Financial Accounting – General Topics

HELP.FITX

Release 4.6C

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Icons

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Financial Accounting – General Topics

Purpose

The Financial Accounting (FI) application component fulfills all the international requirements that must be met by the financial accounting department of an organization. It provides the following features:

- Management and representation of all accounting data

    All business transactions are recorded according to the document principle, which provides an unbroken audit trail from the financial statements to the individual documents.

- Open and integrated data flow

    Data flow between Financial Accounting and the other components of the SAP System is ensured by automatic updates.

    Data is available in real time within Financial Accounting. Postings made in the subledgers always generate a corresponding posting in the general ledger.

- Preparation of operational information to assist strategic decision-making within the organization

Integration

Integration of Financial Accounting with other components

All accounting-relevant transactions made in Logistics (LO) or Human Resources (HR) components are posted real-time to Financial Accounting by means of automatic account determination. This data can also be passed on to Controlling (CO).

This ensures that logistical goods movements (such as goods receipts and goods issues) are exactly reflected in the value-based updates in accounting.

Integration within Financial Accounting

Every posting that is made in the subledgers generates a corresponding posting to the assigned G/L accounts. This ensures that the subledgers are always reconciled with the general ledger.

Features

The Financial Accounting application component comprises the following sub-components:

- General Ledger (FI-GL)
- Accounts Payable (FI-AP)
- Accounts Receivable (FI-AR)
- Bank Accounting (FI-BL)
- Asset Accounting (FI-AA)
- Funds Management (FI-FM)
- Travel Management (FI-TV)
- Special Purpose Ledger (FI-SL)

Financial Accounting – General Topics

Organizational Units and Basic Settings

Definition

Elements of the SAP System logical structure, important for *Financial Accounting*.

Organizational units are used to structure business functions and for reporting. The organizational units of *Financial Accounting* are used for external reporting purposes, that is, they fulfil requirements that your business is subject to from external parties, for example, legal regulations. The financial statements for example, are created based on the organizational units of *Financial Accounting*.

Basic settings in *Financial Accounting* are Customizing settings that you have to make in order to be able to carry out processes in *Financial Accounting*.

Use

You create your company-specific organizational structure in the SAP System by defining the organizational units and making the basic settings. Defining organizational units for *Financial Accounting* is obligatory, that is, you have to define these units in order to be able to implement the *Financial Accounting* component.

Organizational unit	Definition
Client [Page 15]	Obligatory
Company [Page 16]	Optional
Company code [Page 17]	Obligatory
Business area [Page 19]	Optional
Basic setting	
Chart of accounts [Page 21]	Obligatory
Fiscal year [Page 23]	Obligatory
Currencies [Page 40]	Obligatory

Integration

In the SAP System, you define the relevant organizational units for each component that you are implementing. For example, for *Sales and Distribution*, you define sales organizations, distribution channels, and divisions (product groups). Similarly, for *Purchasing*, you define purchasing organizations, evaluation levels, plants, and storage locations. The organizational units are independent of one another at this stage.

Components and Organizational Units

Component	Organizational unit
Sales and Distribution	Sales organization, ...
Logistics	Purchasing organization, ...
Financial Accounting	Company code, ...

Organizational Units and Basic Settings

Controlling	Controlling area, ...
Human Resources	Employee groups, ...

To transfer data between the individual components, you have to assign the organizational units to each other. You only need to make these assignments once in the system. Whenever you enter data subsequently, it is automatically transferred.

For example, invoices that are posted in SD are transferred to FI.
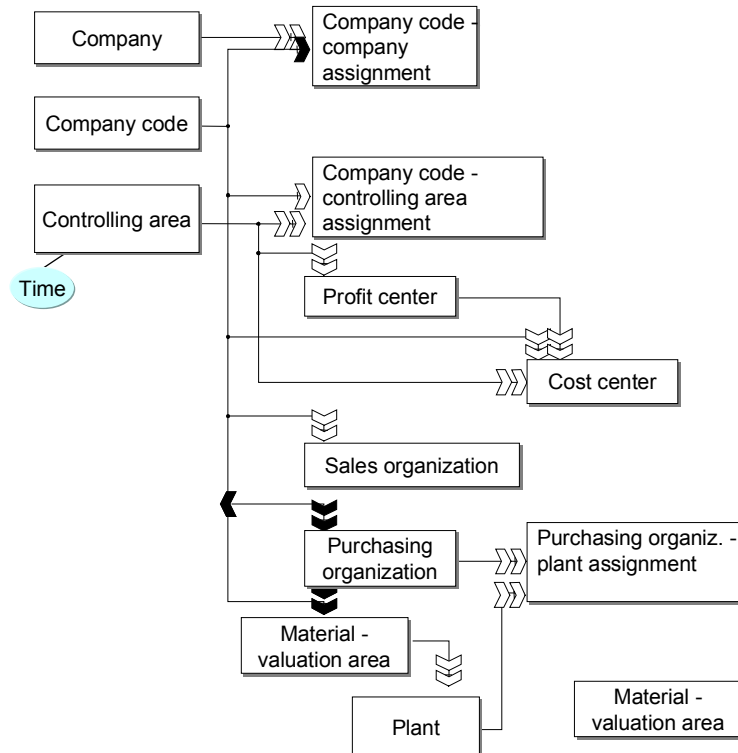
Client

Definition

A commercially, organizationally, and technically self-contained unit within an SAP System. Clients have their own master records and set of tables.

The definition of the *client* organizational unit is **obligatory**.

Use

The client is the highest level in the SAP System hierarchy. Specifications that you make, or data that you enter at this level are valid for all company codes and for all other organizational structures. You therefore only need to make these specifications, or enter this data once. This ensures that the data is consistent.

Users must enter a client key when they log on to the SAP System. This defines the client in which they wish to work. All the entries you make are saved per client. Data processing and analysis is also carried out per client.

This means that you **cannot** include customer accounts from different clients in one dunning run.

Access authorization is assigned per client. You must create a user master record for each user in the client where he or she wishes to work.

The SAP System is delivered with the clients 000 and 001 - these clients already contain default settings. For more information, see Setting Up Clients [Ext.] in Customizing. These sections are automatically selected when you create your implementation projects (company IMG, project IMG).

Company

Definition

The smallest organizational unit for which individual financial statements are created according to the relevant legal requirements. A company can include one or more company codes.

The definition of the *company* organizational unit is **optional**.

Use

A company's financial statements also form the basis of consolidated financial statements.

All of the company codes within a company must use the same chart of accounts and fiscal year. However, each company code can have a different local currency.

To define a company, choose the following in Customizing for the *Enterprise Structure*: *Definition* → *Financial Accounting* → Define Company [Ext.]

You must assign your companies to your company codes. To do so, choose *Assignment* → *Financial Accounting* → Assign Company Code to Company [Ext.] in Customizing for the *Enterprise Structure*.

Company Code

Definition

Smallest organizational unit of external accounting for which a complete, self-contained set of accounts can be created. This includes the entry of all transactions that must be posted and the creation of all items for legal individual financial statements, such as the balance sheet and the profit and loss statement.

The definition of the *company code* organizational unit is **obligatory**.

Use

The company code is the central organizational unit of external accounting within the SAP System. You must define at least one company code before implementing the *Financial Accounting* component. The business transactions relevant for *Financial Accounting* are entered, saved, and evaluated at company code level.

You usually create a legally independent company in the SAP System with one company code. However, you can also define a company code according to other criteria. A company code could also be a separate, but not independent, commercial place of work. This is necessary for example, if the place of work is actually situated in a different country and evaluations therefore have to be carried out in the appropriate national currency and in accordance with other tax and legal specifications.

If you want to manage the accounting for several independent companies simultaneously, you can set up several company codes in one client. You must set up at least one company code in each client.

To define a company code, choose the following in Customizing for the *Enterprise Structure*: *Definition* → *Financial Accounting* → Define, Copy, Delete, Check Company Codes [Ext.].

Integration

If you use other components of the SAP System, you have to make assignments between the company code as the central organizational unit of *Financial Accounting*, and the organizational units of the other components. This is necessary to ensure that data can be transferred between the components.

The assignment between the controlling area [Ext.] and the company code is particularly important. The controlling area is the central organizational unit of the *Controlling* (CO) component.

For more information about the assignment between the company code and the controlling area, see Company Codes and Controlling Areas [Page 18].

Company Codes and Controlling Areas

The controlling area [Ext.] is the central organizational unit of the *Controlling* (CO) component. You use the controlling area to carry out cost accounting.

If you implement the *Controlling* component, postings are forwarded from *Financial Accounting* to *Controlling*. During posting, you can specify any additional account assignments relevant for cost accounting (for example, cost center or internal order). You must assign a controlling area to your company code to ensure that this data is forwarded to *Controlling* for further processing for cost accounting.

The company code and controlling area do not have to exist in a one-to-one relationship. You have the following options for this assignment:

- The company code can correspond to exactly one controlling area (see the following figure, **1**).

- Several company codes can correspond to one controlling area (see the following figure, **2**).
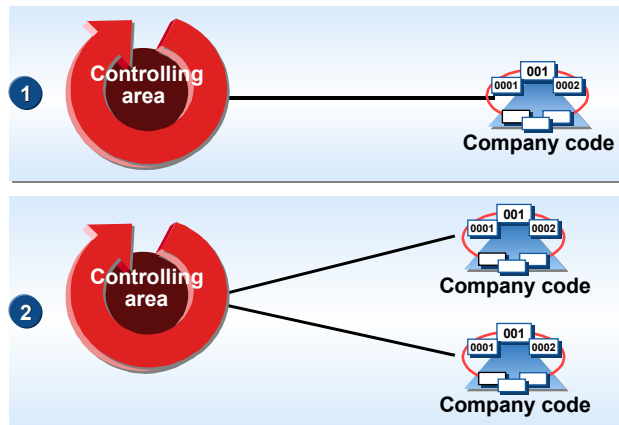
For more information, see Assignment of Company Codes and Controlling Areas [Ext.].

Business Area

Definition

Organizational unit of external accounting that corresponds to a specific business segment or area of responsibility in a company. Movements in value entered in Financial Accounting are assigned to business areas.

Financial statements can be created for business areas for **internal purposes**.

The definition of the *business area* organizational unit is **optional**.

Use

Business areas are used in external segment reporting (over and above company codes), based on the significant areas of operation of a company (for example, product lines, branches).

To define business areas, choose the following in Customizing for the *Enterprise Structure*: *Definition* → *Financial Accounting* → Define Business Area [Ext.].

If you have defined business areas, the transaction figures for the G/L accounts are managed separately for internal evaluation purposes. You can therefore create internal financial statements for business areas.

> If you want to create financial statements for business areas, you must make sure that the *Business area* field is ready for input in all the line items. To do this, proceed as follows in Customizing for *Financial Accounting: Financial Accounting Global Settings* → *Business Area* → Enable Business Area Balance Sheet [Ext.].

Integration

To post items in a business area, enter the business area when you enter the business transaction. However, the business area can also be derived from other account assignments, such as the cost center. To enable the system to do this, you must define the business area in the cost center master record. For more information, see the *SAP Library* under *Financials* → *Controlling* → *Organization in Controlling* → Business Area [Ext.].

If you enter a cross-company code document, you can post to different business areas across all company codes in one document. As a result, any number of combinations of company code and business area are possible.

Business Area
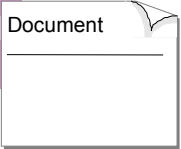
	Company code 01	Company code 02	Company code 03
Business area 1	✗	✗	✗
Business area 2	✗	✗	✗
Business area 3	✗	✗	✗

Document

Chart of Accounts

Definition

This is a list of all G/L accounts used by one or several company codes.

For each G/L account, the chart of accounts contains the account number, account name, and the information that controls how an account functions and how a G/L account is created in a company code.

Use

You have to assign a chart of accounts to each company code. This chart of accounts is the operating chart of accounts and is used for the daily postings in this company code.

You have the following options when using multiple company codes:

- You can use the same chart of accounts for all company codes

    If the company codes all have the same requirements for the chart of accounts set up, assign all of the individual company codes to the same chart of accounts. This could be the case if all company codes are in the same country.

- In addition to the operating chart of accounts, you can use two additional charts of accounts

    If the individual company codes need different charts of accounts, you can assign up to two charts of accounts in addition to the operating chart of accounts. This could be the case if company codes lie in multiple countries.

    The use of different charts of accounts has no effect on the balance sheet and profit and loss statement. When creating the balance sheet or the profit and loss statement, you can choose whether to balance the company codes which use different charts of accounts together or separately.

Structure

Charts of accounts can have three different functions in the system:

- **Operating chart of accounts**

    The operating chart of accounts contains the G/L accounts that you use for posting in your company code during daily activities. Financial Accounting and Controlling both use this chart of accounts.

    You have to assign an operating chart of accounts to a company code.

- **Group chart of accounts**

    The group chart of accounts contains the G/L accounts that are used by the entire corporate group. This allows the company to provide reports for the entire corporate group.

    The assigning of an corporate group chart of accounts to a company code is optional.

- **Country-specific chart of accounts**

Chart of Accounts

The country-specific chart of accounts contains the G/L accounts needed to meet the country's legal requirements. This allows you to provide statements for the country's legal requirements.

The assigning of an country-specific chart of accounts to a company code is optional.

Integration

The operating chart of accounts is shared by Financial Accounting as well as Controlling. The accounts in a chart of accounts can be both expense or revenue accounts in Financial Accounting and cost or revenue elements in cost/revenue accounting. You can find additional information on this subject under Cost Accounting and Chart of Accounts [Ext.].

Fiscal Year

Definition

Usually a period of twelve months for which a company regularly creates financial statements and checks inventories.

The fiscal year may correspond exactly to the calendar year, but this is not obligatory.

Under certain circumstances a fiscal year may be less than twelve months (shortened fiscal year).

Structure

A fiscal year is divided into **posting periods**. Each posting period is defined by a start and a finish date. Before you can post documents, you must define posting periods, which in turn define the fiscal year.

In addition to the posting periods, you can also define **special periods** for year-end closing.

In *General Ledger Accounting*, a fiscal year can have a maximum of twelve posting periods and four special periods. You can define up to 366 posting periods in the Special Purpose Ledger [Ext.].

Use

In order to assign business transactions to different time periods, you must define a fiscal year with posting periods. Defining the fiscal year is **obligatory**.

You define your fiscal year as fiscal year variants which you then assign to your company code. One fiscal year variant can be used by several company codes.

You have the following options for defining fiscal year variants:

- Fiscal year same as calendar year

- Fiscal year differs from calendar year (non-calendar fiscal year). The posting periods can also be different to the calendar months.

You define your fiscal year variants in Customizing for *Financial Accounting* as follows: *Financial Accounting Global Settings → Fiscal Year →* Maintain Fiscal Year Variant (Maintain Shortened Fiscal Year) [Ext.]

Integration

When you enter a posting, the system automatically determines the posting period. For more information, see Determining Posting Periods During Posting [Page 30]

In the general ledger, the system saves the transaction figures for all accounts for each posting period and each special period separately according to debits and credits. In the *Special Purpose Ledger* component (FI-SL), you can save the transaction figures as a balance.

Fiscal Year

Fiscal Year and Calendar Year

You have the following options for defining your fiscal year variants in relation to the calendar year:

- Fiscal year same as calendar year

- Fiscal year differs from calendar year (non-calendar fiscal year). The posting periods can also be different to the calendar months.

- Your fiscal year is year-dependent. This means that the fiscal year only applies to a specific calendar year.

