cost, if any, for the item.

Overhead can be assigned to cover the expense of purchase operations, which can then be recovered as fixed overhead on all purchased items based on a percentage of their cost.

▶ See “Updating Burden and Overhead Costs” on page 260.

Overhead cost can be maintained manually for each item, or by assigning it as a percentage of other cost categories using Item Overhead Cost Update (1.4.21).

Effect of Purchase/Manufacture Code on Cost

If the Purchase/Manufacture code for a manufactured item is incorrectly set to P (Purchased) or D (DRP), all lower-level costs for material, labor, burden, overhead, and subcontract are set to zero. This occurs even when routing and product-structure cost rollups were performed. Additionally, this-level costs for labor and burden are zeroed out.

In order to roll up costs correctly for manufactured items, the Purchase/Manufacture code must be set to M (Manufactured), L (Repetitive line), W (Flow), or R (Routable).

Effect of Phantoms

▶ See *User Guide Volume 3: Manufacturing* for more information on phantoms.

Phantom items are used in manufacturing to define items that are made and consumed in the production process without being kept in inventory. For example, a wire harness that exists only briefly on the assembly line as a separate subassembly is defined as a phantom. Phantoms can be defined as local, global, or both.

Global phantoms identify an item as a phantom on all bills of material. You can perform routing cost rollups on global phantom items. Only lower-level labor, burden, and subcontract costs of a global phantom item are included in the parent item’s cost when the product structure cost rollup is performed.

In some cases, a global phantom may also require the issue of work orders to build the item as a stockable item, such as a service part. If you need to build and stock a phantom item, the routing and product structure cost rollups calculate this-level costs correctly.

Local phantoms are treated like phantoms only in specific product structures. This-level labor and overhead costs for local phantoms roll up into the parent item's cost, causing manufacturing variances. The use of local phantoms is discouraged for this reason.

Effect of Item Planning Data

Material costs for product structures depend both on the quantity of each component used and on the scrap percentage and cumulative yield for the parent assembly. Products may have less than 100% yield through operation processing. Item planning data can be set up to recognize expected yield. If components are scrapped during the assembly process, expected loss can be recognized by the component scrap factor in Product Structure Maintenance (13.5).

The material portion of the Product Structure Cost Report (13.12.4) shows the impact of the component cost, scrap percentage, and yield.

Example Standard purchase cost for an item is \$.05, but its 5% scrap percentage results in a total component cost of \$.05555556 ($$.05 / [100\% - 5\%]$ or $.05/.95$). Similarly, the sum of all components in a product structure (1.38) is divided by the inspection yield percentage (80%) to arrive at the total material cost (1.725).

Maintaining Item Costs

The system automatically posts labor, burden, and subcontract costs to this-level and lower-level item cost fields when you run Routing Cost Roll-Up (14.13.13) and Product Structure Cost Roll-Up (13.12.13). The system also rolls up lower-level material cost, assuming that the current or standard purchase price for an item has been added as a this-level material cost.

▶ See *User Guide Volume 3: Manufacturing* for more information on routings.

Defining Routings

Routings are used to define the steps that a product passes through during the manufacturing process. A routing consists of one or more operations—steps needed to manufacture an item.

For costing purposes, routings provide the following information:

- Manufacturing setup and run times per operation
- Machines per operation
- Operation yield percent or yield at each operation
- Subcontract cost, if any, per unit

Each routing operation is associated with a particular work center, so it is not necessary to enter labor or burden rates for each operation.

Standard Operations

When routings share one or more operations that are essentially the same, you can create template steps called standard operations. The standard operation feature is a particularly useful tool for manufacturers. In many companies—even those that make to order—the same operations occur in more than one routing.

Use Standard Operation Maintenance (14.9) to set up standard operations. When you create a new routing operation, automatically copy the standard operation data to the routing by referencing the standard operation code. If you edit the standard information, the changes apply only to the new routing, not to the standard operation you copied.

When a standard operation is referenced on a routing, the routing cost rollup uses the standard operation data when calculating costs.

Routings and Processes

You can use three programs to create routings or processes.

- Typically, you define routings in Routing Maintenance (14.13.1) where production run time is expressed as the average time required to manufacture a single unit.

- Use Routing Maintenance (Rate Based) (14.13.2) in a high-volume production environment where run time is expressed in terms of an hourly production rate.
- Use Process Definition Maintenance (15.13) when run time is expressed as the average time to process an entire batch.

Subcontract Cost in Routings

Subcontract costs are entered in the routing at the subcontract step or operation. The cost is entered as the standard charge per unit from your subcontract supplier for performing the work. You can have multiple subcontract operations in a routing.

Actual management of subcontract processing requires that the work order be linked to a subcontract purchase order (PO) if you want to have charges applied to specific work orders. When the PO is received, the Inventory accounts are not affected. Instead, the standard subcontract cost is debited to Work in Process (WIP), and the PO amount is credited to PO Receipts. Any variance between the standard subcontract cost and the PO amount is calculated as a subcontract variance and posted accordingly.

If you open a subcontract PO and do not link it to a specific work order, then the subcontract cost is debited to Cost of Production instead of WIP.

Defining Product Structures or Formulas

Product structures attach component items to the parent item and define the quantity to use. The information in a product structure is used to calculate lower-level costs.

For costing purposes, product structures provide the following information:

- Component items and the quantity required to make one of the parent item
- Start and end effective dates for component items
- Structure types defining component/parent relationships
- Component scrap factor
- The operation number in the routing or process where the component is used

▶ See *User Guide Volume 3: Manufacturing* for more information on product structures.

Use Product Structure Maintenance (13.5) to identify raw materials or subassemblies required to produce a finished product or subassembly. Use Formula Maintenance (15.5) to identify ingredients or intermediates required to produce a finished product or intermediate.

Effective Dates

When components must be added or deleted from a product structure, you can manage this with start and end effective dates. You can specify when an old component will no longer be used in a product and when a new component is added. Product Structure Cost Roll-Up (13.12.13) can be performed as of a specific effective date, and most cost reports can be run by effective date as well.

Structure Types

Product structure relationships normally have a blank structure code and are used by manufacturing planning and control and product costing.

See “Effect of Phantoms” on page 248.

An X is a local phantom code and adds this-level cost to the parent item, as well as the component’s cost. A global phantom adds only lower-level costs to the parent.

Table 9.3 lists structure type codes that exclude the cost of a component from the product structure’s cost rollup.

Table 9.3
Non-Costed
Structure Types

Code	Description
A	Alternate. Set by the system as an identifier for an alternate structure.
D	Document. Records miscellaneous expense items or documents associated with the product structure.
O	Option. An optional component. Normally defined using Configured Structure Maintenance (8.1), options may also be entered on planning bills.
P	Plan. Planning bill used for multilevel master scheduling.

Scrap Factor

The scrap percentage is used to indicate the expected additional quantity of a component required to produce an item. Scrap is specified by component and is costed as:

$$\text{Component Cost} / (100\% - \text{Scrap}\%) * \text{Quantity Per}$$

Use scrap percentage carefully, especially on discrete items, since both Material Requirements Planning (MRP) and inventory backflush calculations use it. If you specify a 2% scrap rate on a discrete item—for example, an engine—and you have a requirement for 80 engines, the system calculates the demand quantity to be 81.6. To prevent decimal order quantities for discrete items, enter an order multiple in Item Planning Maintenance (1.4.7). Also note that component requirement and issue quantities are inflated when a scrap percentage is used.

Operation

You must specify an operation for components if you are using repetitive manufacturing or want to use component yield calculations.

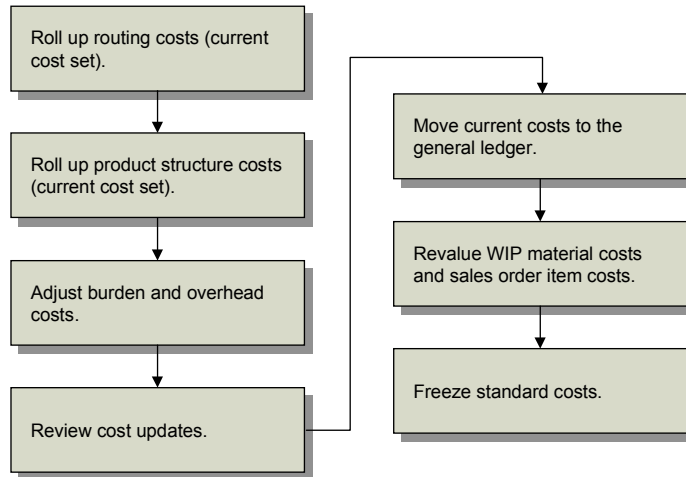
For repetitive environments, components are automatically backflushed (issued) when quantities for the parent item are reported in Advanced Repetitive or Repetitive reporting transactions. If an operation is not defined or does not match a defined operation, the component is not backflushed.

Entering an operation enables component yield cost calculations. Both Product Structure Cost Roll-Up (13.12.13) and Routing Cost Roll-Up (14.13.13) use this field when calculating material costs. If the operation yield is specified as less than 100% in an item's routing, then material costs are increased to reflect yield loss. If an operation is not defined, the system assumes components are issued at the first operation.

Product Costing Process

After you have defined item data, routings, and product structures, you can complete the product costing process. Figure 9.4 shows the steps for rolling up costs in the current cost set and using those costs to update the GL cost set.

Fig. 9.4
Product Costing
Work Flow



You should roll up costs, make any adjustments, and review the updated costs in the current cost set. This lets you validate the updated costs prior to committing them as new GL standards.

Each step in the costing process is discussed in detail in the following sections.

1 Run Routing Cost Roll-Up (14.13.13), which:

- Totals the labor/machine hours and cost, subcontract cost, and burden cost
- Computes the cumulative operation yield for a routing or routings
- Posts the cost data to this-level labor and burden fields for the specified cost set

- 2 Run Product Structure Cost Roll-Up (13.12.13), which:
 - Obtains purchased material and this-level labor and burden costs from the item master.
 - Performs the level-by-level computation of costs for the five cost set categories. Cumulative lower-level costs are posted for all cost categories at each assembly level.
- 3 Run Item Burden Cost Update (1.4.20) to adjust item burden costs. Run Item Overhead Cost Update (1.4.21) to adjust item overhead costs.
- 4 Use Product Structure Cost Report (13.12.4) to review product structure costs to identify any abnormalities such as product structure or routing errors. The report shows costs for an item and its components by structure level.
- 5 Use Cost Set Move to GL Set (1.4.22) to copy the approved current cost set to the GL cost set.
- 6 Once standard GL costs are established, use Cost Roll-Up Freeze/Unfreeze (13.12.1) to prevent the system from recalculating the costs the next time routing or product structures rollups are performed.
- 7 Use WIP Material Cost Revaluation (16.22) to revalue work-in-process material costs. Use Sales Order Cost Revaluation (7.1.12) to revalue line items in sales orders.

Rolling Up Routing Costs

Routing Cost Roll-Up (14.13.13) calculates the manufacturing costs, lead times, and total yield for one or more items at a particular site. Costs are calculated for each operation after accessing the item master, work center, routing, and standard operation data.

You can roll up either current or GL costs. The default is to roll up current costs. Although you can roll up GL costs when they change, it is safer to roll up current costs and then copy them to the GL.

Note If you are using cost linking in the Cost Management module, you must roll up costs in a GL cost set that uses the standard costing method.

♦ See “Effect of Linking on Routing Cost Rollups” on page 282.

Expected yield losses can be factored into cost calculations. The system computes the cumulative yield percentage based on multiplying the operation yields for all operations. This value is posted to the item master and is used for material planning purposes. For example, yield percentages for a two-operation routing are both 90%, so the cumulative yield percent posted to the Yield% field in the item master is 81.00% ($.90 * .90$).

Note Only one field for run time exists on the routing. You cannot divide run time into machine run time and labor run time. For burden calculations, the machine and the labor are both assumed to be in use for the entire run time.

Recalculate manufacturing costs whenever work center rates, routings, or processes change.

Other important fields in Routing Cost Roll-Up (14.13.13) are:

As of Date. Enter an effective date. Roll-up calculations only consider operations that are effective on the specified date. You can enter a question mark (?) to have the system use the current date. This lets you submit the selection criteria once and then run the same batch whenever a new cost rollup is required. Any time the batch is submitted, the system sets this field to the date the batch is run.

Roll-Up Labor Time, Setup Time, and Lead Time. Often, you should set these fields to No so that the manufacturing lead time entered in the item planning data is not overwritten. This should be discussed with the planners to determine how these fields should be set. The default is Yes.

Roll-Up Item Yield. When set to Yes, the system calculates yield based on operation yield. This value is posted to the item master and is used for material planning purposes. The order quantity planned is increased to cover the expected losses, which requires more components and production time.

Include Yield in Cost. If you set the Roll-Up Item Yield field to Yes, the operation yield can be calculated into the costs. Set Include Yield in Cost to Yes to include operation yield in the cost process or No to exclude it.

Roll-Up Labor, Burden, and Subcontract Cost. This-level costs can be rolled up for individual elements or for all elements—labor, burden, and subcontract. Normally, set these fields to Yes.

Update Items Without Routings. This field determines whether cost calculations include only those items with routings, or all items. Setting this field to Yes lets you clear costs associated with obsolete routings. For example, your company decides to stop making an item and acquire it from another source. Simply deleting the routing does not clear out all of the manufacturing costs. To reset those costs to zero, set this field to Yes and run the routing cost rollup. If this item is a component, also run the product structure cost rollup.

Update Items At This Site Only. You can include only those items that exist at the specified site in the cost rollup, or create cost details at the specified site for all items in the item number range regardless of whether the item is defined at the site.

Routing Cost Calculations

- Labor cost per operation

The total labor cost is the combined cost of setting up the operation and running it. Since setup time applies to the whole operation rather than per unit, setup time is divided by the item order quantity, then multiplied by the setup rate.

*Labor Cost = (Setup Hrs / Order Quantity * WC Setup Rate) + (Run Hrs per Unit * WC Labor Rate) / Item Yield%*

- Labor burden cost per operation

Burden costs apply to both setup and run time. Labor burden is calculated as a rate per labor hour and/or a percentage of total labor. Labor burden percent is most commonly used in a labor-intensive environment. Labor burden rates are commonly used in a high-volume production environment. Both types of burden can be applied—as a rate per hour and/or as a percentage of labor cost.

*Labor Burden Rate = [(Setup Hrs / Order Quantity + Run Hrs) * WC Labor Burden Rate] / Item Yield%*

*Labor Burden Percent = [(Setup Hrs / Order Quantity * WC Setup Rate) + (Run Hrs * WC Labor Rate) * WC Labor Burden%] / Item Yield%*

- Machine burden cost per operation

This is calculated based on the number of hours the machine is in use—both while it is being set up and while products are being run.

*Machine Burden Cost = (Setup Hrs / Order Quantity + Run Hrs) * Machines per Operation * Machine Burden Rate / Item Yield%*

- This-level labor and burden cost

Labor and burden costs for each operation are simply added.

This Level Labor = Op 10 Labor + Op 20 Labor + ...

This Level Burden = Op 10 Burden + Op 20 Burden + ...

Rolling Up Product Structure Costs

Use Product Structure Cost Roll-Up (13.12.13) to update the costs of parent items based on the costs of their lower-level components. Each manufactured item has a standard product structure, formula, and/or co-product/by-product structure associated with it that describes the components or base process required to make the item.

Components have information for the quantity required, expected scrap percentage, and the operation where they are required. Purchased items have material and overhead costs. Manufactured items also have labor, burden, and subcontract costs. Product Structure Cost Roll-Up uses these costs to calculate total cost by item, and lower-level run and setup times.

Tip

The system does not let you roll up an average GL cost set.

The system displays a warning if you try to roll up an average current cost set, but allows you to continue. Rolling up average costs interferes with the averaging process. Although you can roll up an average current cost set, consider copying it instead.

♦ See “Effect of Linking on Product Structure Cost Rollups” on page 281.

Note If you are using cost linking in the Cost Management module, you must roll up costs in a GL cost set that uses the standard costing method.

You can run a rollup for all items at a site, in one product line or all product lines, by item type or group, or for individual items.

Other important fields in Product Structure Cost Roll-Up (13.12.13) are:

As of Date. The effective date is used to select parent/component relationships to update. Parent/component relationships are defined as effective over a period of time. Effective dates phase in engineering changes and maintain product structure history online. This lets you make changes to a product structure effective in the future, and then evaluate the cost effect of that change.

You can enter a question mark (?) to have the system use the current date. This lets you submit the selection criteria once and then run the same batch whenever a new cost rollup is required. Any time the batch is submitted, the system sets this field to the date the batch is run.

Low Level Material, Labor, Burden, Overhead, and Subcontract Cost. Set these fields to Yes to include lower-level costs in the cost rollup. Total cost includes all this-level and lower-level costs for an item.

Low Level Labor Time and Setup Time. Set these fields to Yes to include lower-level run times for manufactured items (not including global or local phantoms) in the cost rollup.

Print Audit Trail. A printed audit trail should normally be requested and filed. The audit trail prints a complete list of all changes made and can be used for reference should problems arise. When set to No, the system rolls up component costs, but does not produce a report of the actions taken.

Set Cost Update Field For All/Changed Only. You can update the costs for all items or only those items with cost changes. Setting this field to Changed Only provides a better audit trail of dates when costs change.

Include Yield%. Yield percentages from Routing Maintenance (14.13.1) can be used to calculate component costs. If set to Yes, component costs are adjusted to account for any yield percentage. This adjustment can be upwards (yield is greater than 100%) or downwards (yield is less than 100%).

◆ See “Cost Simulation” on page 271.

Tip
Roll up a copy of the current cost set if you are using the average cost method.

Since you can use Product Structure Cost Roll-Up with simulated cost sets, you can set the options to provide only the output you require.

Example You may want to determine the impact of changes in material cost only. Set the fields for other cost set categories to No so that the rollup only considers material cost changes.

Ideally, you only run a rollup when you know that material, labor, burden, overhead, or subcontract costs have changed. However, this is often difficult to determine. Consider running global rollups periodically for the current cost set to ensure that the top-level item costs are truly current. This is especially important if you have selected the average cost or last cost options in Inventory Control (3.24) or in Cost Set Maintenance (30.1) in the Cost Management module.

Updating Burden and Overhead Costs

You can calculate overhead and burden as a percentage of lower-level costs. This is useful for electronics manufacturers and other companies who calculate overhead and burden based on material cost rather than labor cost. Use the following programs to update burden and overhead:

- Use Item Burden Cost Update (1.4.20) to override item burden costs calculated in Routing Cost Roll-Up (14.13.13). You can change the burden cost for individual items, groups of items, or all items.
- Use Item Overhead Cost Update (1.4.21) to generate overhead allocations as a percentage of other costs.

You can test for the effect of a change in burden or overhead by simulating it. Do this by setting the Update field to No. The system calculates cost data using the specified parameters and prints a report, but does not actually update any cost fields.

Important Take care when making any global changes to ensure that only changes you want are made. Some items may have burden applied differently.

Calculate overhead and burden in three steps:

- 1 Roll up product structure costs to ensure that you calculate overhead from accurate lower-level costs.
- 2 Calculate this-level item overhead costs for the lower-level items by using Item Overhead Cost Update (1.4.21), or calculate this-level item burden costs by using Item Burden Cost Update (1.4.20).
- 3 Roll up the product structure costs again to add the calculated overhead to the lower-level costs.

See “Rolling Up Product Structure Costs” on page 258.

The following example calculates overhead for a parent item with several components.

Example The product structure for item A, illustrated in Figure 9.5, consists of lower-level items B and C. The lower-level material costs originate in the components for B and C—items D, E, F, and G. This-level overhead is 150% of lower-level material cost. The lower-level material costs are:

- Item D = 1.00
- Item E = 2.00
- Item F = 3.00
- Item G = 4.00

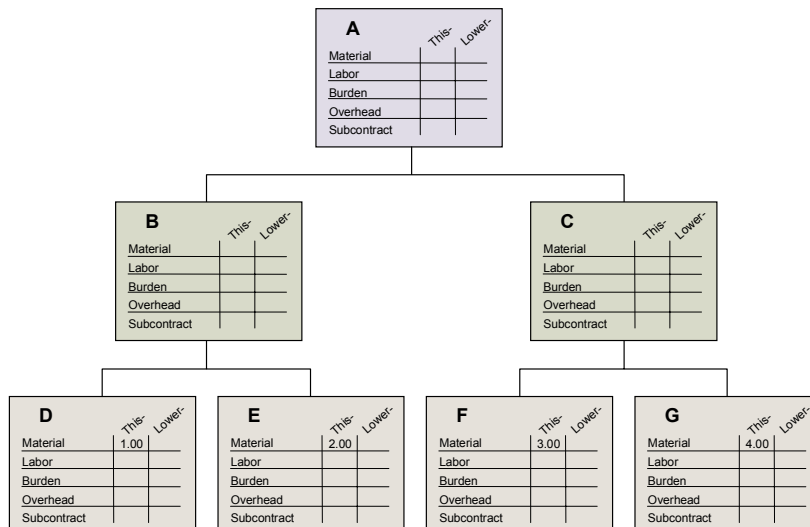
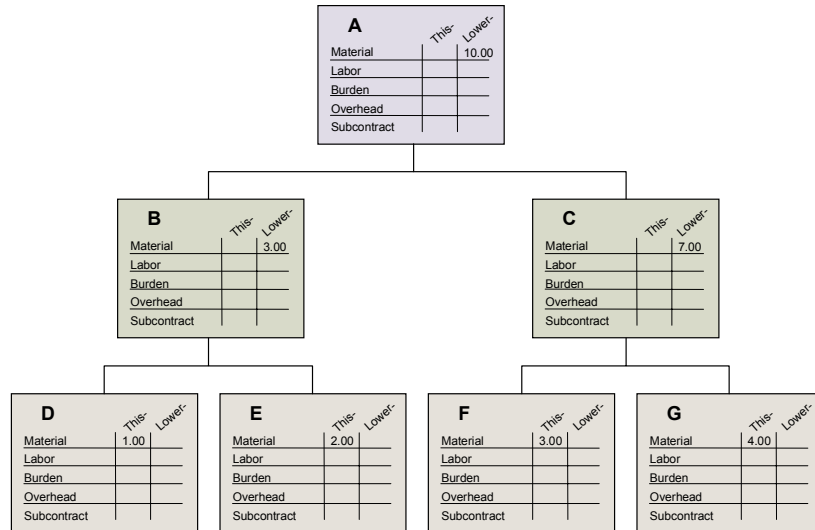


Fig. 9.5
Product Structure
for A

The first product structure cost rollup for item A calculates lower-level material costs of 3.00 for item B, 7.00 for item C, and 10.00 for item A.

Fig. 9.6
Results of First
Product Structure
Cost Rollup



In Item Overhead Cost Update (1.4.21), the material percentage is set to 150% and the other percentages to zero. Use This/Lower Level Costs is set to Lower Level.

Fig. 9.7
Item Overhead Cost
Update (1.4.21)

Item Overhead Cost Update

Prod Line: To:

Item Number: To:

Item Type: To:

Pur/Mfg:

Site:

Cost Set: Cost Element:

Material: 0.00 %

Labor: 0.00 %

Burden: 0.00 %

Overhead: 100.00 %

Subcontract: 0.00 %

Add To/Replace Existing Cost: Replace

Use This/Lower Level Costs: Lower Level

Update:

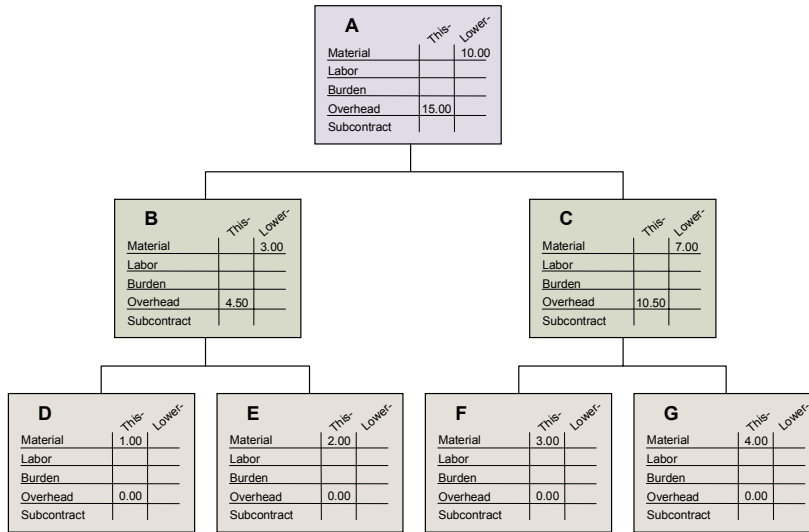
Output:

Batch ID:

Set to Lower Level

This calculation generates overhead costs of 4.50 (150% of 3.00) for item B, 10.50 (150% of 7.00) for item C, and 15.00 (150% of 10.00) for item A. Items D, E, F, and G have overhead costs of zero.

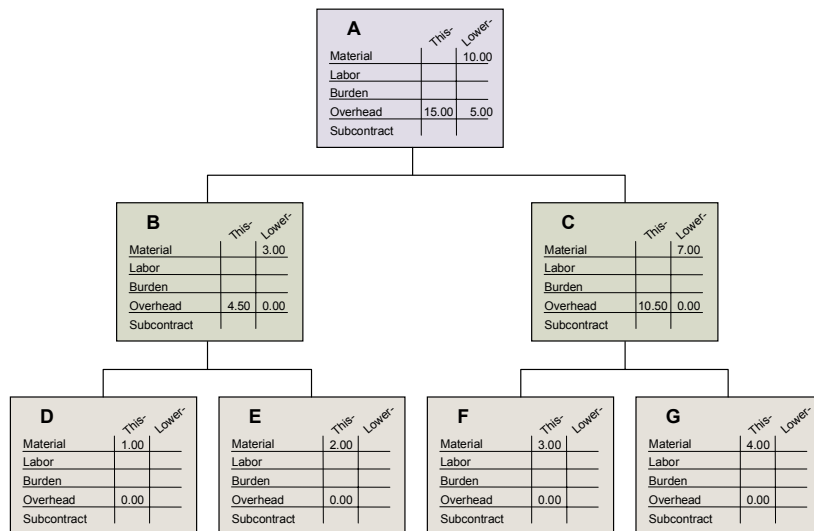
Fig. 9.8
Item Overhead Cost
Calculation



The second product structure cost rollup adds the calculated this-level overhead costs for items D and E to B, then the costs of F and G to C, then the costs of B and C to A.

Note You cannot calculate this-level costs for a specific cost element based on both this-level and lower-level cost elements in the same calculation. Calculate this-level costs first for the lowest level, then the next highest level, and so on. Since you must do lower-level and this-level cost updates separately, check each level before going to the next.

Fig. 9.9
Results of Second
Product Structure
Cost Rollup



Processing Considerations

Before running the calculation, consider the following:

- At which level will you calculate overhead? The lowest level parent item? The highest level parent item? The planning level? This decision varies from company to company.

It is important *not* to base costs indirectly on themselves. The previous example illustrates why you have to be careful. Item A has a lower-level overhead of 15.00 (4.50 + 10.50). However, Item Overhead Cost Update also calculated this-level overhead of 15.00 (150% of 10.00, the this-level material cost).

When you run the calculation for item A, you would calculate an overhead cost that is too high, unless you want the overhead for A to be 300% of 10.00. In a product structure with many levels, the inaccuracies would be even more striking. To prevent this, calculate costs from only one level.

- Which overhead percentage will you use for each level?

In the item burden and overhead cost update functions, the default percentage is 100%. When calculating lower-level costs, typically change this to 0%.

Moving Current Costs to the General Ledger

At least two cost sets are maintained for each item or item and site:

- The current cost set reflects today's cost for an item.
- The GL cost set is used for all general ledger transactions and inventory valuation for an item.

Update the current cost set during cost rollups first, verify the changes, and then copy the updated costs to the GL cost set.

Moving current costs can have significant effects on the general ledger. All changes to GL costs create a GL cost adjustment, updating the value of inventory.

Use Current Cost Set Move to GL Set (1.4.22) to copy data between the current cost set and the GL cost set. You can move the costs of all items, individual items, or groups of items. Optionally, you can specify a range of percentage difference in cost for which copying is allowed. You can also inhibit copying of one or more cost set categories.

This function is most commonly used only at regular, widely spaced intervals. At the beginning of the year, many companies set current and GL costs equal.

Tip
The program actually copies data rather than moving it.

Fig. 9.10
Current Cost Set
Move to GL Set
(1.4.22)

Percent Change Allowed. Enter a percentage range of allowable cost differences between updated current costs and the previous GL costs. Only updated costs within this range are moved to the GL. To accept

the movement of all costs, regardless of the difference from the previous GL costs, enter a question mark in this field and in the corresponding To field. To review cost changes without updating GL costs, enter zero in this field.

Copy Material Cost, Labor Cost, Burden Cost, Overhead Cost, and Subcontract Cost. Normally, set all fields to Yes. Each cost category is copied from the current cost set to the GL cost set, provided that the difference between the two total costs does not exceed the range specified in Percent Change Allowed.

Freezing GL Costs

After GL costs are established, you can prevent those costs from being recalculated the next time costs are rolled up. For example, you may want to set standard costs or create a reference cost set that does not change over a specific period. Any cost set can be frozen.

Freezing standard costs provides fiscal-year control over those costs. You can freeze approved or verified standard costs at the start of your fiscal year, and then track cost changes in variance accounts through the year. At the close of the fiscal year, copy the current cost set to the standard set.

Freezing costs also improves processing speed during cost roll-up calculations. After item costs are calculated and frozen, all subsequent cost roll-up calculations simply use the frozen cost.