Fiscal Year Same as Calendar Year

If your fiscal year is the same as the calendar year, the following specifications apply:

- The fiscal year begins on January 1.

- Twelve posting periods are available.

- The periods correspond to calendar months. You do not have to define the individual periods. The system automatically uses the calendar months.

Calendar year

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug

Fiscal year definition

Period	1	2	3	4	5	6	7	8
End of period	1/31	2/29	3/31	4/30	5/31	6/30	7/31	8/31

Non-Calendar Fiscal Year

If your fiscal year differs from the calendar year, you must specify:

- How many posting periods you require

- How the system should determine the posting period and fiscal year from the posting date during posting:

    Posting Periods

    To enable the system to determine the posting period, specify month and day limits for the end of each period.

Fiscal Year and Calendar Year

Enter **29** as the day limit for **February**. This ensures that the system can also determine the posting period correctly in a leap year. If you enter 28 as the day limit for February, transaction figures posted on 29 February will be updated in the next period. If the next period is not open, the system issues an error message.

Fiscal Year

Since your fiscal year is not the same as the calendar year, you have to specify the year displacement for each posting period. You can use the entries **-1, 0**, and **+1** for this.

In the illustration that follows, your fiscal year begins on April 1 and ends on March 31. The period limits correspond to the beginning and end of the calendar months.

Since the fiscal year does not correspond to the calendar year, you specify how the fiscal year is to be determined by entering the year displacement. If you post with a posting date of 02/03/99, the system uses your definition of the fiscal year variant to determine that posting period 11 is in fiscal year 1998.

Calendar year

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug

Fiscal year definition

Fiscal year begins on April 1

Period	10	11	12	1	2	3	4	5
End of period	1/31	2/29	3/31	4/30	5/31	6/30	7/31	8/31
Year displacement	- 1	- 1	- 1	0	0	0	0	0
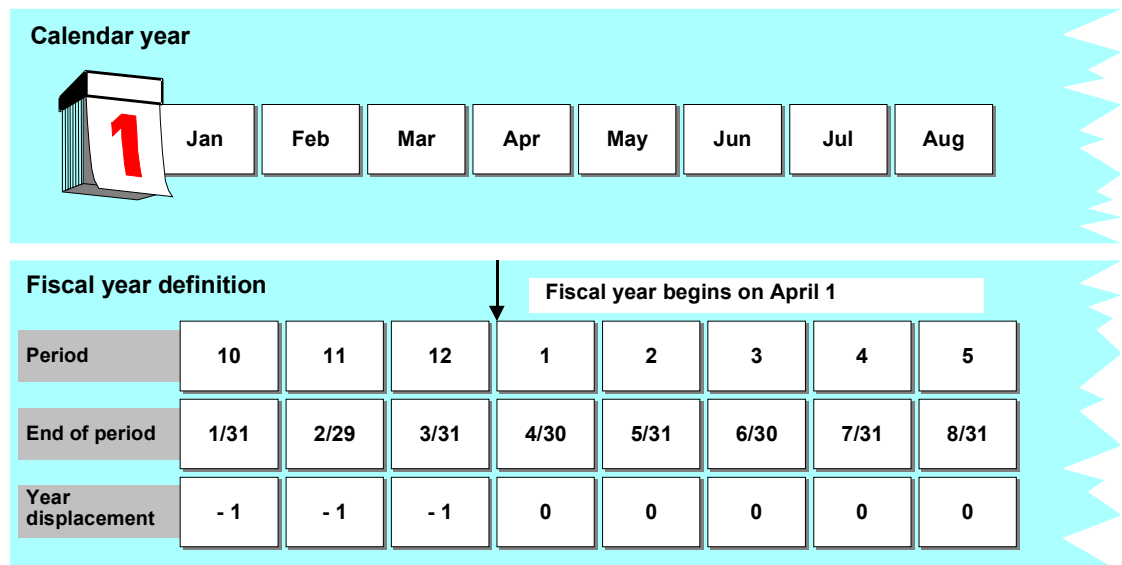
Posting Periods Do Not Correspond To Calendar Months

If you are using a non-calendar fiscal year, and your posting periods do not correspond to the calendar months, define the difference by specifying the day of the period end.

Your fiscal year begins on April 16 and ends on April 15. The start and end of your posting periods do not correspond to the start and end of a calendar month.

You must split the period 12/16 to 01/15 in two posting periods, since you require different specifications for the year displacement. This means that for posting period 9, you have to define two posting periods (with year displacements 0 and -1).

Calendar year

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |

Fiscal year definition   ↓   **Fiscal year begins on April 16**

Period	9	10	11	12	1	2	3	4	5	6	7	8	9
End of period	1/15	2/15	3/15	4/15	5/15	6/15	7/15	8/15	9/15	10/15	11/15	12/15	12/31
Year displacement	- 1	- 1	- 1	- 1	0	0	0	0	0	0	0	0	0
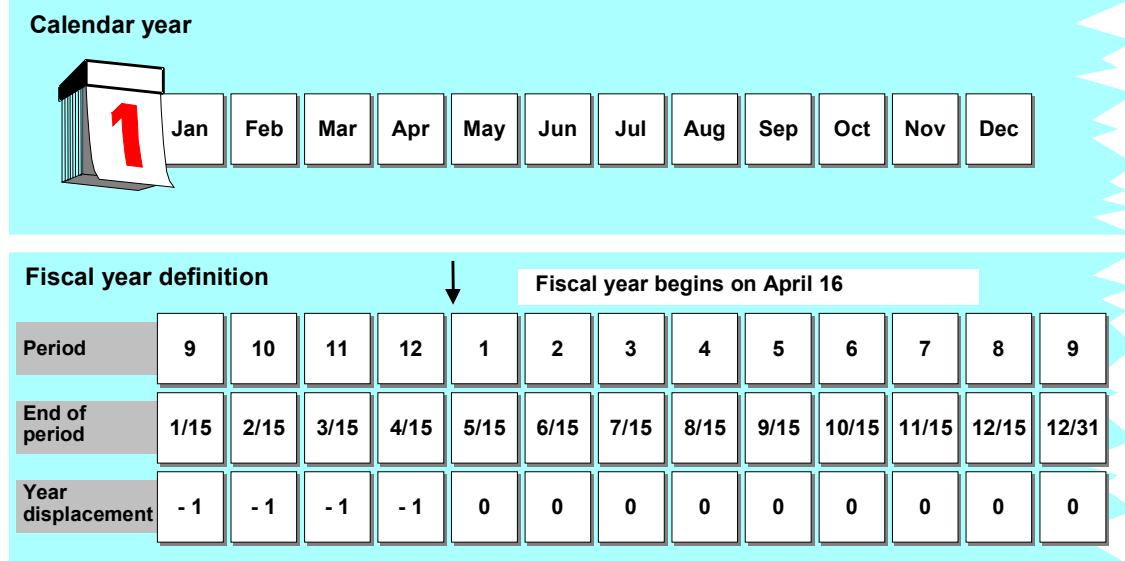
In the example given, the system would determine the following posting periods and fiscal years from the posting dates given:

Posting Date	Year Displacement	Period	Fiscal Year
20.12.1998	0	9	1998
13.01.1999	-1	9	1998

Year-Dependent Fiscal Year Variants

You can define a year-dependent fiscal year variant. This is a fiscal year variant that only applies to a specific calendar year.

To do this, select the field *Year-dependent* when you define your fiscal year variants. You then have to enter the period ends, defined by month and day limits, for each calendar year.

In this case, the year displacement specifications refer to the calendar year for which you have defined posting periods. The year is displayed when you maintain the period ends.

Shortened Fiscal Year

Definition

Fiscal year that contains less than twelve months.

A shortened fiscal year could be necessary in the following cases, for example:

- Establishment of a company

- Changeover from a calendar year to a non-calendar fiscal year, or vice versa.

Use

When you define a shortened fiscal year, you have to make the following specifications:

- A shortened fiscal year must always be defined as year-dependent, since it can only apply to a specific year and must be followed by a complete fiscal year.

- You define a shortened fiscal year and the following or previous complete fiscal year in **one** fiscal year variant.

You define a shortened fiscal year in Customizing for *Financial Accounting* as follows: *Financial Accounting Global Settings* → *Fiscal Year* → Maintain Fiscal Year Variant (Maintain Shortened Fiscal Year) [Ext.]

Integration

The options available for defining a shortened fiscal year depend on whether you are using *Financial Accounting* with or without *Asset Accounting*.

- If you are using *Financial Accounting* **without** *Asset Accounting*, each fiscal year can start with any period.

- If you use *Financial Accounting* **with** *Asset Accounting*, each fiscal year must start with period 001, so that the depreciation can be calculated correctly.

For more information, see the *Asset Accounting* documentation under Shortened Fiscal Years [Ext.]

Special Periods

Definition

Special posting periods that subdivide the last regular posting period for closing operations.

Use

Irrespective of how you have defined your fiscal year, you can also use special periods. Special periods subdivide the year-end closing period. They therefore merely divide the last posting period into several closing periods. This enables you to create several supplementary financial statements.

1	2	3	4	5	6	7	8	9	10	11	12

Special periods

13	14	15	16
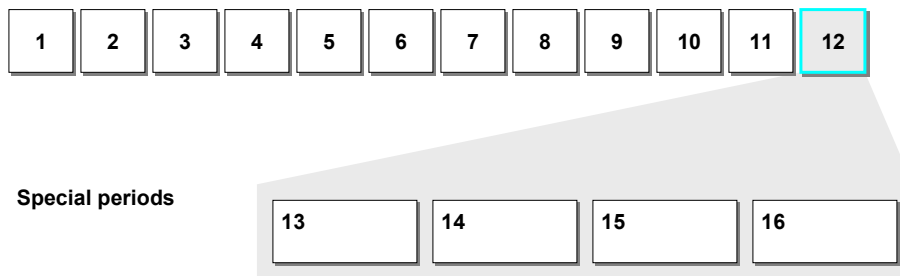
A fiscal year usually has 12 posting periods. In *General Ledger Accounting*, you can define up to four special periods.

> If you do not need 12 posting periods, you can use the posting periods that are not required as special periods. If you use these additional closing periods, you must specify the number you require in the field *No. special periods*. when defining the fiscal year variants. You cannot exceed a maximum of 16 periods.

Integration

When posting to special periods, you must take the following into consideration:

- The posting date must fall within the last regular posting period.

- You have to enter the special periods in the document header in the *Period* field, since the special periods cannot be determined automatically by the system.

Determining Posting Periods During Posting

Use

When you record a document, you enter the posting date. When you post the document, the system uses the posting date specified to automatically determine the posting period. The posting period consists of a month and a fiscal year.

These are both displayed in the document overview. The posting period determined is entered in the document and the transaction figures for this period are updated.

If you want to display the balance of an account, the transaction figures are displayed separately according to posting periods. This process is illustrated below:

Posting a document

Document date.............
Posting date..21.02.1999
Document number.....
Reference..............
.
.

Entry

Accounting document

Document type.... AB
Period................ 2
Fiscal year........   1999

System determines

Balance display	1999	
Period	Debit	Credit
Carry forward		
1	0.00	0.00
2	12,412.00	11,400.00
3	0.00	0.00
...		

Debits and credits in the account displayed per posting period
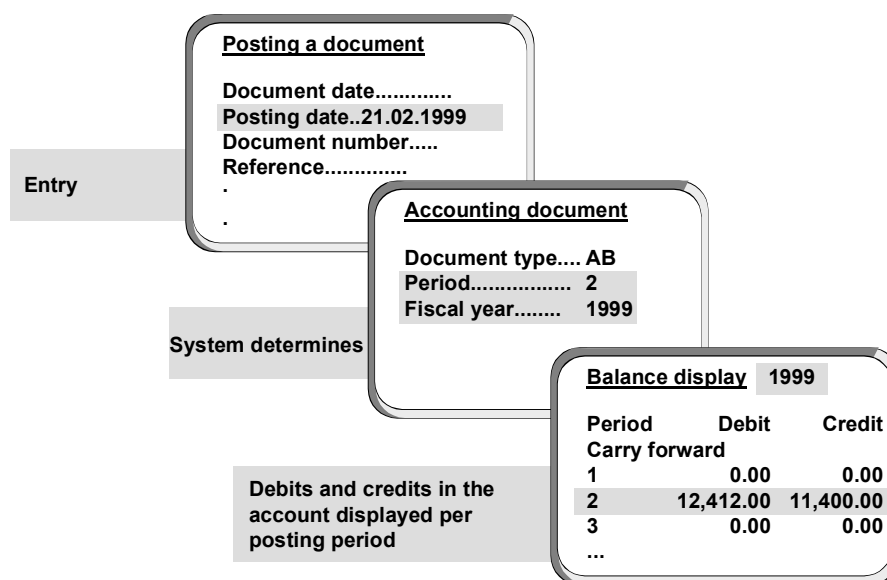
Integration

If you use the *Special Purpose Ledger*, you can define different posting periods per ledger. Only the posting period defined for the general ledger is stored in the document.

Prerequisites

In order for the system to determine posting periods, you must fulfil the following prerequisites:

- Define your fiscal year. For more information, see Fiscal Year and Calendar Year [Page 25].

- The periods in which you want to post must be open. For more information, see Opening and Closing Posting Periods [Page 32]

Features

For postings to the previous fiscal year, the system carries out the following adjustments:

- For **balance sheet accounts**, the system adjusts the carry forward balance of the accounts concerned in the current fiscal year.

- For **profit and loss accounts**, the profit or loss carried forward to the retained earnings account is adjusted.

Opening and Closing Posting Periods

Use

You define posting periods in your fiscal year variants. You can open and close these posting periods for posting. As many periods as you require can be open for posting simultaneously.

Usually, only the current posting period is open for posting, all other posting periods are closed. At the end of this posting period, the period is closed, and the next posting period is opened.

Special periods can be open for closing postings during the period-end closing.

Features

You have the following options for opening and closing posting periods.

- **Posting Period Variants**

  You can specify which company codes are open for posting in a posting period variant. Posting period variants are cross-company code and you have to assign them to your company codes. The posting periods are then opened and closed simultaneously for all company codes via the posting period variants.

  Working with posting period variants is recommended if you are responsible for a large number of company codes. Since you only have to open and close the posting period once for the variant, your work is considerably reduced.

- **Account Type**

  You can differentiate the opening and closing of posting periods by account type. This means that for a specific posting period, postings can be permitted to customer accounts, but not to vendor accounts.

  For each posting period that should be open, you must always specify at least account type **+** (valid for all account types). You can exercise more detailed control by specifying further account types.

  Using the minimum entry, when you enter the posting date in the document header, the system checks whether the posting period determined in the posting period variant can be posted to. As soon as you then enter an account number, in a second step, the system checks whether the posting period is permitted for the account specified.

- **Account Interval**

  You can differentiate the opening and closing of posting periods by account intervals. This means that you only open a posting period for posting to a specific account.

  Account intervals always apply to G/L accounts. If you want to open subledger accounts, you have to enter the corresponding reconciliation account and the account type.

  During the closing operations, you can, for example, use the reconciliation accounts to close customer and vendor accounts **before** G/L accounts. This allows you to

prevent further postings to these accounts after you have confirmed the balances with your customers and vendors. Balance confirmation is one of the prerequisites for further closing operations.

- **User**

    You can open and close posting periods only for specific users. To do this, enter an authorization group at document header level.

    This authorization group is effective only in time period **1** and prevents users who do **not** have the appropriate authorization for the authorization object F_BKPF_BUP (accounting document: Authorization for posting periods) from posting in periods which are only open for time period **1**.

    For more information on assigning authorizations, see the Implementation Guide for *Financial Accounting* under *Financial Accounting Global Settings → Maintain Authorizations*.

Activities

You make the settings for opening and closing posting periods in Customizing for *Financial Accounting* under *Financial Accounting Global Settings → Document → Posting Periods [Ext.]*

Opening and Closing Posting Periods: Example

You want to limit posting to G/L accounts (with a few exceptions) to the current and subsequent period only. The same applies to your customer and vendor accounts. Certain G/L accounts (140100 to 149999), which you need for preparing the financial statements, are to be permitted for the previous period also. Account number 140150, however, is to be excluded from this interval (140100 to 149999). The current period is 01/2000.

You can define the posting periods for these accounts by specifying account intervals. First open all your G/L accounts for posting in the current period and the subsequent period only. You then define your exceptions. by opening accounts 140100 to 149999 for posting in the previous period as well. Enter accounts to be excluded from the interval separately.

```
Account interval

0 to 99999999                      Period
                                   001 - 002 2000

      140100 - 149999              Previous period
                                   also permitted

            140150 - 140150        Period
                                   001 - 002 2000
```
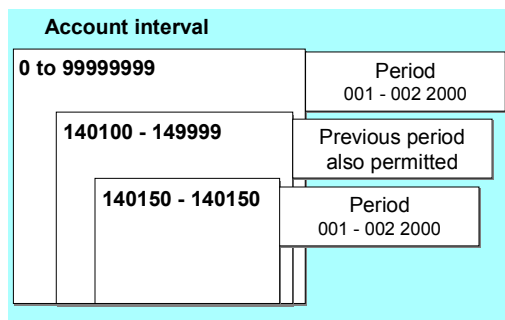
You can do this by making the entries shown below.

VAR	A	From acct	To acct	From per.	To per.	From per.	To per.	
0001	+	__	__	0121999	0121999	0012000	0022000	1
0001	D	__	9999999999			0012000	0022000	
0001	K	__	9999999999			0012000	0022000	5
0001	S	140150	00140150			0012000	0022000	4
0001	S	140100	00149999	0121999	0121999	0012000	0022000	3
0001	S	__	99999999			0012000	0022000	2

1. Specify the minimum entry **+** to open the periods you need for all your accounts.

2. Open the current period and the following period for all your G/L accounts by entering an account number interval containing all account numbers.

3. For the interval 140100 to 149999, specify the current, the following **and** the previous period.

4. For account 140150, specify only the current and the following period.

5. For your customer and vendor accounts, use the reconciliation accounts to specify the permitted posting periods. To do this, enter the account type in the column headed **A**. Then specify the permitted posting periods for the desired account number interval.

For account types **D** and **K**, you specify the numbers of the reconciliation accounts rather than those of the customer and vendor accounts themselves. This entry determines the posting periods permitted for the sub-ledger accounts.

Opening New Fiscal Years

Use

The new fiscal year is automatically opened when you make your first posting in the new fiscal year or once the balance carried forward program [Page 37] has been run. You do **not** have to close the old fiscal year before you can post data in the new one. You therefore do not need to create closing or opening financial statements.

Prerequisites

The prerequisites for posting to a new fiscal year are as follows:

- If you are using a fiscal year variant which is year-specific, you first have to create a variant for this fiscal year and assign it to the relevant company code. See Fiscal Year and Calendar Year [Page 25]

- If you have also defined **year-dependent document number assignment**, you must have already set up the document number ranges for the new fiscal year. For more information, see Document Number Assignment [Page 258]

- The relevant **posting periods** must be open in the new fiscal year. See Opening and Closing Posting Periods [Page 32]

Carrying Forward Balances

Use

This process involves carrying forward account balances into the new fiscal year. The balance to be carried forward is shown in the account balance display. To carry forward balances, you can use separate programs for G/L accounts, and for customer and vendor accounts.

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You therefore do not even have to carry out the balance carry forward manually if you have already posted to the new fiscal year.

The balance carry forward is executed as follows:

Balance Sheet and Customer and Vendor Accounts

- The balances on the balance sheet accounts are simply carried forward into the new fiscal year.

- Additional account assignments are transferred.

Profit and Loss Accounts

- Profit and loss accounts are carried forward to retained earnings accounts. The balances of the profit and loss accounts are set to 0.

- Additional account assignments are **not** transferred.

- Transaction currencies are no longer applicable and the profit and loss accounts are summarized in local currency.

Prerequisites

- **Balance Sheet and Customer and Vendor Accounts**

  There are no prerequisites for carrying forward balance sheet and customer and vendor accounts.

- **Profit and Loss Accounts**

  The following prerequisites must be fulfilled for profit and loss accounts:

  - Specify a profit and loss account type in the master record of every profit and loss account. This is a key, under which you define a retained earnings account for each chart of accounts.

  - You must define your retained earnings account.

    You can make the setting in Customizing under *Financial Accounting → General Ledger Accounting → Business Transactions → Closing → Carrying Forward → Define Retained Earnings Account [Ext.]*

    You can make the settings for the Special Purpose Ledger in Customizing for *Financial Accounting* under *Special Purpose Ledger → Periodic Processing → Balance Carry Forward → Retained Earnings Accounts → Maintain Local/Global Retained Earnings Accounts*.

Carrying Forward Balances

Most companies use only one retained earnings account. If you use the profit and loss account type, you can use more than one retained earnings account. This might be useful for example, for international corporations that have to meet various requirements when producing the profit and loss statement. For more information, see Special Features of Profit and Loss Statements [Ext.]

Features

General Functions

- **Automatically Adjusting Balances Carried Forward**

  When you carry forward the balances for G/L accounts at the end of a fiscal year, the system automatically adjusts the balances when you post values to the previous year. The system uses an indicator to determine whether the balances have been carried forward. Once this has been done, the balance is automatically carried forward whenever a posting is made, even when a posting is made to the previous year. It is therefore **not** necessary to execute the balance carry forward again.

- **Account Adjustment**

  If, in the new fiscal year, you find that a G/L account was mistakenly set up as a P&L account in the prior year instead of as a balance sheet account (or vice versa), you should rerun the balance carry forward program after adjusting the G/L account master record so that the balance carried forward can be adjusted.

Special Features in General Ledger Accounting

- **Parallel Currencies**

  If you run parallel currencies in the general ledger, and the second or third currency is the group currency, the balances are run in this group currency in ledger 00, and carried forward as part of the balance carry forward.

  If you run parallel currencies in other additional general ledgers than ledger 00, you have to carry out the balance carry forward separately for the parallel general ledgers.

Special Features in the Special Purpose Ledgers

- **User-Defined Field Movements**

  If you carry forward additional account assignments, such as profit center or functional area, to the new fiscal year, or you want to summarize using additional account assignments, you must assign field movements for balance sheet and profit and loss accounts to your ledger. To assign the field movements, choose the following in Customizing for *Financial Accounting*: *Special Purpose Ledger → Periodic Processing → Balance Carry Forward → Assign Field Movements*.

  If you want to use a field movement for balance sheet accounts, your field movement **must** contain the dimension *Account*. However, the field movement for profit and loss accounts must **not** contain the dimension *Account* (except for when you want to change the account using a user exit).

- **Secondary Cost Elements**

In the standard system, the program only carries forward G/L accounts from *Financial Accounting*. If you also want to carry forward secondary cost elements in your ledger, you do this with a user exit (transaction SMOD/CMOD, enhancement GVTRS001).

Activities

You run the balance carry forward program as follows:

- **G/L Accounts**

   From the *SAP Easy Access* screen, choose *Accounting → Financial accounting → General ledger → Periodic processing → Closing → Carry forward → Balance carry forward.*

- **Customer and Vendor Accounts**

   From the *SAP Easy Access* screen, choose *Accounting → Financial accounting → Accounts receivable/Accounts payable → Periodic processing → Closing → Carry forward → Balances.*

   You can only carry forward balances in *Accounts Receivable* or *Accounts Payable* for individual accounts. In *General Ledger Accounting*, however, you have to carry forward balances for all G/L accounts.

- **Special Purpose Ledger**

   From the *SAP Easy Access* screen, choose *Accounting → Financial accounting → Special purpose ledger → Periodic processing → Balance carry forward.*

Currencies

Definition

Legal means of payment in a country.

Use

For each monetary amount that you enter in the SAP System, you must specify a currency. You enter currencies as the ISO standards, for example, USD for US dollar.

You define currencies in Customizing. To do this, choose *General Settings → Currencies → Check Currency Codes*.

In Financial Accounting, you have to specify for each of your company codes, in which currency ledgers should be managed. This currency is the national currency of the company code, that is, the local currency [Ext.] (or company code currency). From a company code view, all other currencies are then foreign currencies [Ext.].

You can manage ledgers in two parallel currencies in addition to the local currency, for example, group currency or hard currency. For more information, see Parallel Currencies [Page 46].

In order for the system to translate amounts into various currencies, you must define exchange rates [Page 41]. For each currency pair, you can define different exchange rates and then differentiate between them by using exchange rate types [Page 43].

Integration

In *Financial Accounting*, currencies and currency translation are relevant in the following circumstances:

	General Ledger	**Accounts Receivable and Accounts Payable**
Account master data	Defining account currencies [Ext.]	Defining reconciliation accounts [Ext.]
Posting	Posting documents in foreign currency [Ext.]	
Clearing	Clearing open items in foreign currency [Ext.]	
Foreign currency valuation	Foreign currency valuation [Ext.]	

Exchange Rates

Definition

Relationship between two currencies.

Exchange rates are used to translate an amount into another currency.

Use

You define exchange rates in the system for the following purposes:

- **Posting and Clearing**

    To translate amounts posted or cleared in foreign currency, or to check a manually entered exchange rate during posting or clearing.

- **Exchange Rate Differences**

    To determine gains or losses from exchange rate differences.

- **Foreign Currency Valuation**

    To valuate open items in foreign currency and foreign currency balance sheet accounts as part of the closing operations.

You define exchange rates in Customizing under *General Settings* → *Currencies* → Enter Exchange Rates [Ext.].

> Exchange rates are defined at client level and therefore apply for all company codes.

Structure

For each foreign currency, specify the exchange rate in the local currency in the system.

In addition, the following specifications apply for each exchange rate:

- You must specify an exchange rate type [Page 43].

- You can set time restrictions for the exchange rate, in order to take exchange rate fluctuations into account, for example.

    Use the validity date to specify the date from which the exchange rate should apply. The system then refers to either the posting date or the translation date and uses the current exchange rate from the system.

- You can use either direct or indirect quotation to specify exchange rates. For more information, see Direct and Indirect Quotation of Exchange Rates [Ext.] .

- You must specify the relationship of the exchange rate, for example, USD/DEM exchange rates are normally specified 1:1, ITL/DEM exchange rates in the relationship 1000:1.

Exchange Rates

ERtyp	Valid fm	Indirect	Factor (from)	From	Direct.	Factor (to)	To
M	01.01.1999	1,65000	1	DEM		1	USD
M	01.01.1999		1	USD	1,65000	1	DEM
M	01.01.1999		1	USD	7,84900	1000	IDR
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

> If you maintain your exchange rates on a daily basis, you should delete the exchange rates that you no longer require from the system, so that there are not too many entries in the system.

Integration

You do **not** have to enter all exchange rates. There are various tools you can use to automatically determine other exchange rates from existing ones.

You specify the tool to be used for each exchange rate type. The following tools are available:

- Inversion

  Inversion is the process of calculating the opposite rate from a defined exchange rate.

  > Inversion is **not** permitted for exchange rate type *M* (average rate), since the opposite rate calculated would not be sufficiently precise.

  > SAP recommends using the reference currency and exchange rate spread as tools.

- Reference Currency [Page 44]
- Exchange Rate Spread [Page 45]

Exchange Rate Types

Definition

Key used to define exchange rates in the system.

Use

You can define different exchange rates for **each currency pair**. You then differentiate between these exchange rates using the exchange rate type.

You need different exchange rates for the following purposes, for example:

- Valuation
- Conversion
- Translation
- Planning

You define exchange rate types in Customizing under *General Settings → Currencies →* Check Exchange Rate Types [Ext.].

Structure

The following exchange rate types exist:

- Buying rate
- Bank selling rate
- Average rate

> For posting and clearing, the system uses the exchange rate type *M* (average rate). This exchange rate type **must** be entered in the system and you must also enter the exchange rates for this type.

- Historical exchange rate
- Key date exchange rate

Reference Currency

Definition

Currency key used to carry out all foreign currency translations for a specific exchange rate type.

Use

You can assign a reference currency to an exchange rate type. For every other currency, you enter the exchange rate in the reference currency. All other translations are carried out using the reference currency.

> You can only use the reference currency for exchange rate type *M* (average rate), and not for *buying* or *bank selling* exchange rate types.

> You specify USD as the reference currency. To translate from GBP to DEM, the system uses the GBP/USD and DEM/USD exchange rate specifications.

You can specify several reference currencies for one exchange rate type. This may be necessary for example, to comply with legal regulations.

To specify a reference currency for an exchange rate type, proceed as follows in Customizing: *General Settings* → *Currencies* → Check Exchange Rate Types [Ext.].

Exchange Rate Spread

Definition

Constant difference between the average rate and the buying rate, or between the average rate and the bank selling rate.

Use

For exchange rate types, you can define fixed exchange rate spreads between average rate and buying rate, as well as between average rate and bank selling rate.

You then only have to enter exchange rates for the average rate. The system then calculates the exchange rates for the buying rate and bank selling rate by adding and subtracting the exchange rate spread for the average rate.

> SAP recommends defining a reference currency for the average rate and then entering exchange rate spreads for the buying and bank selling rates. This combination is particularly efficient since you only have to enter exchange rates for the individual currencies to the reference currency for the average rate exchange rate type. The system calculates all the other exchange rates.

Parallel Currencies

Use

In *Financial Accounting*, you can define up to two parallel currencies in addition to the local currency [Ext.]. Your ledgers are thereby managed in these parallel currencies in addition to the local currency.

You can use various different currency types as parallel currencies. You define the currency for a currency type when you define the organizational units.

- **Group Currency**

  You define the group currency [Ext.] when you define your client.

- **Global company Currency**

  You define the global company currency [Ext.] when you define the company that is assigned to your company code.

- **Hard Currency**

  You define the hard currency [Ext.] when you define the country that your company code is assigned to.

- **Index-Based Currency**

  You define the index-based currency [Ext.] when you define the country that your company code is assigned to.

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  You can use a maximum of two parallel currencies (**second and third local currencies**).

  If you have defined the group currency as the second local currency, this has no additional effects. In all other cases, you define an additional ledger in which transaction figures are managed.

Features

If you manage your ledgers in parallel currencies, this has the following effects:

- During posting, the amounts are also saved in the parallel currencies. The amounts are translated automatically, but you can also enter them manually.

- G/L account transaction figures are also updated in the parallel currencies.

- Exchange rate differences also arise in the parallel currencies.

- You can also carry out a foreign currency valuation in the parallel currencies.

Activities

To define parallel currencies, proceed as follows in Customizing for *Financial Accounting: Financial Accounting Global Settings → Company Code → Parallel Currencies*.

Taxes (FI-AP/AR)

Purpose

You can use the SAP System to manage various types of tax according to the legal requirements of a country or a region. The *Financial Accounting* components *Accounts Receivable (FI-AR)*, *Accounts Payable (FI/AP)*, and *General Ledger* provide the following comprehensive tax functions:

- Tax calculation
  The system calculates tax amounts with or without cash discount based on the tax base amount.
  Tax codes are used to calculate and check the amounts.