Warning Freezing costs only prevents the system from recalculating costs. It does not prevent manual changes in item cost data maintenance functions, cost set copy functions, or operation cost calculation.

Run Cost Roll-Up Freeze/Unfreeze (13.12.1) to mark item costs for a cost set and site as frozen. You can freeze all items or groups of items. You can also selectively unfreeze items to allow cost updates only for the new or revised items.

Revaluing Costs

When costs change, sales order item costs and work-in-process (WIP) material costs are not revalued automatically.

Revalue Sales Order Costs

Use Sales Order Cost Revaluation (7.1.12) to change the sales order line-item cost when the prevailing GL costs are changed. Gross margin reports then reflect the proper difference between GL cost and selling price.

Since the system costs items for COGS purposes at the time of shipment, post any unposted invoices before running the cost revaluation program.

Revalue WIP Material Costs

Use WIP Material Cost Revaluation (16.22) to change the cost of material in work-in-process (WIP) when the prevailing GL costs are changed. You can control the revalue process by a range of accounts, sub-accounts, cost centers, projects, work orders, or item numbers. Specify the date for the GL transactions created, or use the default system date.

The output from the revaluation program is a two-part report. The first part shows the before and after data for all work order components regardless of whether cost changes were made. Part two shows the detailed GL transactions resulting from the revaluation.

Bill of material data might be needed if component quantity changed after the work order was created. Such changes create a usage variance during Work Order Accounting Close (16.21). The rate variance is computed as follows:

$$(NewFrozenMaterialCost - OldFrozenMaterialCost) * Quantity\ in\ WIP$$

Cost Management

You can use Cost Management functions to create and maintain an unlimited number of cost sets. Use additional cost sets to:

- Create and maintain different GL and current cost sets for each site and use different GL and current costing methods. Only one GL and current cost set can be active for each site.
- Establish cost planning sets to be automatically activated at specified dates to recognize expected material or other cost changes.
- Develop simulated item costs for planning purposes to evaluate the effects of differing scenarios, such as material price inflation, batch sizing, and labor or burden rate changes.
- Retain inactive cost sets for historical comparative purposes.
- Maintain frozen standard costs. Unlike GL costs, frozen standard costs do not change during the accounting fiscal year. Frozen costs and GL costs are identical at the beginning of the accounting year. The original standard costs at the start of a fiscal period can be retained as an historical cost set.

Cost Management also lets you create additional cost elements in the five cost categories—material, labor, burden, overhead, and subcontract. These provide additional reporting detail.

Creating Multiple Cost Sets

Multiple sets of costs can be maintained for any item, each identified by a cost set code. Data associated with a cost set code controls how these costs are updated and used.

Use Cost Set Maintenance (30.1) to set up GL, current, and simulation cost sets and to specify the costing method for each set.

Cost Set Type. Each cost set must be assigned one of three type codes, indicating its purpose.

GL: Cost sets of type GL, when associated with sites using Cost Set to Site Assignment (30.9), are used with GL transactions to value inventory and determine the cost of sales.

Current: Current cost sets are typically system maintained and used for reporting purposes.

Simulated: Simulated cost sets are for reporting only and are typically used for planning, developing new standards, or simulating the effects of a cost change. Simulated costs cannot be system maintained. You must maintain them manually using functions on the Cost Simulation Menu (30.13).

Costing Method. A costing method must be assigned to each cost set indicating how costs are defined and maintained:

Average: Costs are updated during item receipts and other inventory-related activities using a simple weighted-average calculation.

▶ See “Cost Sets and Methods” on page 237.

Standard: Costs are not updated automatically. Updates are performed manually and typically no more than a few times a year.

Last: Each item’s cost is equal to the unit cost from the last receipt or inventory update.

None: Costs are not updated automatically. They are maintained manually as needed.

The cost set type determines which costing methods can be used:

- For current costs, the cost method can be Average, Last, or None.
- For GL costs, the cost method must be Average or Standard.
- For simulated costs, the cost method defaults to None and cannot be updated.

After you have defined cost sets, you can assign them to separate sites using Cost Set to Site Assignment (30.9).

Important Only one active GL and one active current cost set per site are permitted. The system automatically updates average or last costs only for these two cost sets.

You cannot delete a cost set using Cost Set Maintenance (30.1), even if it was added by mistake. You must use Cost Set Delete (30.23) to delete all other cost information completely.

Multi-Element Costing

▶ See “Cost Set Categories” on page 242.

Costs for an item are always separated into five categories—material, labor, burden, overhead, and subcontract. An unlimited number of cost elements can be created as subsets of these categories. Item costs can then be assigned to these cost elements.

The use of cost elements is optional. You only need to introduce cost elements when you want additional reporting detail. For example, a company may want to split material cost into foreign and domestic content. Another company might want to split material costs for purchased items into purchase price and freight.

▶ See *User Guide Volume 6: Master Data* for details on logistics charges.

If you are using the Logistics Accounting module, you need to set up separate cost elements used for inbound logistics charge accruals. The cost elements must be in the Material or Overhead cost categories.

Create new cost elements for GL and current cost sets using Cost Element Maintenance (30.17.1).

Fig. 9.11
Cost Element
Maintenance
(30.17.1)

Element	Category	Description
Material	Material	Material
Labor	Labor	Labor
Burden	Burden	Burden
Overhead	Overhead	Overhead
Freight	Overhead	Freight
Subcontr	Subcontract	Subcontract

Element	Category	Description
Freight	Overhead	Freight

Every cost set starts out with five cost elements that match the cost categories. You can add others but you cannot delete these. Each of the cost elements you add must be associated with one of the five cost categories.

You can set up each current and GL cost set with its own set of cost elements, or each cost set can be set up the same. To use the same elements for all cost sets, enter the cost elements for one cost set, and then use Cost Element Copy (30.17.4) to copy them to the other cost sets. Additional elements can be added to these cost sets.

Entering Element Costs

After cost sets and elements have been created, you can enter costs. You can use Item-Element Cost Maintenance (30.17.5) to enter costs manually, or have the system calculate these costs based on other cost elements in the cost set.

Item-Element Cost Calculation (30.17.10) lets you calculate the value for a particular cost element as a percentage of one or more cost elements. For example, you can set up Freight as 10% of Domestic Material costs and 30% of Foreign Material costs. You can specify whether the system should calculate costs as a percentage of an item's this-level or lower-level costs.

The ability to calculate a particular cost element as a percentage of lower-level costs is especially important for companies that calculate fixed overhead as a percentage of total material costs.

Comparing Cost Sets

You can compare the active GL cost set with either simulated cost sets or historical GL cost sets. For example, you can compare Quarter 1/2000 with Quarter 1/2001. The system can retain an unlimited number of inactive cost sets and make comparisons among them, or between inactive and simulated cost sets. Use Comparative Cost Set Report (30.22) to compare cost sets.

Cost Simulation

Cost simulation functions let you set up different cost scenarios and test the impact of cost changes. Unlike the other cost rollup and update functions, cost simulation calculations look at an entirely different set of cost standards. You can set up different work center labor and burden

rates, different subcontract operation costs, and different item material and overhead costs. Simulation roll-up functions use these costs rather than the standards.

Note The Cost Simulation menu does not let you modify current or GL cost sets. It is used only for simulations. This lets you set up menu security so that many users can have access to the simulation functionality, while only a few have the ability to actually affect the GL or current cost sets.

1 Create a simulation cost set.

Use Cost Set Maintenance (30.1) to define a simulation cost set with a Cost Set Type of SIM.

2 Copy costs to the simulation set.

Use Cost Set Copy to Cost Set (30.3) to copy user-specified item cost data for each cost element into the simulation cost set. Enter a question mark (?) in Percent Change Allowed to disable the check for percentage difference between the two cost sets.

3 Copy routing and work center data.

Use Item/Routing to Simulation Copy (30.13.23) to copy work center rates for labor, burden, and subcontract cost from user-specified routings into the simulation cost set.

This program creates direct item costs for material, labor, burden, subcontract, and overhead. Use Cost Set Maintenance (30.1) to vary these costs by a positive or negative percentage.

4 Modify cost elements.

In the simulation process, you can split material or overhead into multiple elements. For example, divide purchase cost into two elements, material and shipping cost, so you can add and maintain amounts separately.

The cost of any sub-elements is added to existing direct material cost, so you first need to zero out any existing material cost. You can then use Simulation Cost Element Maintenance (30.13.1) to create the two new material elements. Enter costs for them with Simulation Item-Element Cost Maintenance (30.13.5).

5 Modify direct item costs.

Use Simul Item-Element Cost Update (30.13.8) to change item element or sub-element costs directly by a positive or negative percentage.

Example You identify TRANS as a sub-element of material cost. Examine the impact of a 10% increase in transportation cost by entering 10% in the Change field.

6 Modify work center rates.

Use Simul Work Center Rate Maintenance (30.13.13) to change labor, labor burden, or machine burden rates. You could, for example, evaluate the impact of a 15% increase in labor cost by multiplying the existing labor rate by 1.15 and entering that value for the labor cost element.

Tip

To examine the impact of improved efficiency for an operation, create an alternate routing with different standard hours rather than changing the labor rate.

7 Modify subcontract costs.

Use Simulation Subcontract Cost Maintenance (30.13.10) to change routing subcontract costs.

8 Roll up simulation costs.

Use Simulation Cost Rollup (30.13.18) to combine sub-elements before rolling up product structure costs.

9 Roll up simulation product structure costs.

Use Simulation Structure Cost Rollup (30.13.19) to roll up costs for the simulation cost set.

10 Review simulation cost set data.

You can perform this task several times depending on the number of changes you have made to costs and work center rates.

11 Copy work center and subcontract costs to your production database.

Use Simulation to WC/Routing Copy (30.13.22) to copy the work center and subcontract costs to the production database. Enter a question mark (?) in Percent Change Allowed to allow all changes.

The program copies the work center setup rate, labor rate, labor burden rate, machine burden rate, and labor burden percentage to user-specified work center records. It also copies subcontract costs to specified routings. Use Work Center Report (14.7) and Routing Cost Report (14.13.14) to verify that expected changes have been made.

12 Copy simulation costs to GL cost set.

Use Cost Set Copy to Cost Set (30.3) to copy the simulation data into the GL cost set. Review the data with Cost Set Report (30.21) or Item Cost Report (1.5.6). The Item Cost Report shows both the current and GL cost data for items.

Cost Planning

You can phase in different GL cost sets by date. For example, you can change GL costs to reflect seasonal commodity price fluctuations.

1 Create a new cost set.

Suppose you experience a 10% cost increase in the first quarter. You can create a cost set with costs that are 10% higher than normal and name it 1st Qtr or whatever seems appropriate. Similarly, you might want to create a cost set for the third quarter (3rd Qtr) if costs for that quarter are expected to be less than normal.

If you have costs set up at multiple sites, the active GL cost set at all sites should use the same name.

2 Create a cost plan.

Use Cost Plan by Site Maintenance (30.15.1) to enter the cost set names you want to activate in the future and their start dates.

Figure 9.12 shows a plan with special costs for the first quarter. Standard costs display with Standard in the Cost Set field.

Fig. 9.12
Cost Plan by Site
Maintenance
(30.15.1)

Start	Cost Set	Memo
08/01/2002	standard	

Note The same cost set can appear more than once, as the standard cost set does. Setting up a cost plan does not actually make a cost set active with respect to GL transactions. It only provides Material Requirements Planning (MRP) and Master Production Schedule (MPS) with the costs to appear on costed reports.

3 Activate cost set.

Use Cost Plan by Site Update (30.15.3) to activate the cost set according to the cost plan. This program also changes the inventory to reflect the new costs and posts the cost revaluation amount to the general ledger.

4 Revalue work-in-process (WIP).

Assuming that WIP exists, revalue it using the newly activated cost set with WIP Material Cost Revaluation (16.22).

Cost Linking

Linked-site costing functions let you specify default cost source sites for items held at multiple sites in one database. An *inventory site* is any site where items are held in inventory. Linking an inventory site to a primary costing site eliminates the need to set up duplicate GL cost records at all sites. This functionality only affects the active GL cost set. Current, simulated, and inactive GL cost sets are not affected.

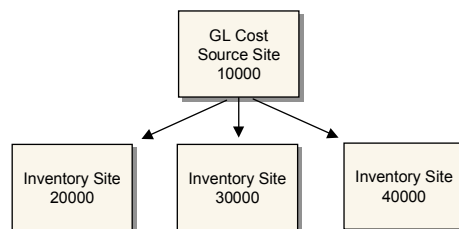


Fig. 9.13
Inventory Sites
Linked to a Cost
Source Site

Linked-site costing is especially useful when items are held in inventory or manufactured at one primary site, but are also held or manufactured at secondary sites. You can also assign different primary sites for different product lines, item types, or Purchase/Manufacture code designations.

Updating the active GL costs at a cost source site triggers a cost adjustment (CST-ADJ) transaction for the item at any other inventory site linked to the cost source site.

Updating the active GL costs at a target site has no effect on the cost source site. No CST-ADJ transactions are created at a cost source site if a target site's GL cost set is updated.

Note You cannot use linked-site costing for a site if you use the average cost method for GL transactions, since the average cost calculation does not consider inventory at multiple sites.

An inventory site can be a cost source site or a target site, but not both for the same item. If an inventory site has been used as a cost source site for an item, it must remain a cost source as long as there are links to it from target sites. Conversely, an inventory site for an item cannot be a cost source site as long as it is a target site.

Site-Linking Rules

Use Linked-Site Rules Maintenance (30.18.1) to set up site-linking rules. The rules you set up here determine the default cost source site in Item-Site Cost Maintenance (1.4.18). These are defaulting rules for linked target sites, not strict data enforcement rules. You can change the GL cost source site for individual items.

Three site-linking rules determine the default GL cost source site for items:

- Linking rule 1 sets the inventory site as the default cost source site. The inventory site is also the default site if you are not linking costs. However, if you implement linking rules, this setting lets you retain the inventory site as the default site for some item attributes, while linking other attributes to alternate sites. For example, you may want to set up the inventory site as the default cost site for manufactured items (Purchase/Manufacture code M), and set up another site as the default cost site for configured items (Purchase/Manufacture code C).
- Linking rule 2 sets the site in Item Master Maintenance (1.4.1) as the default cost source site.

This setting lets you set up costing on a per item basis easily. For example, if your business manufactures an item at one site and distributes that item from several sites, you can set up the manufacturing site entered in Item Master Maintenance as the default cost source site for that item. This eliminates the need to set up separate GL standard costs for the same item at each distribution site.

- Linking rule 3 sets any site you designate as the default cost source site.

Important To avoid setting up chained or circular links, do not assign linking rules to the cost source site. A warning message displays in Linked-Site Rules Maintenance, and the site code fails to default to the GL Cost Source Site field in Item-Site Cost Maintenance. You should set up linking rules for inventory sites only.



Fig. 9.14
Circular Link



Fig. 9.15
Chained Link

You can specify a default cost source site for all items at an inventory site, or you can associate a linking rule at an inventory site with one of the following item attributes:

- Product line
- Item type
- Purchase/Manufacture code

You can select only one item attribute for a particular inventory site. Existing linking rules for an item attribute must be deleted before you can associate a different attribute with an inventory site.

Example Linking rules for inventory site 20000 are associated with the product line attribute. Linking rules for the item type or Purchase/Manufacture code attribute cannot be assigned as long as the product line attribute is associated with the site.

This lets you determine different primary sites for different item classifications depending on your business requirements.

Fig. 9.16
Linked-Site Rules
Maintenance
(30.18.1)

Linking Rule	Default GL Cost Site
1	

Inventory Site. Enter the code for the site where inventory is held.

Item Attribute. Optionally enter an item attribute identifying the items to associate with linking rules. You can select according to product line, item type, or Purchase/Manufacture code. You can select only one item attribute for each site. Enter None, the default, to select all items without regard to attribute.

Linked Site Costing Active. Enter Yes to activate linked-site costing for this site. The default is Yes.

Item Attribute Code. If an attribute has been selected, enter the product line, item type, or Purchase/Manufacture code associated with the linking rule.

Warning It is possible to assign a blank value to product lines and other item attributes. Do not assign blank values if you use linked-site costing, since you cannot use blank to specify all other attribute values.

Linking Rule. Enter the linking rule to assign to this site.

Default GL Cost Site. If you have selected linking rule 3, specify the default cost source site for items or designated item attributes.

Refreshing Cost Sets

Use Linked-Site Refresh Utility (30.18.5) to update the GL cost source site and GL cost set records after entering rules in Linked-Site Rules Maintenance. Running this utility creates CST-ADJ transactions for records that meet the range of criteria you specify and generates a report of updated GL costs for the selected criteria.

Fig. 9.17
Linked-Site
Refresh Utility
(30.18.5)

You can run a report at two levels of detail. A detailed report lists all old and new costs and cost source sites. A summary report provides only the cost source site changes. Enter No in Update to generate a simulation report before running the refresh utility to show what records will be updated.

Because updates in systems with large volumes of data can be time consuming, consider running the refresh utility at the close of the day or whenever system resources are highest.

As part of the update process, you can also delete GL costs at inventory sites deactivated by linked-site costing by setting Delete Deactivated GL Costs to Yes. Deleted records are reported in detail only.

Important To facilitate GL cost set management with linked-site costing active, use the same active GL cost set name at all sites. Only deactivated GL costs with the active GL cost set name are deleted when Delete Deactivated GL Costs is Yes.

Defining Source Sites for Individual Items

You set up the rules that define the default cost source site in Linked-Site Rules Maintenance (30.18.1). However, you can change this value manually in the GL Cost Source Site field in Item-Site Cost Maintenance (1.4.18). Use this field to enter a valid site code to specify which site to set as the GL cost source site for any item. This lets you assign costs for any item from any valid designated GL cost source site. Access to this field can be security restricted.

Fig. 9.18
Item-Site Cost
Maintenance
(1.4.18)

Element	This Level	Lower Level	Total	Pri	Category	A/D
				☐	☐	

For linked-site costing to function in Item-Site Cost Maintenance, the following must be true:

- Valid item, site, inventory, and GL standard cost information exists for the sites and inventory you want to link.
- Linked-site costing is active and linking rules are defined for the inventory site.
- The inventory site and the GL cost source site are in the same database.
- GL cost set costing method is not average for the cost source site or the inventory site.
- The GL cost source site is not linked to another cost source site.

Otherwise, the linking rule is not applied, you cannot update GL Cost Source Site, and the GL standard cost site and inventory site remain the same.

Item-Site Cost Relationships with Linking Rules

When linked-site costing is activated and an item at the inventory site is assigned GL standard costs from another site, other cost set information—including current costs, old GL costs, and simulated costs—remains associated with the inventory site.

Effect of Linking on Product Structure Cost Rollups

Product Structure Cost Roll-Up (13.12.13) uses the costs of an item's components and any subassemblies to calculate this-level and any lower-level costs.

When cost linking is used, links are maintained for active GL costs only. The target site is linked to the source site for the active GL costs. Product Structure Cost Roll-Up recognizes the links for any GL cost set using the standard costing method, regardless of whether the cost set is active or inactive. Since you cannot take advantage of cost linking using a simulation cost set, you should set up an inactive GL standard cost set and use it to prepare costs for future periods instead.

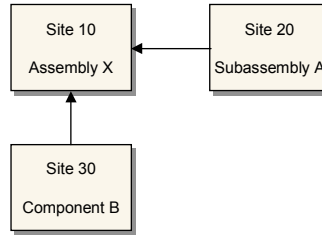
Important Product Structure Cost Roll-Up does not recognize links when the rollup is performed for current or simulation cost sets. In order to roll up costs correctly for linked items, you must use a GL standard cost set.

When items are linked, the system uses the cost set specified at the GL cost source site to find the cost. If the GL cost record does not exist at the source site, costs are not created and a zero cost value is used for the linked item.

Performing a product structure cost rollup at one site does not roll up costs for a linked subassembly at another site. The GL cost for the subassembly at the source site is used to calculate the parent item's cost at the inventory site.

Example Figure 9.19 shows that assembly X at Site 10 uses subassembly A, manufactured at site 20, and component B, held at site 30. Site 20 is the cost source site for subassembly A and site 30 is the cost source site for component B.

Fig. 9.19
Example of Cost
Rollup with Linked
Costs



At site 20, costs are rolled up for subassembly A in the current cost set and then the updated costs are moved to the GL standard cost set. Updating the GL cost set at site 20 automatically updates the linked GL cost for subassembly A at target site 10. Similarly, updating the GL cost of component B at site 30 automatically updates the linked cost at site 10.

Since assembly X contains linked items, its cost at site 10 must be rolled up for the active GL standard cost set. The system locates the GL cost for subassembly A at site 20 and component B at site 30. These costs are used in the cost calculation.

Effect of Linking on Routing Cost Rollups

Routing Cost Roll-Up (14.13.13) calculates this-level manufacturing costs, lead times, and total yield for an item at a particular site.

If a GL standard cost set is specified for the rollup, then:

- The routing cost rollup does not update this-level costs if the item at the rollup site is linked.
- Lead time and yield for all selected items are calculated whether they are linked or not.
- The operation cost calculation recognizes linked costs.
- Updating the active GL standard costs at a cost source site automatically updates the costs at target sites.

Important Routing Cost Roll-Up does not recognize links if the rollup is performed for current or simulation cost sets. In order to roll up costs correctly for linked items, you must use a GL standard cost set.

As with product structure cost rollups, Routing Cost Roll-Up recognizes the links for any GL cost set using the standard costing method, regardless of whether the cost set is active or inactive. This lets you roll up costs in an inactive GL cost set used to prepare costs for future periods.

Cost Accounts

Transactions in several MFG/PRO modules create GL transactions for accounts involved with item costing. This section summarizes these accounts.

Inventory Accounts

Cost Revalue. This account records the GL impact of item cost changes on inventory. When you change the GL costs for items using Item Cost Maintenance (1.4.9) or Item-Site Cost Maintenance (1.4.18), the system automatically creates adjusting transactions. An increase in cost creates a debit to the Inventory account and a credit to the Cost Revalue account.

Note GL item cost changes do not automatically revalue material in WIP. Use WIP Material Cost Revaluation (16.22) to revalue this material.

Inventory. Use this account to maintain inventory value. Inventory accounts can be different for each product line, site, and location within each site. If site/location Inventory accounts are specified, all inventory transactions use them. Otherwise, the product line Inventory accounts are used.

Transactions affecting Inventory accounts include purchase order receipts, work order issues/receipts, sales order shipments, physical inventory counts, and manual inventory transactions. Each transaction affects inventory by creating a GL transaction that either debits or credits the account value.

Inventory Discrepancy. Use this account to post the value of cycle counts or physical inventory differences. Positive count adjustments debit the Inventory account and credit the Inventory Discrepancy account. Negative count adjustments do the reverse.

Purchasing Accounts

Accounts Payable Rate Variance. This account records variances between supplier invoice and purchase order price. If the invoice is higher, this account is debited in addition to the Purchase Order Receipts account to balance the credit to the Accounts Payable account.

Accounts Payable Usage Variance. This account records variances between the quantity on a supplier invoice and received quantity. A positive variance (invoice quantity larger than received quantity multiplied by the invoice unit price) is debited to this account to offset the higher than expected invoice amount credited to the Accounts Payable account.

Overhead Applied. This transaction applies to both purchase order and work order receipts whenever the standard cost includes overhead. When receipt transactions are made, the system credits this account and debits Inventory for the this-level overhead amount.

Purchase Order Receipts. This account records purchase order receipts before receipt of a supplier invoice. The Inventory account is debited for the GL cost of the item less any overhead amount multiplied by the quantity received. This account is credited for the purchase order price times the quantity received.

Purchase Price Variance. This account records the variance between the GL cost of an item less any overhead and the purchase order price. When a purchase order item is received, the system creates a debit to Purchase Price Variance in addition to a debit to Inventory if the PO price is higher. It does so to balance the credit to Purchase Order Receipts.

Sales Accounts

Five accounts contain the standard portion of Cost of Goods Sold (COGS).

- COGS Burden
- COGS Labor
- COGS Material
- COGS Overhead
- COGS Subcontract

For each shipment, the Inventory account is credited for the total GL cost of the item times the quantity shipped and debited for the appropriate COGS portion.

Work Order Accounts

Labor. This account records labor cost for a department based upon standard hours reported at the work center labor rates. When labor is reported in the Repetitive and Shop Floor Control modules, the following types of transactions are made using the standard hours earned multiplied by the work center labor or setup rate.

Setup and Run Labor		Downtime	
Debit:	Work in Process (Standard Labor + Burden)	Debit:	Cost of Production (Standard Labor + Burden)

Table 9.4
GL Transactions
Generated by Labor
Reporting

Labor Rate Variance. This account records variances resulting from a difference between the actual employee pay rate and the standard work center labor rate. This variance is calculated as:

*(Actual Labor Rate – WC Labor Rate) * Actual Hours*

At posting, a positive variance (unfavorable) is debited to the Labor Rate Variance account and credited to WIP.

Labor Usage Variance. This account records variances resulting from a difference between the actual hours needed to complete an operation and the standard hours. This variance is calculated as:

*(Actual Hours – Std. Hours) * WC Labor Rate*

Where:

*Std. Hours = Run Hours / Unit * Number of Units Completed*

At posting, a positive variance (unfavorable) is debited to the Labor Usage Variance account and credited to WIP.

Note Both labor rate and usage variances are normally posted at the same time as labor. However, if Post Variances at SFC is No in Work Order Maintenance (16.1), variance posting is delayed until work order receipt. Delaying posting can be useful if an operation requires more than one shift to complete.

See “Defining Work Order Control Settings” on page 245.

Burden. This account records the variable overhead associated with production operations. The Burden account is used to accumulate accrued burden for a department. Each operation may have labor burden and/or machine burden depending on how variable overhead is applied. Machine burden is applied as a machine hour rate. However, labor burden can be applied either as a labor burden rate or as a percentage of direct labor cost.

The standard hours reported are multiplied by the standard work center labor or machine burden rate.

- Labor Burden using Labor Burden Rate:

$$\text{Labor Burden} = (\text{Std. Setup Hrs.} / \text{Order Qty.} + \text{Std. Run Hrs}) * \text{WC Labor Burden Rate}$$

- Machine Burden using Machine Burden Rate:

$$\text{Machine Burden} = (\text{Std. Setup Hrs} / \text{Order Qty.} * \text{No. of Machines} + \text{Std. Run Hrs.}) * \text{WC Machine Burden Rate}$$

Note This option assumes that the machine hour rate applies to both setup and run. If this is not true, create a separate setup operation that has zero run hours per unit.

- Labor Burden Percentage:

$$\text{Labor Burden} = (\text{Std. Setup Hrs.} * \text{WC Setup Rate} * \text{Labor Burden\%}) + (\text{Std. Run Hrs.} * \text{WC Labor Rate} * \text{Labor Burden\%})$$

Burden Rate Variance. This variance applies to burden application using burden rate percentage. It requires the actual employee labor rate.

$$\text{Burden Rate Variance} = \text{Labor Burden\%} (\text{Actual Labor Rate} - \text{WC Labor Rate}) * \text{Actual Hrs.}$$

Burden Usage Variance. This variance applies to burden calculated by any of the three allocation methods—burden rate, burden percentage, or machine hours.

$$\text{Burden Usage Variance} = (\text{Actual Hrs.} - \text{Standard Hrs.}) * \text{Standard Burden}$$

Note You can use any or all of the burden application methods to calculate standard burden.

Work in Process (WIP). WIP is the cost of open work orders. It includes the cost of component issues, labor, burden, and subcontract.

When labor is reported, WIP is debited and the Labor account credited for actual hours times actual labor rate. At posting, positive (unfavorable) labor rate and labor usage variance amounts are debited to the Labor Rate Variance account and credited to WIP. These transactions leave WIP at standard.

Cost of Production (COP). COP is the material or subcontract cost not associated with a work order and labor not associated with a work order or repetitive schedule.

- **Material and Subcontract Items.** The Cost of Production account is updated by unplanned issue transactions and purchase order receipts for subcontract items. For subcontract item receipts, when a work order ID is associated with the PO, the initial posting to COP is reversed and the purchase order price is posted to WIP. When work order ID is blank for the PO, the subcontract price remains in COP.
- **Labor.** Labor hours for maintenance, cleanup, meetings, and other labor reported in Non-Productive Labor Feedback (17.4) are charged to Cost of Production. The system creates a GL transaction that debits the COP account for the actual hours at the work center labor and burden rate and credits labor and burden absorption accounts.

Floor Stock. This is a clearing account for bulk issue items that are part of the product structure, but are not issued in the normal manner. These items are defined in Item Master Maintenance (1.4.1) with Issue Policy set to No. They are issued to the floor using an unplanned issue transaction. However, the default Cost of Production account is changed to the Floor Stock account so that the material is not expensed. The issue transaction debits Floor Stock and credits Inventory. When a work order is closed, the cost of the bulk issue items is automatically credited to the Floor Stock account, and WIP is debited.

Material Rate Variance. This account records variances between costs of a component issued to the work order and the cost stored on the work order bill of material. This variance would occur if materials were issued from another company site with costs that differ from costs at the using site. The variance is computed when material is issued to a work order.

Note This variance is not a purchase price variance. That variance is posted to the Purchase Price Variance account.

Material Usage Variance. This account records variances in cost between the actual quantity of components issued and the standard quantity required. Since this variance is a function of the order quantity completed, this variance is not calculated and posted until Work Order Accounting Close (16.21). The system then credits WIP for a positive variance and debits Material Usage Variance.

Subcontract Rate Variance. This account records variances between the purchase order price and the standard subcontract cost for a routing operation. A positive rate difference multiplied by the quantity received at purchase order receipt is credited to WIP and debited to the Subcontract Rate Variance account.

Subcontract Usage Variance. This account records variances between the quantity of a work order operation invoiced by the subcontractor and the quantity completed at work order close. A positive quantity multiplied by the subcontract operation cost is debited to Subcontract Usage Variance and credited to WIP.

Method Variance. This variance is not computed directly but is derived after all of the variances attributable to known causes have been computed. Method variance can be caused by a variety of factors such as using a different work center, routing, or product structure. It is only computed after a work order is closed and is used to zero out work-in-process for the work order. Any positive balance in WIP is credited and debited to the Method Variance account.

Scrap. Cost of items reported as rejected at work order receipt. The total standard cost of these items multiplied by the quantity rejected is debited to scrap and credited to WIP.

Costing Impact by Module

Costing interacts closely with several modules. This section summarizes these relationships.

Items/Sites. This module contains item master data used in some computations.

- Order/batch quantity
- Yield percent
- Site code
- Routing code
- Bill of material code
- GL cost set data
- Current cost set data
- Product line/account data

Order/batch quantity and yield percent are used in the cost computations. The routing code and bill of material code are optional fields where you can specify a default routing and BOM other than the same code as the item.

You can specify different characteristics for the same part at different sites using the item-site maintenance programs (1.4.16, 1.4.17, 1.4.18).

Items/Sites also maintains the product line records, which specify the default GL accounts—inventory, sales, purchasing, and work orders—for each product line at a site.

The system provides separate programs to make finer account distinctions:

- Use Purchasing Account Maintenance (1.2.5) to specify different accounts for purchases, applied overhead, PO receipts, PO price variances, and accounts payable variances by product line, site, and supplier type.
- Use Work Order Account Maintenance (1.2.9) to specify different accounts for floor stock, cost of production, WIP, and subcontract by product line and site.

- Use Inventory Account Maintenance (1.2.13) to specify different accounts for inventory, scrap, inventory discrepancy, and cost revalue by location at a site.
- Use Sales Account Maintenance (1.2.17) to specify different accounts for sales, sales discount, and COGS accounts by customer type and sales channel.

Configured Products. This module works with the Sales Orders/Invoices module to create unique product structures for individual sales orders. Once a configured item is constructed during order entry, the system accesses item master and product line data to determine and maintain the cost of the configured item for COGS purposes.

Cost Management. Use Cost Management to create multiple cost sets beyond the GL cost set and the current cost set provided with standard MFG/PRO. These cost sets can be GL sets, current cost sets, or they can be simulated cost sets. The system can access data from the item-site records, product structures, and routings/work centers in the development of various cost sets.

Flow Scheduling. This module lets you create flow scheduled orders and specify the sequence in which they are produced on a flow production line. Recording flow completions creates GL records for inventory receipts and issues on the associated system-maintained work order. The system uses item/site cost data to cost a GL debit or credit transaction.

Formula/Process. This module defines the contents of formula items in the same way as bills of material define fabricated and assembly items. The system uses content information, process definition data, and work center data to calculate level-by-level costs.

General Ledger. This module maintains GL transactions originating in other modules for financial reporting.

Inventory Control. This module creates GL records for receipts, issues, and cycle count adjustments. The system uses item/site cost data to cost a GL debit or credit transaction.

Kanban. This module lets you create kanban transactions that track the movement of items in and out of the production process. Kanban transactions create GL records for inventory receipts and issues. The system uses item/site cost data to cost a GL debit or credit transaction.

Physical Inventory. This module uses physical inventory counts to establish the new work-in-process and stocking location inventory balances. Costed item counts are used to determine the beginning GL amounts for the Inventory and Finished Goods accounts and inventory variance accounts.

Product Structures. This module creates and maintains multilevel parent/component relationships of manufactured products. Product structure rollup determines the item cost (GL, current, or simulated) by adding up purchased material costs and routing labor and overhead costs for each assembly level. The program posts cost data to this-level and lower-level buckets for the five cost categories in the cost set specified in the rollup.

Purchasing. This module provides the prices used to determine purchase price variances. Actual item costs can be used to compute average item inventory amounts. Users of the Accounts Payable module can include differences between invoice cost and purchase price in the average cost computation.

Repetitive and Advanced Repetitive. These modules let you charge labor, material, and burden costs for a repetitively planned item and accumulate data for the WIP and variance accounts. Work Orders and Shop Floor Control perform the same functions for work orders.

Routings/Work Centers. This module maintains the standard hours for setup and run time for manufacturing or subcontract operations used to make an item. The module also maintains the labor and overhead rates for cost centers where an operation is performed. This data is used to determine current costs and GL costs, and can also be used to create simulated costs.

Sales Orders/Invoices. This module provides shipping transaction data that results in GL transactions affecting inventory, accounts receivable, cost of goods sold, and sales accounts.

Shop Floor Control. This module lets you accumulate actual labor costs against work orders or downtime for the WIP account and assorted variance accounts.

Work Orders. This module lets you charge labor, material, and burden costs for a work order planned item and accumulate data for the WIP and variance accounts. The Repetitive and Advanced Repetitive modules perform the same function for repetitively planned items.

Generating Cost Reports

The system provides many cost-related reports to facilitate cost analysis. This section summarizes the types of available reports.

Accounts Payable

Table 9.5
Accounts Payable
Cost Reports

Report	Description
Voucher/Std Cost Variance Report (28.17.1)	Shows the variance between an item's supplier invoice cost and the standard cost.
Voucher/PO Cost Variance Report (28.17.2)	Shows the variance between an item's supplier invoice cost and the purchase order cost.

General Ledger

Table 9.6
General Ledger
Reports

Report	Description
Account Balance Detail (25.15.2)	Provides posted transaction detail for the selected account or accounts for a specified effective date horizon.
Cost Center Activity (25.15.18)	Lists posted cost center account activity.
Cost Center Activity Comparative (25.15.19)	Shows the differences in posted account activity between periods for cost centers.
Project Activity (25.15.21, 25.15.22)	Summary lists project activity over a period. Detail also lists individual transactions.
Project Activity Comparative (25.15.23)	Compares actual project figures to budgeted amounts.

Inventory

Table 9.7
Inventory Reports

Report	Description
Average Cost Accounting Report (3.21.17)	Lists transactions involving average cost computations. Quantity, unit cost, and inventory value data are shown for the beginning balance data, the change data, and the ending balance data.
Item ABC Status Report/Update (3.6.3)	Calculates item ABC class codes. Lists items in either descending sales or issue value, and shows an item's old and new ABC classifications.
Current Surplus Inventory Report (3.6.8)	Lists current surplus quantities and GL value of items. Surplus is determined by absence of issue activity after a user-specified date.
Projected Surplus Inventory Report (3.6.9)	Lists projected surplus inventory based on either MRP requirements or average use. Choose either current cost or GL cost for surplus cost computations.
Inventory Valuation (3.6.13, 3.6.14, 3.6.15)	Lists inventory valuation for a product line or lines, or for sites and locations.
Transactions by Order Report (3.21.13)	Shows transaction information for selected orders (work orders, sales orders, and so on).
Transactions by Item Report (3.21.14)	Shows transaction information for selected item numbers.
Transactions Accounting Report (3.21.16)	Shows the costed GL transactions created for each selected inventory transaction.
Frozen Inventory Valuation Report (3.16.16)	Shows costed inventory balances prior to conducting a physical inventory.
Tag Inventory Valuation Report (3.16.17)	Shows the value of counted inventory.
Inventory Variance Report (3.16.18)	Shows the variance between physical counts and the frozen inventory count.

Items

Table 9.8
Item Cost Reports

Report	Description
Item Cost Report (1.5.6)	Shows item cost information for current and GL cost sets for each site and product line, as well as for other cost sets created with Cost Management.
Product Structure Cost Report (13.12.4)	Shows costs for an item and its components by structure level.

Manufacturing

Table 9.9
Manufacturing Cost
Reports

Report	Description
Operations Accounting Report (17.13.10)	Shows the GL transactions resulting from discrete manufacturing downtime and labor transactions.
Rep Operations Accounting Report (18.4.10)	Shows the GL transactions resulting from repetitive work order downtime and labor transactions.
Down Time Report (18.22.20)	Shows transactions for each work center or machine in transaction sequence by date. Total downtime for each work center is shown for the specified period.
Down Time by Reason Report (18.4.6)	Shows downtime transactions for each reason code. The system charges downtime to the Cost of Production account. Use Operations Accounting Report (17.13.10) to list details on the GL transactions for the COP account.
Efficiency by Work Center Report (17.13.19)	Shows setup and run efficiency by work center.
Efficiency by Work Order Report (17.13.20)	Shows setup and run efficiency by ascending work order number.
Efficiency by Employee Report (17.13.21)	Shows the setup and run efficiency for all setup and run transactions for an employee during a specified period.
Routing Cost Report (14.13.14)	Provides a detailed cost record for a routing. It shows cost detail for each operation in the routing, and total labor, burden and subcontract costs.
Work Order Cost Report (16.3.4)	Provides a detailed cost record for a work order while it is in process and after it has been closed. It shows cost detail for material by component and labor operation detail, labor burden, and subcontract costs.
Work Order WIP Cost Report (16.3.5)	Shows the accumulated amounts for material, labor, burden, and subcontract cost for a work order for each WIP account, sub-account, cost center, and project. A similar report, Repetitive WIP Cost Report (18.4.12), is available for repetitive WIP costs.
Work Order History Report (16.3.6)	Shows the current status of a work order in terms of schedule, material consumed, and labor expended.

Purchasing

Report	Description
Purchase Order Commitment Report (5.9.4)	Shows the commitment to suppliers for open purchase order line items. Blanket orders are not included in this report.

Table 9.10
Purchasing Reports

Sales Orders

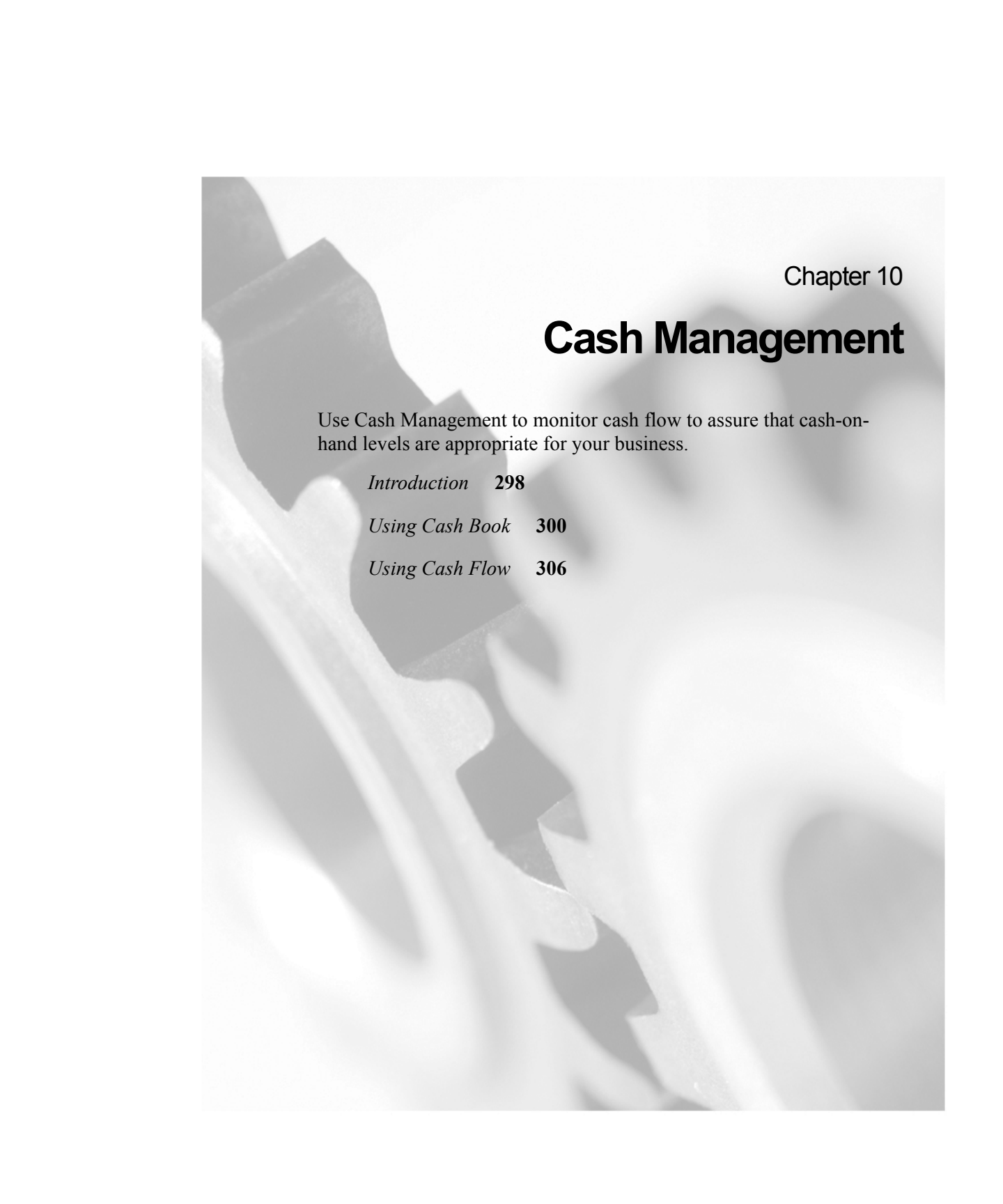
Report	Description
Sales Order Gross Margin Report (7.15.5)	Shows the gross margin for all open sales order item quantities by line item and order. Order totals are shown for the extended price and gross margin.

Table 9.11
Sales Order Cost Reports

Cost Management Reports

Report	Description
Simulation Cost Element Report (30.13.3)	Shows cost elements for selected cost sets.
Simul Item-Element Cost Report (30.13.7)	Shows direct item costs by part number for selected cost sets.
Simul Subcontract Cost Report (30.13.12)	Shows subcontract costs by routing code and operation for selected cost sets.
Simul Work Center Rate Report (30.13.15)	Shows work center rates by work center for setup and run labor and burden cost elements for selected cost sets.
Cost Set Report (30.21)	Lists this-level and lower-level costs by category and total item cost for part numbers in cost sets at selected sites.
Comparative Cost Set Report (30.22)	Lists costs by cost element category and total cost for each part number in a selected cost set. The percent difference is shown for each element and for the total unit cost.

Table 9.12
Cost Management Reports



Chapter 10

Cash Management

Use Cash Management to monitor cash flow to assure that cash-on-hand levels are appropriate for your business.

Introduction **298**

Using Cash Book **300**

Using Cash Flow **306**

Introduction

Accounting managers monitor cash flow to prevent shortages or surpluses of cash. Insufficient cash on hand can make the company unable to pay creditors on time or meet payrolls and harm the company’s credit rating. Too much cash on hand can mean that cash is not being properly invested.

Use the Cash Management module to increase visibility of your cash position and control over your cash balance.

Table 10.1 lists Cash Management functions. These functions support two features:

- Cash flow: Menu items 31.1 through 31.8
- Cash book: Menu items 31.13 and 31.14

Table 10.1
Cash Management
Menu

Menu No.	Menu Label	Program
31.1	Cash Flow–Misc. Maintenance	cmcfmmt.p
31.2	Cash Flow–Misc. Browse	cmbr001.p
31.3	Cash Flow–Misc. Report	cmcfmrp.p
31.5	Cash Expected Date Maintenance	cmcfxmt.p
31.8	Cash Flow Projection Report	cmpecfrp.p
31.13	Cash Book Maintenance	cmbookmt.p
31.14	Cash Statement of Account Print	cmbookrp.p
31.24	Cash Management Control	cmcmpm.p

Cash Book

Use Cash Book Maintenance (31.13) to record cash inflow and outflow by bank account, in environments where wire transfers are common.

When payments are received or created as printed checks, each payment is recorded directly in MFG/PRO. The system automatically updates system records from this information, including supplier and customer balances and the GL cash account.

However, businesses in many countries process payments using wire transfers rather than printed checks. Wire transfers are processed by the bank rather than the company, so there has to be a way of recording the payment to update system records.

The system does this by maintaining bank statements in an online cash book. When the bank sends a statement—often daily—payments and other amounts such as processing fees or interest are recorded in the cash book. The information on the statement then updates system records.

Cash Flow

Use cash flow functions to project future cash positions based on the system's expected cash sources—sales, AR, service and support, miscellaneous cash—and cash uses—purchasing, AP, miscellaneous cash.

- Calculate how much cash is available for short-term investments.
- Determine whether it is necessary to obtain credit to finance company expansion or other activities.
- Forecast exposure to currency fluctuations by projecting sources and uses of cash in particular currencies.

To estimate cash flow, uses of cash are subtracted from sources of cash. Use detailed information from Cash Flow Projection Report (31.8) to predict and explain changes in the company's financial position. This report contains several aging options, and you can include or exclude particular sources or uses of cash from the projection. You can also include vouchers paid by draft.

▶ See “Cash Flow Projection Report” on page 309.

Cash Management Processing Flow

Before using either the cash book or cash flow functions, complete any processing that updates system records on sources and uses of cash.

- Process incoming and outgoing payments.
- Release service contracts to billing and create call invoices.
- Invoice shipments and run Invoice Post (7.13.4).
- Enter and receive purchase orders.

Example A sales order is shipped and invoiced. If you run the Cash Management functions before posting the invoice to accounts receivable (7.13.4), the invoice amount would be reported as a sales order rather than accounts receivable on the Cash Flow Projection Report. If the customer had already sent payment for the invoice, you would not be able to apply it in Cash Book. Payments can be applied only to posted invoices.

If you use both cash book and cash flow, run the cash book functions first.

Using Cash Book

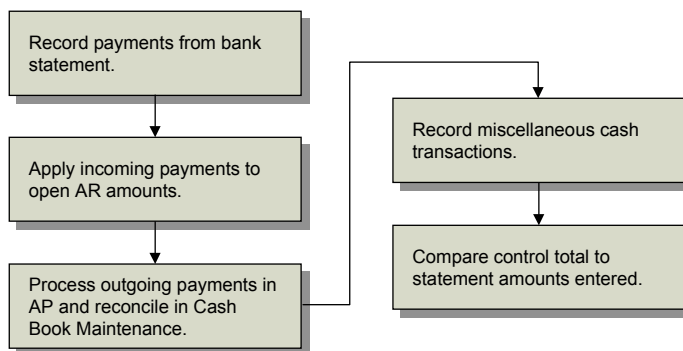
Cash book includes two processing steps.

- Record the bank statement in Cash Book Maintenance (31.13).
- Print the cash statement of account (31.14) to verify that the system and statement account balances match.

Recording Bank Statements

Use Cash Book Maintenance (31.13) to maintain your own bank statements on the system.

Fig. 10.1
Bank Statement
Process Flow



When you receive the statement from the bank, you record both incoming and outgoing payments.

- Outgoing payments are still selected and processed in Accounts Payable, but you reconcile them in Cash Book Maintenance.
- Incoming payments are entered and simultaneously applied to open AR amounts, in a process similar to AR Payment Maintenance (27.6.4).
- You can directly record miscellaneous cash transactions unrelated to AR or AP, such as bank charges or transfer processing fees. The record updates GL cash balances just like a GL standard transaction (type JL).

▶ See “Processing Payments” on page 158.

Cash Book Maintenance

Bank: AA Year: 2002 Statement: 1560

US Bank Account #8293-01 8293-01 USD

Status: NU (NU = Not Used, UB = Unbalanced, C = Closed)

Date: 07/22/2002

Book Balance: 5,012,308.30 Bank Balance: 5,012,208.30

Batch Ctrl: -100.00 Total: 0.00

Line	T	Amount	Cur	Currency Amount
1	G			

Fig. 10.2
Cash Book
Maintenance
(31.13)

Batch Number. Batch numbers identify a group of transactions on the same statement. Each time you enter the cash book, you must enter the bank code, year, and statement number. This becomes the batch number for all of the AP, AR, and GL transactions created. Most users enter the month and day as the statement number. The statement date becomes the effective date for all GL transactions created.

Status. During statement entry, Status is usually blank—meaning Open. If you return to this screen to correct an unbalanced statement, the record has a status of UB. Once a statement has a status of Closed (C), it cannot be changed. If you create a statement record without entering any data, the system considers the batch number unused (NU).

Control Totals

Control totals are used to verify data entry. The book balance defaults to the balance of the GL cash account for the bank code. You then enter the bank balance as printed on the bank statement. The batch control total defaults to the difference between the book balance and the bank balance. If the bank statement shows less cash than you have on your books today, the batch control total will be negative.

The system maintains two sets of control totals related to the cash book:

- First, as you enter AR payments, cancel AP checks, and process miscellaneous cash transactions, the system maintains a running control total. When you exit each transaction, the system compares this control total with the batch total you entered in the cash book line screen. If the totals do not match, the statement line is deleted.

- Second, the system maintains a control total of all the transactions on the statement. When you exit Cash Book Maintenance, this total is compared to the batch control total for the statement. The statement cannot be closed until these two totals agree.

When the totals do not agree, the statement is marked as unbalanced (status UB). Although this does not affect the status of any of the AR, AP, or GL transactions, unbalanced statements should be investigated and corrected. Until they are, they will be marked as unbalanced on the Statement of Account (31.14).

In the lower half of the screen, you enter individual lines from the bank statement. After the line is entered, the screens you see depend on the kind of transaction being recorded.

Outgoing Payments

Tip

Enter payables as negative numbers.

Use the Multi Entry option to record a range of checks. When you enter the check number, the remaining information displays. You can override the default clear date and payment amount. After entering the transaction, check the control totals.

Fig. 10.3
Cash Book
Maintenance,
Payment

Incoming Payments

The other screens function just like Payment Maintenance (27.6.4) in Accounts Receivable. The system uses the check number for internal tracking. The Remarks field can be used to record the customer's payment number. You must enter a bill-to code. If it is not on the statement, you can access a look-up/browse from the Bill-To field.

You can record payments as unapplied (for example, prepayments) or applied to an invoice, DR/CR memo, draft, or finance charge (Ref field).

Cash Book Maintenance

Stmnt: 02AA1560 Control: 7,800.000 Total: 0.000

Check: 1000009 Bill To: 001 PEI Computers Ltd.
 Currency: USD Type: P
 Check Control: 7,800.00 Total: 0.00
 Date: 08/06/2002 Batch: 02AA1560
 Effective: 08/06/2002 Daybook:
 Bank: AA Account: 1040
 US Bank Account #8293-01 Disc Acct: 3910
 Remark: Entity: 1000
 Auto Apply: ☐

Fig. 10.4
Cash Book
Maintenance,
Receivable

Miscellaneous Amounts

The system automatically assigns a reference number for GL tracking. The line entry screen prompts you to enter the GL account, sub-account, cost center, and project. The last three are optional.

The Account Information window displays in the lower left corner. Once again, check the control totals after recording the transaction.

You do not need to enter a journal line for the cash account. The system automatically creates the offsetting entry for the cash account for the bank.

Cash Book Maintenance

Primary Entity

GL Reference: JL020722000001 Type: JL Effective: 07/22/02 Period: 7/2002
 Currency: USD Control: 200.00 USD Total: 0.00
 Daybook: Entry Number: Correction: ☐

Account Information

Account:

Sub-Account:

Cost Center:

Project:

Line	Enty	Description	Cur	Amount
1	1000		USD	0.00

Add Link

Fig. 10.5
Cash Book
Maintenance,
Miscellaneous GL

Closing the Statement

After entering all transactions and confirming that the statement batch control matches the statement control total, you can close the statement.

Sometimes you close the statement as a separate step. For example, your company might require a manager to review and approve the totals before the statement is closed.

The Book Balance field is not updated until you run Transaction Post (25.13.7), which updates the GL cash account. The system calculates the book balance using the combination of account, sub-account, and cost center code.

Multiple Currency Processing

See Chapter 5, “Multiple Currency,” on page 117.

You can specify non-base currencies in Cash Book Maintenance. Validation is based on the bank entered in the header frame. For a non-base currency bank, payment must always be in the bank currency. When you specify a base currency bank, you can record cash entries in any currency.

Specify the base amount in the Amount field and the foreign currency code.

Fig. 10.6
Cash Book
Maintenance,
Foreign Currency

The screenshot shows the 'Cash Book Maintenance' window. At the top, it displays 'Stmt: 02AA1560', 'Control: 8,233.910', and 'Total: 0.000'. Below this, transaction details are shown: 'Check: 1000010', 'Currency: EUR', 'Check Control: 8,233.91', 'Date: 08/06/2002', 'Bill To: 001', 'PEI Computers Ltd.', 'Type: P', 'Total: 0.00', and 'Batch: 02AA1560'. A section for the exchange rate shows 'Exchange Rate: EUR' with a value of '1.05563' in a yellow box, followed by an equals sign, 'USD', and a value of '1.0' in another yellow box. At the bottom left, there is an 'Auto Apply:' checkbox which is unchecked. Navigation arrows are visible at the bottom right of the form area.

The system displays the effective exchange rate relationship and lets you override it. It then calculates the non-base currency amount and displays it in the Currency Amount field.

For a member currency defined in EMU Currency Maintenance, triangulation through the euro is used to determine the exchange rate. In this case, the exchange rate relationship includes four components. The fixed rate of the EMU currency to the euro cannot be updated. Cash amounts can be reviewed in terms of the transaction currency or the base currency.

♦ See “Euro Currency Rules” on page 317.

If the exchange rate has changed between the time the amount was invoiced (vouchered) and the time cash was received (paid), the system automatically calculates a realized exchange gain or loss for the currency.

The system uses the base currency to verify the batch total for the statement lines against the statement control total. However, within each transaction, it uses the transaction currency to verify the transaction batch total against the statement control total. When you record the payment, the control totals are expressed in the second currency.

When you return to the main cash book screen, the system verifies the control totals for the statement lines in the base currency.

Printing the Statement of Account

Cash Statement of Account Print (31.14) is often used to produce a cash book audit trail. It can also be reviewed prior to closing statements. The statement does not have to be closed prior to printing the statement of account.

The statement of account shows the statement status, each line of the statement, the debits and credits to the cash account, and any reference numbers associated with the transaction.

Using Cash Flow

Cash flow processing generates the Cash Flow Projection Report (31.8), which shows anticipated sources and uses of cash. It also can include vouchers paid by draft.

▶ See “Cash Flow Projection Report” on page 309.

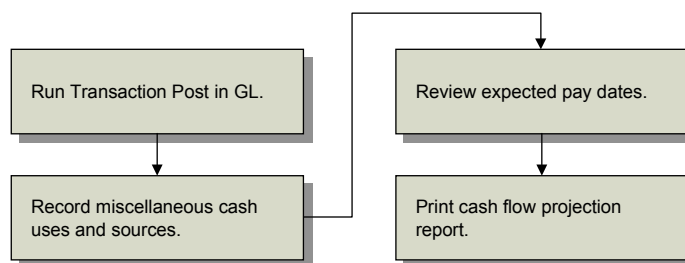
Typically, the Cash Flow Projection Report is printed weekly, although you can print it whenever needed to verify that a sufficient level of cash is on hand. In addition to displaying cash sources, uses, and vouchers paid by draft, it calculates a net total. This report displays different information depending on the options selected.

Prior to running the cash flow functions, execute Transaction Post (25.13.7) in the General Ledger module to update the GL cash account and other system records.

Manually estimate and record amounts for miscellaneous cash sources and uses, such as investment income, and tax refunds. These amounts are not derived from sales and purchasing transactions. The system cannot project them from existing information.

You should also add or change the expected pay date on certain transactions. This is the date you actually expect to receive or make a payment, which may be different from the invoice due date. Expected dates can make cash flow projections and aging reports more precise, because they provide a better indication of when cash will actually be received or paid out.

Fig. 10.7
Cash Flow
Processing Flow



Recording Miscellaneous Cash Sources/Uses

Use Cash Flow–Misc. Maintenance (31.1) to record miscellaneous sources of cash including bank interest, tax refunds, and corporate borrowings. These are associated with type Source. Miscellaneous uses of cash include such items as expected payroll expenses by period or monthly sales tax amounts. These are associated with type Use.

The screenshot shows the 'Cash Flow - Misc. Maintenance' window with the following data:

Field	Value
Cash Number	1
Reference	264-15-2210
Description	TAX REFUND
Due Date	04/15/1994
Expect Date	05/15/1994
Last Due Date	
Entity	1000
Bank	AA
Currency	USD
Exchange Rate	USD 1.0 = USD 1.0
Type	Source
Expected Amount	1,000.00
US Bank Account	#8293-01
Date Entered	03/10/1994
Last Edit	07/22/2002
Us	mkr

Fig. 10.8
Cash Flow–Misc.
Maintenance (31.1)

You can distinguish between the cash due date and expect date, although these are often the same.

The due date indicates when payment is required to be received or paid out. The expect date indicates when payment is likely to be received or paid out.

If you change the due date, the system displays the previous due date as the last due date. The screen also displays the date the record was entered originally as well as the date and user ID for the most recent edit.

If you specify a non-base currency bank, payment must always be in the bank currency. However, when you specify a base currency bank, you can record cash flow in any currency.

The system displays the effective exchange rate relationship and lets you override it. For a member currency defined in EMU Currency Maintenance, triangulation through the euro is used to determine the exchange rate. In this case, the exchange rate relationship includes four components. The fixed rate of the EMU currency to the euro cannot be updated.

See “Euro
Currency Rules”
on page 317.

Miscellaneous cash in a non-base currency does not appear on the Cash Flow Projection Report (31.8) unless the currency is selected on the report option screen.