- Tax posting
  The system posts the tax amounts to defined tax accounts.

- Adjustments
  The system corrects tax amounts, in the case of cash discount or other deductions, for example.

- Tax reporting
  You can use the system to create tax returns.

Implementation considerations

To make use of the various tax types, make the relevant settings in the Implementation Guide (IMG) for *Financial Accounting* under *Financial Accounting Global Settings*.

For more information, see the individual activities in the IMG.

Integration

You can process tax in all components in which tax is incurred as a result of business transactions that are later posted to Financial Accounting.

Features

The SAP System supports the following tax types for calculating, posting, and correcting tax, as well as for tax reporting.

Tax type	Description
Tax on sales and purchases [Page 51]	Taxes on sales and purchases are levied on every sales transaction in accordance with the principles of VAT. This applies to input and output tax, for example.
	Input tax is calculated using the net invoice amount and is charged by the vendor. Output tax is calculated using the net price of products and is charged to the customer.
	Companies can offset input tax against output tax, paying the balance to the tax authorities. Tax authorities can set a nondeductible portion for input tax which cannot then be claimed from the tax authorities.

Tax type	Description
Additional tax [Page 51]	Additional taxes are taxes that are posted in addition to tax on sales/purchases. They are usually country-specific, such as investment tax in Norway, or sales equalization tax in Belgium.
Sales tax [Page 51]	An example of sales tax is the sales and use tax that exists in the USA. Sales transactions that are taxed must be kept strictly separate from sales transactions that are not taxed. In general, goods that are intended for production or for resale to a third party are procured untaxed; that is, the vendor does not calculate tax on the sale of these goods (sales tax). Procurement transactions for individual consumption, on the other hand, are taxable (use tax). The principle of sales tax does not permit the option of offsetting input tax against output tax. The vendor must pay the taxes to the tax authorities. The system calculates sales tax based on material and customer location and posts it in Sales and Distribution (SD) and Materials Management (MM). If customers or vendors are exempt from taxation, you can specify this in their master records by entering the appropriate indicator.
Withholding tax [Page 145]	In some countries, a portion of the invoice amount must be withheld for certain vendors and paid or reported directly to the tax authorities. SAP currently provides two functions for calculating withholding tax: Classic withholding tax [Page 148] and extended withholding tax [Page 163]. Extended withholding tax includes all the features of classic withholding tax and, in addition, also fulfills a number of further country-specific requirements. If you wish to implement the withholding tax functions in your organization, you should choose extended withholding tax. For more information about changing over from classic withholding tax to extended withholding tax, see Withholding Tax Changeover [Page 190].

The SAP System provides the following types of taxation:

Taxation type	Description
At national level	Tax calculation with standard tax rates
At regional/jurisdiction level	Tax calculation with tax rates levied for the region or the tax jurisdiction USA: In the USA, there are more than 67,000 tax jurisdictions. Software from third parties is used in this case, and supported by SAP using generic interface software (see also the SAP Library under *Country-Specific Documentation*).

Taxes on sales/purchases, additional taxes, and sales taxes are determined and calculated using condition methods. For the calculation, the system requires details of the calculation procedure,

Taxes (FI-AP/AR)

the tax code, the jurisdiction code if applicable, and so on. These taxes are posted when the documents are processed.

Withholding tax, by contrast, is not calculated using condition methods, nor is it posted during document processing. Withholding tax is not considered until the outgoing payment is made.

Taxes on Sales/Purchases, Sales Taxes, and Additional Taxes

The Accounts Receivable, Accounts Payable, and General Ledger application components support the calculation and posting of tax as follows:

- The tax amount can be determined upon request

- The tax amount is checked by the system at document level

- The tax amount is posted to the tax accounts automatically

- A tax adjustment can be performed automatically, if required, for cash discount postings and other deductions

These transactions are controlled using Customizing, whereby the following specifications need to be made:

- To determine the tax amount, the system calculates a **base amount**, the composition of which varies from country to country. You determine whether the base amount for tax calculation is to include the specified cash discount amount. This information must be defined for each company code. See also Base Amount and Cash Discount [Page 54].

- To enter and determine taxes automatically, a **tax code** is required, which will include the tax rate prescribed by law. See also Tax Codes [Page 55].

- The **tax amount** is generally **posted automatically**. For posting, specify the tax accounts to which the individual taxes are to be posted. See also Automatic Tax Posting [Page 61].

- In a **G/L account master record,** you can specify whether the account is a tax account, and if so, which tax type (input tax or output tax) can be posted to the account. For all other G/L accounts, you can use the master record to specify a tax rate and a tax type, or specify that it is not tax-relevant. See also Specifications in G/L Accounts [Page 62].

See also:

Tax on Sales/Purchases for Down Payments [Page 69]

Specifications for the Tax Type [Page 74]

Separate Exchange Rate for Translating Taxes into Foreign Currency [Page 96]

Tax Return to the Tax Authorities [Page 97]

Types of Taxation

There are basically two types of taxation that can be processed in the SAP System:

- Taxes at federal level/national level

- Taxes below federal level/at regional level

Combination types or taxation are also possible.

Taxes at Federal Level

In most European states, in South Africa, and in Australia, for example, taxes are levied by a federal authority. Tax percentage rates are defined at federal level and local differences do not exist.

Taxes Below Federal Level

In other countries, taxes are levied at local level when goods are sold (USA and Brazil, for example). The local tax authorities can exist at state level, county level, or town level. Taxes can be levied at lower levels again, such as fire department district, school district, local traffic area. Such taxes are then paid directly to these tax authorities. In some cases, however, these taxes are also payable to higher-level tax authorities, in which case they are apportioned between the two levels.

Sales taxes are a typical example of tax below federal level. Since sales tax usually consists of several levels, it is processed using a tax jurisdiction code in addition to the tax code.

Interface to External Tax Calculation Programs for Taxes Below Federal Level

Taxes below federal level are usually made up of several levels. In the USA in particular, up to six different taxes are possible in parallel resulting in tax scenarios with more than 50,000 tax jurisdictions for which time-dependent tax percentage rates must be maintained, taxes paid periodically, and to which tax revenues must be reported. These factors make maintaining tax percentage rates manually or communicating with tax authorities very time-consuming, since formats can vary from authority to authority. However, software products are available that are tailored to these scenarios, allowing taxes to be calculated, reported, and paid where such special rules apply. In addition, the companies that provide these products keep their customers up-to-date concerning changes to percentage rates and calculation types, thereby reducing manual maintenance time considerably, especially for companies that offer direct sales or have a large number of organizational units in different locations. For these reasons, SAP supports generic interfaces to such systems. These interfaces provide all the necessary data at the appropriate points. Data transfers that are tailored to individual taxation systems must however be created within a particular project. These interfaces enable both the jurisdiction code for an organizational unit and the taxes to be determined externally and with reference to the transaction.

Combination Types of Taxation

In some countries, such as Canada, India, and Brazil, taxes are levied both at and below federal level. In these countries, purchase tax is usually levied at federal level and sales tax at local level.

In Canada, for example, GST is a tax on sales and purchases at federal level, whereas PST or QST is a province tax, the percentage rate and basis of calculation varying from province to province.

These different international requirements can be handled by the Accounts Payable (FI-AP), Accounts Receivable (FI-AR), and General Ledger (FI-GL) application components. You customize your system to meet the relevant legal requirements of a country using the Implementation Guide, and you will normally be able to copy most of the specifications in the standard system.

For information on handling tax on sales/purchases within the European single market, see .

The document *FI - Closing Operations and Reporting* contains information on making tax returns and on creating the tax overview of withholding tax that must be sent to vendors.

Base Amount and Cash Discount

The tax amount that you input when entering an invoice is checked by the system when the invoice is posted. Alternatively, you can have the system calculate the tax amount automatically. The tax amount is usually calculated from the expense or revenue item, which is the tax base amount. The composition of the base amount varies from country to country. The base amount can (but does not have to) include the cash discount amount. This information must be defined for each company code.

If the tax base amount includes the cash discount amount, the tax base is gross; if not, it is net. You make these specifications in the Implementation Guide for *Financial Accounting* in the activity *Specify Base Amount.* See also Configuring the System Using the Implementation Guide [Page 121].

In addition to the tax base amount, you can also define the base amount for calculating the cash discount (per company code). For information about the cash discount amount, see Terms of Payment and Cash Discount [Ext.].

Note that only the following combinations are possible:

- Gross cash discount base and gross tax base

- Net cash discount base and gross tax base

- Net cash discount base and net tax base

- Net tax base and gross cash discount base only for tax calculation with jurisdiction code

Tax Codes

Tax codes are used to:

- Check the tax on sales/purchases amount in the document

- Calculate the amount of tax on sales/purchases automatically on request

- Calculate the non-deductible input tax portion

- Check if a tax account with tax type (input or output tax) can be posted to

- Determine the tax account

You define a tax code by entering a two-digit code to represent a tax percentage rate. See also Tax Rates [Page 57]. In addition, the following technical specifications (characteristics) are required:

- Tax type: You specify whether it is input or output tax. See also Input or Output Tax [Page 59].

- Target tax code

- Check indicator: You use this indicator to specify whether the system is to output a warning message or an error message if the tax amount entered manually does not match the amount calculated automatically. See also Check Indicators [Page 58].

- EU indicator

    " "   =   Not EU-relevant

    1   =   goods delivery within EU, display in EC sales list

    2   =   services within the EU

    3   =   subcontracting within the EU

    9   =   acquisition tax

Country key	US	USA			
Tax code	V1	Input tax, 15%			
Procedure	TAXU	Tax on sales/purch. USA			
Tax type	V	Input tax			

Percentages

Tax type	ACTKY	Tax percent.rate	Level	Fr.level	Cond. type
Base amount			100	0	BASB
Output tax	MWS		110	100	MWAS
Input tax	VST	1.500	120	100	MWVS
Input tax (fin.assets mgmt)	VST		125	100	MWV1
Travel expenses (fr.home)	VST		130	100	MWRK
Trav.exp.(fr.hm), n.deduct.	NVV		135	100	MWRV
Input tax, n.dedct, n.ass.	NAV		140	100	MWVN

Tax Codes

The system defaults tax types when you define a tax code. These tax types are the taxes that are relevant to your country or group of countries.

The tax types are defined in the system as country-specific and they determine how the tax is calculated and posted. The system determines the tax types by means of the country key that you specify when you define a tax code. For more information on the tax type, see Specifications for the Tax Type [Page 74].

For information on how to proceed if you need a tax code for tax-exempt sales, see Tax Codes for Tax-Exempt Sales [Page 60].

For information on how to define tax codes, see the Implementation Guide for *Financial Accounting* under the documentation for the activity *Define Tax Codes for Sales and Purchases.* See also Configuring the System Using the Implementation Guide [Page 121].

Tax Rates

When defining a tax code, you can specify tax rates for one or more tax types.

If you need to post input tax (15 percent) with a non-deductible portion (of 40 percent), define a tax code with both deductible and non-deductible rates. When defining this code, enter the portion for input tax (9 percent) under the tax type "Input tax", and the non-deductible portion (6 percent) under the tax type "Nonded.input tax".

Check Indicators

The system checks tax amounts that are entered manually. In doing this, it determines the tax amount by means of the tax code. For each tax code, you determine whether the system outputs an error message or a warning message for amounts that are entered incorrectly. You make this specification by means of the check indicator.

The check indicator determines that if the tax amount is not correct, the error must be corrected. This means that you can prevent users from posting incorrect amounts of output tax. If you do not set a check indicator, the system issues a warning in the case of a different tax amount; a correction does not have to be made. This is necessary for input tax postings, since the tax amount on the incoming invoice is the amount users must enter when posting the invoice.

The system always issues a warning message or error message if the difference (in the smallest currency unit) between the tax amount you enter and the tax amount determined by the system is greater than the number of G/L account and asset items. You can increase this value, if necessary, by changing the rounding rules in the activity for defining currencies in the Implementation Guide (IMG) for *Financial Accounting*. For example, in Switzerland, 5 centimes is the smallest currency unit (5-centime rounding). See also Configuring the System Using the Implementation Guide [Page 121].

> During document entry, eight G/L account and asset line items were created with the same tax code. The system would issue an error message if the difference amounted to 0.09 USD.

Input or Output Tax

You use the tax type to specify whether the tax is an input tax or output tax.

The system uses the tax type to check that you are posting to an account with an allowed code. An error message is output if necessary. This happens, for example, if you enter a tax code for input tax when posting to a customer account for which only output tax codes are allowed.

For every individual tax type, there are country-specific definitions for whether the tax amount fields and the fields for the percentage specifications are ready for input. For more information on this, see .

Tax Codes for Tax-Exempt Sales

You can also create sales/purchase tax codes for sales that are tax-exempt in which case the tax rate is zero percent. You specify this tax code when posting such a transaction and this code is then stored in the line item. When making an advance return for tax on sales/purchases, these transactions can then be displayed separately.

However, you can also post transactions that are not subject to tax without codes, provided the G/L account is marked accordingly in the master record. The *Posting without taxes allowed* indicator must be selected. This is especially necessary for those countries where tax is calculated using jurisdiction codes, since you would otherwise have to enter a dummy jurisdiction code each time you made a posting, or define a dummy code in the respective master records (cost center, customer, and so on). For all other countries, this would not be necessary, since you can simply create a tax code "Sale not taxable" with zero percent, enter it for the appropriate transactions, and not include this code in tax reporting.

Postings without tax codes do not generate any tax information. They are therefore not included by the programs for tax reporting.

If you post to a tax-relevant account without a tax code, the system issues a warning message. You can deactivate this warning message in the Implementation Guide (IMG) for *Financial Accounting* under *Change Message Control for Taxes*. See also <u>Configuring the System Using the Implementation Guide [Page 121]</u>.

> The tax code and its definition must not be deleted or changed once items have been posted with it. If you do not observe this rule, the tax amounts would be displayed for the advance return for tax on sales/purchases with incorrect tax rates, or if a tax adjustment is supported for payment transactions, erroneous corrections would be made. In the case of a tax increase, it is particularly important that old codes are not changed or deleted, but that a new entry with the increased tax rate is created instead.
> The exception to this rule is tax definitions with a jurisdiction code, the percentage rates of which are date-dependent. A tax adjustment with cash discount deduction is not allowed here.

Automatic Tax Posting

When posting a document, the system creates the tax items automatically. The data required to do this, the posting key, and the account number of the tax account must be defined in the system.

The posting keys are already defined in the system. The accounts vary according to the chart of account, and to post taxes in the system you must therefore define the account numbers of your chart of accounts.

To enable the tax accounts to be specified, an account key has been assigned to the tax types. You enter your tax accounts in the system for each chart of accounts and account key. For the tax types "Input tax" and for "Travel expenses", for example, the same account key (VST) is specified. You enter a tax account for all three tax types.

You can distinguish tax accounts by tax codes. That is, you can determine whether for a tax transaction represented by an account key, a single tax account should always be posted to, or separate accounts according to the tax code in each case. Since the advance return for tax on sales/purchases is created from the documents, you do not need to differentiate tax accounts according to tax code.

| Chart of accounts | AAAA | Chart of acts acc.to Ger.law |
| Account key | VST | Input tax |

Tax code	G/L accounts
V1	154100
V2	154200

If the non-deductible portion of the input tax can be assigned, it can be apportioned to the G/L accounts and fixed asset accounts which have the same tax code. If it cannot be assigned, it is posted to a separate account. Whether or not the posting can be assigned is predefined for the tax types that the system defaults. If you want to post the input tax amount to a separate account, you define the account number for the automatic posting in the system.