Adding/Changing Expected Dates

You can assign an expected pay day for certain sources and uses of cash. Cash flow projections may use this date for aging calculations. The expected date can be designated in:

- Voucher Maintenance (28.1)
- DR/CR Memo Maintenance (27.1)
- Customer Credit Review/Update (27.10)
- Cash Flow–Misc. Maintenance (31.1)

Use Cash Expected Date Maintenance (31.5) to add or modify expected dates for all of the above. The following examples illustrate reasons for adding or modifying expected dates:

- The official due date of an invoice is May 10, but today's date is May 20 and the customer still has not sent payment. Based on their payment history, you know you are not likely to receive payment until June 1. If you enter an expected date of June 1, the Cash Flow Projection Report places this amount in the appropriate time bucket.
- To reduce your tax burden for this year, you want to pay off some vouchers due next year. To accurately reflect when the vouchers will be paid, enter expected dates for this year.
- When recording calls during Customer Credit Review/Update (27.10), you can update the expected date based on a customer's payment intentions.

Expected dates are optional. If you do not use them, the expected date defaults to the due date in all functions.

Cash Flow Projection Report

The Cash Flow Projection Report (31.8) forecasts whether your company will have a positive or negative cash flow in a given time period. The report determines the net source (positive cash flow) or net use (negative cash flow) by totaling cash sources and uses and subtracting uses from sources.

The report has several options for customizing output.

Fig. 10.9
Cash Flow
Projection Report
(31.8)

Projections by Entity/Bank Code

Cash flow can be projected by entity or bank code. Do this to project cash balances, to find out if you have enough cash in an account to pay for an unexpected expenditure. If the only cash sources/uses you select for the report are AR, AP, and miscellaneous, the projection will always be valid.

A projection run by entity or bank may not be 100% correct if purchase orders or sales orders are included.

- On reports printed by entity, the system includes orders if the site specified in the order header is assigned to that entity. However, individual line items in the order may be associated with different sites. If the header site is assigned to the report entity, the system includes the entire order in the cash flow projection, even if some items are associated with sites at other entities.

- On reports printed by bank, the system does not distinguish orders by bank. All orders that meet the aging and other criteria are included. This is because orders are not associated with specific bank accounts until payments are processed for them in AP and AR.

Cash Sources and Uses

Set the default cash sources and uses for this report in Cash Management Control (31.24). You can override these from the report screen. For each of the following sources and uses, individual transactions can be listed in detail or summarized by period.

Table 10.2
Sources of Cash

Cash Source	Description
Sales Orders	Sales orders, customer schedules (firm and planned), call invoices, and unposted invoices. Can be run for confirmed sales orders only. Can be selected by bank code.
Accounts Receivable	Open invoices, DR/CR memos, finance charges, and drafts.
Service and Support	Service contracts released for billing (open invoices but not future contract amounts). Can be selected by bank code.
Misc. Cash Sources	Tax refunds, rental income, bank interest, investments.

Table 10.3
Uses of Cash

Cash Use	Description
Purchase Orders	Purchase orders and supplier schedules. Blanket orders are not included, only the purchase order releases associated with them. Can be selected by bank code.
Accounts Payable	Vouchers. Can be run for confirmed vouchers only. Includes vouchers paid by drafts.
Misc. Cash Uses	Payroll expenses, loans, investments, rent, utilities.

To obtain a realistic overall picture of cash flow, most companies select only AR, AP, and miscellaneous cash, since these represent the firmest payment commitments. However, the other options are often used for:

- Reviewing purchase order commitments to determine cash demands
- Reviewing sales orders to project the cash effects of expected sales order shipments
- Reviewing expected cash on service contract billings
- Forecasting exposure to currency fluctuations

Aging Transaction Amounts

There are three options for aging transaction amounts:

- Average days late
- Expected date
- Transaction credit terms

This aging lets the system project when cash amounts will be paid or received. You can select more than one option on a report. Each aging option supports transactions with multiple due dates.

Age by Avg Days Late. Assigns the sources of AR cash to a time bucket based on the average number of days late that payment is received. For example, a customer who usually pays 30 days late has an invoice due April 10. The system projects that this invoice will not be paid until May 10.

Age by Expected Date. Amounts are assigned to a time bucket by expected date rather than due date. For example, an invoice is due April 10, but payment is not expected until April 15.

Age by Credit Terms. Amounts are assigned to a time bucket based on the payment credit terms. For example, an invoice is due April 30 and has credit terms of net 30. The payment would be expected May 30. The system does not calculate discount dates and amounts on credit terms. If the credit terms in the example were 2/10 30, the entire amount would be assigned to May 30.

Time Periods

The cash flow projection can be expressed in terms of days, weeks, months, or GL periods. Amounts for multiple time periods can be summarized in each column.

Multiple Currencies

You can use cash flow projections to forecast the company's exposure to exchange rate fluctuations. For example, if your company base currency is the euro, but you have purchase orders and sales orders in British

▶ See "Exchange Rate Fluctuation" on page 128.

pounds, you should periodically run a cash flow projection for purchase orders and sales orders in British pounds to project the value of transactions in this currency.

Note Unlike many reports, you cannot leave the Currency field blank to print the cash flow projection for a range of currencies.

▶ See “Reporting Currency” on page 133.

You can also specify a Reporting Currency. This field supports the introduction of the euro. The standard report output is converted and displayed in the reporting currency specified.

Converting a Database to the Euro

This appendix describes how to convert the base currency of a database to the euro, the single currency introduced by the European Monetary Union (EMU).

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Introduction

The introduction of the euro had major implications, not only for businesses located within the EMU, but also for any business—regardless of location—that carried out financial transactions in any of the affected currencies. MFG/PRO provides features that can be used by both types of businesses when new countries join the EMU.

These features are not currently required, since the first group of countries and currencies have already completed this transition. However, additional countries are expected to join the EMU in the future. Examples in this appendix are based on EMU member states that adopted the euro before July 2002 and use their old national currencies.

General multicurrency features are discussed in Chapter 5. This appendix provides information about two types of functions.

- One set of functions supports the conversion of a database's base currency to the euro. These functions are required only by companies with an EMU base currency.
- A second set of functions can be used by companies with an EMU base currency and those that do business with these companies during the transition period. These functions support reporting and visibility in dual currencies.

Understanding the Impact of the Euro

The EMU introduced its new currency, the euro, on January 1, 1999. Following this date, the national currencies of the original 12 EMU member states were no longer currencies in their own right. They were, instead, denominations of the euro.

The EMU member states that participated in the initial transition are:

• Austria	• Ireland
• Belgium	• Italy
• Finland	• Luxembourg
• France	• The Netherlands
• Germany	• Portugal
• Greece	• Spain

▶ See “Multiple Currency” on page 117 for details.

By July 1 2002, the national currencies of these 12 nations ceased to be legal tender, leaving the euro as the single currency of all the participating states in the EMU.

The Business and Accounting Software Developers Association (BASDA) is recognized within the software development industry and various standards organizations as the authority on the introduction of the euro and its effects on accounting software packages.

Euro Timetable

The timetable for the introduction of the euro is governed by appropriate legislation for the participating countries in the EMU. The following section describes the phases of the introduction of the euro that occurred for current member nations. When other countries, such as the UK and Denmark, elect to introduce the euro, similar phases are likely to occur.

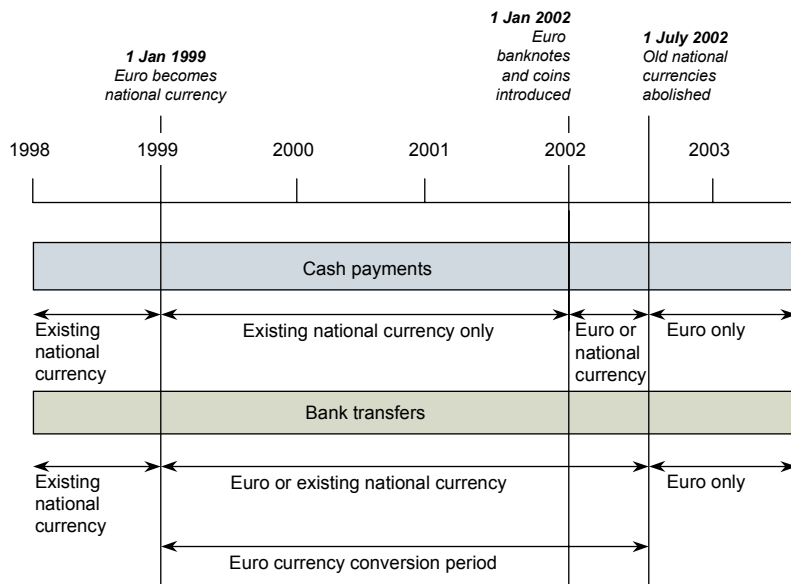
- Until the end of 1998, the existing national currency continued to be the single currency of each participating country. Banks and financial institutions in these countries could only prepare for the introduction of the euro, to ensure a smooth transition to the new currency.
- On December 31, 1998, the exchange rates between the euro and existing national currencies was irrevocably fixed.
- On January 1, 1999, the euro became the currency of the participating countries and the old national currencies become denominations of the euro.
- On January 1, 2002, euro coins and bank notes were introduced. A transitional period extended until July 1, 2002, when both euro bank notes and coins and the national currency's bank notes and coins were in circulation.
- On July 1, 2002, the old national currencies ceased to be legal tender.

This legislation had practical consequences for all companies located in the participating countries:

- Before January 1, 1999, all financial transactions continued to be conducted in a national currency.
- Between January 1, 1999, and January 1, 2002, cash payments continued to be made in the original national currency, but bank transfers could be conducted in any of the following:
 - The national currency
 - The national currency, but expressed in the euro as well, for informational purposes
 - The euro, but expressed in the national currency as well, for informational purposes
- After July 1, 2002, financial transactions can only be conducted in the euro.

Figure A.1 illustrates the impact of the euro on companies located within EMU member states.

Fig. A.1
Impact of Euro on
EMU Companies



Euro Currency Rules

The euro has specific currency conversion rules:

- It has two decimal places.
- It has fixed conversion rates, with six significant figures.
- The conversion rates are defined in terms of how many units of each relevant currency are equivalent to one euro.
- The euro must be used as an intermediary when converting from the old national currency of a member nation (now a denomination of the euro) to any other currency. This concept is known as *triangulation*.
- The *inverse rate*, derived from the conversion rates, cannot be used in the conversion process. The inverse rate is the opposite of a given rate, and is obtained by dividing one by the rate (1/rate).

Triangulation

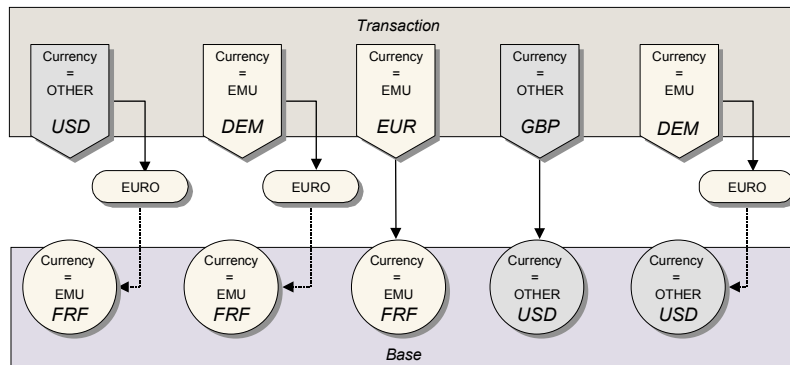
The following steps must be completed for triangulation to be valid:

- The original national currency is converted into euros using the fixed six-digit conversion rate.
- The euro amount is rounded to no less than three decimal places.
- The euro amount is converted into the other member currency using the fixed six-digit conversion rate and rounded to two decimal places.

During the transitional phase, triangulation is required whenever an EMU currency is involved in a currency transaction.

Figure A.2 shows some sample conversions, based on the transition period between January 1, 1999 and July 1, 2002. The conversions of EMU currencies are performed in accordance with euro processing rules. Since neither British pounds nor American dollars are EMU currencies, a direct exchange rate can exist between them.

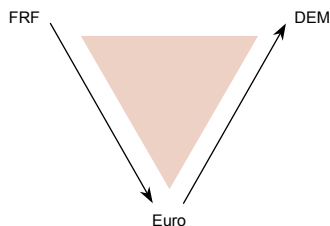
Fig. A.2
Currency
Conversion Using
Euro Rules



Triangulation Example

Figure A.3 shows how French francs were converted to German marks using triangulation.

Fig. A.3
Triangulation



In this example, assume the following exchange rates:

$$EUR\ 1 = FRF\ 6.58001$$

$$EUR\ 1 = DEM\ 1.92003$$

Note These exchange rates are only examples. They do not imply that the actual fixed exchange rates are similar.

To convert 100 French francs into German marks using triangulation through the euro:

- 1 First convert the French francs into euros:

$$FRF\ 100 / 6.58001 = EUR\ 15.19755$$

- 2 Next, convert the euros into German marks:

*EUR 15.19755 * 1.92003 = DEM 29.17975*

- 3 Finally, perform any necessary rounding:

DEM 29.18

MFG/PRO functions use the euro conversion processing rules, including triangulation, for all currency conversions during the effective range defined by the start and end dates in EMU Currency Maintenance. Triangulation is used only when members of the EMU are involved in a transaction.

Euro Transparency

On January 1, 1999, the euro became the national currency of the participating countries and the old national currencies became denominations of the euro. This means that the euro had a similar relationship to francs and marks as the dollar does to quarters and dimes.

Any company that traded with a business located in the EMU had to be able to conduct business in euros and the local currency simultaneously. The system recognizes the euro as a distinct currency, while recognizing the local currency as a denomination of the euro. This concept is known as *euro transparency*.

Euro transparency affects the way payments can be made. The basic rule is that whenever payment in the euro is valid, payment in the old national currency is also accepted.

Note The currency of the bank imposes some restrictions in AP payments.

Euro transparency is also supported by various reporting features that enable documents to be reported in a currency other than the base or document currency.

The concept of transparency does not extend to:

- *Pricing*. When searching for a price list, the system looks for a price list in the exact currency of the transaction.
- *Invoice consolidation*. Invoices can only be consolidated when the currency matches exactly.

Euro Support in MFG/PRO

▶ See “Euro Timetable and Conversion” on page 323.

The introduction of the euro had major implications, not only for businesses located in the affected member states, but also for any business—regardless of location—that carried out financial transactions in any of the affected currencies.

MFG/PRO provides features that specifically support both business environments. Companies within and companies outside of the EMU can benefit from the following features:

- Define the euro and the countries that use it. You can define EMU currencies and fixed exchange rates relative to the euro.
- Triangulation. Based on currency definitions, use triangulation to calculate exchange rates whenever an EMU currency is involved.
- Dual pricing. View pricing on sales orders and similar documents created in an EMU currency—including the euro—in a second currency.
- Reporting currency. Specify a reporting currency to be used on selected reports.
- Euro transparency. Pay invoices in the base currency, the document currency, or the euro, if either the base currency or document currency is an EMU currency. Associate purchase orders in any combination of different EMU currencies with the same voucher. Enter any EMU currency or the euro for the voucher currency, even if it differs from the EMU or euro currency of the purchase orders.

Features specifically targeted to companies with an EMU base currency include:

- EMU revaluation, which supports realization of exchange rate gains and losses created as a side-effect of introducing the euro.
- Financial integrity checks, which help you verify the financial integrity and consistency of your financial data before and after conversion.
- Base currency conversion programs, used to switch the base currency of your database to the euro and adjust currency amounts and documents in the old base currency to reflect the new base currency.

EMU-specific features are found on the Euro Functionality Menu (26.21).

- The Pre-Conversion Menu (26.21.1) lists functions used before converting the base currency of your database to the euro, including EMU revaluation.
- The Post-Conversion Menu (26.21.3) lists functions used after the base currency conversion.
- Euro Functionality Control (26.21.24) provides settings needed by the currency conversion, as well as dual pricing and reporting features.

To optimize performance, the base currency conversion is started from outside your MFG/PRO database. Therefore, it has no option on the Euro Functionality Menu.

See “Creating Startup Scripts” on page 360.

Table A.1 presents these benefits in the form of a matrix, indicating which companies would use each feature.

Multicurrency Feature	EMU Companies	Non-EMU Companies
Base currency conversion	✓	
Financial integrity checks	✓	
Revalue historical financial data	✓	
Reporting currency	✓	✓
Dual pricing	✓	✓
Specify currencies becoming a denomination of the euro	✓	✓
Euro transparency	✓	✓
Triangulation	✓	✓

Table A.1
Euro Features
Matrix

Conversion Objectives

The base currency conversion was designed to accomplish three goals:

- Maintain the integrity of the database. You can use financial integrity checks to ensure that the integrity of your database is not compromised.

While the conversion should not lower your database integrity, it also will not improve it. Any integrity problems found by the financial integrity checks before the conversion should be reviewed and, when necessary, fixed before you start the conversion.

- Create an audit trail of conversion activities—before, during, and after the conversion. The results of the financial integrity checks are automatically stored in log tables in your database and are then used after the conversion to verify its success.
- Complete the conversion as quickly as possible. The database cannot be accessed during the conversion. Other supporting activities should be done either before or after the conversion.

Planning the Conversion

Converting an existing database to the euro requires careful planning and coordination. A number of related tasks must be completed, many of which depend on the successful completion of prior tasks. You will need to coordinate activities with various departments in your organization and may need to form a conversion task force to analyze and plan your exact schedule.

▶ See “Base Currency Conversion and Consolidation” on page 406.

Note The discussion of base currency conversion assumes, in general, that each database being converted represents a stand-alone reporting unit. If any database being converted is involved in a consolidation relationship with other databases, additional issues must be addressed.

You should read this appendix carefully before making any decisions regarding the conversion process.

- “Preparing for Conversion—Phase 1” on page 326 discusses activities you can complete immediately in preparation for converting your database.
- “Preparing for Conversion—Phase 2” on page 333 discusses additional activities to complete before converting your database.
- “During the Conversion—Phase 3” on page 365 details how to run and monitor the conversion and determine whether it has been successful.
- “After Conversion—Phases 4 and 5” on page 380 describes adjustments needed after the conversion.
- “Relational Data Integrity” on page 396 provides additional information on how the conversion manages financial data.

- “Base Currency Conversion and Consolidation” on page 406 discusses considerations only relevant when one or more databases are involved in a consolidation relationship.
- Use the “Base Currency Conversion Checklist” on page 412 to monitor the completion of conversion tasks.

Tip
You can also generate a Conversion Checklist Report (26.21.1.23).

See “Euro Timetable” on page 315.

Euro Timetable and Conversion

The introduction of the euro occurs in five phases, governed by appropriate legislation for the participating countries in the EMU. During each phase, different supporting features of MFG/PRO can be used.

Figure A.4 illustrates the five phases in the euro timetable. The dates used here are for illustration only, and are based on the dates used for currencies in the initial transition to the euro. The actual timeline for additional currencies may be quite different and will be determined by legislation that applies to each new member of the EMU.

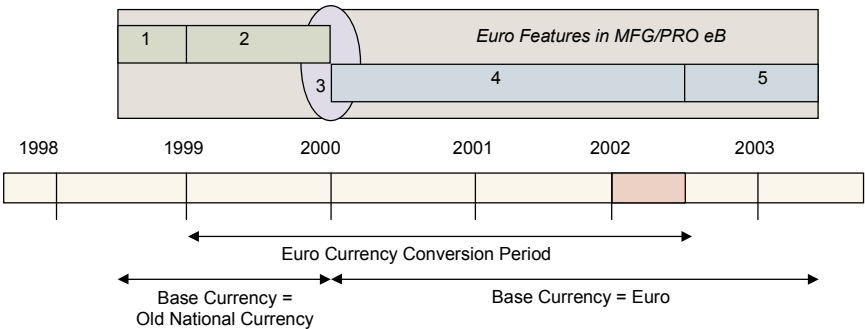


Fig. A.4
Five Phases of Euro Conversion

If your company is located in a country that joins the EMU, you are not required to convert your base currency immediately. You can plan various activities to occur during the introductory phases.

Phase 1

Before the transition period begins, organizations can set up and plan euro currency features, but cannot actually use the euro in transactions.

Phase 2

January 1, 1999, the date the euro became a valid currency, was the start of the transition period for those countries that initially adopted the euro. During the transition period, you can define effective exchange rates against the euro, report financial transactions in the euro or any other currency of your choice, print dual currency invoices, and raise vouchers in the euro for member purchase orders. You must also perform a one-time EMU revaluation when the exchange rate is fixed.

During this phase, your database still has its original national currency as its base currency. However, you can begin to prepare for conversion to the euro by:

- Running financial integrity checks to verify the internal integrity of your database. Compare these results with the post-conversion results.
- Carrying out a test conversion, using a copy of your production database.

Phase 3

Some time during the transition period, you must convert the base currency of your database to the euro. Existing financial data is also converted.

During the base currency conversion, the database cannot be accessed by users, so you should plan to keep this phase as short as possible.

Typically, although this is entirely your decision, conversion is scheduled at the start of a new accounting year. To continue reporting on prior periods, you must keep a copy of the original database on your system. Both versions of the database—the new one that has been converted to the euro, and the old one that is still in the old national currency—must be available for short periods of time after the conversion.

Year-end activities must be performed on the original database, not the converted version. All transactions for the new accounting year must be entered into the new version of the database. Once year-end close transactions are complete in the original database, the starting balance in the new euro database can be corrected, if necessary.

Figure A.5 clarifies this approach, which is in line with standard procedures used when new accounting systems are installed.

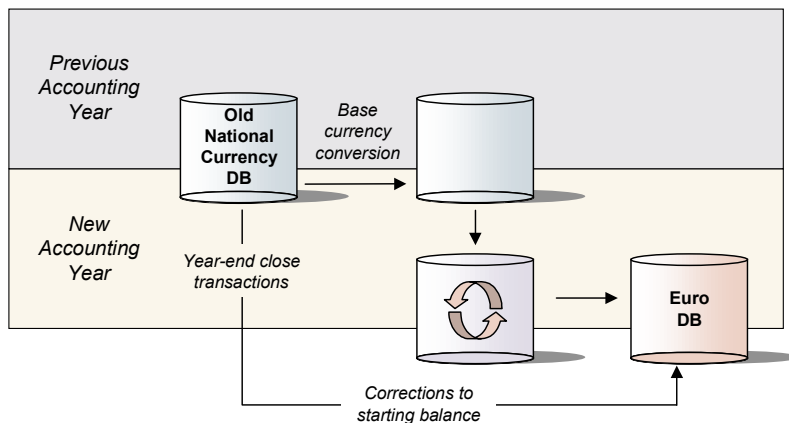


Fig. A.5
Completing Year-
End Close
Transactions

After completing the base currency conversion, run the financial integrity checks again and compare before and after results. If they are equivalent, you can proceed to phase 4. If the results are different, you must restore your backup database and start over at phase 2.

Tip
Before conversion amounts are in the old base currency; after conversion amounts are in the euro.

Phase 4

The functions you execute in this phase are the same as in phase 2, but the euro is now the base currency. You can also continue to report financial transactions in your existing national currency for informational purposes.

Phase 5

At the end of the transition period, any open documents that refer to your old national currency should be reviewed. You should either delete these or convert them to the euro. You should no longer enter new data referencing old national currencies after this date.

Conversion Steps

Converting your database to the euro requires a number of steps. These activities can be grouped by the phase when they occur. The steps must be performed in the listed order, but can be performed over a period of time within the relevant phase.

While you must perform steps in the correct sequence, some can be performed more than once. This is true, for example, of running financial integrity checks. If problems occur at any stage, you may need to return to an earlier step and repeat part of the process.

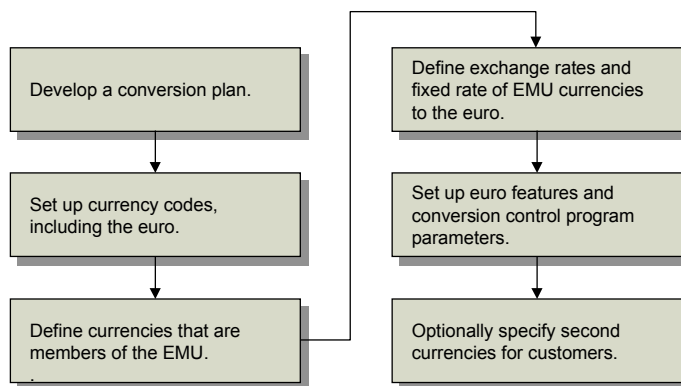
Important The steps performed during phase 3 should be performed as consecutive activities over the shortest possible period. This minimizes disruption to your normal work procedures.

Preparing for Conversion—Phase 1

This section details the initial steps required before you begin the conversion of your database to the euro. These steps can be taken well in advance of the conversion. Carrying out this preparation minimizes the time required for the actual conversion.

Figure A.6 represents preparation steps you can take in phase 1.

Fig. A.6
Preparation Steps in
Phase 1



This initial preparation includes standard multicurrency functions as well as euro-specific settings in Euro Functionality Control (26.21.24).

Setting Up the Euro and EMU Currencies

Before you can enter currency values in the euro, you must create a euro currency and define exchange rate relationships between the euro and each EMU member currency. Defining this code lets you process documents in the euro, even before the base currency of your database is converted. Basic multicurrency setup is described in Chapter 5.

You use three programs to fully define the euro:

- Use Currency Maintenance (26.1) to define codes for the euro as well as each national currency you use.
- Use EMU Currency Maintenance (26.19) to indicate which currency code is the euro and identify the national currencies that are in transition to the euro.
- After the exchange rate of the euro to EMU member currencies is officially fixed, use Exchange Rate Maintenance (26.4) to define exchange rate relationships.

▶ See “Setting Up Multiple Currencies” on page 118.

▶ See “Defining Currency Codes” on page 119.

▶ See “Defining Exchange Rates” on page 122.

Setting Up EMU Currencies

Use EMU Currency Maintenance (26.19) to identify the currencies—including the euro—that are part of the European Monetary Union.

This function is needed only during the transition period when a new country is becoming part of the EMU and its national currency is considered a denomination of the euro.

Note Identify the EMU currencies before defining the fixed exchange rates in Exchange Rate Maintenance (26.4).

Specify the start date when the member currency becomes a denomination of the euro and the end date when the member currency is no longer a denomination.

Tip
The start date for initial members was January 1, 1999.

Figure A.7 illustrates an example of some of the national currencies that became denominations of the euro during its initial introduction.

Fig. A.7
EMU Currency
Maintenance
(26.19)



Member	Start	End Date
ATS	01/01/1999	12/31/2001
ESP	01/01/2002	01/01/2002
FIM	01/01/1999	12/31/2002
FRF	01/01/2002	12/31/2002
ITL	01/01/2002	01/01/2002
LUF	01/01/1999	12/31/2001
NLG	01/01/2002	12/31/2002
PTE	01/01/1999	12/31/2001

Tip
Only one union
currency can be
defined.

Tip
If you create
multiple effective
ranges for one
currency, they
cannot overlap.

Union Currency. Enter the currency code identifying the euro. The code specified must be an active currency defined in Currency Maintenance and cannot be a member currency defined in EMU Currency Maintenance.

Member. Enter the currency code of a nation participating in the EMU. This must be an active currency defined in Currency Maintenance and cannot be the euro.

Start. Enter the date when this currency becomes a denomination of the euro. Euro conversion processing rules only apply to currency transactions with an effective date after this start date.

Start defaults to the date of the previous entry.

End. Enter the date when the currency is no longer a denomination of the euro. This date must be the same as or later than the start date. Euro conversion processing rules only apply to currency transactions with an effective date before the specified end date.

End defaults to the value of the previous entry.

Note The system checks for a direct exchange rate between the member currency and any currency other than the euro within the start and end date range. If one is found, an error displays.

Defining Exchange Rate Relationships

You set up exchange rates for member currencies and the euro in Exchange Rate Maintenance (26.4) in the same way as other exchange rates with the following special conditions.

- An EMU member currency can have a direct exchange rate only to the euro. If one currency is an EMU currency, then the other must be the euro
- When one of the currencies is the euro and the other is an EMU member currency, the Units field in Exchange Rate Maintenance defaults to 1 and cannot be updated. EMU member currencies can only have direct exchange rates with one unit of the euro.

▶ See “Defining Exchange Rates” on page 122.

When an EMU member currency defined in EMU Currency Maintenance (26.19) is involved in an order transaction such as Sales Order Maintenance (7.1.1), triangulation through the euro is used to determine the exchange rate. In this case, the exchange rate relationship is stored and displayed as four components. The exchange rates between an EMU member currency and the euro are fixed and cannot be updated.

▶ See “Euro Currency Rules” on page 317 for more details on triangulation.

The Fixed Rate field does not display when both currencies in a transaction are EMU member currencies since these rates are already fixed through the euro. It does display for transactions with one EMU member currency. In this case, triangulation through the euro is used. Setting Fixed Rate to No only affects the relationship of the non-EMU currency to the euro.

Defining Control Settings

Euro Functionality Control (26.21.24) serves two purposes.

- It lets you enable and manage dual currency reporting features. These are useful both for companies doing business with EMU member nations and companies with an EMU currency.
- It provides settings used to enable and manage the conversion of a database’s base currency to the euro. These let you:
 - Specify the GL account, sub-account, and cost center used to correct any rounding differences that occur during the conversion.

- Specify the effective date for any correction bookings needed in the GL because of conversion rounding differences.
- Activate the batch conversion procedures used for converting your database's base currency to the euro.

Fig. A.8
Euro Functionality
Control (26.21.24)

The screenshot shows the 'Euro Functionality Control' window with the following fields and values:

- Old Base Currency: USD
- Print SO/Inv In Dual Cur: ☐
- Show Conversion Rounding Diff with Rpt Cur: ☐
- Euro Currency Exchange Rates Activated: ☐
- Euro Conversion Rounding Differences Account: 1055
- Is GL Correction Booking Date in Valid Period: 07/23/02
- Allow Conversion: ☐

On the left, two labels with arrows point to the window: 'Currency reporting features' points to the 'Print SO/Inv In Dual Cur' field, and 'Base currency conversion settings' points to the 'Euro Conversion Rounding Differences Account' field.

See “Dual Pricing” on page 388.

Old Base Currency. This field is display-only, and defaults to the currency code specified in System/Account Control (36.1) before conversion.

Print Sales Orders/Invoices in Dual Currency. This field indicates whether a second currency should display on invoices and sales orders. The default is No.

If you enter Yes, sales orders and invoices in EMU currencies or the euro can also display pricing information in a second currency specified for the customer in Customer Maintenance (2.1.1). When a second currency is not specified in Customer Maintenance, a second currency is not shown. The second currency displays for reference only.

For EMU currencies other than the euro, the second currency is always the euro. If the original currency is the euro, the second currency is set in Customer Maintenance.

Even if this field is Yes, only the relevant financial documents created in the euro or one of the participating EMU currencies are affected. Any such documents created in non-EMU currencies continue to be single currency.

See “Conversion Differences” on page 395 for details.

Show Conversion Rounding Differences with Reporting Currency.

This option affects the display of reports when the Reporting Currency field is used. Selecting a reporting currency converts the value of selected financial documents to the currency of your choice.

This conversion process can introduce rounding errors. As a result, the total of the converted amounts on the reports might no longer equal the sum of their detailed amounts.

When this option is Yes, the report includes an additional line showing the cumulative rounding difference caused by conversion.

Euro Currency Exchange Rates Activated. This display-only field indicates whether the initial copying of euro exchange rates has taken place. If it has, Yes displays here, together with the date and time the copy was performed. Otherwise, No displays.

♦ See “Activating Euro Exchange Rates” on page 340.

Euro Conversion Rounding Differences Account, Sub-Acct, CC. Use this account, sub-account, and cost center to ensure the general ledger still balances after your database is converted to the euro. Any changes needed to correct rounding differences that occur during the euro conversion are posted to this account. Correction bookings are posted on the effective date specified in the next field.

♦ See “Relational Data Integrity” on page 396 for details on required corrections.

The conversion uses a running total approach to ensure that the current balance sheet and income statement are as close as possible to the amounts before the conversion. However, this approach can lead to imbalances between debit and credit accounts on a day-to-day basis. The account, sub-account, and cost center that you specify in these fields are used for corrections.

Is GL Correction Booking Date in Valid Period. If rounding errors occur, the conversion routine makes a one-time correction booking effective on this date. The date must be in a valid accounting period for all entities with accounting transactions, and is usually the date of the base currency conversion.

Allow Conversion. This field indicates whether the database is in a suitable state for the base currency conversion process to be activated. Valid entries are Yes or No (the default). This field cannot be updated from No to Yes until you have performed all preliminary conversion steps. Set this field to Yes immediately before shutting down and backing up the database in readiness for the conversion.

Important Be sure you are ready to proceed with the conversion before setting Allow Conversion to Yes. Once all open database sessions are closed, you cannot restart MFG/PRO until the conversion completes or you restore the database from a backup copy.

The MFG/PRO startup procedures validate if this field is set to Yes, and if it is, prevent any unauthorized user access to the database during the base currency conversion. The conversion must be performed when no users are logged in to the database.

The conversion procedures reset this field to No automatically when all conversion processes complete. This re-enables user access to the database.

Defining Second Currencies for Customers

If you are planning to print sales orders and invoices in two currencies, you can use the Cust Second Currency Mass Update (26.21.5) utility to assign a second currency to groups of customers, rather than doing it one at a time in Customer Maintenance.

See page 330.

Set up the dual currency option in Euro Functionality Control (26.21.24).

Fig. A.9
Cust Second
Currency Mass
Update (26.21.5)

You can update this field based on the country associated with the customer, the customer type, the customer's current default currency, or their associated site.

You can enter the currency to be assigned as the dual pricing second currency for the selected customers. The dual pricing second currency lets you see prices in both an EMU currency and the euro on sales quotes, sales orders, or sales invoices.

You can replace the value already defined for second currency by specifying Yes in Override Existing Definition. If you enter No to this field, only customers with a blank second currency are updated.

Preparing for Conversion—Phase 2

This section details additional preparation steps required prior to converting the base currency of your database to the euro. These steps can be taken well in advance of the conversion.

Figure A.10 represents the steps that can be taken in phase 2.

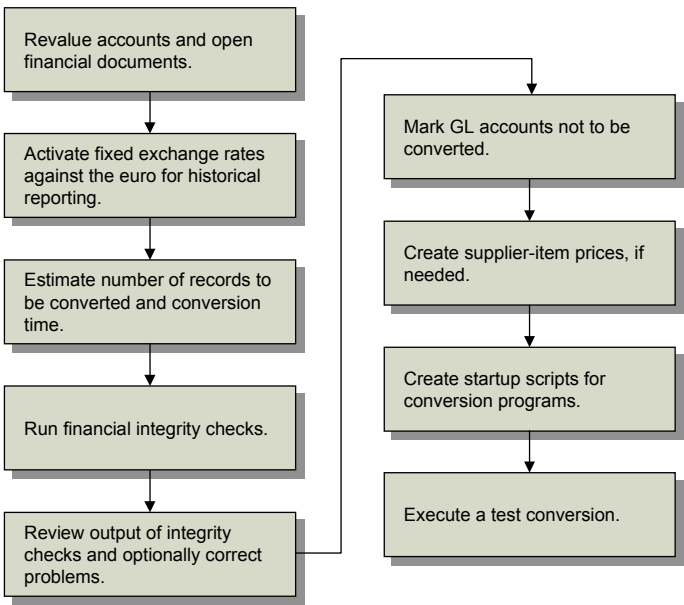


Fig. A.10
Preparation Steps
in Phase 2

Most of the functions needed to complete these tasks are found on the Pre-Conversion Menu (26.21.1) and its submenus.

Menu #	Description	Program
26.21.1.2	Initial Euro Exchange Rate Copy	etrategp.p
26.21.1.6	AR EMU Revaluation	etarfxmt.p
26.21.1.7	AP EMU Revaluation	etapfxmt.p
26.21.1.8	GL EMU Revaluation	etglfxmt.p
26.21.1.9	Imported Transactions EMU Revaluation	etglfimp.p
26.21.1.12	Financial Integrity Checks Menu	

Table A.2
Pre-Conversion
Menu (26.21.1)

Menu #	Description	Program
26.21.1.13	Accounts Not To Convert Maintenance	etexacmt.p
26.21.1.14	Accounts Not To Convert Report	etexacrp.p
26.21.1.16	Supplier Item Price Creation	etsipc.p
26.21.1.18	Count Program	etcount.p
26.21.1.19	Count and Estimate Report	etcntrp.p
26.21.1.20	Hash Total Report	ethashrp.p
26.21.1.23	Conversion Checklist Report	etvack.p

Using these functions, you can:

- Revalue foreign currency GL accounts and open documents based on the fixed rate to the euro.
- Convert current exchange rates into exchange rates against the euro, and modify these rates if necessary.
- Count the contents of the database to determine how many records need converting and approximately how long the actual conversion will take.
- Analyze the integrity of your database and generate reports detailing any discrepancies. Based on this analysis, you can correct problems as needed.
- Determine the currency in which each account in the general ledger should be held after the conversion.
- Create supplier-item prices.
- Generate a report indicating how many pre-conversion tasks are complete.

Important Before executing the actual conversion, you must also create startup scripts and run a test conversion.

Revaluing EMU Accounts and Documents

On December 31, 1998, exchange rates of the original EMU member currencies were fixed, with an exchange rate effective date of January 1, 1999. It is likely that the next set of countries and currencies adopting the

euro will follow a similar process, but the date is not yet known. By European directive, companies must account for profits or losses that are realized on that date because of exchange rate differences.

All foreign EMU currency amounts must be revalued using the fixed EMU exchange rates, and gains or losses must be booked. The reporting requirements are country dependent and in some countries, gains and losses must be booked to different GL accounts.

Use the following set of functions to perform this revaluation:

- AR EMU Revaluation (26.21.1.6)
- AP EMU Revaluation (26.21.1.7)
- GL EMU Revaluation (26.21.1.8)
- Imported Transaction EMU Revaluation (26.21.1.9)

You need to run these functions only once for each EMU currency. For the original EMU members, this must be done when the exchange rates were fixed at the end of 1998. If other nations join the union at a later date, every member must revalue the new member's currency on the date the exchange rate is fixed.

Before executing these functions, use Currency Maintenance to define, by currency, the gain and loss accounts for realized and unrealized gains and losses.

♦ See “Defining Currency Codes” on page 119.

Processing Order for Revaluation

Important The revaluation of accounts and imported transactions must occur after revaluation of AR and AP documents. This prevents problems that occur when AP accounts and AR accounts exist in foreign EMU currencies.

To ensure that the right sequence is followed, GL and Imported EMU Revaluation check that both AR and AP EMU Revaluation are complete before they execute. You should set Mark Completed to Yes in these programs to indicate when all revaluations are complete.

Both AR and AP revaluation can be run for a subset of documents, entities, and EMU currencies. Make sure that Mark Completed is set to Yes only when all documents, currencies, and entities have been revalued.

Report-Only Mode and Audit Trail

All of the revaluation programs can be run in a report-only mode by setting Create Transactions to No. Set Audit Trail to Yes to generate a report of the transactions that will be revalued when Create Transaction is set to Yes.

GL EMU Revaluation

Use GL EMU Revaluation (26.21.1.8) to:

- Revalue EMU member currency GL accounts against the fixed EMU exchange rates for the euro currency to calculate the gains and losses for a given fiscal year.
- Correct previous unrealized revaluations as a result of the foreign exchange revaluation procedure. Amounts from the unrealized gain and loss accounts are posted to the currency realized gain and loss accounts.

Fig. A.11
GL EMU
Revaluation
(26.21.1.8)

Enter appropriate information in the following fields.

Entity, To. Enter a range of entities with accounts to be revalued.

Account, To. Enter a range of EMU currency accounts to be revalued.

EMU Currency, To. Enter a range of EMU currencies for selecting accounts to be revalued.

Effective Date. Enter the effective date for selecting transactions to revalue. This is normally the end date of the GL period to be processed. This date is also the GL effective date for the gain/loss transaction.

Exchange Rate Date. Enter the date the system should use when looking for the effective exchange rate to use in the revaluation.

Create FX Transactions. If Yes, the system automatically creates foreign exchange (FX) realized exchange rate gain/loss transactions. Bookings are created to convert unrealized gain/loss to realized gain/loss. Specify No to generate a report only.

Print Audit Trail. Specify Yes to print a report of updates to the output device specified.

Transaction Processing

For each selected entity, posted and unposted GL transactions from period one of the first year in which transactions were created through the effective date specified are processed. For each period, a new GL reference is created and all accounts within the account range are processed. If the currency of the account is an EMU member currency, the account is selected and the sub-accounts are processed.

Tip
Periods are defined in GL Calendar Maintenance (25.3.4).

For the selected sub-accounts, the value in both base currency and foreign currency is calculated with respect to the euro for the end date of the selected period. All existing unposted FX transactions for the account, up to the end date, are added to the balance total.

The base currency value of the account is calculated based on the fixed EMU member exchange rates to the euro currency. If this value differs from the existing base currency value, an FX-realized exchange rate gain or loss transaction is created for that account with the effective date specified. The transaction description is FX-Realized. Posted and unposted FX-unrealized amounts are also converted to realized, with a description of FX-Converted.

Exchange Rate Date

Use the Exchange Rate Date field to distinguish between the GL effective date and the exchange rate effective date. This is required since the two dates do not always coincide.

Example The first countries joining the EMU revalued with a GL effective date of 12/31/1998. The fixed rate of the euro to the old national currency was set as of 01/01/99. The latter date (the start of the fixed rate) should be specified for the exchange rate effective date.

Different GL and exchange rate effective dates will be needed by companies in countries joining the EMU at a later date such as Britain and Sweden.

Account Balances

If you have used Foreign Exchange Revaluation (25.19.13), you should be aware of the following. Prior to Version 8.6E, this program posted unrealized exchange gains and losses to the Unrealized Exch Rate Gain/Loss Acct specified in General Ledger Control (25.24). This account is no longer used and has been removed from the control program. Instead separate exchange gain and loss accounts are defined for each currency in Currency Maintenance (26.1).

GL EMU Revaluation uses the accounts associated with the currency. When it revalues an FX transaction, it debits the unrealized gain account associated with the currency and credits the realized gain account. However, the original unrealized gain calculated by Foreign Exchange Revaluation may have been posted to the account in the control program. Since this account is no longer available to the system, any amounts posted to it will remain after the revaluation. As a result, account imbalances may occur after revaluation that need to be adjusted manually.

Imported Transaction EMU Revaluation

Imported Transaction EMU Revaluation (26.21.1.9) works the same way as GL EMU Revaluation, except that only imported GL transactions are reviewed (type XY), and only imported transaction realized exchange rate gain and loss accounts are used in the transactions.

Only transactions for entities with a non-base EMU member currency are revalued. For these entities, only accounts defined in the base currency with a currency translation index of 1 (current) are revalued.

♦ See “Account Indexes” on page 144.

Unrealized amounts are converted from the Translation Adjustment Accounts—for Income or Balance Sheet—specified in General Ledger Control (25.24). The realized amounts are posted to the realized exchange gain or loss accounts associated with the currency in Currency Maintenance (26.1).

AR EMU Revaluation

AR EMU Revaluation (26.21.1.6) revalues open AR documents and unapplied payments in EMU member currencies to the euro currency. Run the revaluation for a range of entities and member currencies on a specified effective date. When the exchange rate of an open document in a member currency differs from the fixed exchange rate to the euro, a realized gain or loss is calculated.

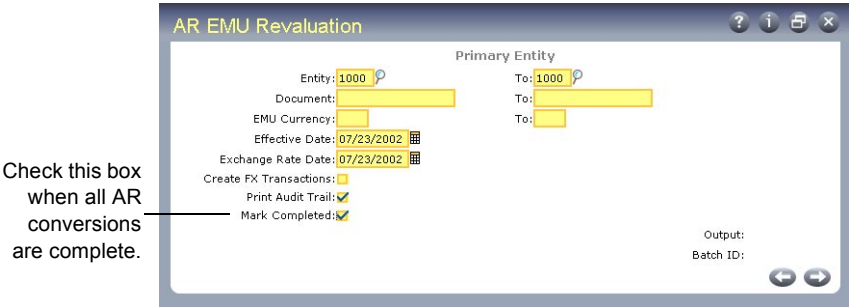


Fig. A.12
AR EMU
Revaluation
(26.21.1.6)

Important AR revaluation must be complete before GL or Imported Transaction EMU Revaluation are run. To indicate you have completed this step, set Mark Completed to Yes the last time you run AR EMU Revaluation.

Transaction Processing

For each selected entity, open AR transactions from period one of the first year in which transactions were created through the effective date specified are processed. For each period, all open documents within the document range are processed. If the currency of the document is within the EMU member currency range you specify, it is selected and processed.

For the selected document, the value in both base currency and foreign currency is calculated with respect to the euro for the end date of the selected period. All existing unposted FX transactions for the document, up to the end date, are added to the balance total.

The base currency value of the document is calculated based on the fixed EMU exchange rates. If this value differs from the existing base currency value, an FX-realized exchange rate gain or loss transaction is created for that document with the effective date specified. The transaction description is FX-Realized.

AP EMU Revaluation

AP EMU Revaluation (26.21.1.7) works in the same way as AR EMU Revaluation, except that open AP documents are processed.

AP revaluation must also be complete before GL or Imported Transaction EMU Revaluation are run. To indicate you have completed this step, set Mark Completed to Yes the last time you run AP EMU Revaluation.

Activating Euro Exchange Rates

Use Initial Euro Exchange Rate Copy (26.21.1.2) to automatically copy existing exchange rates, including ones that are no longer effective, to rates offset against the euro. The rates against the euro are calculated based on the fixed rate of the base currency against the euro. The old rates to the national currency are deleted when this program completes.

Rates for the old national currency against the euro are added to the exchange rate table for a range:

- Beginning five years before the current system date
- Ending on the currency end date specified in EMU Currency Maintenance

The historical rates are primarily used for historical reporting. For example, they are referenced by reports like AR or AP Aging by Effective Date. If you enter an effective date prior to the date the relevant currency became a denomination of the euro, the system retrieves the equivalent rate against the euro created by this program.

You should execute this program as soon as the exchange rate between your current base currency and the euro is fixed, even if you are not planning to convert the base currency of your database immediately.

After exchange rates are copied, the system automatically sets the Euro Currency Exchange Rates Activated field in Euro Functionality Control to Yes. This field must be Yes before you can execute the base currency conversion.

Table A.3 illustrates the process of copying existing exchange rates to exchange rates offset against the euro. In this example, the base currency is the Dutch guilder (NLG) and the exchange rates are initially offset against the German mark (DEM).

Line	Currency	Base Currency	Period	Exchange Rate
1	DEM	NLG	01/01/97 – 06/31/98	1.1253
2	DEM	NLG	07/01/98 – 02/11/99	1.1167
3	FRF	NLG	01/01/97 – 06/31/98	1.1131
4	FRF	NLG	07/01/98 – 12/31/98	1.11304

Table A.3
Initial Exchange Rates

If the euro exchange rate for the Dutch guilder is 2.00000, the copy action adds the exchange rates for the euro shown in Table A.4.

Line	Currency	Euro	Period	Exchange Rate
1	DEM	EUR	01/01/97 – 06/31/98	1.777304
2	DEM	EUR	07/01/98 – 12/31/98	1.772648
3	FRF	EUR	01/01/97 – 06/31/98	1.758690
4	FRF	EUR	07/01/98 – 12/31/98	1.758688
5	NLG	EUR	01/01/94 - 07/01/02	2.0

Table A.4
Converted Exchange Rates

In row two of Table A.4, the end date was truncated to 12/31/98, since it extended beyond the introduction of the euro. The system also added a fifth row, extending the fixed rate of the base currency to the euro.

Note The program only extends the fixed rate for the old base currency to the euro. It sets the start date five years before the introduction of the euro and the end date to the end of the transition period.

Running Count and Estimate Programs

Use the Count Program (26.21.1.18) on the Pre-Conversion Menu to count the records in your database that need to be converted to the euro and list them in a report.

Based on these numbers, the system:

- Calculates the total number of records that need to be converted
- Estimates the length of time it will take to convert the relevant tables

Tip

Conversion on the Oracle platform typically takes three to five times longer than conversion of Progress databases.

When estimating the time required for database conversion, the system multiplies the time taken to count the records in a table by five. This factor typically yields an appropriate value for the entire conversion, although its accuracy may vary for individual tables or batch programs. The exact conversion factor may also vary depending on your operating system and hardware configuration.

This information is stored in the database. During the base currency conversion, these record counts and time estimates are used to monitor the progress of the conversion. At any time during the conversion, you can see how many records remain that still need to be processed, and what percentage of the database has been converted.

The Count Program also generates and stores the data reported by the Hash Total Report. It calculates the totals for each base currency amount and each exchange rate that needs to be converted. Separate totals are calculated for positive and negative amounts and rates. These results are stored in a work table in your database and can be used to verify the success of the base currency conversion.

You must run the Count Program before generating either the Count and Estimate Report or the Hash Total Report.

Count and Estimate Report

Use Count and Estimate Report (26.21.1.19) to print the results of the Count Program.

Figure A.13 illustrates a sample report output by this function.

Page: 1 Quality Products Corp. Time: 14:33:39

Batch	Table Name	Total Records	Count Time	Estimated Conv.Time
01	abd_det	3	00:00:00	00:00:00
	accd_det	1	00:00:00	00:00:00
	ast_mstr	2	00:00:00	00:00:00
	dprd_det	6	00:00:00	00:00:00
	dprt_det	25	00:00:00	00:00:00
	fas_ctrl	1	00:00:00	00:00:00
	maxt_det	4	00:00:00	00:00:00
	max_mstr	2	00:00:00	00:00:00
	TOTAL:	44	00:00:00	00:00:00
02	abs_mstr	5	00:00:00	00:00:00
	ptv_det	0	00:00:00	00:00:00
	sd_mstr	2	00:00:00	00:00:00

Fig. A.13
Example Count and
Estimate Report
Output

Tables that contain only a few records display a 0 (zero) count time when less than a second is required for the count.

Hash Total Report

The Hash Total Report (26.21.1.20) displays the totals calculated by the Count Program and stored in a database work table. Figure A.14 illustrates the Hash Total Report screen.

Hash Total Report

Field: To:

Include Zero Values:

Output:
Batch ID:

Fig. A.14
Hash Total Report
(26.21.1.20)

Note A hash total is a mathematical value derived by an algorithm that uses cross-checks to ensure that two sets of data are identical.

Run the Hash Total Report immediately before and immediately after the conversion. Then compare the results to verify if the conversion was successful.

Zero values are not normally included in the report since they indicate that few or no records exist. You can include them if you want to verify that no fields were overlooked.

Count values are stored by field, not table name. Run the report for a range of fields with a common prefix to approximate a report by table name.

Example To see all the fields in the ar_mstr, enter the range ar_acct to ar_var_cc.

Figure A.15 illustrates a sample page from the Hash Total Report.

Fig. A.15
 Hash Total Report
 (26.21.1.20)

ethashrp.p e-a		26.21.1.20 Hash Total Report				Date: 25/02/2001	
Page: 12		Quality Products Corp.				Time: 16:52:55	
Field	Pre-Conv	Pos	Expected	Total	(Pow)	Pre-Conv	Neg
	Post-Conv	Positive	Total	(Pow)		Post-Conv	Negative
ard_amt							
		2.654.932,2583333333		0			264.800,35
			0,00	0			0,00
		2.654.932,2583333333		0			264.800,35

Tip
 In the sample report, (Pow) represents the scaling factor—or power of ten—used to adjust large numbers.

Hash totals are calculated by summing up every value in each column and row of the table. The resulting calculated totals for positive and negative amounts can be very large. The system can store a maximum of 40 digits before the decimal point. When a number exceeds this limit, a scaling factor, or exponent, is applied. The amount is divided by 10 and the scaling factor is increased by 1. Any new amounts that need to be added are divided by 10^{scaling factor}. Using this approach, very large amounts can be stored.

Both the pre- and post-conversion results are displayed in terms of the euro. The system multiplies the pre-conversion results by the euro exchange rate so that amounts are in equivalent currencies. Any differences should be due to rounding differences only.

Note This is unlike the other integrity reports, which display pre-conversion results in the old base currency and post-conversion results in the euro.

Table A.5 and Table A.6 illustrate how the system derives the hash totals to verify the success of the base currency conversion. These examples assume:

1 euro = 2 units of base currency

Table A.5 shows the totals for various base currency amounts before and after the conversion. The first column lists original base currency amounts before the conversion, which are then split by sign in the next two columns. Column 4 shows the same amounts after conversion to the euro. These converted amounts are then split by sign in the final two columns.

Before Conversion			After Conversion		
Original Amount	Positive Total	Negative Total	Converted Amount	Positive Total	Negative Total
12.65	12.65		6.33	6.33	
-123.98		-123.98	-61.99		-61.99
450.25	450.25		225.13	225.13	
-97.50		-97.50	-48.75		-48.75
-18.12		-18.12	-9.06		-9.06
Totals (in old base currency):	462.90	-239.60	Totals (in euros)	231.46	-119.80

Table A.5
Converted
Currency Amounts

The system then divides the totals before conversion by the euro exchange rate.

Before Conversion			After Conversion		
Original Amount	Positive Total	Negative Total	Converted Amount	Positive Total	Negative Total
Totals (in euros):	231.45	-119.80	Totals (in euros)	231.46	-119.80

Table A.6
Converted
Currency Amounts
in Euros

The slight difference in this example between the actual converted positive total (231.46) and the estimated one (231.45) is caused by rounding differences introduced during the conversion.

Running Financial Integrity Checks

As part of preparing for conversion, you must run various checks on the financial integrity and consistency of the data in the database using functions on the Financial Integrity Checks Menu (26.21.1.12) and its submenus.

These functions perform cross-checks on related data elements. This lets you verify the data and highlight any imbalances both before and after the base currency conversion. Sub-ledgers should match the general ledger, and totals must equal the sum of their parts both before and after the conversion.

◆ See “Relational Data Integrity” on page 396.

If the checks highlight any imbalances before the conversion, you can either resolve these differences or accept them as they are. However, remember that any imbalances that exist when you begin conversion remain afterward. The conversion does not attempt to resolve such differences. The goal of the conversion is to neither improve nor lower the financial integrity of your database in any way. However, because complex interdependencies of data can exist, complete relational integrity cannot always be maintained after the conversion.

The results of the integrity checks are stored in a log table, created automatically in your database, and marked *before conversion*. You should run further financial integrity checks immediately after the conversion—marked *after conversion*—and then compare the two sets of results. Review the log tables to ensure the conversion has not impacted the integrity of the data in your database.

Each report has a pre-conversion and post-conversion column. Before conversion, the amounts in the pre-conversion column are in the old national currency. The post-conversion columns show zeros. After conversion, the post-conversion columns express amounts in the euro; the pre-conversion amounts remain in the old base currency.

Important You should not attempt the actual conversion until you have performed these tests at least once.

Where possible, these checks are automated. The automatic financial integrity checks verify the financial integrity and consistency of the following data:

- The internal structure of GL history
- Accounts Receivable against the general ledger
- Accounts Payable against the general ledger
- The internal structure of inventory
- Work in Process against the general ledger
- For purchase orders, the PO Receipts not Invoiced account
- The internal structure of Fixed Assets and their link to the general ledger

A combined integrity check enables you to verify all the data checked by the individual integrity checks at once.

You may also want to run some standard financial checks. These checks must be performed manually, since they require detailed knowledge of your chart of accounts and accounting procedures. As with the automated financial checks, these should be performed both before and after the conversion and the two sets of results compared to verify the success of the conversion.

If equivalent reports produce inconsistent results before and after the base currency conversion, problems occurred during the conversion.

Note The automated checks are intended to be run immediately before and after conversion of the database to the euro. They are not intended for use on a day-to-day basis.

Financial Integrity Checks Menu

Both the automated and the recommended manual financial integrity checks can be accessed from two Financial Integrity Checks menus (26.21.1.12 and 26.21.3.1). These two menus are identical, but one is accessed from the Euro Functionality Pre-Conversion Menu, the other from the Post-Conversion Menu.

Table A.7
Financial Integrity
Checks Menu
(26.21.1.12)

Menu Number	Description	Program
26.21.1.12.1	GL Integrity Report	etinglrp.p
26.21.1.12.3	AR Integrity Report	etinarrp.p
26.21.1.12.4	AP Integrity Report	etinaprp.p
26.21.1.12.6	PO Integrity Report	etinporp.p
26.21.1.12.8	Inventory Integrity Report	etinirp.p
26.21.1.12.9	WIP Integrity Report	etinwirp.p
26.21.1.12.11	Fixed Assets Integrity Report	etinfarp.p
26.21.1.12.12	Combined Integrity Checks	etincbrp.p
26.21.1.12.13	Trial Balance	gltrbp.p
26.21.1.12.14	Income Statement	glinrp.p
26.21.1.12.15	Balance Sheet	glbsrp.p
26.21.1.12.16	AR Aging as of Effective Date	arcsrp05.p
26.21.1.12.17	AP Aging as of Effective Date	apvorp04.p
26.21.1.12.18	Inventory Valuation as of Date	ppptrp06.p
26.21.1.12.19	Work Order WIP Cost Report	woworp09.p
26.21.1.12.20	AR Tax by Tax Rate Report	txarrp01.p
26.21.1.12.21	AP Tax by Tax Rate Report	txaprp01.p
26.21.1.12.22	Purchase Receipts Report	poporp06.p

The manual integrity checks on these two menus are identical to those found on the standard menus. They are included simply for completeness and for ease of use.

Alternatively, the automated checks can also be run in batch mode from the server in the same way as the conversion process. This is particularly advantageous immediately after the conversion completes, since it means you can run these checks while the database is still inaccessible to users.

Running Automated Checks

All the automated financial integrity checks have the same selection screen. From this initial selection screen, you can choose to do one of the following:

- Generate the integrity check records without printing the results (set Build to Yes and Report to No).

- Generate the integrity check records and print the results (set Build and Report to Yes).
- Print the results generated by a previous execution of the integrity check program (set Build to No and Report to Yes).

The features of each individual integrity check are described in the following sections. All of them first verify that no unposted GL transactions exist display a warning if they do. Your checks may produce unreliable results if unposted transactions exist.

Note You cannot run the base currency conversion procedure when unposted GL transactions exist.

The report generated by each automated check displays separate lists for errors found before the base currency conversion and those found after.

General Ledger Integrity Check

The GL Integrity Report (26.21.1.12.1) verifies the internal structure of the general ledger. The following items are verified:

- The total of the detail GL transactions in the GL transaction history table is equal to the values stored in the account balance detail table.
- The entity for each GL entry exists.
- The account for each GL entry exists and is active.
- The values of debits and credits for each entity are equal for any effective date, with the exception of any year-end-close transactions.

For each combination of entity, GL account, sub-account, and cost center where the total of the posted GL transactions is not equal to the account balance as stored in the system, the report lists:

- Entity
- Account, sub-account, and cost center
- Pre-conversion GL transaction total (in original base currency)
- Pre-conversion account balance total (in original base currency)
- Post-conversion GL transaction total (in the euro)
- Post-conversion account balance total (in the euro)

For any effective date where the total of all debit and credit postings does not equal zero, the report lists the effective date, the pre-conversion balance, and the post-conversion balance. If no errors are found, the report displays a message indicating that the GL integrity is intact.

Accounts Receivable Integrity Check

Tip
Type A (allocation) records are not checked.