The *Define Tax Accounts* activity in the Implementation Guide for *Financial Accounting* explains how to make the settings for automatic posting of taxes. See also Configuring the System Using the Implementation Guide [Page 121].

Specifications in G/L Accounts

You can make specifications for calculating, checking, and posting taxes on sales/purchases in three fields in **G/L accounts**. These are:

Tax category
By means of this field, you determine in the master record of a G/L account whether the account is a tax account, a tax-relevant G/L account, or a G/L account that is not tax-relevant. For a tax-relevant G/L account, you can determine the tax codes that can be used to post to the account.

Posting without taxes allowed
By means of this field, you can indicate the accounts that are tax-relevant, but for which posting of non-tax-relevant transactions without a tax code is allowed. This is especially necessary for postings with a jurisdiction code to avoid having to define "dummy" jurisdictions. For tax processing with a jurisdiction code, the jurisdiction code is also ready for input on the G/L accounts/asset screen, in addition to the tax code.

Automatic posting only
For each account, you can use this field to determine whether you want to have the account posted to by the system only, that is automatically, or manually as well.

See also:

Tax Accounts [Page 63]

Reconciliation Accounts [Page 64]

Other G/L Accounts [Page 65]

Change to the Specifications in G/L Accounts [Page 66]

Tax Adjustment for Payment Transactions [Page 67]

Tax Accounts

You define the tax accounts by entering the characters specified below in the *Tax category* field. In doing so, you also determine which tax type (input or output tax) is displayed on the account. The possible entries are:

Indicators in tax accounts

Indicator	Meaning
<	You can only post to this tax account with an input tax code.
>	You can only post to this tax account with an output tax code.

For the tax accounts, you must also decide how the account should be posted to: manually or only by the system. You determine the type of posting by means of the entry in the *Only automat. post.* field.

> You should ensure that the *Only automat. post.* indicator is set for all output tax accounts. Manual posting to the tax account is only necessary in exceptional cases, such as when posting a tax adjustment.

Reconciliation Accounts

The field for the tax category in the reconciliation accounts plays a special role. Your specifications affect the vendor or customer account when posting is made. You have two options with this field:

- You can use it to hide the *Tax code* field for posting to the vendor or customer account if you do not have to post taxes on sales/purchases.

    If you want to allow for this option, you must not make an entry in the *Tax category* field in the master record of the reconciliation account.

- You can have the *Tax code* field output as ready for input when posting to the vendor or customer account. If you enter a tax code in the open item account item, it is defaulted in the asset and G/L account items posted subsequently. This is useful when you enter several line items with the same tax code.

    If you want to allow for this option, you must enter one of the following characters in the *Tax category* field in the master record of the reconciliation account:

Indicators in reconciliation accounts

Indicator	Meaning
_	Only postings with input tax codes are allowed.
+	Only postings with output tax codes are allowed.
*	All tax codes are allowed.

If you enter one of the above indicators in the master record of a reconciliation account, the *Tax code* field is output with the default value ** when line items are entered.

Other G/L Accounts

For all other G/L accounts, you can use the *Tax category* field to make specifications that affect the account when posting is made.

If an **account** is **not tax-relevant** (for example, bank accounts), you may not make an entry in the *Tax category* field. When a posting is made to the account, a tax code cannot then be entered.

If no **tax adjustment** for payment differences is to be made to the accounts for payment transactions (for example, cash discount received, cash discount paid, or unearned deductions), you may not make an entry in the *Tax category* field in the account for cash discount posting. Otherwise, the system makes a tax adjustment automatically when payment transactions are made. With postings with a jurisdiction code, all accounts for cash discount paid and received must be non-tax-relevant. For more information, see Tax Adjustment for Payment Transactions [Page 67].

When you enter a tax code, you assign a **fixed tax rate** to the account. If you enter the code "V1", for example, postings can only be made to the account with this code. The code from the master record is output when a posting is made to the account and can no longer be changed. You should only define a fixed tax rate for G/L accounts in exceptional cases, such as for the account "Domestic travel expenses taxed at a flat rate" in Germany, since otherwise not only new codes, but also new G/L account master records must be created when making a change to the tax rate.

If you **do not** want to assign a **fixed tax rate** to a G/L account, you can use your entries to make the following specifications:

Indicators in G/L accounts

Indicator	Meaning
<no indicator>	Not tax-relevant
-	Only postings with input tax codes are allowed. Cost element accounts are managed with this indicator, for example.
+	Only postings with output tax codes are allowed. Revenue accounts are managed with this indicator, for example.
*	All tax codes are allowed.
-B	Account for gross vendor down payments. Offsetting entry for the tax amounts is made on separate clearing accounts. For more information, see Tax on Sales/Purchases for Down Payments [Page 69].
+B	Account for gross customer down payments. Offsetting entry for the tax amounts is made on separate clearing accounts. For more information, see Tax on Sales/Purchases for Down Payments [Page 69].

Change to the Specifications in G/L Accounts

You can no longer change the tax category (input or output tax account) for a tax account if the account has a balance. For example, you cannot assign another indicator at a later date to a tax account for tax on sales/purchases that contains the indicator **>** in the *Tax category* field. In the same way, you cannot subsequently determine that a G/L account, which has a balance, is a tax account. The system prevents such changes from being made.

In all other cases, that is, if the accounts have no balance or you are making changes to accounts that are not tax accounts, nor are they to be used as tax accounts in future, only a warning message is issued.

Tax Adjustment for Payment Transactions

If you want tax on sales/purchases to be adjusted automatically for cash discount postings when payments are cleared, you must make an entry in the *Tax category* field for the accounts for cash discount received and cash discount paid.

If you do not want tax on sales/purchases to be adjusted automatically, do not make an entry in the *Tax category* field for the cash discount accounts. Tax adjustment is not necessary in Italy, for example. Note that the system does not allow tax adjustment to postings made with a jurisdiction code.

Payment transactions can be posted manually or automatically using the payment program. For adjustment postings, the system divides the calculated gross cash discount amount into net cash discount amount and tax portion. It needs a tax code to do this.

The following scenarios can be distinguished:

Case 1: The whole document contains one tax code only.

Customer/vendor line item	V1
G/L account line item 1	V1
G/L account line item 2	V1

When the payment transaction is posted, the system uses tax code V1 to calculate the tax amount for the cash discount amount. It then automatically adjusts the tax on sales/purchases amount previously posted to the tax account.

Case 2: The document contains different tax rates. A tax code has been entered in the customer/vendor line item.

Customer/vendor line item	V1
G/L account line item 1	V2
G/L account line item 2	V3

In this case, the system corrects the tax on sales/purchases amount per tax on sales/purchases code. Line items that are not liable for cash discount are ignored when the adjustment posting is made. When the payment transaction is posted, the system uses the tax code in the customer/vendor line item to make the adjustment. As above, the tax on sales/purchases amounts already posted to the tax accounts are automatically adjusted per tax on sales/purchases code.

Case 3: The document contains different tax rates. A "**" is entered in the customer/vendor line item in place of a tax code.

Customer/vendor line item	**
G/L account line item 1	V1
G/L account line item 2	V2

Tax Adjustment for Payment Transactions

If the customer/vendor line item does not contain a code, the codes from the G/L account line items are used. The system calculates the tax amount for the cash discount amount for each tax code. As above, the tax on sales/purchases amounts already posted to the tax accounts are automatically adjusted per tax on sales/purchases code.

> You have posted an outgoing invoice for USD 3,370 (see the following figure, **1**). The tax amount (USD 370) was posted automatically to the tax account.
> The customer pays the invoice amount of USD 3,370 minus three percent cash discount, that is, USD 3,268.90 (see the following figure, **2**). The invoice contained one line item for USD 2,000 with 15 percent tax (A1) and an item of USD 1,000 with 7 percent tax (A2). When posting the payment transaction, the system determines (per code) the net cash discount amount and the tax amount. From these tax amounts, the system automatically makes an adjustment posting to the tax accounts.

The system posts the following amounts during the payment transaction:

Customer			Sales revenue	
1 3,370	3,370 **2**			3,000 **1**
				2,000 (A1)
				1,000 (A2)

Rec.from goods/services			Tax	
1 3,370	3,370 **2**		**2** (A1) 9.00	300 (A1) **1**
			2 (A2) 2.10	70 (A2) **1**

Bank		Cash discount	
2 3,268.90		**2** (A1) 60	
		2 (A2) 30	

Tax on Sales/Purchases for Down Payments

In the R/3 System, down payments are posted to special reconciliation accounts (special G/L accounts). For more information on special G/L transactions and down payments, see *Special G/L Transactions* in the *Accounts Receivable and Accounts Payable* documentation. The following section describes how the tax on sales/purchases is to be dealt with for down payments.

The legal specifications of your country determine whether or not tax on sales/purchases is to be posted for down payments. If as a general rule you do not post any **tax on sales/purchases,** you can hide the fields for the tax specifications. You do this via the special G/L account (down payment account):

You can create the master records with an account group for which the *Tax category* field does not appear. When creating the master record, you will not be able to make an entry in this field.

Alternatively, you can simply leave the *Tax category* field blank in the master record. All fields for tax on sales/purchases are then hidden on the entry screens. For more information on the screen layout, see *Master Data* in the *Accounts Receivable and Accounts Payable* documentation.

See also:

Net or Gross Display for Down Payments

If you need to post tax on sales/purchases, you must determine whether the down payment should be displayed in the open item account and special G/L accounts with or without tax on sales/purchases.

If you select **net display**, the down payment is posted to the open item and the down payment account minus tax on sales/purchases. The tax itself is posted to the input or output tax account.

Bank account	Customer account Down payments received
11,500	10,000

Output tax	Special G/L account Down payments received
1,500	10,000
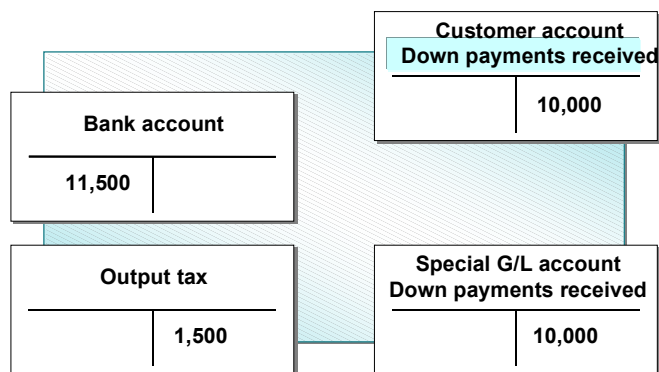
If you select **gross display,** the down payment is posted to the open item and down payment account including tax on sales/purchases. The tax itself is posted to the input or output tax account. To clear the tax, the amount is also automatically posted to a clearing account.

Bank account	Customer account Down payments received
11,500	11,500

Output tax	Special G/L account Down payments received
1,500	11,500

Output tax clearing account
1,500
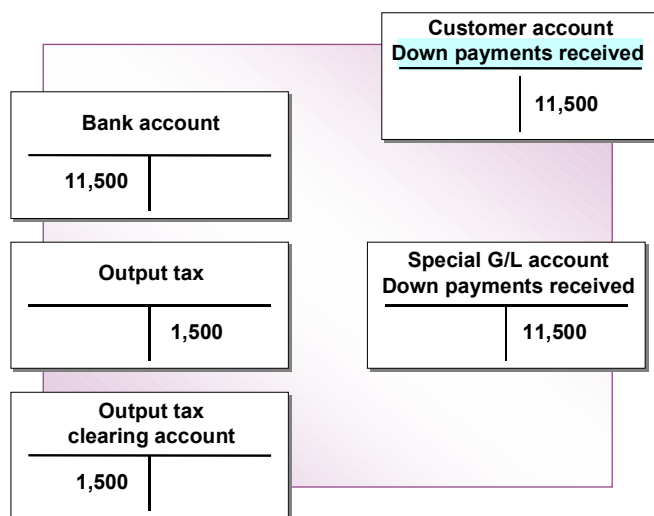
Gross display has the advantage that the down payment amount is displayed in the open item accounts including the taxes on sales/purchases, meaning that the whole amount of the payable or receivable is displayed.

You use the down payment accounts to determine whether the display is net or gross. For this, you enter the appropriate indicator in the field for the treatment of tax.

Down payments with taxes are not supported for tax calculation with a jurisdiction code.

Indicators for displaying taxes

Indicator	Display
+B	Down payments received, gross
+	Down payments received, net
-B	Down payments made, gross
-	Down payments made, net

Display on the Balance Sheet

If net display is selected, the down payment is displayed net on the balance sheet.

If gross display is selected, you must carry over the down payment accounts with the corresponding tax clearing accounts to a balance sheet item. As a result, the down payments are also displayed net.

To display down payments on the balance sheet, there must be a separate clearing account for the tax on sales/purchases for every down payment type (special G/L indicator). Clearing accounts are generally managed with open item management. For tax clearing accounts, you should not choose this option. Since the accounts are posted to automatically only, you do not need to be able to make changes to the open items manually.

Example

Input tax	
1,500	
3,000	
4,500	
700	

Input tax clearing for general down payments made		**Input tax clearing for general down payments made**	
	1,500		4,500

Input tax clearing for down pmnts made on intang.assets		**Input tax clearing for down pmnts made on intang.assets**	
	3,000		700

Affiliated companies	**Non-affiliated companies**

You manage down payment accounts separately for affiliated and non-affiliated companies, for general down payments and down payments on intangible assets. You post the down payments according to the gross procedure and want to display them as net on the balance sheet. To do this, you need four clearing accounts for input tax clearing, separated by down payment type and affiliated and non-affiliated companies.

Tax on sales/purchases is posted automatically. That is, the system determines the tax and clearing accounts when posting. You must define the numbers of the accounts in the system beforehand. The clearing accounts are to be distinguished in this case by the criteria down payment type (for example, special G/L indicator I, A) and affiliated and non-affiliated companies. You can specify a two-digit key, which groups this information together, when entering the numbers of the special G/L accounts. When entering the clearing accounts for the tax on sales/purchases, enter this key to make the differentiation.

Example

For the non-affiliated companies, you enter the key **A** for down payments on fixed assets, and **I** for down payments on intangible assets. For the affiliated companies, you enter the keys **AV** and **IV.** You use these keys to distinguish the accounts for tax clearing.

	Reconcil. account	Special G/L account	Down payment type Sp. G/L indicator	Key for tax clearing account
Non-affiliated companies	160000 160000	159000 159001	A I	A I
Affiliated companies	161000 161000	159002 159003	A I	AV IV

Key for tax clearing account	Tax clearing account
A I AV IV	159010 159020 159030 159040

Specifications for the Tax Type

When you define your tax codes, the system defaults certain tax types that have been defined in the system for specific countries. Input tax, output tax, and non-deductible input tax are examples of tax types used in Germany.

The system determines which tax types are to be displayed by means of the country key. A calculation procedure is specified for each country key, and this procedure contains the country-specific specifications for calculating and posting the different tax types.
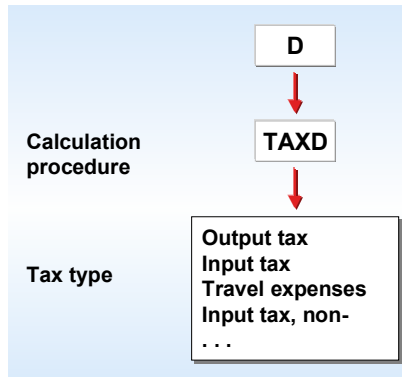
When you define the calculation procedure, you must answer the following questions concerning each tax type:

- What is the **base amount** for calculating the tax? This can be the expense or revenue amount or, as with sales equalization tax in Belgium, a tax amount.