The AR Integrity Report (26.21.1.12.3) verifies the AR balance against the general ledger. The following items are verified:

- A customer record exists for all open AR documents.
- The value of all open AR records is equal to the balance of the appropriate AR accounts in the general ledger, for all entities.
- The applied amounts are correct for all open AR transactions.
- All open AR transactions have associated AR detail records.
- All AR detail records have associated AR master records.
- Customer balance equals the sum of open AR transactions for the related customer.

Imbalances may be found in the Accounts Receivable and/or the general ledger before and after the conversion. Any differences found before the conversion remain after the conversion, unless you investigate and fix them before beginning the conversion process.

For each AR account referenced on open AR transactions, the report lists:

- Entity
- Account, sub-account, and cost center
- Pre-conversion AR total (in original base currency)
- Pre-conversion AR currency total (in original base currency)
- Pre-conversion GL total (in original base currency)
- Post-conversion AR total (in the euro currency)
- Post-conversion AR currency total (in the euro currency)
- Post-conversion GL total (in the euro currency)

The report output varies depending on what kind of errors are found. If no errors are found, the report is empty. No message confirming integrity displays.

Accounts Payable Integrity Check

The AP Integrity Report (26.21.1.12.4) verifies the AP balance against the general ledger. This integrity check works in a similar way to the AR check. The following items are verified:

- The supplier record exists for all open AP documents.
- The value of all open AP records is equal to the balance of the appropriate AP accounts in the general ledger, for all entities.
- The applied amounts are correct for all open AP transactions.
- All open AP transactions have associated voucher detail or check detail records.
- All voucher and check detail records have associated AP master records.
- Supplier balances equal the sum of open AP transactions for the suppliers concerned.

For each AP account referenced on open AP transactions, the report lists:

- Entity
- Account, sub-account, cost center
- Pre-conversion AP total (in original base currency)
- Pre-conversion AP currency total (in original base currency)
- Pre-conversion GL total (in original base currency)
- Post-conversion AP total (in the euro currency)
- Post-conversion AP currency total (in the euro currency)
- Post-conversion GL total (in the euro currency)

The report output varies depending on what kind of errors are found. If no errors are found, the report is empty. No message confirming integrity displays.

Inventory Integrity Check

The Inventory Integrity Report (26.21.1.12.8) verifies the relationship between inventory transactions in the inventory sub-ledger and GL inventory transactions. The following items are verified:

- Inventory transaction history records are checked to ensure that GL cross-reference records exist for those transactions affecting the GL.

- Inventory transaction GL cross-reference records are checked to ensure that a corresponding inventory transaction history record exists.

The report output varies depending on what kind of errors are found. If no errors are found, the report displays a message indicating that the inventory integrity is intact.

You cannot verify the relationship of the general ledger and the inventory sub-ledger over a period of time. The starting balance cannot be determined because inventory transactions do not create consolidated entries. In addition, if you have modified the product line GL accounts, this check cannot verify the link to the individual GL accounts.

In this situation, you should use Inventory Valuation as of Date (3.6.15) to verify the link between the GL and inventory records. You must know which GL account balances the report totals need to be compared against.

Work in Process Integrity Check

The WIP Integrity Report (26.21.1.12.9) verifies the work in process (WIP) balance against the general ledger. The following items are verified:

- WIP cost is calculated for each open work order record.
- These values are then accumulated by entity, GL account, sub-account, and cost center, and are compared with the equivalent values in account balance detail records in the general ledger. These values are then displayed together with any differences between the calculated WIP cost and the GL value.

The WIP Integrity Report must be run immediately before and immediately after the base currency conversion. It is not possible to check the integrity of this data on any given effective date.

This check is similar to the standard Work Order WIP Cost Report (16.3.5). However, the layouts of the resulting reports are different. The Work Order WIP Cost Report breaks out the information by work order account and accumulates the total WIP cost for each GL WIP account.

The WIP Integrity Report lists the following for each WIP account on open work order master records:

- Entity
- Account, sub-account, and cost center
- Pre-conversion WIP amount (in original base currency)
- Pre-conversion GL total (in original base currency)
- Post-conversion WIP amount (in the euro currency)
- Post-conversion GL total (in the euro currency)

The report output varies depending on what kind of errors are found. If no errors are found, the report is empty. No message confirming integrity displays.

Purchase Order Integrity Check

The PO Integrity Report (26.21.1.12.6) verifies the financial data for non-vouchered or partially vouchered purchases as part of the conversion of the base currency to the euro. The following items are verified:

- The open value of all non-vouchered or partially vouchered purchase order receipts for both inventory and non-inventory items is calculated. This calculated value is compared with the GL value of each of the accounts specified for PO Receipts (from the item product line) and Expensed Items Receipts (from System/Account Control).
- The site for each open PO receipt exists.
- The site for each open PO with a receipt exists.

This integrity check is similar to the existing Purchase Receipt Report (5.13.5), when executed with the Non-Vouchered Only option. However, the layouts of the resulting reports are different.

For each PO Receipts account or Expensed Items Receipts account referenced on open purchase receipts history records (those not fully matched against vouchers), the report lists:

- Entity
- Account, sub-account, and cost center
- Pre-conversion PO receipts amount (in original base currency)
- Pre-conversion GL total (in original base currency)

- Post-conversion PO receipts amount (in the euro currency)
- Post-conversion GL total (in the euro currency)

The report output varies depending on what kind of errors are found. If no errors are found, the report is empty. No message confirming integrity displays.

Fixed Assets Integrity Check

The Fixed Assets Integrity Report (26.21.1.12.11) verifies the internal structure of the fixed assets financial data and compares it to the general ledger. This report is similar to Depreciation Expense Report (32.5.7).

The following items are verified:

- The asset cost and accumulated depreciation are calculated for every asset by entity, by account, sub-account, and cost center.
- These calculated values are compared with the GL value of each of the general ledger accounts specified for Asset accounts and Accumulated Depreciation accounts for the defined asset classes.

For each asset cost account and accumulated depreciation account referenced on asset master records where the asset concerned is neither fully depreciated nor retired, the report lists:

- Entity
- Account, sub-account, and cost center
- Pre-conversion asset cost/accumulated depreciation amount (in original base currency)
- Pre-conversion GL total (in original base currency)
- Post-conversion asset cost/accumulated depreciation amount (in the euro currency)
- Post-conversion GL total (in the euro currency)

This integrity check uses the asset master to determine which GL accounts need checking. You cannot check the integrity of this data on any given effective date, but you can calculate the relevant values per GL period.

Running Combined Checks

The Combined Integrity Checks (26.21.1.12.12) enables you to generate integrity check records for all the automated integrity checks at one time.

You can run this check both before and after the base currency conversion. You can run it online or in batch mode, to allow the more intensive processing to be carried out in the background.

You can use the individual financial integrity programs to print the results generated by this program.

Running Manual Checks

You might also want to perform some standard financial checks to verify and approve the conversion results. These checks cannot be automated because they rely on information regarding company-specific accounting and procedures. In many cases, only someone with detailed knowledge of a company's bookkeeping procedures knows which accounts need to be checked.

Table A.8 lists standard reports you should consider running, and the checks you should perform before approving conversion results.

For ease of use, these recommended manual reports can be accessed from the two Financial Integrity Checks menus, in addition to their standard menu positions in other modules. The programs in both places are identical. The additional menu positions are offered as a convenient way to run them in conjunction with the automated checks.

Note In all reports, amounts before conversion are in the old base currency; afterwards they are in the euro. To make comparisons, divide the pre-conversion totals with the fixed euro exchange rate for the old national currency. The results should be the same as the post-conversion amount.

Table A.8
Manual Integrity
Checks

Menu	Description	Checks
25.15.4	Trial Balance Summary	Check if the Trial Balance is the same before and after the conversion. The monetary value should be the same and the debit and credit amounts should match.
25.15.8	Balance Sheet	Check if the Balance Sheet is the same before and after the conversion. The monetary value should be the same and the debit and credit amounts should match.
25.15.13	Income Statement	Check if the Income Statement is the same before and after the conversion. The monetary value should be the same and the debit and credit amounts should match.
27.18	AR Aging as of Effective Date	Check if the sub-ledger matches the general ledger, and if this report shows the same monetary values before and after the conversion.
28.17.6	AP Aging as of Effective Date	Check if the sub-ledger matches the general ledger, and if this report shows the same monetary values before and after the conversion.
3.6.15	Inventory Valuation as of Date	Check if the Inventory Value is the same before and after the conversion.
16.3.5	Work Order WIP Cost Report	Verify the Work in Process accounts. These accounts can contain imbalances because differences can be introduced by archiving or when WIP Revaluation is not run after modification of standard costs.
2.13.15.14	AR Tax by Tax Rate Report	Verify tax amounts between the GL and the sub-ledger tax amounts.
2.13.15.17	AP Tax by Tax Rate Report	Verify tax amounts between the GL and the sub-ledger tax amounts.
5.13.5	Purchase Receipt Report	Run this report with Non Vouchered Only set to Yes, and verify the results against the balance of the PO Receipts account set up in Product Line Maintenance and the Expensed Items Receipt account defined in System/Account Control.

Reviewing and Fixing Integrity Problems

If the integrity checks performed in the previous step find any problems with the consistency of your financial data, you must review those differences and attempt to correct them where necessary. Not all of the differences need to be corrected. However, you should be aware of them before the conversion so that you understand the results after the conversion.

Any errors you choose not to correct will still exist after the conversion. Immediately before you start the base currency conversion, you should run the financial integrity checks again with Build Integrity Check Records set to Yes. The output of these checks is saved in the database, and used to verify the post-conversion results.

Important It is strongly recommended that you test the conversion beforehand with a copy of the production database so you can verify the conversion results.

After completion of the base currency conversion, you must run the financial integrity checks again with Build Integrity Check Records set to Yes and compare the post-conversion and the pre-conversion results. If the results are the same—when divided by the fixed euro exchange rate—the database can be made available for general use. You can then proceed with the various post-conversion activities.

However, if significant differences are found between the pre-conversion and post-conversion results, you must restore a backup copy of the production database and return the live system to its pre-conversion state.

Table A.9 lists specific errors displayed in the output of the various automated integrity check programs.

Program	Condition	Message
GL	For each posted GL transaction that references an entity that does not exist in the entity master.	ENTITY: <GL transaction entity> NOT ON FILE
	Any GL accounts referenced on posted GL transactions without a corresponding account master record.	ERROR: ACCOUNT: <account code> NOT ON FILE

Table A.9
Integrity Error
Messages

Table A.9 — Integrity Error Messages — (Page 1 of 3)

Program	Condition	Message
AR	For each customer (bill-to) where the customer balance is not equal to the total of open AR transactions for that customer.	CUST BALANCE = <customer balance> BUT AR TOTAL = <total of open AR transactions>
	For each bill-to address referenced on open AR transactions without a corresponding customer master record	CUSTOMER: <Bill-to address> DOES NOT EXIST
	For each AR master record without a corresponding AR detail record.	NO AR DETAIL LINES EXIST
	For each AR detail record without a corresponding AR master record.	NO AR MASTER RECORD EXISTS
AP	For each supplier where the supplier balance is not equal to the total of open AP transactions for that supplier.	SUPP BALANCE = <supplier balance> BUT AP TOTAL = <total of open AP transactions>
	For each supplier address referenced on open AP transactions without a corresponding supplier master record.	SUPPLIER: <Supplier address> DOES NOT EXIST
	For each AP master record of type VO without a corresponding voucher master record.	NO VOUCHER MASTER RECORD EXISTS
	For each voucher master record without a corresponding voucher detail record.	NO VOUCHER DETAIL LINES EXIST
	For each voucher detail record without a corresponding voucher master record.	NO VOUCHER MASTER RECORD EXISTS
	For each voucher master record without a corresponding AP master record.	NO AP MASTER RECORD EXISTS
	For each check detail record without a corresponding check master record.	NO CHECK MASTER RECORD EXISTS
	For each check master record without a corresponding AP master record.	NO AP MASTER RECORD EXISTS
	For each check master record without a corresponding check detail record.	NO CHECK DETAIL RECORDS EXIST

Table A.9 — Integrity Error Messages — (Page 2 of 3)

Program	Condition	Message
PO	For each site referenced on purchase receipt history records or associated purchase order master records without a corresponding site master record.	SITE DOES NOT EXIST
Inventory	For each inventory transaction history record without a corresponding inventory transaction GL cross-reference record.	TRGL_DET for transaction: <transaction number> DOES NOT EXIST
	For each inventory transaction GL cross-reference record without a corresponding inventory transaction history record.	TR_HIST for transaction: <transaction number> DOES NOT EXIST

Table A.9 — *Integrity Error Messages* — (Page 3 of 3)

Specifying GL Account Currencies

By default, all accounts in the GL and its sub-ledgers held in the original base currency are converted to the euro. The currency code is changed on accounts only; base currency documents and transaction detail are not modified.

You may want some GL accounts to remain in their existing national currency. For example, you may want accounts linked to bank accounts to remain in the currency of the corresponding bank account. Similarly, you may want AR or AP accounts that are split by currency to remain in their original currency.

Use Accounts Not To Convert Maintenance (26.21.1.13) to indicate which base currency GL accounts you do not want converted to the euro. Specify an account code and set Convert to No.

After the conversion, these exception accounts are marked as foreign currency accounts, not base currency accounts. All other base currency accounts not identified as exceptions are converted to the euro.

Use Accounts Not To Convert Report (26.21.1.14) to print a list of exception accounts.

Creating Supplier-Item Prices

It is possible that not all purchased items have supplier quotes defined in Supplier Item Maintenance (1.19). When this happens, the system uses the GL material cost, defined in Item Master Maintenance (1.4.1), as the supplier quote. The GL material cost is expressed in the base currency and converted to the euro during the base currency conversion.

After the conversion, the supplier's currency remains the old national currency. If any purchase orders or requisitions are made for those items, the GL material cost is converted back to the original national currency. This can introduce rounding differences, resulting in the creation of purchase requisitions or orders with incorrect pricing information.

You can prevent this by creating supplier item prices in the old national currencies for these purchased items. You can do this manually or use Supplier Item Price Creation (26.21.1.16).

Fig. A.16
Supplier Item Price
Creation
(26.21.1.16)

This program processes each purchased item without a supplier quote in the old base currency. It then creates a supplier quote for such items, in Supplier Item Maintenance. This supplier quote is in the base currency and is based on the GL material cost currently defined in Item Master Maintenance (1.4.1).

Creating Startup Scripts

The actual base currency conversion procedures consist of two parts:

- Conversion batch processes perform the actual conversion. These run in the background with no user output.
- The base currency conversion control process controls and monitors the batch programs and outputs status information on their progress.

You must start the base currency conversion process directly from the operating system prompt, the same way you start an MFG/PRO session. It cannot be started from within MFG/PRO itself. The conversion must also be run on the server machine, not on a client.

To do this, you must create two new operating system scripts:

- `ba_ctrl` starts the base currency conversion control process.
- `ba_conv` starts the conversion batch programs.

You should base both these scripts on the standard MFG/PRO startup script.

Note The example scripts shown here are based on the UNIX operating system. If your environment is not UNIX based, you must create similar scripts for your operating system.

Creating `ba_ctrl`

Copy the standard MFG/PRO startup script to `ba_ctrl`. Then, replace the startup line in the new `ba_ctrl` with:

```
#start monitor
$DLC/bin/_progres $DBNAME -p language_code/et/etcnvctr.p
```

`$DLC` should contain the directory name where Progress is installed and `$DBNAME` should contain the file name of the MFG/PRO database to be converted.

Important The scripts access the MFG/PRO database in the same way it is accessed when a user logs in. For this reason, the program to run (`-p`) must be qualified with the language directory and the two-character program directory.

A record must exist in the database for the blank user ID with the appropriate language code. Use User Maintenance (36.3.18) to define the record if it does not exist.

The following example shows how the `ba_ctrl` script could look in UNIX for the Dutch language code (`du`). Lines in bold have been added to the original MFG/PRO startup script. Lines marked with strikethrough have been deleted from that original script.

```
# start server
$DLC/bin/_mprosrv $DBNAME -H HPCPD -n 24
$DLC/bin/_progres \
$DBNAME -ld qaddb \
-cpinternal iso8859-1 -cpcell basic -Bt 350 -c 30 -D 100 -mmax 3000
-d dmy -nb 2
00 -s 48 -yy 1950 -E
# start monitor
$DLC/bin/_progres $DBNAME -p du/et/etcnvctr.p
# shut down server
$DLC/bin/proshut $DBNAME -bn
```

Creating ba_conv

Copy the standard MFG/PRO startup script to `ba_conv`. Then, replace the startup line in the new `ba_conv` with the following lines.

```
#start batches
$DLC/bin/_progres $DBNAME -p language_code/et/etbatm.p -b &
$DLC/bin/_progres $DBNAME -p language_code/et/etbat03.p -b &
$DLC/bin/_progres $DBNAME -p language_code/et/etbat11.p -b &
$DLC/bin/_progres $DBNAME -p language_code/et/etbat08.p -b &
$DLC/bin/_progres $DBNAME -p language_code/et/etbat04.p -b &
$DLC/bin/_progres $DBNAME -p language_code/et/etbat05.p -b &
$DLC/bin/_progres $DBNAME -p language_code/et/etbat06.p -b &
$DLC/bin/_progres $DBNAME -p language_code/et/etbat07.p -b &
$DLC/bin/_progres $DBNAME -p language_code/et/etbat02.p -b &
$DLC/bin/_progres $DBNAME -p language_code/et/etbat09.p -b &
$DLC/bin/_progres $DBNAME -p language_code/et/etbat10.p -b &
$DLC/bin/_progres $DBNAME -p language_code/et/etbat01.p -b &
$DLC/bin/_progres $DBNAME -p language_code/et/etbat12.p -b &
$DLC/bin/_progres $DBNAME -p language_code/et/etbat13.p -b &
$DLC/bin/_progres $DBNAME -p language_code/et/etbat14.p -b &
$DLC/bin/_progres $DBNAME -p language_code/et/etbat15.p -b &
$DLC/bin/_progres $DBNAME -p language_code/et/etbat16.p -b &
$DLC/bin/_progres $DBNAME -p language_code/et/etbat17.p -b &
$DLC/bin/_progres $DBNAME -p language_code/et/etbat18.p -b &
```

These commands start multiple Progress sessions that run simultaneously in the background. The UNIX convention for a background task is appending an ampersand (&). If your operating system uses a different convention, use it instead.

Note The batch processes are not started in numerical order. You should use the order listed here to optimize performance.

The following example shows how the `ba_conv` script could look in UNIX for the Dutch language (du). Lines marked in bold have been added to the original startup script. Lines marked with strikethrough have been deleted from that original script.


```

DLC=/ext0/dlc83
DBDIR=/ext1/production/mfg86e/db
PATH=$PATH:$DLC;export PATH
PROTERMCAP=$DLC/protermcap;export PROTERMCAP
PROMSGS=$DLC/promsgs
MFG=/ext1/mfg86e/qad
export DLC MFG DBDIR
DBNAME=$DBDIR/mfg.db;export DBNAME
PROPATH=$PROPATH:$MFG:$MFG/du:$MFG/du/src:$MFG/du/bbi:$MFG/du/xrc
export PROPATH
$DLC/bin/_progres \
$DBNAME -ld qaddb \
cpinternal iso8859-1 cpecll basic Bt 350 c 30 D 100 mmax 3000
-d dmy nb 2
00 s 48 yy 1950 E
# start batches
$DLC/bin/_progres $DBNAME -p du/et/etbatm.p -b &
$DLC/bin/_progres $DBNAME -p du/et/etbat03.p -b &
$DLC/bin/_progres $DBNAME -p du/et/etbat11.p -b &
$DLC/bin/_progres $DBNAME -p du/et/etbat08.p -b &
$DLC/bin/_progres $DBNAME -p du/et/etbat04.p -b &
$DLC/bin/_progres $DBNAME -p du/et/etbat05.p -b &
$DLC/bin/_progres $DBNAME -p du/et/etbat06.p -b &
$DLC/bin/_progres $DBNAME -p du/et/etbat07.p -b &
$DLC/bin/_progres $DBNAME -p du/et/etbat02.p -b &
$DLC/bin/_progres $DBNAME -p du/et/etbat09.p -b &
$DLC/bin/_progres $DBNAME -p du/et/etbat10.p -b &
$DLC/bin/_progres $DBNAME -p du/et/etbat01.p -b &
$DLC/bin/_progres $DBNAME -p du/et/etbat12.p -b &
$DLC/bin/_progres $DBNAME -p du/et/etbat13.p -b &
$DLC/bin/_progres $DBNAME -p du/et/etbat14.p -b &
$DLC/bin/_progres $DBNAME -p du/et/etbat15.p -b &
$DLC/bin/_progres $DBNAME -p du/et/etbat16.p -b &
$DLC/bin/_progres $DBNAME -p du/et/etbat17.p -b &
$DLC/bin/_progres $DBNAME -p du/et/etbat18.p -b &
# shut down server
$DLC/bin/proshut $DBNAME -bn

```

Verifying Database Readiness

Use the Conversion Checklist Report (26.21.3.23) to verify that your database is ready for conversion. This report scans conversion-related records in the database and verifies that all required records exist.

The following items are verified:

- Has the conversion already been performed?
- Is the GL booking date specified in Euro Functionality Control in a valid period?
- Have all transactions been posted?
- Is the euro currency defined?

- Are both the euro and the old base currencies defined as EMU currencies?
- Has the Initial Euro Exchange Rate Copy been completed?
- Has a valid account been defined for rounding differences in Euro Functionality Control?
- Has the Count Program been executed?
- Are AP financial integrity checks complete?
- Are AR financial integrity checks complete?
- Are FA financial integrity checks complete?
- Are GL financial integrity checks complete?
- Are inventory financial integrity checks complete?
- Are PO financial integrity checks complete?
- Are WIP financial integrity checks complete?

If all the criteria are met, the report indicates that you can now begin the conversion.

Running a Test Conversion

It is very important that you run a test conversion before converting your production database. This test conversion is identical to the real one and follows all the same steps. The only difference is that it is done on a copy of your database rather than the live version.

Performing a test validates the conversion procedures for your specific environment, including any customizations you may have. It also gives you valuable information regarding the length of time the real conversion is likely to take.

You are strongly advised to verify that each step of the test conversion completes successfully before attempting to convert your live database.

During the Conversion—Phase 3

This section describes the steps you must take during the conversion of your MFG/PRO database to the euro.

Figure A.17 represents the steps required to execute the conversion.

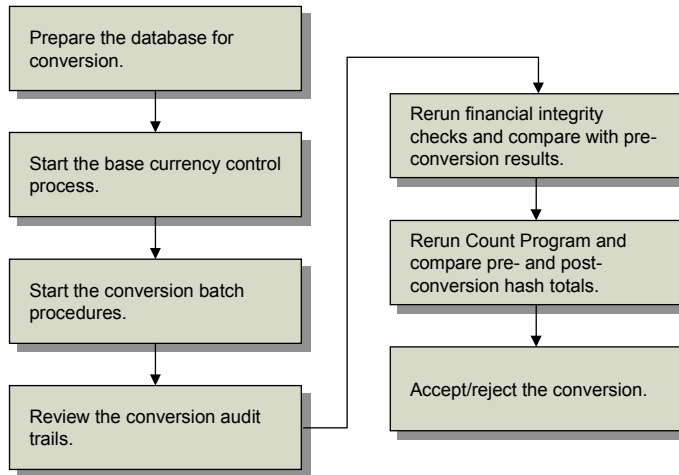


Fig. A.17
Conversion Steps in
Phase 3

Users cannot access the database during the conversion. To minimize the amount of time the database is unavailable, you should:

- Allocate a suitable time to perform the conversion, such as a weekend or holiday.
- Ensure the conversion steps are carried out as quickly as possible.

You should consider the timing of the conversion of the database to the euro. Typically, the start of a new accounting year is the most appropriate time. This has the advantage of ensuring a full accounting year completed with a single base currency. It also has the disadvantage that accounting year-end close transactions typically still need to be done.

Year-end transactions are not usually completed directly at the start of the new accounting year. As a result, you must keep two versions of the database on your system until these transactions are complete:

- The new euro version, used for all new transactions
- The old national currency version, used for the year-end transactions

The actual conversion is started from the operating system, since access to the database is prohibited during this period.

Preparing the Database for Conversion

Immediately before carrying out the conversion of the base currency, you must perform a number of activities:

- Activate conversion
- Bring your database down
- Reduce the size of the database Before Image (.bi) file
- Back up your database
- Restart the servers

Activate Conversion

The conversion must be performed without any users working in the MFG/PRO system. However, performance is optimized if multiple conversions are performed at the same time. This requires the database to be in multiuser mode. To run the database in multiuser mode but prevent unauthorized user access, set the Allow Conversion field in Euro Functionality Control to Yes. The MFG/PRO startup procedures check the value of this field. When it is Yes, users cannot log in.

Set this field immediately before shutting down and backing up the database in readiness for the conversion. This ensures that when you restart the database in multiuser mode, no users can log in.

Important Be sure you are ready to proceed with the conversion before setting Allow Conversion to Yes. Once all open database sessions are closed, you cannot restart MFG/PRO until the conversion completes or you restore the database from a backup copy.

Bring Database Down

The next step is to bring the database server processes down in readiness to perform a full backup.

Reduce Before Image File

Reduce the size of the Before Image files (using *kill bi*) to make the backup process faster. Use the proutil utility to do this.

Back Up Database

Now you are ready to carry out a full backup of all MFG/PRO databases. The conversion procedures run in no-integrity mode to maximize performance. This means it is very important that you have a full system backup that you can use if necessary.

Important Check that the backup completes successfully without errors and verify that you can restore the backup tape successfully before proceeding with the conversion.

Tip

Use the Progress
-i startup
parameter to
indicate no-crash
protection mode.

Start Servers

After the backup completes successfully, restart the server processes.

Executing the Base Currency Conversion

Executing the conversion requires two steps:

- Starting the base currency conversion control process, which monitors the conversion progress.
- Starting the conversion batch programs, which perform the actual database updates.

Starting the Control Process

Start the base currency conversion control process from the operating system prompt with the script you created. The monitor performs the following functions:

- Verifies that the conversion process can be started.
- Monitors the progress of each conversion batch procedure.
- Verifies when all the conversions have been completed.
- Verifies that any necessary GL correction procedures have been performed.

♦ See “Creating Startup Scripts” on page 360.

Important If you have a client/server installation such as Windows, do not perform the conversion from a client session. The client/server setup implies that during the conversion the entire contents of your database are transported over the network.

Conversion Records

Internally, the currency conversion process is guided by *conversion detail steps*. One of these exists for each function that must be performed during the base currency conversion. Some steps actually convert a database table. Others perform activities such as balancing debit and credit amounts in the general ledger.

A *conversion step detail record* is associated with each conversion detail step. You cannot modify these records. They include the following information.

- The name of the batch procedure that performs the step.
- A status value, indicating if a particular step has been completed. Initially, this value is No.
- The time and date when the step was started.
- The time and date when the step was completed.
- The name of any other step that must be performed before this particular step. For example, the conversion step to balance the debit and credit amounts in the general ledger should not run before the GL conversion completes.

The step detail records are modified during the conversion to reflect up-to-date information. The Base Currency Conversion Process monitors and displays this data. Based on the step detail records, it ensures that:

- No conversion step is performed more than once.
- All the conversion steps have been completed.

Figure A.18 illustrates the relationship between these conversion step records and the batch procedures that complete the conversion.

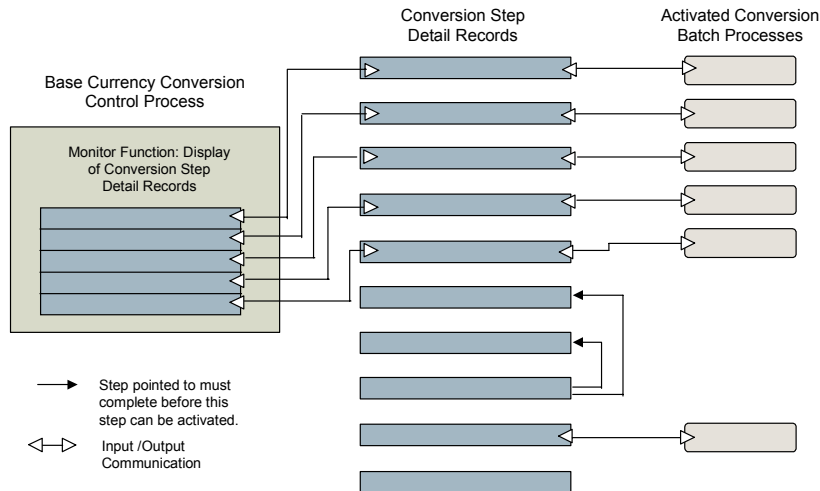


Fig. A.18
Conversion Step
Detail Records

The conversion step detail records are shown in the middle of the diagram. These can be considered to form the *script* for the conversion.

Each step in the conversion process is linked to a separate conversion batch process. These are shown on the right of Figure A.18. When the conversion batch processes start, they communicate with the conversion step detail records in your database. These records are updated by the conversion batch processes as they perform the base currency conversion.

The base currency conversion control process is shown to the left of Figure A.18. This process monitors the conversion step detail records and displays the status information contained in them, so you can monitor the conversion's progress.

Validation of Conversion Startup

The base currency conversion control process starts only if all the following conditions are met. Otherwise, it terminates with an error.

- A currency code for the euro has been defined in EMU Currency Maintenance. This currency code must also exist in the exchange rate master table.
- The currency code for the base currency exists in Euro Functionality Control, EMU Currency Maintenance, and Exchange Rate Maintenance.

- The base currency code in System/Account Control (36.1) is not the euro. If it is, the conversion has already taken place.
- The euro exchange rates have been activated. The Euro Currency Exchange Rates Activated field in Euro Functionality Control must be set to Yes.
- The fixed exchange rate between the old base currency and the euro has been specified in Exchange Rate Maintenance.
- A valid GL account, sub-account, and cost center have been specified in the Euro Conversion Rounding Differences Account field in Euro Functionality Control. This account is used for any rounding differences that occur during the currency conversion.
- A date has been specified for the entry of any corrective bookings needed to ensure GL totals after the conversion match those before. This is set in the GL Correction Booking Effective Date field in Euro Functionality Control. This date must be in a valid accounting period for all entities with accounting transaction, and is typically the conversion date.
- The financial integrity checks on the Pre-Conversion Menu have been run at least once.
- The Count Program has been run at least once.
- No unposted GL transactions exist.
- The Allow Conversion field in Euro Functionality Control is Yes.

If the criteria are met, the control process creates a record with the time and date it started. The batch processes that carry out the conversion check for the existence of this record. They terminate if this record does not exist.

Starting Conversion Procedures

♦ See “Creating Startup Scripts” on page 360.

After starting the monitor program, you can start the conversion procedures from the operating system prompt with the appropriate script. Typically, a batch process exists for each MFG/PRO table that contains data requiring conversion. For those tables containing related detail and total data, both the detail and the total records are converted by the same batch process.

Before a specific conversion batch process can start, the following criteria must be met:

- The base currency conversion control process must be running.
- A conversion step detail record must exist for that specific batch process.
- The conversion step has not already been run. Each step can only run once.
- Any conversion steps that must run before this batch process have completed. These steps are included in the conversion step detail record. On startup, the batch process verifies that required steps have completed successfully, and if not, keeps checking until the relevant steps are complete.

Once a batch process begins, its starting time and date are stored automatically in the corresponding conversion step detail record. You can pause a batch process if necessary using the base currency conversion control process.

Monitoring Batch Procedures

The individual batch conversion processes run on the server, and because of performance considerations, return no output. However, the base currency conversion control process, which controls these batch processes, does let you monitor the progress of each batch procedure.

Figure A.19 illustrates the Base Currency Control Process screen.

Fig. A.19
Base Currency
Control Process

Base Currency Control Process						
Bat	Table	Status	Total Table Records	Processed <Table>Records	Batch% Complete	Info.
01	abddet	INACTIVE	0	0	0.00%	
18	bkmstr	INACTIVE	10	0	0.00%	
07	cfmstr	COMPLETE	2	2	100.00%	
09	cslmstr	COMPLETE	0	0	100.00%	
01	dprddet	RUNNING	0	0	0.00%	
10	dsdet	COMPLETE	0	0	100.00%	
12	fp1plan	INACTIVE	0	0	0.00%	
14	opglDET	INACTIVE	0	0	0.00%	
15	pacmstr	INACTIVE	1	0	0.00%	
13	pcmstr	INACTIVE	1	0	0.00%	
03	prebal	RUNNING	44	10	4.00%	1000/120
16	qobdet	INACTIVE	0	0	0.00%	
05	rbmmstr	COMPLETE	0	0	100.00%	
06	scanstr	COMPLETE	2	2	100.00%	
02	somstr	COMPLETE	4	4	100.00%	

For each batch process, this screen shows:

- The number of the batch procedure executing
- Name of the table currently being converted
- Status of the conversion. Possible statuses are:
 - Inactive indicates the table is not being processed yet.
 - Running indicates the table is currently being converted.
 - Finished indicates that the table has been converted, but the entire batch is not yet complete.
 - Complete indicates that the last table in the entire batch has been converted.
 - Paused indicates that the user has manually halted the conversion process.
- Total number of records, as previously determined by the count and estimate programs
- Number of records processed so far
- Approximate percentage of records in batch processed so far

Note In the Info column, the related entity code and account code display for selected tables.

Tip
Only the last table
in the batch has this
status.

This screen is refreshed automatically to display up-to-date information. From this screen, you can also pause processing if a problem is encountered. To do this, select a batch process by using the Up and Down arrow keys to position your cursor on a specific line. Pressing Enter toggles the status between Running and Paused.

Tip
Refresh occurs
every 100 records.

Validating Conversion Steps

As the batch processes complete each individual conversion step, that step is marked as finished. When the steps for an entire batch process are Finished, the last step is marked Complete, indicating that the batch process has no more steps. The control process monitors which batch processes are complete and which are currently active, in order to determine when the entire conversion is complete. The conversion is totally complete when:

- All the individual tables requiring conversion are marked as converted.
- The batch process to balance the debit and credit amounts in the GL has completed.
- The batch procedure that corrects any rounding differences introduced in the general ledger is complete.

◆ See “General Ledger: Corrections” on page 376.

The control process continues to check until all the conversion steps are marked as complete. Once this is the case:

- The base currency, as specified in System/Account Control, is set to the euro.
- The Allow Conversion field in Euro Functionality Control is reset to No. This lets you access the database again.

Once the conversion is complete, a dialog box displays, prompting you to exit the Base Currency Control Process screen and return to the operating system prompt.

Converted Records

The following sections detail the main types of data requiring conversion by the batch processes. Typically, most conversions involve base currency amounts and exchange rates. Special actions may be required in some cases, such as the conversion of the general ledger's historical transactions.

Base Currency Amounts

All base currency amounts in the database are converted to the euro, with a few exceptions:

- ◆ See “GL Report Writer” on page 382.

 - General Ledger Report Writer data. This data is rebuilt after the conversion using one of the programs located on the Post-Conversion Menu.
- ◆ See “Specifying GL Account Currencies” on page 359.

 - GL accounts previously marked as being excluded from the conversion.
 - Freight charge detail.
 - Price list detail on sales orders and sales quotations.

Base currency amounts are converted to the euro by dividing the original amount by the euro exchange rate for that currency. Special rules are applied for rounding.

Normally, transaction amounts must be rounded to two decimal places for euro compliance. However, this approach could lead to incorrect results if used automatically for all base currency conversions.

Example A base currency item price is 0.03 Dutch guilder. The exchange rate against the euro is 2 Dutch guilder. If converted to two decimal places, the converted item price would be 0.02 with a rounding difference of 25% (0.005). Clearly, this is not acceptable.

Depending on the situation, the converted amount is rounded to either:

- The maximum number of decimal places, as specified in the data dictionary
- The number of decimals places (two) allowed by the euro

Base Currency Documents

When a financial document—such as an invoice—in the old base currency is converted, it retains its original currency. After the conversion, these documents are considered foreign currency documents, with the exchange rate set to the fixed rate to the euro.

Euro Documents

When a financial document—such as an invoice—in the euro is converted, it becomes a base currency document. The exchange rate for such documents is automatically set to 1.

Foreign Currency Exchange Rates

In the old national currency version of your database, exchange rates are offset against the old national currency. During the conversion process, these exchange rates, including historical ones, must be converted to rates against the euro.

Each exchange rate consists of two components. To convert existing relationships to rates offset against the euro, each component in the document’s exchange rate relationship is multiplied by its counterpart in the fixed euro exchange rate relationship.

See “Defining Exchange Rates” on page 122.

Consider a case where the database base currency before conversion is NLG. The fixed exchange rate of NLG to the euro is:

NLG 1 = EUR 2.2406

A debit memo for FRF 100 has a historical document exchange rate with these two components:

Exchange Rate Component 1: 5.12334

Exchange Rate Component 2: 2.2406

During conversion, the historical rate is multiplied by the fixed rate to the euro.

5.12334	2.2406
x 2.2406	x 1.0
11.47935	2.2406

Handling of Currency Codes

During the conversion, all fields in your database containing base currency amounts are converted to the euro, with the exception of those in the account master and those GL accounts and sub-accounts explicitly excluded from the conversion.

All currency codes in the database are checked during the conversion to find any occurrences of blank codes. Since blank currency codes denote base currency amounts, any such amounts would be converted to the euro. To prevent this, blank codes must be replaced with the currency code of the old base currency before the conversion. These then become foreign currency amounts after the conversion.

Special Conversions

Most conversions involve base currency amounts and exchange rates. However, special actions must be performed in the following cases:

- When total amounts are converted, the conversion makes sure the totals match detail amounts and no rounding differences occur.
- GL entries for an account marked as an exception must be converted to foreign currency entries.
- Sub-ledger documents in the old base currency retain their original currency after conversion, and also must be converted to foreign currency documents.

▶ See “Base Currency Documents” on page 375.

General Ledger: Corrections

In the conversion of the general ledger, all detail amounts are converted to the euro and rounded to two decimal places. Because of possible rounding differences, the sum of the converted GL detail entries may differ from the converted totals.

The objective of the conversion is that the totals of the balance sheet and income statements after the conversion should match the corresponding totals before the conversion. To verify if this is true, the ending balance before conversion is automatically compared with the starting balance after conversion. The ending balance before conversion is calculated by dividing the pre-conversion totals with the fixed euro exchange rate for the old national currency.

If discrepancies are found between the two balances, simply recalculating the account totals by adding up the new converted detail amounts (which could also contain rounding errors) could introduce larger errors than those already caused by the conversion.

If this happens, the base currency control process makes a one-time corrective booking to minimize rounding differences. This correction is an unposted GL transaction, which you can verify and modify manually, as needed.

♦ See “Relational Data Integrity” on page 396 for details.

General Ledger: Debit and Credit Balances

During the conversion, rounding differences may result in an imbalance between debit and credit amounts. Since debit matching credit is a fundamental accounting premise, balances must be restored.

After the base currency conversion completes and any necessary GL correction booking has been made, the system automatically calculates the total debit and credit amounts for each entity for each effective date. This must be done for each effective date since the difference between the debit and credit amounts varies on a day-to-day basis. Any differences between the debit and credit balances are corrected automatically with a one-time single-sided GL entry directly in the GL history.

Note When matching debit and credit, year-end close transactions are not taken into account.

Reviewing Conversion Audit Trails

Two audit trails are generated during the base currency conversion:

- Conversion audit trail
- General ledger audit trail

Conversion Audit Trail

The conversion audit trail shows the time each individual conversion procedure started and finished, as well as any other messages generated during the conversion. Since these batch procedures run in the background without user output, this information facilitates monitoring the conversion and makes tracking errors easier.

You can print this audit trail after the conversion using Conversion Audit Trail (26.21.3.3).

General Ledger Audit Trail

The GL audit trail shows the ending balances in the previous base currency and the starting balances in the euro after the conversion. This allows you to verify that the GL balances have been converted correctly.

You can print this audit trail for a range of accounts using GL Conversion Audit Trail (26.21.3.4).

Fig. A.20
GL Conversion
Audit Trail
(26.21.3.4)



This report shows all the GL balances before and after the conversion. Information included in this report is:

- Header, giving details on the conversion rate used to perform the base currency conversion, the date of the conversion, and the effective date of the correction booking.
- Account codes and descriptions.
- Pre-conversion balances in the original base currency, with a debit and credit column.
- Post-conversion balances in euro, with a debit and credit column. The post-conversion balances include the unposted GL correction bookings created by the conversion.

Rerunning Financial Integrity Checks

After the conversion completes, you must run the financial integrity checks again to verify that the conversion has not affected the financial integrity of the database. If you want, you can run the integrity checks in batch mode in the same way you ran the conversion processes. The results of these checks are stored in the relevant log table in your database and marked as after conversion.

Note Pre-conversion results are displayed on the reports in the old base currency. Post-conversion results are displayed in the euro. Adjust the pre-conversion results by the euro exchange rate to determine if the amounts are the same.

Rerunning Count Program

After the conversion completes, you should also rerun the Count Program to generate post-conversion hash totals. Then use the Hash Total Report to verify the pre-conversion and post-conversion results are the same, disregarding any rounding differences.

▶ See “Running Count and Estimate Programs” on page 342.

Accepting or Rejecting the Conversion

After rerunning the integrity checks and Count Program, review the results of these checks and the Hash Total Report and compare them with the results generated before the conversion, to ensure the conversion completed successfully.

If the conversion was successful, you can make the database available for general use. The base currency conversion control process detects when the conversion is complete and automatically resets the Allow Conversion field to No in Euro Functionality Control. This permits users to access the database again.

If you find problems with the conversion, you should restore the backup version of the database and use that instead. You can then investigate the problems in the converted database off-line without impacting other users of the system. Once you have determined why the conversion failed, you can start the conversion process again.

After Conversion—Phases 4 and 5

You may need to make a number of final adjustments after the conversion of your database to the euro. These steps can improve the relational integrity of your database. The functions needed after conversion are found on the Post-Conversion Menu (26.21.3) and its submenus.

Table A.10
Post-Conversion
Menu (26.21.3)

Menu #	Description	Program
26.21.3.1	Financial Integrity Checks Menu	
26.21.3.3	Conversion Audit Trail	etaudtrp.p
26.21.3.4	GL Conversion Audit Trail	etacaud.p
26.21.3.13	Routing Cost Roll-Up	rwroru.p
26.21.3.14	Product Structure Cost Roll-Up	bmcsrcu01.p
26.21.3.16	WIP Revaluation	wocswip.p
26.21.3.18	Sales Order Revaluation	sosorvp.p
26.21.3.19	Adjust Customer Balances	utcsbal.p
26.21.3.20	Adjust Supplier Balances	utvdbal.p
26.21.3.22	GL Report Writer Synchronize	grsync.p
26.21.3.23	Budget Calculation	glbgcalc.p

Performing Post-conversion Activities

Tip
Even after creating adjustments, some small rounding differences may remain.

During the conversion, rounding operations may introduce differences between the values of related data. You can correct these discrepancies in a number of ways. For example, you can recalculate totals and make a one-time adjustment to account for differences between converted totals and the sum of their details.

You probably need to perform some, but not necessarily all, of these revaluations to improve the relational integrity of your database. Some of these steps must be performed off-line.

Routing Roll-Ups and Product Structure

The total cost of a manufactured item, the cost of its components (the *product structure costs*), and the cost to make the item (the *routing costs*) are all converted individually. As a result, rounding differences may occur

after the conversion. Execute Product Structure Cost Roll-Up (26.21.3.14) and then Routing Cost Roll-Up (26.21.3.13) to correct these rounding problems.

Work Order Revaluation

If you need to correct the totals for the costs of manufactured items because of any rounding differences, you also need to correct the material values of any affected work orders. Use WIP Revaluation (26.21.3.16) to do this.

Sales Order Revaluation

If you need to correct the totals for the costs of manufactured items because of any rounding differences, you also need to correct the material values of any affected sales orders. Use Sales Order Revaluation (26.21.3.18) to do this.

Imported Transaction Revaluation

The balances in the base currency and the rates of any imported transactions are both converted during the conversion process. However, no revaluation using the correct euro conversion rules is performed as part of that conversion. You must reevaluate the original amounts of all imported transactions rather than the converted amount for two reasons:

- Converting an already converted amount could result in differences.
- The euro has a fixed exchange rate in relation to the old national currencies.

Use Imported Transaction Revaluation (25.19.17) to do this.

Tip

This function is not located on the Post-Conversion Menu.

Customer and Supplier Balance

To optimize performance, the conversion processes simply convert the customer and supplier balances in the customer and supplier records. However, when individual open items are converted, rounding differences can result between the customer and/or supplier balances. You can correct these differences using either Adjust Customer Balances (26.21.3.19) or Adjust Supplier Balances (26.21.3.20).

GL Report Writer

The General Ledger Report Writer transaction data is not converted. Use GL Report Writer Synchronize (26.21.3.22) to rebuild this data after the conversion.

Budget Calculation

If budgets are linked to a base account, use Budget Calculation (26.21.3.23) to correct any rounding differences that exist.

Reviewing Open Items in Old Currency

At the end of the transition period, the old national currencies of the participating countries in the EMU cease to be legal tender. Before this date, you should review all open documents in your database to see if they contain any remaining references to old national currencies. If they do, you should either delete these references or convert them to the euro.

There is no automatic procedure to handle these remaining references. Each case must be dealt with separately. In general, only a very small number of such references should remain in your database by this date.

You cannot enter transactions using old currencies after the date specified in the End date field in EMU Currency Maintenance (26.19). This date can vary from currency to currency.

Use the following guidelines for addressing issues related to various MFG/PRO documents.

Purchase Requisitions

You must create a new purchase requisition in euros for each open requisition in any of the old national currencies. You can then delete the original old currency requisition.

Purchase Orders

You must create a new purchase order in euros for each open PO in any of the old national currencies. The new PO should be created with an open quantity equal to the outstanding order quantity on the existing order and

with the currency code defined as the euro. If you use price lists and have not set up prices in the euro already, prices may also need to be adjusted. The original old national currency order should be closed.

Blanket Orders

You must create a new blanket order in euros for each open blanket PO in any of the old national currencies. The new blanket order should be created in euros, for the unreleased quantity of the old national currency order. If you use price lists and have not set up prices in the euro already, the price may need to be adjusted. The original old national currency order should be closed.

Supplier Schedules

You must create a new schedule in euros for each active supplier schedule in any of the old national currencies. If you use price lists and have not set up prices in the euro already, the price may need to be adjusted. The original old national currency schedule should be marked as inactive.

Supplier Price Lists

You must create new euro price lists for each supplier price list in any of the old national currencies. You can use Price List Copy (1.10.2.5) to create new lists and set an expiration date on the original old national currency price lists.

Supplier Items

If any supplier items reference any of the old national currencies, you must change the currency code to the euro and adjust the price accordingly.

AP Vouchers

For open AP vouchers in any of the old national currencies:

- Create a credit voucher to reverse the old currency voucher.
- Apply a zero payment to the original and credit vouchers to clear them from the ledger.
- Create a new euro voucher.

Do this before the expiration date of the applicable national currency.

Uncleared AP Payments

All uncleared AP payments made in any of the old national currencies should be reconciled or canceled. Do this before the expiration date of the applicable national currency.

AP Recurring Vouchers

You must create a new voucher in euros for each open recurring voucher in any of the old national currencies. The new voucher should be created for the remaining period of the old national currency voucher. The original old national currency voucher should be expired.

Sales Quotes

You must create a new sales quote in euros for each open sales quote in any of the old national currencies. The original old currency quote can then be deleted.

Sales Orders

You must create a new order in euros for each open unshipped sales order in any of the old national currencies. If you use price lists and have not set up prices in the euro already, the price may need to be adjusted. The original old national currency order should be deleted.

For each open partially shipped sales order in any of the old national currencies, create a new order using the euro currency code and with an open quantity equal to the outstanding order quantities of the original

order. On the original order, set the remaining order quantities to zero and print and post the invoice for the shipped quantities. If you use price lists and have not set up prices in the euro already, the price may need to be adjusted.

For each fully shipped sales order in any of the old national currencies, an invoice should be printed and posted.

Customer Schedules

You must create a new schedule in euros for each active customer schedule in any of the old national currencies. If you use price lists and have not set up prices in the euro already, the price may need to be adjusted. The original old national currency schedule should be marked as inactive.

Customer Price Lists

You must create new euro price lists for each customer price list in any of the old national currencies. You can use Price List Copy (1.10.1.8) to create new lists and set an expiration date on the original old national currency price lists.

Sales Invoices

For each open sales invoice in any of the old national currencies:

- Create a debit/credit memo to reverse the old currency invoice.
- Apply a zero payment to the original invoice and debit/credit memo to clear them from the ledger.
- Create a memo in the euro to maintain the accounts receivable balances.

Do this before the expiration date of the applicable national currency.

Debit/Credit Memos

For each open debit/credit memo in any of the old national currencies:

- Create a reversing memo.
- Apply a zero payment to the original and reversing memo to clear them from the ledger.
- Create a memo in the euro to maintain the accounts receivable balances.

Do this before the expiration date of the applicable national currency.

Finance Charges

For each open finance charge in any of the old national currencies:

- Create a reversing debit/credit memo.
- Apply a zero payment to the original finance charge and reversing memo to clear them from the ledger.
- Create a memo in the euro to maintain the accounts receivable balances.

Do this before the expiration date of the applicable national currency.

AR Payments

Accounts receivable payments against old national currency invoices must be made before the expiration of the applicable national currency.

AR Unapplied Payments

For each unapplied payment in any of the old national currencies:

- Create a reversing debit/credit memo.
- Apply the unapplied payment to the reversing memo to clear it from the ledger.
- Create a memo in the euro to maintain the accounts receivable balances.

Do this before the expiration date of the applicable national currency.

AR Drafts

You must reverse each approved draft in any of the old national currencies and create new drafts in euros. You should delete each unapproved draft in any of the old national currencies and re-create it with euro currency specified.

SSM Contracts

You must create a new contract in euros for each open contract in any of the old national currencies. If you use service price lists and have not set up prices in the euro already, the price may need to be adjusted. The original old national currency contract should be expired.

SSM Quotes

You must create a new service quote in euros for each open service quote in any of the old national currencies. The original old currency quote can then be deleted.

Service Price Lists

You must create new euro price lists for each service price list in any of the old national currencies. You can use Price List Copy (1.17.4) to create new lists and set an expiration date on the original old national currency price lists.

General Ledger

You must close each GL account code defined with the old national currencies. The balance should be transferred to a new euro GL account and the old GL account should be set as inactive.

Bank Accounts

New euro bank codes must be created.

Suppliers

Various settings associated with suppliers may need to be modified, including the AP account code, currency, and bank account code.

Customers

Various settings associated with customer records may need to be modified, including the AR account code and the currency.

Using Features During the Transition

A number of features can be used to support companies during the transition to the euro. These features are not tied to any particular transition phase, but can be used both before and after a database is converted to the euro. They can also be used by companies with a non-EMU base currency that do business with companies that are in transition.

Dual Pricing

Financial documents such as invoices or sales quotes are normally expressed in the currency of the address receiving the document. However, with the introduction of the euro, two currencies are valid for many customers: the euro and their national currency.

▶ See “Print Sales Orders/Invoices in Dual Currency” on page 330 for details.

To support companies during the transitional period—as they move from national currencies to the euro—some MFG/PRO financial documents can display item prices and totals in two currencies. This feature is enabled by the Print Sales Orders/Invoices in Dual Currency field in Euro Functionality Control (26.21.24).

When this field is Yes, original currency amounts are converted into their equivalent values in the second currency, and both values display in the document. Dual pricing applies only when the original currency amount is expressed in an EMU currency, including the euro. Documents expressed in non-EMU currencies remain single currency.

Note Prices in the second currency are included for information only. The only valid pricing remains that expressed in the original currency. A warning to this effect displays at the end of dual-currency documents.

The second currency shown on these financial documents is defined in the Second Currency field in Customer Maintenance. If a second currency is not specified, a second currency is not shown on any financial documents.

Use the Second Currency Mass Update Cust (26.21.5) utility to quickly assign second currencies to groups of customers.

♦ See “Defining Second Currencies for Customers” on page 332.

The documents generated by the following functions support dual pricing:

- Sales Quote Print (7.12.3)
- Contract Quote Print (11.5.1.3)
- Sales Order Print (7.1.3)
- RMA Print (11.7.1.3)
- Invoice Print (7.13.3)
- Closed Invoice Reprint (7.13.12)
- Pre-Shipper/Shipper Confirm (7.9.5)

A second currency is shown on the relevant financial documents only when all of the following are true:

- The Print Sales Order/Invoices with Dual Currency field in Euro Functionality Control is Yes.
- The original amounts shown in the financial document are in either an EMU currency or the euro.
- A Second Currency is defined in Customer Maintenance for the bill-to address of the document.
- The Second Currency defined in Customer Maintenance is a different currency from the original one shown on the document.

When the dual-pricing feature is enabled and these criteria are met, documents in the selected range that are in either the euro or an EMU currency are printed with dual-currency information. Only totals and item prices are shown in both currencies because this information is of most interest to the customer.

Print functions, such as Sales Order Print (7.1.3), include two columns with the totals and item prices displayed in both currencies. The following message displays at the bottom of the order where XXX is the original currency and YYY is the second currency:

The YYY prices are shown for reference only, and may not add up correctly. The only valid prices and amounts are stated in XXX.

Transparent Settlement

Normally, the system allows invoices to be paid only in the invoice currency or the base currency. However, with the introduction of the euro, two currencies are valid for many customers: the euro and their national currency.

To support companies during the transitional period—as they move from national currencies to the euro—euro transparency is allowed during settlement of financial documents. This rule also applies to assigning purchase order to vouchers.

If either the document or base currency is an EMU currency—including the euro—settlement can occur in another EMU currency or the euro. This means you can pay (or receive payment for) invoices expressed in an old national currency with euros, and those expressed in euros with an old national currency.

For example, you can accept settlement of an invoice opened in your database's base currency by a payment in the euro. Similarly, you can pay a voucher from one of your suppliers in the euro, while the original purchase order is expressed in the German mark.

Three functions support transparent settlement:

- Payment Maintenance (27.6.4)
- Voucher Maintenance (28.1)
- Cash Book Maintenance (31.13)

These functions relate to payments outside your company's control. Payment Maintenance offers transparent settlement since you have no control over the currency in which a customer settles one of your invoices. However, Payment–Manual Checks (28.9.10) does not because you determine the currency in which this payment is made.

Accounts Receivable Transparency

Payment Maintenance (27.6.4) offers transparent settlement. When a payment is received in a currency other than the document or base currency, the actual payment amount is automatically converted into the original invoice currency. This amount is then automatically converted into your database's base currency to give the actual settlement amount that appears in your financial records.

When you are using multiple currencies, the system uses the following rules in Payment Maintenance to validate the combination of base currency, payment currency, and bank currency.

Note For AR drafts, payment must always be in either the base or the draft currency.

If you have a non-EMU base currency:

- And the bank is using a non-EMU currency, payment must be in the bank currency.
- And the bank is using an EMU currency, payment can be in the bank currency, the euro, or any other EMU currency (euro transparency).

If you have an EMU base currency:

- And the bank is using a non-EMU currency, payment must be in the bank currency.
- And the bank is using an EMU currency, payment can be in any currency.

Amounts are posted to the bank cash account and the AR account in the account currency, not the transaction currency.

Example Your database base currency is NLG. You have a FRF receivable and a DEM payment against the FFR receivable. You can receive the DEM payment against a DEM bank. The amount posted to the receivable account will be in FRF and the amount posted to cash will be in DEM (assuming that DEM bank accounts are in DEM, and not base currency).

Accounts Payable and Cash Book Transparency

Transparent settlement for accounts payable is also possible, enabling you to assign purchase orders to vouchers in another currency. Normally, all purchase orders connected to a voucher must be in the same currency. The voucher currency is automatically set to the currency of the first purchase order and cannot be updated.

However, when the base currency and purchase order currency are EMU currencies, you can receive vouchers in another EMU currency—including the euro.

- You can associate purchase orders in any combination of different EMU currencies with the same voucher.
- You can enter any EMU currency or the euro for the voucher currency, even if it differs from the EMU currency or euro currency of the purchase orders.

When the currency of the purchase order and the voucher differ, a message displays the PO currency and shows the PO cost and extended open amounts in that currency.

Euro transparency is limited in AP payments by the currency of the payment bank. Base currency vouchers must be paid from a base-currency bank. For a non-base currency voucher, the bank must be either base or the same currency as the voucher. If you enter a base-currency bank, the system changes the check form to 3, indicating an electronic funds transfer.

Note The same limitation applies to payments in Cash Book Maintenance (31.13).

Reporting Currency

Most reports let you specify a reporting currency. When specified, a financial document can be reported in a currency other than the document or the base currency.

The reporting currency provides important benefits for companies with an EMU base currency:

- It prepares you for the base currency conversion of your database by enabling you to review currency information in the euro before the base currency is switched.
- It enables official reporting in the euro before the base currency of your database is converted.
- After conversion, you can continue to report in the old base currency.

Reporting currency can also be useful outside the context of euro conversion, although its usefulness is more limited. A full discussion of reporting currency features is included in Chapter 5. This section includes only examples that are related to currencies that are in transition to the euro.

♦ See “Reporting Currency” on page 133.

When you specify a reporting currency, the system takes all of the selected base currency amounts and displays them in the reporting currency, based on a single exchange rate between the reporting currency and the base currency. When the two currencies are an EMU currency and the euro, the results are the equivalent of currency translation because only one fixed rate exists between the two currencies.

Important In any case other than where the two currencies are an EMU member currency and the euro, the results are an approximation that is not suitable for official reporting.

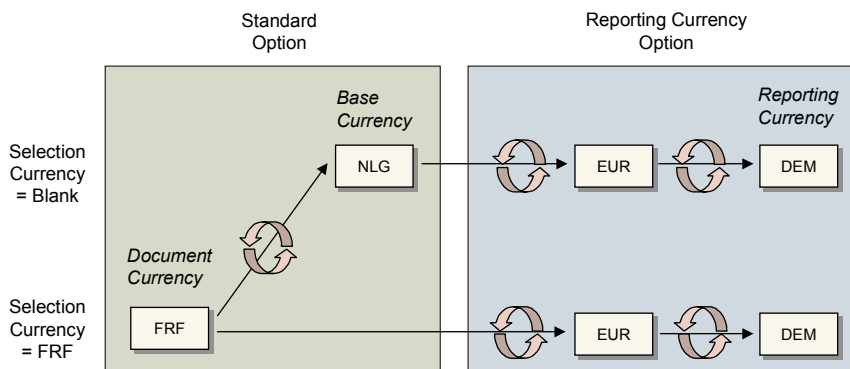
Reporting Currency Example 1

This example shows the conversion process followed when EMU currencies are involved. This example uses currencies that have already adopted the euro.

- The base currency is the Dutch guilder (NLG).
- Document currency is French francs (FRF).
- Reporting currency is the German mark (DEM).

Depending on the selection currency, the standard report amount can be either in the original French francs or it can be converted to the base currency, Dutch gilders. Either amount is then converted first to the euro, for euro compliance, and then into German marks (the reporting currency).