- Which **calculation type** is used to determine the base amount: percentage included or percentage separate? With very few exceptions (such as for travel expense accounting in Germany), the base amount is normally determined percentage included.

  The tax amount is 15%.

Percentage included

Tax amount = invoice gross amount * (tax rate/100 + tax rate)

150 = 1150 * (15 / 100 + 15)

Percentage separate

Tax amount = invoice net gross * tax rate/100

150 = 1000 * 15 / 100

- To which **side of the account** must the tax amount be posted? The input and output tax is always posted in accordance with the G/L account and asset line items. For the tax to be posted additionally, the side of the account is determined depending on the input or output tax. For the acquisition and investment tax, for example, you post to the opposite side of the account.

- Should a possible **tax expense** be divided between the G/L account and asset line items or posted separately? If, for example, you have a non-deductible input tax amount, you can

choose whether to post to a separate expense account or apportion the tax expense between the G/L account and asset line items.

The type of tax calculation and posting depends on the answers to these questions and the combination of those answers.

Tax type	2nd tax posting to	Base amount	Calc. rule	Side of account	Separate posting/distrib.
Output tax		Revenue and expense items	A		
Input tax		Revenue and expense items	A		
Travel expenses		Revenue and expense items	I		
Non-deductible input tax	Input tax	Revenue and expense items	A		Optional
Investment tax	Input tax	Revenue and expense items	A	Opposite	Optional
Acquisition tax		Revenue and expense items	A		
Offsetting entry for acquisition tax	Acquisition tax	Acquisition tax	A	Opposite	
Sales equalization tax	Output tax	Output tax	A		

A = Percentage incl.   I = Percentage separate

The following topics introduce individual tax types and explain the necessary specifications for calculating and posting tax. For more information on the calculation procedure, see The Calculation Procedure [Page 141].

See also:

Tax on Sales/Purchases: Input and Output Tax [Page 76]

Non-Deductible Input Tax [Page 79]

Deferred Tax: Italy [Page 81]

Sales Tax [Page 82]

Use Tax [Page 84]

Tax Calculation With or Without Jurisdiction Code? [Page 86]

Entering Taxes with Jurisdiction Code [Page 87]

Acquisition Tax [Page 90]

Investment Tax [Page 92]

Sales Equalization Tax [Page 94]

Tax on Sales/Purchases: Input and Output Tax

Input and output tax is calculated on revenue or expense items (base amount). The tax amounts are posted to separate tax accounts and refunded by the tax office (input tax) or paid to the tax office (output tax). The tax percentage rates vary from country to country and are determined when you define the tax codes.

The tax amount is determined as a percentage of the base amount, meaning that the tax amount is included in the invoice amount. Given a tax rate of 15 percent, the invoice amount or the total of the expense or revenue items and the tax items together would be 115 percent. To calculate the tax amount, the invoice amount is divided by 115 and multiplied by 15. The result is an amount corresponding to 15 percent of the base amount.

The tax amounts are automatically posted to tax accounts. The system always posts the amounts to the side of the account to which the other G/L account amounts are also posted. See also Example: Posting Output Tax [Page 77] and Example: Posting Input Tax [Page 78].

The input tax can be completely or partially non-deductible. This part cannot be claimed from the tax office. The amount can be posted to a separate expense account, or it can be distributed to the G/L account and asset line items.

Example: Posting Output Tax

You post an outgoing invoice to the sum of USD 1150 with 15 percent output tax. The invoice amount, including tax, is automatically posted to the customer account; the tax amount (USD 150) is automatically posted to the output tax account.

Customer		Output tax		Revenue	
1,150			150		1,000

Example: Posting Input Tax

You post an incoming invoice with an invoice amount of USD 1150 with 15 percent input tax. The invoice amount, including tax, is posted to the vendor account. The tax amount (USD 150) is automatically posted to the input tax account.

Vendor	Input tax	Expense
1,150	150	1,000

Non-Deductible Input Tax

If part or all of the input tax is non-deductible, you can post the tax amount to a separate expense account or distribute it to the G/L account and asset line items. You enter the tax percentage rates for the input tax portion and the non-deductible portion under a shared tax code. If the entire input tax is non-deductible, you must specify for the tax code that zero percent input tax is to be calculated. See also Example: Posting Non-Deductible Input Tax [Page 80]

Example: Posting Non-Deductible Input Tax

You have to post an incoming invoice to the sum of USD 1,200. The tax amount of USD 200 (20 percent) comprises 12 percent input tax (USD 120) and a non-deductible portion of eight percent (USD 80). You can now post the non-deductible portion to a separate account (see the following figure, example A) or distribute it to the G/L account and asset line items (see the following figure, example B).

If the whole input tax amount is non-deductible, no input tax posting is made; the non-deductible input tax can be posted to a separate account (see the following figure, example C) or be distributed between the G/L account and asset line items.

	Vendor	Input tax	Non-ded.input tax	Expense
A	1,200	120	80	1,000

	Vendor	Input tax		Expense
B	1,200	120		1,080

	Vendor	Input tax	Non-ded.input tax	Expense
C	1,200	0	200	1,000

Deferred Tax: Italy

In Italy, a special ruling applies to the remittance of tax on sales/purchases on goods sold to public institutions such as universities, hospitals, or government departments. In such cases, if payment is not expected in the near future, you can withhold payment of the tax on sales/purchases until the invoice is paid. The tax authorities therefore grant you an extension of time in which to remit the tax payable on sales made to public institutions.

The R/3 System provides the program RFUMSV25 for posting deferred taxes. This program is normally run on a weekly basis, and transfers the tax on sales/purchases amount of an invoice from the "Deferred tax" account to the normal output tax account.

Since invoices for such sales remain unpaid for an extended period, it is possible that the tax rate can change during this period, in which case you would use program RFUMSV35, which debits the customer with the invoice difference and creates a letter to the customer. The form for this letter is F_RFUMSV35_10. You can modify this form to meet your requirements. The form must be assigned to the program.

Sales Tax

Sales tax is levied on the sale of taxable goods. Sales tax is paid to the vendor, if the transaction is taxable (private consumption). In essence this tax is identical to Non-Deductible Input Tax [Page 79]. The taxes paid increase the expense, an explicit tax posting is not carried out. See also Example: Posting Sales Tax [Page 83].

In contrast to non-deductible input tax, sales taxes have multiple levels and tax is calculated on a different basis.

Where sales tax is paid to vendors, it does not need to be reported to the tax authorities. To enable later checks, however, it must be stored in the system along with the transaction to which it relates.

Example: Posting Sales Tax

Posting a Customer Invoice

You post an outgoing invoice for 1,000 USD to the customer account with the jurisdiction code PA001001000 and the tax code C1. The offsetting entry is made to the receivables account 800000, Domestic Sales. The document overview then looks as follows:

Document overview

PK	Account	Debits	Credits
01	Customer	1,000	
50	800000 - Domestic Sales		916.17
50	175001 - A/R Sales Tax State		61.84
50	175002 - A/R Sales Tax County		21.99

Posting a Vendor Invoice

You post an incoming vendor invoice for 1,000 USD with tax code I1. The offsetting entry is made to the Payables account with cost center 111, to which the jurisdiction code PA001001000 is assigned. The document overview then looks as follows:

Document overview

PK	Account	Debits	Credits
31	Vendor		1,000
40	Payables	1,000	

The taxes paid are stored by the system but are not displayed in certain G/L accounts.

Use Tax

Use tax is tax that is withheld by the vendor. If the vendor does not charge taxes on taxable transactions or cannot charge for legal reasons, for example, the recipient of the goods is obliged to pay the taxes due to the tax authorities. This tax increases the expense, the offsetting entry is made to a tax provision account similar to an output tax account. See also Example: Posting Use Tax [Page 85].

Use taxes are a special kind of taxation within the USA that arises from the fact that companies must withhold and remit tax only to those states in which they are registered. To those states in which they are not registered, vendors supply goods tax-free, even where the transaction would normally be liable to tax. The goods recipient is however required to pay use tax on the goods to their own state, and therefore obtains no tax advantage.

Some companies in the USA also have a global license, called a "Self-assessment Permit", that allows them to receive goods from vendors tax-exempt. These companies are then also responsible for correct payment of taxes on taxable transactions.

Use taxes must be both reported and paid to the tax authorities.

Example: Posting Use Tax

You post a vendor invoice of 1,000 USD to the vendor account with tax code U1. The invoice amount does not contain taxes. The use tax rate is 7 percent. You make the offsetting entry with amount entry * and *Calculate taxes* to the account Payables. The document overview then looks as follows:

Document overview

PK	Account	Debits	Credits
31	Vendor		1,000
40	Payables	1,070	
50	154010 A/P Use Tax State		60.00
50	154020 A/P Use Tax State		10.00

Although the invoice amount did not contain any tax, the system determined the use tax by means of the tax code and posted it to the corresponding tax accounts. At the same time an offsetting entry increased by the amount of the use tax was posted to the account Payables.

Tax Calculation With or Without Jurisdiction Code?

SAP provides two options for calculating sales tax and use tax:

*   With jurisdiction codes

*   Without jurisdiction codes

One of these two options must be assigned to each country.

You choose the **tax calculation without jurisdiction codes** if you have business relationships with companies whose locations are restricted to few jurisdictions. You can then simply assign percentage rates to the different tax codes.

You choose **tax calculation with jurisdiction codes** if you have business relationships with companies whose locations have many jurisdictions, or if you expect that this will be the case in the future.

Once you have chosen one tax calculation method, you cannot reverse your decision.

Entering Taxes with Jurisdiction Code

Use

The jurisdiction code is a key which (together with the tax code) determines the tax amount and the way in which payment of the total tax amount is divided between different tax authorities. Jurisdiction codes are used in the USA and Brazil.

Jurisdiction codes are made up of multiple levels. They can have three levels, for example:

250221105

25 = State code

    022 = County code

        1105 = City code

Prerequisites

In order to post a document using jurisdiction codes, all state codes (highest level) in the document must have the same tax base (net or gross) and the same cash discount base.

Features

On the Additional Screen for Tax Amounts [Page 89], you can choose how you want to enter the tax amounts for the jurisdiction codes. You can enter them either:

    a) **For the entire jurisdiction code**. This variant is the system default. If you know the total tax amount for the entire jurisdiction code, after entering the G/L account items, you enter the tax amounts for each jurisdiction code.

or

    b) **Individually for each state, county and city code**. If you have only individual details for each state, county, and city code, you choose this variant.

When you go to enter taxes on the *Tax amounts* screen, you will always start by entering the area of jurisdiction (state, county or city). On the tab page *Details*, you can have the system display the entry screen for each state, county, and city code. Once you change amounts on this detail screen, you cannot navigate back to the entry screen for the entire jurisdiction code, but must continue entering the tax amounts per state, county, and city code.

    a) To enter taxes using variant a), choose *Tax amounts* and enter the tax amounts for each entire jurisdiction code. You can enter tax codes that have not already been entered for line items or change amounts that have already been specified. If you enter new tax codes, you have to specify a posting key in addition to the tax amount and tax code.

Amount	Tx	PK	Tax base amount	Jurisdict.code...
1,100.00	I9	40	1,100.00	250221105...

    b) To enter taxes using variant b), choose the *Details* tab page, which displays the tax data broken down by amount, tax code, posting key, tax base amount, jurisdiction

Entering Taxes with Jurisdiction Code

code, and condition type. The entire jurisdiction code is broken down by state, county, and city.

Amount AcctType	Tx	PK	Tax base	Jurisdict.code	
550.00	I9	40	1,100.00	250000000	JP1I...
330.00	I9	40	1,100.00	250220000	JP2I...
220.00	I9	40	1,100.00	250221105	JP3I...

You can then specify the tax amounts in the greatest possible detail. After you press enter, the system combines the individual tax details into the entire jurisdiction code. Once you have made entries on the detail screen, the system no longer displays the intermediate tax amounts screen, but only the detail screen.

Additional Screen for Tax Amounts

When entering G/L account items, you specify the net amount and the tax code. The tax amounts for the G/L account items are entered on a separate screen that you can reach by choosing *Extras → Tax amounts.*

The *Tax amounts* screen shows you the tax amount, tax code, posting key, and tax base amount for all items you have entered. If you access the *Tax amounts* screen after entering the G/L account items, you will see the amounts you have already entered.

You can enter tax codes that have not already been entered for line items or change amounts that have already been specified.

If you enter new tax codes, you have to specify a posting key in addition to the tax amount and tax code.

If you **create several tax line items with one tax code**, for example, when posting with a jurisdiction code or in the case of Canadian tax processing (GST/PST), you can display and enter these tax line items on a further detail screen by choosing *Goto → Details.* The detail screen displays the entire tax amount broken down by state, county, or city code. Here you can enter the individual amounts. Once you have made entries on the detail screen, you cannot branch to the *Tax amounts* screen.

Acquisition Tax

In some countries, deliveries to certain companies abroad can be tax-exempt, such as in the case of goods exported within the EU. The vendor does not charge any tax in these cases, although the invoice will record the fact that no tax was charged on the transaction.

Acquisition tax must be displayed on the balance sheet of the company that acquired the object, but can be posted as input tax. It follows that by deducting this amount as input tax, the company effectively avoids paying the acquisition tax. The tax amount is posted to the tax account as both a payable and a receivable when the incoming invoice is posted.

The tax amounts are calculated from the invoice amount (base amount), the percentage rates being country-specific. You determine them when defining your tax codes.

In contrast to acquisition tax, the offsetting entry for the acquisition tax is posted to the other side of the account (by defining a +/- sign change for the offsetting entry). See also Example: Posting Acquisition Tax [Page 91].

As a result of these two postings, a tax-exempt business transaction is created. The tax amount must, however, be reported to the tax authorities.

Example: Posting Acquisition Tax

You have an incoming invoice to post to the sum of USD 1,000, with no input tax. The acquisition tax rate is 15 percent, and an offsetting entry has to be made as input tax at the same percentage rate.

You have defined a tax code for which you have specified a rate of 15 percent for acquisition tax and 100 percent for the offsetting entry for acquisition tax. The acquisition tax rate is used as the base for the offsetting entry.

Vendor		Input tax		Acquisition tax		Expense	
	1,000	150			150	1,000	

Investment Tax

Investment tax is levied on certain goods in some countries, such as Norway. This tax is calculated on the amount of the incoming invoice and posted in addition to input tax. The tax amount is to be posted as a payable to the tax office. In contrast to the input tax amount, the investment tax must therefore be posted on the opposite side (generally the credit side) of the account. To enable the system to make this posting, you define a +/- sign change for the second tax posting to distinguish it from the posting for the input tax.

The expense arising from the investment tax is generally divided equally between the G/L account and asset line items. If you wish, you can also have the system post the expense to a separate expense account.

The percentage rates of taxes vary from country to country. You determine them when defining the tax code. A percentage rate for input tax and a percentage rate for investment tax are to be specified under the same tax code.

The input tax is determined as a percentage of the base amount, meaning that the tax amount is included in the invoice amount. See also Example: Posting Investment Tax [Page 93]

Example: Posting Investment Tax

You have an incoming invoice to post to the amount of 1,200 NOK. The invoice amount includes input tax at 20 percent (200 NOK). In addition to the input tax, investment tax must be posted at a rate of 10 percent (100 NOK). In example A (see the figure below) the expense from investment taxes is charged to a separate account; in example B (see the figure below), the amount is distributed proportionally to the G/L account line items.