Fig. A.21
Different
Document and
Reporting
Currencies



Reporting Currency Example 2

When the reporting currency is the same as the document currency and no selection currency is specified, the reported amount can sometimes differ from the original amount.

When no selection currency is specified, the system converts the original document amount into a base-currency amount. This is then converted into the reporting currency (the same base currency)—or into the euro first, and then into the reporting currency, when EMU currencies are involved.

Figure A.22 illustrates the conversion flow for such a transaction.

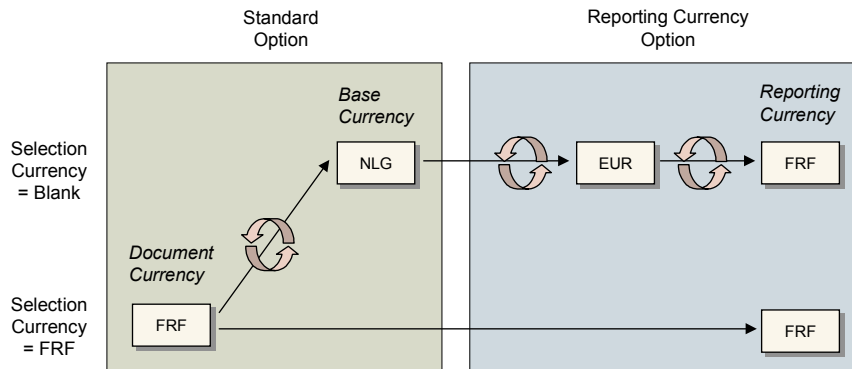


Fig. A.22
Same Document
and Reporting
Currency

In Figure A.22, the base currency is Dutch guilders, and both the document and reporting currencies are French francs. When no selection currency is specified, the document is converted:

- First to Dutch guilders, the base currency
- Then to the euro, for compliance with EMU regulations
- Finally into the reporting currency, French francs

Potential differences between the original document amount and the reported amount in this case can be caused by a combination of factors:

- Rounding differences can be introduced as a result of the reporting currency conversion.
- Different exchange rates are used at different points in the conversion.

The first conversion—from the original document currency (the French franc) to the base currency (the Dutch guilder)—uses the historical exchange rate stored in the document. The reporting currency conversion uses either the exchange rate entered into the appropriate report, browse, or inquiry or the current exchange rate.

Conversion Differences

When standard report amounts are converted to the reporting currency, rounding differences can occur. These can result in differences between converted totals and the sum of their details. If this occurs, a separate line showing these differences can be added at the end of the relevant report or inquiry.

▶ See “Show Conversion Rounding Differences with Reporting Currency” on page 330.

This display depends on the setting of the Show Conversion Differences with Reporting Currency field in Euro Functionality Control. If this field is No, the additional line is not included. This line takes the form Reporting Currency *XXX* Difference, where *XXX* is set to the reporting currency.

The difference between converted totals and the sum of their details is calculated by converting the total output by the standard version of the report or inquiry into the new reporting currency. The result of that calculation is then compared with the actual reported value in the reporting currency. Any difference between the two is the reporting currency difference and is shown in the new line added to the relevant report or inquiry.

Relational Data Integrity

This section looks in more detail at the impact of the conversion on the relational integrity of the historical data in your database.

Data Interdependencies

The base currency conversion attempts to retain the relational integrity of the historical data in your database. During the conversion, all amounts in the general ledger are converted to the euro, and all exchange rates are converted into rates against the euro.

The conversion of an individual amount into the euro is not difficult, but because many of the monetary amounts are linked to each other in the database, the conversion of your database to the euro is a complex operation. For example, the sum of the detail lines held on financial documents is also stored as the total amounts of those documents. Each detail line is translated into GL transactions, which also need to be summarized and totaled into GL balances.

Figure A.23 shows some of the interdependencies of the data in your database.

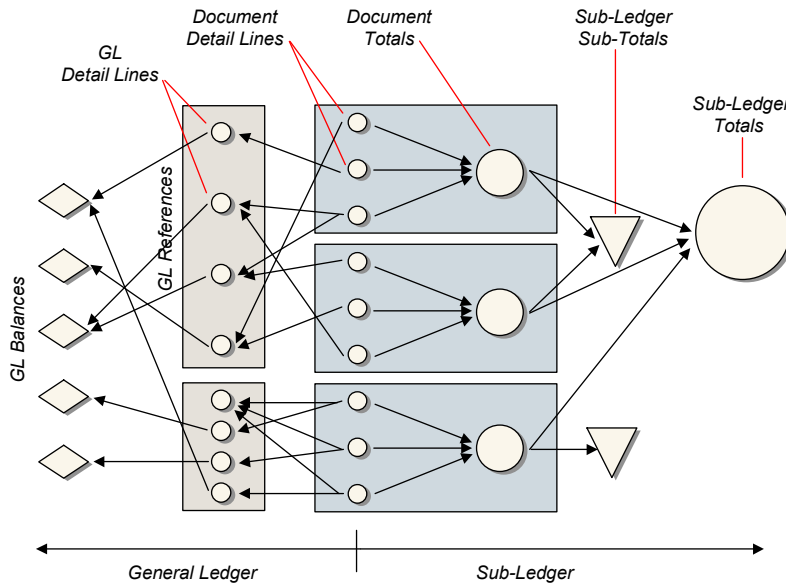


Fig. A.23
Database
Interdependencies

Other interdependencies between data in the database can also exist in addition to those shown here. For example, open AR amounts for specific customers can be linked to the relevant customer balances. Each individual amount, including those related to other data in the database, must be converted to the euro during the base currency conversion process.

The conversion of your database to the euro is merely a restatement of your financial amounts and, as such, should have no effect on the Balance Sheet or your Profit and Loss Accounts. The objective of the conversion is to maintain the financial integrity of the data already in your database as far as possible. However, rounding operations can lead to discrepancies between related data after the conversion.

Note Only the relational integrity of historical data is affected. New transactions performed after the base currency conversion have the correct relational integrity.

Rounding differences can occur in five major areas:

- General ledger and sub-ledger balances
- Financial document totals

- Debit and credit amounts in the general ledger
- Single transactions
- Report totals

While it might not be possible to maintain complete relational integrity after the base currency conversion, all major interdependencies, particularly those associated with the general ledger, are upheld.

General Ledger Conversion

From an accounting perspective, the most important data area requiring relational integrity is the general ledger. All relevant business transactions are reflected in the general ledger, and all accounting verification checks are offset against it. Thus, the goal of the base currency conversion is to:

- Convert the general ledger as precisely as possible.
- Convert sub-ledger amounts so that the amounts after conversion match the associated converted GL transactions as closely as possible.

In the general ledger, individual GL transactions are grouped into GL references and totaled into GL balances. After the conversion, the following data in the general ledger should still balance:

- The total of all GL transactions at any given point in time must be equal to the balance total at that same time.
- GL references must balance, unless they are consolidated.
- The general ledger must balance. Debit must equal credit, in accordance with basic accounting principles.

After the base currency conversion, the account balances should be identical to the account balances before the conversion, divided by the euro exchange rate. However, the rounding differences introduced during the conversion could affect your database's relational integrity.

Table A.11 shows the type of inconsistencies in data that can be introduced as a result of these rounding differences. Here, four GL references are to be converted from Dutch guilders to euros. Table A.12 shows post-conversion results obtained when detail amounts are converted to the euro and the balance totals are calculated from those converted detail amounts.

Table A.11

Detail Amount
Conversions

GL Reference	Base Currency NLG			Euro	
	Account	Debit	Credit	Debit	Credit
1	1200	12.34		5.52	
1	3000		6.01		2.69
1	1700		0.99		0.44
1	1600		1.34		0.60
1	1500		4.00		1.79
<i>Total Reference</i>	1	<i>12.34</i>	<i>12.34</i>	<i>5.52</i>	<i>5.52</i>
2	1200		12.32		5.51
2	5700	11.99		5.37	
2	5300	0.33		0.15	
<i>Total Reference</i>	2	<i>12.32</i>	<i>12.32</i>	<i>5.52</i>	<i>5.51</i>
3	1200	7.11		3.18	
3	3000		6.99		3.13
3	1700		0.12		0.05
<i>Total Reference</i>	3	<i>7.11</i>	<i>7.11</i>	<i>3.18</i>	<i>3.18</i>
4	1200		7.11		3.18
4	5700	6.63		2.97	
4	5300	0.48		0.21	
<i>Total Reference</i>	4	<i>7.11</i>	<i>7.11</i>	<i>3.18</i>	<i>3.18</i>
Total Transactions		38.88	38.88	17.40	17.39

When the balance totals of the same transactions are calculated in both Dutch guilders (NLG) and euros, the results shown in Table A.12 are obtained.

Table A.12

Balance Totals
Conversion

Account	Base Currency NLG		Euro	
	Debit	Credit	Debit	Credit
1200	0.02		0.01	
1500		4.00		1.79
1600		1.34		0.60
1700		1.11		0.49
3000		13.00		5.82
5300	0.81		0.36	

Account	Base Currency NLG		Euro	
	Debit	Credit	Debit	Credit
5700	18.62		8.34	
Balance Total	19.45	19.45	8.71	8.70

This example clearly illustrates the inconsistencies in data that can be introduced because of rounding differences. Here, following the conversion:

- GL reference 2 no longer balances.
- The total for all transactions does not balance (17.40 euros against 17.39 euros).
- The general ledger as a whole does not balance (8.71 euros against 8.70 euros).

If the balance totals were to be calculated as the total of the detail transactions, the totals from the balance sheet and income and loss statements would be taken as the starting point for the conversion, and the following post-conversion results would be obtained.

Table A.13
Post-conversion
Results

Account	Base Currency NLG		Euro	
	Debit	Credit	Debit	Credit
1200	0.02		0.01	
1500		4.00		1.79
1600		1.34		0.60
1700		1.11		0.50
3000		13.00		5.82
5300	0.81		0.36	
5700	18.62		8.33	
Balance Total	19.45	19.45	8.70	8.71

Although GL references often fail to balance after the conversion, this should not create any real problems, since balanced GL references are only necessary for unposted transactions. When transactions are consolidated in the general ledger, unbalanced GL references also exist.

Correcting Rounding Differences

The following sections detail how the system absorbs any discrepancies between related data introduced by the base currency conversion. Each section considers the implications of these rounding differences in the main data areas affected by rounding operations: the general ledger and its sub-ledgers, document totals, debit and credit amounts in the general ledger, single transactions, and report totals.

Rounding Differences in the General Ledger

Each individual detail balance in the general ledger after the conversion should equal its equivalent value before the conversion, divided by the euro exchange rate. However, this is not always the case. Rounding operations performed during the base currency conversion can introduce discrepancies between these balances.

To overcome these discrepancies, the conversion makes a one-time booking to correct the post-conversion account balance. It then equals the balance total as it would have been if converted directly into the euro. This correction is made automatically in the Euro Conversion Rounding Differences Account, specified in Euro Functionality Control. It is made as an unposted GL transaction, so that you can verify and modify it, if necessary. Table A.14 illustrates this approach. In this instance, 1 euro equals 2.00000 NLG.

GL: NLG	GL: Euro	GL: Euro Rounding Diff. Acct.
Before Conversion	After Conversion	After Conversion
50.00	25.00	
37.75	18.88	
12.75	6.38	
1,248.12	624.06	
	5,000,008.26	
	-8.26	
10,000,000.00	5,000,000.00	8.26

Table A.14
Rounding
Example 1

In this table, the left column shows pre-conversion detail amounts in the general ledger. The base currency before the conversion is Dutch guilders, and the total ending balance is 10,000,000.00 Dutch guilders. A fixed euro exchange rate of 2.00000 is assumed. The middle column shows the detail amounts once they have been converted to the euro.

If all these detail amounts are added together, the new total is 5,000,008.26 euros. However, a total of 5,000,000.00 euros was expected. This is calculated by dividing the original detail amounts total (10,000,000.00) by the euro exchange rate (2.00000). Thus, the rounding operation on each individual detail amount has introduced a discrepancy of 8.26 euros.

Correction bookings automatically book the rounding difference to the Euro Conversion Rounding Differences Account. This is shown in the right column of Table A.14. These correction bookings are performed on the effective date specified in Euro Functionality Control, typically the date of the base currency conversion.

From an accounting perspective, these corrective bookings need to be performed only on current transactions. They do not need to be applied to historical data in your database. Should any official reports be needed for previous financial years, create them using a backup version of your old national currency database to ensure accuracy.

Corrective bookings also do not need to be made for any open transactions with an effective date after the conversion, even if their details were entered before the conversion. Since the euro will be the database's functional currency by the effective date, no conversion will be necessary when those transactions are closed.

Rounding Differences in the Sub-ledger

The situation is slightly more complicated when a GL account linked to a sub-ledger is converted. In the following example, the conversion of Accounts Payable, which is linked to the AP sub-ledger, is considered.

GL: NLG		GL: Euro		AP: Euro	
Before Conversion	50.00	After Conversion	25.00	After Conversion	8.38
	37.75		18.88		16.63
	12.75		6.38		18.88
	1,248.12		624.06		412.14
	...		...		...
10,000,000.00		5,000,008.26		5,000,004.87	

Table A.15
Rounding
Example 2

If the AP Summarization Level field is set to 2 in Accounts Payable Control, multiple sub-ledger amounts are posted to the GL as one total amount. Again, rounding differences can lead to the introduction of differences between the converted totals and the sum of their converted detail amounts.

In Table A.15, the right column shows the converted Accounts Payable sub-ledger. The sub-ledger total after the conversion is 5,000,004.87 euros. This does not match the equivalent post-conversion total of 5,000,008.26 euros in the general ledger, shown in the middle column.

To correct this discrepancy, a correction document is created in the sub-ledger. This posts the difference between the total of the converted sub-ledger details and the calculated total of the expected post-conversion sub-ledger total. This value is reached by dividing the pre-conversion total by the euro exchange rate. This correction is posted to the Euro Conversion Rounding Differences Account specified in Euro Functionality Control. Table A.16 illustrates how that account total is then corrected.

Table A.16
Rounding
Example 3

GL: NLG		GL: Euro		AP: Euro	
Before Conversion	50.00	After Conversion	25.00	After Conversion	8.38
	37.75		18.88		16.63
	12.75		6.38		18.88
	1,248.12		624.06		412.14
	...		...		...
	10,000,000.00		5,000,008.26		5,000,004.87
			-4.87		-4.87
			5,000,003.39		
			-3.39		
			5,000,000.00		5,000,000.00

This correction booking is performed automatically during conversion, but you must manually correct the general ledger, based on sub-ledger totals. Sub-ledger documents in the previous base currency are now considered foreign currency documents.

Table A.17 shows the entire procedure. The second correction, 4.87 euros, needs to be performed manually. The first correction is performed automatically during conversion.

Table A.17
Rounding
Example 4

GL: NLG		GL: Euro		AP: Euro	
Before Conversion	50.00	After Conversion	25.00	After Conversion	8.38
	37.75		18.88		16.63
	12.75		6.38		18.88
	1,248.12		624.06		412.14
	...		...		...
	10,000,000.00		5,000,008.26		5,000,004.87
			-8.26		
			5,000,000.00		
			4.87		
			5,000,004.87		

Rounding Differences in Debit and Credit Amounts

Rounding differences introduced during the conversion can cause debit and credit to no longer match after the conversion. Since this balance is a fundamental accounting premise, any imbalance must be corrected.

During the base currency conversion, the difference between debit and credit entries on a daily basis is automatically calculated. This difference must be calculated daily, since the associated balance totals, and thus the debit and credit amounts, differ from day to day.

Once these differences have been calculated, the conversion makes a one-sided GL entry directly into the GL history, to correct these discrepancies. The account used for this is the Euro Conversion Rounding Differences Account specified in Euro Functionality Control.

Rounding Differences in Document Totals

When sub-ledger documents are converted to the euro, rounding differences can be introduced. This can mean that document totals no longer match their associated detail lines. Since both the detail lines and the document totals can generate GL transactions to different accounts, simply correcting either the detail line or the total is not an acceptable solution.

Rounding Differences in Single Transactions

Rounding differences can be introduced by the conversion of a single transaction. Table A.18, showing the conversion of individual amounts, illustrates this.

	Base (NLG)	Euro
Sales Amount:	100.50	224.57
Tax:	17.59	39.30
Total:	118.09	263.88
Difference:	0.00	0.01

Table A.18
Conversion of a
Single Transaction

▶ See
“Consolidating
Multicurrency
Transactions” on
page 142.

Rounding differences can occur both during currency conversion and when using the dual pricing function, or when reporting in a currency other than the base or the document currency.

Rounding Differences in Report Totals

If reports are shown in a currency other than the base currency or the relevant document’s currency, rounding differences can be introduced. As a result, the report totals no longer match their totals as held in the base currency.

Base Currency Conversion and Consolidation

The introduction of the euro affects both companies located within the EMU and companies that do business with organizations within the EMU. Generally, each company deals with these issues in the context of their own business needs and requirements. However, in the case of large corporations with multinational subsidiaries, the business issues can become more complex.

Additional issues must be addressed by any company that:

- Uses consolidation to create financial reports.
- Includes at least one (either parent or subsidiary) database that plans to convert the base currency to the euro.

Slightly different issues arise depending on the particular location of the companies and the combination of currencies being used. Several scenarios are possible:

- The parent company needs to convert to the euro, but the subsidiaries are outside the EMU.
- Both the parent and the subsidiaries are within the EMU.
- The parent company is outside the EMU, but one or more subsidiaries are within it.

If your organization fits any of these profiles, it is important that you carefully consider how converting the base currency of a database will affect your consolidation process. You should leave sufficient time to plan

any accounting or reporting adjustments required. Consolidation issues need to be analyzed in the context of your own business procedures since each company has unique needs and requirements. It is also important that each entity within your business organization be aware of these issues and coordinate their activities and plans.

This section outlines some of the issues you should consider before undertaking base currency conversion.

Consolidation

When consolidation is used, each entity manages its own processes within a local database. Each entity also prepares its own financial statements. Financial reporting by the corporate parent is accomplished through consolidation.

Each entity exports transactions to an ASCII file using Transaction Export (25.19.14). The consolidation entity then imports each ASCII file using Transaction Import (25.19.15) and prepares financial reports as usual. The imported transactions are then evaluated and posted. When the various subsidiaries use currencies that differ from the consolidating entity, currency translation takes place during import, based on the translation index associated with each account when it is defined.

In a typical consolidation scenario, the subsidiaries and parent share the same chart of accounts, although this is not a requirement. The consolidating entity can set up cross-references so that imported transactions can be mapped to a different account.

To clarify the issues, the following example is used in this discussion.

Company Type	Name	Location	Base Currency
Parent	US Multi	United States	USD
Subsidiary	FRF Sub	France	FRF
Subsidiary	DEM Sub	Germany	DEM

Table A.19
Consolidation
Example

The issues discussed here are presented from the point of view of a parent company with a subsidiary that is converting the base currency to the euro. When appropriate, issues from the point of view of a subsidiary with a converting parent are addressed.

Effect of Base Currency Conversion

When a base currency of a database is converted to the euro, there are two important consequences for consolidation:

- Account currencies are changed.
- The entity currency of the subsidiary is changed.

Account Currencies

After the base currency conversion, most accounts that were previously held in the old national currency are now held in the euro.

Issue

The parent may have asset or liability accounts defined in the old base currency of the subsidiary database. These accounts in the consolidating entity will now no longer match the subsidiary. It is not possible to change the account currency in the parent database once activity has been posted to it.

For example, FRF Sub has a cash account number 1200, currently held in French francs. US Multi has the same account in French francs. When FRF Sub converts to the euro, account 1200 is now expressed in euros and no longer matches the account in US Multi.

Recommendation

The parent should set up a new account and map the original subsidiary account to it using Account Cross-Reference Maint (25.19.4). In the previous example, US Multi would set up account 1201 with a EUR currency and cross-reference it to 1200.

When you set up the new account, you must make sure to transfer the existing balance for the old local base currency account to the new account. The accounts whose balances should be transferred, as well as their new account balances, can be determined from the audit trail generated when the subsidiary converted the base currency.

Note When an EMU parent changes its base currency, its subsidiaries may need to create new asset and liability accounts in the euro. This would be the case if your company policy requires certain accounts to be defined in the parent currency. After the subsidiary creates the new accounts, the parent should map the new accounts to their converted accounts.

Entities

The base currency conversion updates each entity with the old national currency so that the associated currency is now the euro.

Issue

The corresponding entity in the consolidation database, however, remains in the old national currency. Transaction import requires that the currency of the From and To entity match. However, you cannot modify this currency in the consolidation database since transactions for the entity already exist.

Recommendation

The parent should set up a new entity code representing the subsidiary with the euro currency. Use a code for the new entity that sorts immediately before or after the current code. When the codes are set up this way, you can run Balance Sheets for the sequential entities to see a combined report.

Example A subsidiary has an entity code of 1000. Before conversion, this entity is defined for both parent and subsidiary as FRF. After conversion, entity 1000 has EUR currency in the subsidiary database. The parent must create entity 1001 in EUR and import transactions to this entity. A Balance Sheet can then be run for entities 1000 to 1001, enabling you to see all relevant data for the old and new entity codes.

During transaction import, the From and To entity codes do not have to be the same, as long as the currencies match. Using the previous example, you can export from entity 1000 and import to entity 1001.

Need for Coordination

Because of the pervasive effect of the base currency conversion, it is important that activities between related entities be closely coordinated.

Planning for Changes

The subsidiary should make sure they communicate to the corporate parent regarding their plans to convert. This will ensure that the parent can make any necessary accounting adjustments to accommodate the change.

Important This should be done before any transactions are imported to avoid any problems with account currencies.

MFG/PRO Version

In general, it is recommended for consolidation that all exporting and importing databases use the same numbered version of MFG/PRO. If you choose not to follow this recommendation, you should be aware of the following changes:

- Introduction of GL daybooks in Version 8.6 changed the definition of the `gltr_hist` record, required for the import. This means that records created in Version 8.5 and earlier do not correspond with those created after Version 8.6.
- In addition, `gltr_hist` was further modified to accommodate euro features in Version 8.6E.

For this reason, all databases must upgrade to Version 8.6E or later of MFG/PRO. If this cannot be achieved, the import/export programs must be customized to accommodate the differences in the `gltr_hist` fields.

Multiple Conversions

If both the parent entity and one or more subsidiaries are located within the EMU, each must execute the base currency conversion. The following sequence is recommended.

Each subsidiary affected should:

- 1 Close out their fiscal year in their local currency if possible, close the year in the GL, print all of their financial statements, and export transactions for the consolidation.
- 2 Make a copy of the database at year-end for generating any further official reports as needed.
- 3 Run the base currency conversion.

The parent company should:

- 1 Complete its fiscal year processing in its local currency, close the year in the GL, and print all financial statements.
- 2 Import and consolidate all financial data from subsidiaries.
- 3 Complete any required adjustments and run all final financial reports.
- 4 Make a copy of the database at year-end for generating any further official reports as needed.
- 5 Run the base currency conversion.

Note After conversion, any other account adjustments should be related to issues discussed previously.

During the next fiscal period, the subsidiary will export data from a euro currency database, and the parent will import this data into its own euro currency database.

Retroactive Adjustments After Conversion

After conversion, you may need to make a retroactive adjustment to a prior fiscal year when the base currency was the old national currency. These adjustments should be made in the copy of your database preserved for historical reporting.

The equivalent adjustment should also be made in the new database to maintain proper account balance amounts.

Base Currency Conversion Checklist

Tip

Manual integrity checks are in *italic font*.

The following three tables list the steps required to successfully switch the base currency of your database from an EMU currency to the euro. Use this list as a guide when performing the conversion. Once each step has been completed satisfactorily, you can mark it as complete in the final column of this table.

Note Only those steps needed to successfully convert the base currency of your database to the euro are listed. Other steps are needed to implement the euro throughout your entire organization.

Table A.20

Base Currency Conversion Checklist—Before Conversion

Step	Description	Perform with...	Status
1	Add a currency code for the euro.	Currency Maintenance (26.1)	
2	Define a new GL account for euro conversion differences.	Account Code Maintenance (25.3.13)	
3	Define conversion control settings.	Euro Functionality Control (26.21.24)	
4	Define EMU currencies.	EMU Currency Maintenance (26.19)	
5	Define exchange rates, including fixed rate to euro.	Exchange Rate Maintenance (26.4)	
6	Revalue EMU currency accounts and open documents.	• AR EMU Revaluation (26.21.1.6) • AP EMU Revaluation (26.21.1.7) • GL EMU Revaluation (26.21.1.8) • Imported Transaction EMU Revaluation (26.21.1.9)	
7	Activate euro exchange rate. • Copy all base currency exchange rates to euro exchange rates. • Verify the Euro Currency Exchange Rates Activated field is Yes.	• Initial Euro Exchange Rate Copy (26.21.1.2) • Euro Functionality Control (26.21.24)	

Step	Description	Perform with...	Status
8	Run count and estimate programs. • Run Count Program. • Run Count and Estimate Report. • Run Hash Total Report.	• Count Program (26.21.1.18) • Count and Estimate Report (26.21.1.19) • Hash Total Report (26.21.1.20)	
9	Run all financial integrity checks listed here. (Manual checks are in italic font.)	Financial Integrity Checks (26.21.1.12)	
	GL Integrity Report	26.21.1.12.1	
	AR Integrity Report	26.21.1.12.3	
	AP Integrity Report	26.21.1.12.4	
	PO Integrity Report	26.21.1.12.6	
	Inventory Integrity Report	26.21.1.12.8	
	WIP Integrity Report	26.21.1.12.9	
	Fixed Assets Integrity Report	26.21.1.12.11	
	Combined Integrity Checks	26.21.1.12.12	
	<i>Trial Balance</i>	26.21.1.12.13	
	<i>Income Statement</i>	26.21.1.12.14	
	<i>Balance Sheet</i>	26.21.1.12.15	
	<i>AR Aging as Effective Date</i>	26.21.1.12.16	
	<i>AP Aging as Effective Date</i>	26.21.1.12.17	
	<i>Inventory Evaluation as of Date</i>	26.21.1.12.18	
	<i>Work Order WIP Cost Report</i>	26.21.1.12.19	
	<i>AR Tax by Tax Rate Report</i>	26.21.1.12.20	
	<i>AP Tax by Tax Rate Report</i>	26.21.1.12.21	
	<i>Purchase Receipts Report</i>	26.21.1.12.22	
10	Create supplier-item prices.	Supplier Item Price Creation (26.21.1.16)	
11	Specify GL accounts that are not to be converted.	Accounts Not To Convert Maintenance (26.21.1.13)	

Step	Description	Perform with...	Status
12	Create conversion startup scripts.		
13	Run test conversion. It is strongly recommended that you perform a test conversion using a copy of your production database, prior to converting your live data.		

Table A.21
Base Currency
Conversion
Checklist—During
Conversion

Step	Description	Perform with...	Status
14	Prepare for conversion.		
	- Set Allow Conversion field to Yes. - Make a copy of your database for year-end transactions if the conversion takes place at accounting year-end. - Bring database servers down. - Reduce size of Before Image files. - Make a backup of your database. - Start database servers when the backup completes.	Euro Functionality Control (26.21.24) proutil	
15	Start the conversion. - Start base currency conversion control process. - Start conversion batch procedures.	ba_ctrl ba_conv	
16	Check conversion audit trails.	Conversion Audit Trail (26.21.3.3) GL Conversion Audit Trail (26.21.3.4)	
17	Rerun the Count Program and generate a Hash Total Report to compare pre- and post-conversion results.	Count Program (26.21.1.18) Hash Total Report (26.21.1.20)	

Step	Description	Perform with...	Status
18	Run financial integrity checks. Run financial checks listed here and compare the results with those obtained from the financial integrity checks run in step 9 before the conversion. (Manual checks are in italic font.)	Financial Integrity Checks	
	GL Integrity Report	26.21.3.1.1	
	AR Integrity Report	26.21.3.1.3	
	AP Integrity Report	26.21.3.1.4	
	PO Integrity Report	26.21.3.1.6	
	Inventory Integrity Report	26.21.3.1.8	
	WIP Integrity Report	26.21.3.1.9	
	Fixed Assets Integrity Report	26.21.3.1.11	
	Combined Integrity Checks	26.21.3.1.12	
	<i>Trial Balance</i>	<i>26.21.3.1.13</i>	
	<i>Income Statement</i>	<i>26.21.3.1.14</i>	
	<i>Balance Sheet</i>	<i>26.21.3.1.15</i>	
	<i>AR Aging as Effective Date</i>	<i>26.21.3.1.16</i>	
	<i>AP Aging as Effective Date</i>	<i>26.21.3.1.17</i>	
	<i>Inventory Evaluation as of Date</i>	<i>26.21.3.1.18</i>	
	<i>Work Order WIP Cost Report</i>	<i>26.21.3.1.19</i>	
	AR Tax by Tax Rate Report	26.21.3.1.20	
	AP Tax by Tax Rate Report	26.21.3.1.21	
	<i>Purchase Receipts Report</i>	<i>26.21.3.1.22</i>	
19	Approve/Disapprove conversion		

Table A.22
Base Currency
Conversion
Checklist—After
Conversion

Step	Description	Perform with...	Status
20	Perform post-conversion activities as needed.	Post-Conversion Menu	
	Routing Cost Roll-Up	26.21.3.13	
	Product Structure Cost Roll-Up	26.21.3.14	
	WIP Revaluation	26.21.3.16	
	Sales Order Revaluation	26.21.3.18	
	Adjust Customer Balances	26.21.3.19	
	Adjust Supplier Balances	26.21.3.20	
	GL Report Writer Synchronize	26.21.3.22	
	Budget Calculation	26.21.3.23	

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