	Vendor		Input tax		Investment tax		Exp. from invest.		Expense	
A		1,200	200			100	1,100			
B		1,200	200			100			1,100	

Sales Equalization Tax

In Belgium and Spain, customers can be made exempt from tax on sales/purchases. Vendors must charge these customers a sales equalization tax in addition to output tax. Sales equalization tax is paid to the tax authorities by the vendor.

Different factors are used to calculate the sales equalization tax in each country:

- In Belgium, sales equalization tax is charged at a certain percentage rate of output tax.

- In Spain, sales equalization tax is charged at a certain percentage rate of the invoice amount.

Sales equalization tax is determined as a percentage of the base amount, meaning that the tax amount is included in the invoice amount. See also Example: Posting Sales Equalization Tax [Page 95].

Example: Posting Sales Equalization Tax

You post an outgoing invoice to the sum of 1,186.20 BEF. The output tax rate is 14 percent, and the additional sales equalization tax amount is 33 percent of the output tax (4.62 percent of the invoice amount). The output tax is therefore 140 BEF and the sales equalization tax amount 46.20 BEF. You post 1,000 BEF to the revenue account.

Customer		Output tax		Sales equaliz. tax		Revenue	
1,186.20			140		46.20		1,000

Separate Exchange Rate for Translating Taxes into Foreign Currency

If you want to use your own exchange rate to translate taxes for postings in foreign currency, you must first make the relevant settings in the Implementation Guide (IMG) for *Financial Accounting*. You specify that a separate exchange rate can be entered manually or automatically for translating tax amounts. You must also define an account for posting exchange rate differences in the IMG. See also Configuring the System Using the Implementation Guide [Page 121].

If during document entry you use an exchange rate for translating tax amounts that differs from the rate in the document header, the system takes the resulting difference (in local currency) into account, and creates a separate line item for it when posting is made. This exchange rate difference is also displayed on the tax screen. If the tax amounts in local currency are changed manually, this does not result in an exchange rate difference posting.

If you do not enter an exchange rate and there is no default entry, the taxes are calculated in the normal way.

Tax Return to the Tax Authorities

You are required to create an **advance return for tax on sales/purchases** on a regular basis, and to do this you can make use of the various country-specific programs in the R/3 System.

To credit the tax accounts, you must transfer the tax amounts to a tax payable account by:

- Creating the postings using the program for the advance return for tax on sales/purchases

- Posting the tax amounts manually to a tax payable account using the *Tax payable* function

For more information on this subject, see *FI - Closing and Reporting* documentation.

Data Medium Exchange Engine

Use

The Data Medium Exchange Engine (DMEE) enables you to define file formats that meet the requirements of your financial institution. This is particularly important as there is no worldwide or regional standard. In some cases, no country standard exists and the file must comply with bank-specific standards. With no ABAP programming knowledge required, this tool enables you to flexibly define new formats and to efficiently modify existing ones. In addition, DMEE can be used by calling applications to generate a DME file.

Integration

Formats can be defined for and DME files can subsequently be generated from the following application areas in *Financial Accounting*:

- Payment program
- Tax reporting
- Withholding tax reporting

Features

- Creation of formats with a graphical DME tool
- Single program interface for all formats
- No coding for additional layouts or changes
- Transport of layouts

Format Tree Definition

Purpose

This process describes the steps involved in defining a format tree in the DME Engine.

Process Flow

There are three main steps:

1. Data selection

   After you specify the application for which you wish to create a file format (such as the payment program) and assign a unique format tree ID, the system executes a selection step. It selects all R/3 fields that are predefined for the particular application. These fields form the source field inventory [Page 231] and are made available to you when you do the data mapping in step 3.

2. Definition of tree structure

   In this step, you define the layout of the format tree in a hierarchical structure. This tree stores all data that is relevant to describe this file structure: here you maintain the level structure of the file, the field structure, and the mapping and conversion of SAP source fields to file target fields.

3. Data mapping

   When you define your structure, you must link the fields in your file format to the corresponding fields in the R/3 System. This enables the DME Engine to extract the required data from the appropriate fields when you later generate a file. There are several mapping procedures; the most common ones are direct reference to R/3 fields or specification of a constant. You can also define more complicated mapping rules by including conditions, aggregation, or user exits.

After the above steps have been completed, you activate [Page 236] your format tree and it can then be used for generating DME files from the defined applications.

See also:

Creating Nodes [Page 227]

Data Mapping [Page 229]

Screen Layout

After you specify a tree type and a unique format tree ID on the initial screen of the DME Engine, the *DMEE: Create Format Tree <format tree>* screen appears. It is divided into three parts:

1. Tree structure

> On the left side of the screen, you define your format tree by inserting nodes in a hierarchical structure.

2. Detailed view

> When you insert a node in the format tree, detailed information is displayed to the right of the tree in the top frame. Here you specify additional data depending on the type of node. The information is displayed like a card index; you navigate between different areas by choosing the tabstrips along the top.

> You can display the details for any node by double-clicking it in the left-hand tree structure.

3. Source fields

> The bottom right frame contains all source fields made available by the data-selection step. These fields make up the source field inventory; you can select from them during the data-mapping process.

Nodes

Definition

Object that represents a hierarchy level in a format tree structure.

Use

Nodes are used to model a file defined by a certain external authority, such as a bank, government, or standardization organization. In most cases, it is possible to transfer to the format tree on a 1:1 basis the structure in the file description that the authority provides. SAP recommends that each file field corresponds to an element in the format tree.

Structure

Each format tree begins with a root node called the header [Page 225]. It appears automatically at the top of the tree structure when you create a format tree, and you can maintain the details on the right.

Below the header, you insert nodes to form the body of your format tree based on your file requirements. Likewise, details for the nodes can also be maintained on the right. For a description of the nodes and when to use each type, see Node Types [Page 226].

Header

The root node of the DMEE format tree contains technical settings and properties that apply to the entire file. Below is an overview of data that can be maintained on the detailed view to the right of the tree structure. For more information on the individual fields, refer to the F1 help.

Administrative data

You can document your format tree as needed. To do so, specify a name for your documentation text in the *Documentation* field; the name format *<format tree ID>_DMEE* is recommended. You can then maintain the text directly in the SAPscript editor by choosing ⓘ. The user documentation for a format tree can be displayed in the display or change modes by choosing *Goto → Documentation*.

The of the format tree is displayed. The system assigns the fixed value 000 to an active version and 001 to a maintenance version.

Format attributes

Here you specify a DDIC structure in the case of format-specific parameters and delimiter information.

For format trees of the tree type PAYM, you can additionally specify that an accompanying sheet is to be printed when the file is generated. The system supports the printing of both simplified sheets and sheets with subtotals. If you specify an accompanying sheet with subtotals, you must maintain the key fields on the *Sort/key fields* tabstrip.

Levels

Here you specify the number of levels in the format. In addition, you can define a repetition limit for each level. This value specifies how often a certain level may be output. If this number is exceeded, the corresponding level cannot be output anymore. If the limit is reached for the uppermost level in the format tree and additional data is to be processed, a second file is generated. If the limit is reached for lower levels, the preceding level is repeated so that data can continue to be output for this level.

Sort/key fields

Here you can specify how certain fields are to be sorted. For the payment program, for example, you can sort according to currency or account by specifying the appropriate source field. If a sort field is additionally marked as a key field, then a change to the value in this field causes the corresponding format level to end.

If you indicate on the *Format attributes* tabstrip that an accompanying sheet is to be printed, you maintain the key fields here, which define how the subtotals are calculated.

File data

Here you specify whether segments are to be separated by carriage return or by line feed.

Node Types

Each node type performs a different function and various data can be maintained accordingly in the detailed view. For additional information on nodes and when to use certain node types, choose *Extras → Node legend* on the *DMEE: Create/Change Format Tree <format tree>* screen.

Below is an overview of node types in the DME Engine and their use:

Node	Use
Segment group	Used to group segments
Segment	Represents a record in the target file
Composite	Used to group elements
Element	Represents a target field of the DME file
Atom	Describes the link from the file definition to the internal R/3 structures
Technical node	Element that is not output to a target file; it stores values that are used in other tree nodes (elements, atoms) by a reference to this node

Creating Nodes

1. For the first node, position the cursor on the root node and choose the pull-down menu next to the 🗋 icon, or do a right mouse click on the root node and select the node you wish to create.

2. For successive nodes, always position the cursor on the node above where you want to insert a node. You can then specify whether the node is to be inserted on the same level or as a subnode.

    💡

    When you insert a node, position the cursor on the node above where you wish to insert the new node by double-clicking. If you just highlight it with a single click, the details of another node may still be displayed to the right and the system recognizes this as the previous node.

3. Depending on the type of node you create, various data can be maintained in the detailed view to the right of the format tree. For more information on the individual fields, choose the F1 help for the field.

Conditions

Use

This function enables you to define conditions that control whether a certain format tree node is processed during file generation.

Conditions can be defined for any node type [Page 226]. If one condition applies to several consecutive elements, you should define a composite. If you assign a condition to a segment or a composite, it applies to the corresponding subtree. In this way, for example, you can control that a complete record (a segment, including all its elements defined as subnodes) is not output to the file.

Activities

You define a conditional relationship for a node in the detailed view under *Conditions*. Here you specify one of the following types of condition arguments and the corresponding arguments:

- Constant

- Field in a source structure (from the source field inventory)

- Reference ID (of another node already defined in the format tree)

When a file is generated from one of the predefined applications, the system processes the format tree and checks each node for conditions. If a condition is met, the system processes the node; if it is not, the node is ignored.

> If a condition for an upper-level node is not met, all subnodes are also ignored during processing.

Data Mapping

Purpose

This process describes how to map data from R/3 source fields to the target fields in a DME file. In most cases, you specify how data is to be mapped to elements, the nodes in the DMEE format tree that represent these target fields. You can also specify a mapping procedure and source information for atoms, which you define if an element contains several mapping rules.

Process Flow

1. You insert an element in the format tree structure on the left.

2. The system automatically displays the detailed view for an element in the right frame. This includes the following tabstrips: Attributes, Source, Conditions, and Aggregation.

3. After you enter the required attribute information, select a mapping procedure.

Mapping procedures:

Select mapping procedure	If
Constant	The value is to be set to a constant
Structure field	A value is to be retrieved from a specific source field in the R/3 System
Reference to tree node	An attribute (current value, length, or counter reading) of another DMEE format object that was already defined is to be used
Aggregation	A value related to a reference node is to be totaled and made available to this node
Exit module	The standard mapping and conversion rules do not meet your requirements and you wish to specify an exit module
Own mapping (atoms)	Your mapping rules are dependent on conditions or if different parts of the element are to be filled from different sources

4. Enter detailed source information:

   a. If you choose one of the following mapping procedures, enter source data in the appropriate fields on the *Source* tabstrip:

   - Constant

   - Structure field

   - Reference to tree node

   - Exit module

     In most cases, you specify that the target field is to be filled from one source field from the R/3 System, which corresponds to the mapping procedure *Structure field*.

To specify the source field, you can enter the source field and structure directly under *Source*, or you can select a field from the source field inventory [Page 231].

b. If you choose *Aggregation* as the mapping procedure, enter data as required on the *Aggregation* tabstrip.

c. If you choose *Own mapping (atoms)* as the mapping procedure, you create as many atoms as you require in the form of subnodes to the element. You then specify a mapping procedure and source information for the atoms.

5. You can specify a conversion method used to convert source field data to a particular format for the DME file. This step is optional; if no conversion method is specified, data is transferred to the target field in the format it has in the R/3 System.

See also:

Aggregation [Page 234]

Exit Modules [Page 235]

Conversion of Source Field Data [Page 232]

Source Field Inventory

For each DMEE tree type, a set of possible source fields is predefined by SAP. These fields form the source field inventory, which is generated automatically during the data-selection step. You can select from these fields in the data-mapping process.

The source field inventory can consist of the following fields, depending on the tree type:

- Source fields for the application

    These fields are dependent on the particular application.

- ABAP system fields

    These fields are made available for each application. An example is the system date.

- Technical fields

    These fields are additional ABAP system fields that are usually not selected in the data-mapping process. However, they are still made available in the case that you require such source fields.

- Source fields for note to payee (internal table)

    These fields are specific to the tree type PAYM (payment program). If the appropriate settings are defined in Customizing for *Payment Medium Formats for the Payment Medium Workbench* and you select one of these fields as your source field, then a value will be filled in this target field.

- Parameters and source fields from Customizing

    These fields are specific to the tree type WTRE (withholding tax reporting). By choosing one of these fields, you map data that has been defined in Customizing and that remains unchanged.

Selecting fields from the source field inventory

To select a field from the source field inventory, double-click the document icon to the left of the field name, and the system transfers the structure and the field name to the mapping source above. For a description of the fields, choose 🛈. To branch from the structure directly to the ABAP Dictionary, choose 🗔.

You can also insert a new element in the format tree directly from the source field inventory by highlighting the field name and dragging it to the format tree. The element is inserted after the last node in the structure and assigned the technical name of the field.

Conversion of Source Data

Use

This function converts source field data to a particular format for the DME file. You can specify a conversion method for any of the mapping procedures available for elements and atoms.

The system supports conversion rules for the following field types:

- Date

- Time

- Currency amount

- Character string

If you require an additional conversion method, you must specify an exit module for the node.

Activities

First enter the source information, then choose 🔲 on the *Attributes* tabstrip; the system restricts selection criteria and displays the conversion rules that apply to the particular field type. Or, you can choose from all available formats via the input help.

Available formats

For field type	You can specify a combination of the following data:
Date	• Day, month, and year sequence • Number of characters for year: two or four • With or without separator • Type of separator: slash or period • Year, month, or day only • Year and number of days since January 1
Time	• Hour, minutes, and seconds sequence (with or without seconds) • With or without separator • Hour only • Conversion to time stamp
Currency amount	• Number of decimal places • Decimal formatting: period, comma or none • With leading zeros • Left- or right-justified • Output decimal value as 0 (round down)

Conversion of Source Data

Character string	• With leading zeros
	• Left- or right-justified
	• Replace leading zeros with space
	• Replace strange characters
	• All letters as capital letters

Aggregation

Use

This function enables you to aggregate values for specified format tree nodes (called aggregation nodes) and it makes this number available to a target field (element) in the DME file.

The aggregation function can be used at the end of a level or a file to:

- Add the total value of specified nodes

    In this case, you can only specify aggregation nodes that are filled with values (elements).

    This could be the amount of all payments in a level.

- Add the number of nodes

    In this case, you can specify any aggregation nodes because the system totals the number of occurrences, not specific values.

    This could be the number of payments in a level.

Activities

When you create an element, select the mapping procedure *Aggregation*. On the *Aggregation* tabstrip, you enter the reference IDs of the nodes you wish to aggregate and the aggregation type – how the aggregation nodes are to be totaled to the target node (either summation of values or of total number of occurrences).

Exit Modules

Use

You can implement exit modules for elements or atoms if the standard mapping and conversion rules do not support your requirements. Exits can also be used to select data from additional database tables not included in the standard selection step (such as customer database tables) and therefore not made available in the source field inventory. The exit module can, however, use the same source fields as the standard mapping rules.

Activities

When you create an element or an atom, select the mapping procedure *Exit module*. On the *Source* tabstrip, you then enter the name of the exit function.

> You write ABAP source code in the ABAP Workbench – not in the DME Engine. The function module DMEE_EXIT_TEMPLATE can be used as a template for your exit module.

Activating Format Trees

Use

You always maintain version 001 of the DMEE format tree. After you finish maintenance of your format tree, you activate the tree so that it can be used to generate a DME file from one of the defined applications.

Procedure

1. Complete maintenance of the format tree.

2. Choose *Format tree → Activate* or .

3. The system performs a check [Page 237] of the format tree.

Result

If the check determines inconsistencies (errors or warnings), the system saves the format tree in the maintenance version, 001. To activate the tree, you must first correct all errors and then repeat the activation procedure.

If no errors are determined, the system activates the format tree and saves it as the active version, 000.

Checks

Use

Checks are carried out on the format tree to prevent inconsistent data from being used when a file is generated. You can execute a check manually at any time in the format-defining process. In addition, the system performs a check automatically when you activate your format tree.

Activities

To perform a manual check, choose *Format tr*ee → *Check* or ⬚. The system carries out the following checks:

- Syntax check

- Consistency check (such as reference to node attributes)

- Correct level distribution

- Check for completeness

If the check generates error or warning messages, the system displays a log. The log indicates the type of message (red for error, yellow for warning, green for information) and a short text. The text of an error message – which must be corrected in order to activate a format tree – is additionally highlighted in yellow. If a long text is available for the message, you can display it by choosing ⬚.

After a log has been generated, you can display it by choosing *Goto* → *Log* or ⬚.

Testing Active Format Trees

Use

The DME Engine includes a testing function, which enables you to test active versions [Page 240] of format trees before they are used to generate a file.

This function is intended for small-scale tests only. You can employ it, for example, to test the effects of new conversion rules or to determine if the offset is correct within a line or record. It is not intended to check an entire format tree – but rather a few lines – as it is very difficult to manually generate all application data correctly.

Activities

1. On the initial screen of the DME Engine, choose *Format tree → Test active version* or ⬛.

   The *DMEE Test Data* screen appears. The system displays the source structures for the particular application, each followed by the most commonly selected source fields for that structure. If you need to test fields not included here, you can add fields via the standard layout function.

2. Next you enter the data you wish to test.

   Only enter data in those fields that are specified in the format tree as actual source fields.

3. To start the test, choose *File → Test* or ⬛.

4. On the *Data output* dialog box that appears, the system displays in list form the results for the data you entered as they would appear in an actual DME file.

   If you do not enter data in the fields for which mapping rules are defined in the format tree, these fields remain empty when the test version is output. Fields defined as constants are output accordingly.

See also:

Activating Format Trees [Page 236]

Transporting Format Trees

You can transport both active and maintenance versions of format trees to other systems. The logical transport object for a DMEE format tree is R3TR DMEE; this contains all associated database tables. To transport a format tree, choose either *Format tree → Transport* or 🖳 on the initial screen of the DME Engine.

The DME Engine also supports an upload/download of format trees as an alternative to the transport:

- Upload format tree

    You can upload a format tree that you have as an XML file. To do so, choose *Format tree → Upload XML file* on the DMEE initial screen. You then specify the file name and the presentation server or URL address.

- Download format tree

    You can download a format tree and create an XML file on your PC that contains all format tree information. To do so, choose *Format tree → Download XML file* on the DMEE initial screen. After you specify which version you wish to download (active or maintenance), you enter the tree type, format tree ID, and a name for the XML file.

Format Tree Maintenance

Use

A DMEE format tree can be maintained with the transaction *DMEE*. You specify the tree type and the name of your format tree. A DMEE file specification can then be defined or modified in the form of a hierarchical tree structure.

Versions

When you create a format tree, the system automatically assigns it the version 001 (maintenance version). When you have finished maintaining the tree and wish to use it to generate DME files, you activate [Page 236] the tree. In the activation process, the system performs certain checks; if these are successful, an active version of the tree is stored under the version 000.

After you activate a format tree, two versions exist in the system: the active version (000) and the maintenance version (001). You always maintain version 001. When making changes to the maintenance version, you can always return to the last active version. You would want to do this, for example, if you make changes to the maintenance version, save it, and decide later that you do not want to keep these changes. To return to the last active version, on the DMEE initial screen choose *Edit → Maintain active version*.

When you return to the last active version, it overwrites the maintenance version.

Only two versions exist in the system at any given time. Once you modify a maintenance version and activate it, this is the only active version that exists – at this point it is not possible to return to an earlier active version.

Both the active and maintenance versions can be transported [Page 239] to other systems.

Generation of Data File Using DMEE

Purpose

The DMEE format tree can be used by a calling application to generate a DME file. The system currently supports the use of the DME Engine from three *Financial Accounting* applications: payment program, tax reporting, and withholding tax reporting.

Prerequisites

For the PAYM tree type, the format tree must be defined as a payment medium format in Customizing for *Payment Medium Formats for the Payment Medium Workbench*.

Process Flow

The calling application carries out the following steps:

1. Selects data and fills the transfer structure

2. Calls DMEE modules with the data that has been selected

3. Obtains an internal table with data in format structure

4. Writes data to a file or to File/TemSe/... and, in the case of PAYM, possibly updates DME administration

Current Settings and the Implementation Guide

You can configure your system:

- Using the current settings in the Accounts Payable menu

- Using the Implementation Guide (IMG)

See also:

Making Current Settings

To access current settings, from the Accounts Receivable or Accounts Payable menus, choose *Environment → Current settings.*

From here you can carry out the following activities:

- Specify exchange rates

- Enter planned amounts for the payment program

- Open and close posting periods

- Create worklists for processing open items and displaying line items and balances

To carry out one of these activities, click the *Execute* icon next to it. You can display documentation about each current setting by placing the cursor on the title of the activity and choosing *Activity → Display documentation*.

Configuring the System Using the Implementation Guide

Certain system settings are made using the Implementation Guide (IMG).

The following information refers to the SAP Reference IMG. If you are working with an Enterprise IMG or your own projects, you may see slightly different paths than the ones listed here.

The SAP Reference IMG lists all activities that must be carried out to configure the SAP System.

You can execute functions and display documentation about these functions from the IMG structure.

For more information about system settings (function descriptions and instruction manuals), see the documentation for Customizing [Ext.].

See also:

Calling Up the SAP Reference IMG [Page 122]

Searching for Activities in the SAP Reference IMG [Page 123]

Calling Up the SAP Reference IMG

To call up the SAP Reference IMG, proceed as follows:

1. From the SAP Easy Access menu, choose *Tools* → *AcceleratedSAP* → *Customizing* → *Edit Project* → *SAP Reference IMG*.

    The structure of the IMG is now displayed.

2. Position the cursor on *Financial Accounting* and choose *Edit* → *Expand* or click on the plus sign to display the subheadings under Financial Accounting.

    You will see the IMG for *Financial Accounting Global Settings*, *General Ledger Accounting*, and *Accounts Receivable and Accounts Payable*.

3. Position the cursor on either *Financial Accounting Global Settings*, *General Ledger Accounting*, or *Accounts Receivable and Accounts Payable* and expand the tree structure until you find the configuration activity you require

4. Read the descriptions for the relevant activities by double-clicking on the text icon, then go to the views for making or maintaining the settings in these activities by clicking on the *Execute* icon.

5. Make the required settings and save them.

6. Return to the IMG structure display by choosing *Goto* → *Back*.

Searching for Activities in the SAP Reference IMG

Using the *Find* function, you can search for a specific word or character string within the structure titles of the IMG.

Proceed as follows:

1. From the IMG structure display screen, choose *Edit → Find.*

2. Enter your search term (word or character string).

3. Select the type of search and hit list display.

4. Confirm your entries.

Plants Abroad

Use

You can process tax returns for warehouses or sales and distribution centers abroad using domestic company codes.

These tax returns may be:

- Tax returns to a foreign tax authority

- EC sales list for another EU country

This procedure simplifies the process of making tax returns for companies with several plants or warehouses abroad. Note that these are **not** real operation centers abroad; you would have to create separate company codes for these.

> You should only use this function if you have several warehouses, distribution centers, or plants abroad.
> If however, you only have individual warehouses abroad for example, you should set up a separate company code for each warehouse. Otherwise the functions and scope of the Customizing settings for plants abroad would be too complicated for a single entity abroad.

For more information, see the Implementation Guide (IMG) for *Financial Accounting* under *Financial Accounting Global Settings → Tax on Sales/Purchases → Basic Settings → Plants Abroad.*

Integration

This function affects the FI, MM, and SD application components. For more information, see the documentation for the SD and MM application components.

Prerequisites

If you want to introduce plants abroad, note the following in connection with tax codes and tax jurisdiction codes:

- **Jurisdiction code**

  Ensure that *Tax calculation with jurisdiction code* is **not** used in any of the company codes in the clients in which you want to use plants abroad.

- **Tax procedure and tax code**

  Define **one** tax procedure with a unique tax code for all the countries/company codes that are to be combined under the plants abroad function.

> You want to use plants abroad for your company codes Spain, France, and United Kingdom. However there are different tax on sales/purchases rates in each of the three countries. For each tax on sales/purchases rate, assign a unique tax code (not **A0** in all company codes):

Company code	Spain 0001	France 0002	United Kingdom 0003
Tax on sales/purchases	12%	14%	16%
Tax code	AX	AY	AZ

In addition, you must ensure that **each** document contains the tax code for **one** country only.

The only exceptions to this rule are the following:

− More than one tax country is allowed for incoming payments with tax adjustment for cash discount amounts, but only for those cash discount line items created automatically.

− Inter-plant transfers between different countries from SD are allowed, since no cash discount adjustment is required here (solely G/L account postings).

Features

This function is only for those transactions for which there are no further reporting requirements in the given country currency, other than submitting tax returns.

In order to use plants abroad, you use the field *Tax country* in the tax code. The *Tax country* is the country to which the tax return is submitted.

You can use the tax country to make settings that differ from the company code country for the following areas:

• Tax base determination

• Cash discount base determination

• Currency key

• Translation rule for the tax currency

You make and activate the settings for plants abroad in Customizing for *Financial Accounting*.

When you enter a document, you can enter one tax country; the appropriate returns are then created for this country. The amounts are translated into the reporting currency where this differs from the local or transaction currency.

Any exchange rate differences are created in the local currency of the company code in question, independent of the tax currency.

The tax programs allow you to select by tax country. Sender information is replaced by country-specific sender information where required.

You use the following programs for plants abroad:

Adapted programs	Comments
RFUMSV00	Selection can be made according to tax country (reporting country). There is also a parameter enabling you to control whether the value is output in the national or local currency.
RFUSVB10	
RFASLM00	Selection according to tax country possible. The amount is displayed in the national currency.

Plants Abroad

RFASLD02 (without CoCde address)	Selection according to tax country possible. The amount is displayed in the national currency. Company code address data is not presently provided.
RFASLD12 (without CoCde address)	Selection according to tax country possible. The amount is displayed in the national currency. Company code address data is not presently provided.
RFASLI00 (Include)	
RFASLIDD (Include)	
RFWERE00	

Tax Apportionment for Cross-Company Code Transactions: RFBUST10: Release 4.0

In the case of cross-company code transactions, the total tax is only posted to and displayed in the first company code. Tax incurred in the other company codes is not included. In certain countries, such as Japan or Denmark, however, the tax amounts arising have to be displayed separately for each company code.

As of Release 4.0A, program RFBUST10 creates a list of the tax amounts for each company code, for which transfer postings can then be made at a later date.

For more information, see the documentation for program RFBUST10.

For more information about customizing this program, see the Implementation Guide for *Financial Accounting* under *Financial Accounting Global Settings → Tax on Sales/Purchases → Posting → Transfer Posting of Tax for Cross-Company Code Transactions.*

European Single Market and VAT Processing

The following topics provide you with information about special tax processing required within the European Union, and the configuration settings necessary for dealing with this in the SAP System. For more detailed information on how to make these settings, see the Implementation Guide for *Financial Accounting* under *Financial Accounting Global Settings → Tax on Sales/Purchases.*

European Single Market and VAT Processing: Overview

With the advent of the European Single Market, the tax frontiers between the individual states of the European Union have been abolished. Border controls have been replaced by more extensive reporting for deliveries made to companies in other countries of the EU. Vendors have to report these deliveries/goods movements to their own tax authorities in an EC sales list. Delivery itself is tax-exempt with tax being levied in the country of destination. Import tax has been replaced by acquisition tax.

To enable the authorities to check that the new law is applied correctly, every company that has to pay tax on an acquisition within the Union is assigned a VAT registration number (VAT reg.no.). This number must be specified on invoices, and vendors must enter both their own VAT registration number and their customers' registration number in the sales lists for the tax authorities.

For financial accounting purposes, the above legislation means companies need to produce an extended advance return for tax on sales/purchases and an additional report. For reporting purposes, new fields have been included in the line items. New tax codes are required for posting the tax and for documenting the tax-exempt deliveries.

The changes that affect financial accounting are explained in the following topics. If you are affected by this new legislation, you should check that you have made the necessary system settings described in the following topics.

The settings you make when configuring your system must be in line with the laws passed in your country concerning VAT processing within the European Single Market.

VAT Registration Number

As part of the process of establishing the European Single Market, the tax authorities in each EU member state assign VAT registration numbers to companies. All companies that are entitled to deduct input tax can receive a VAT registration number.

A VAT registration number is alphanumeric and consists of up to 15 characters. The first two letters indicate the respective member state, for example DE for Germany or ES for Spain.

The VAT registration number is designed to specify the tax processing involved in certain transactions and to allow the financial authorities to monitor the application of the new regulation.

For this reason, the VAT registration number of the company code and that of the customer must be specified on invoices for tax-exempt deliveries and other goods and services within the European Union. The VAT registration number is thus part of the control procedure that has replaced the former border controls (EC sales list).

You can define VAT registration numbers in the system for every customer, company code, and vendor. The VAT registration numbers in the vendor master record are currently only used in Spain for information purposes.

Fields in the Line Item

There are four fields in the line item which enable VAT on transactions within the European Single Market to be displayed correctly. These fields are currently only used for business transactions with customers. These are the fields:

- **Tax number**
  This is the VAT registration number of the customer.

- **Reporting country**
  This is the country to which the goods are delivered and therefore where the customer acquired a VAT registration number. This field is ready for input, so that the relevant VAT registration number can be called up automatically from the customer master record. The reporting country is, however, not stored in the document.

- **Delivering country**
  This is the country from which the delivery is made; the system automatically takes the country of the company code as the delivering country. The contents of this field are not displayed in the document and cannot therefore be changed.

- **EU triangular deals**
  This indicator is necessary so that triangular deals can be displayed separately in the EC sales list.

Identifying the EU Countries

The fields for VAT processing in the EU are only needed if the company code country and the country of the business partner are member states of the EU. For this reason, every EU country must be indicated as such.

There are also check rules defined in the system which the system uses to recognize an incorrectly entered VAT registration number. For every country, you also enter the ISO code for the EC sales list and a numeric country key for the Intrastat declaration.

Company Code VAT Registration Number

You must define a VAT registration number for every company code that is located in an EU country and undertakes business transactions with other EU member states. The number is to be specified on invoices for tax-exempt deliveries and in the sales lists for the tax authorities. You can assign both domestic and foreign VAT registration numbers, since you can have a number assigned to you in the country of your company code and in other EU member states.

Preparations for Outgoing Invoices

Deliveries to customers with a VAT registration number in other EU member states are exempt from tax. You must note on the outgoing invoices that they are tax-exempt. You must also specify the customer's VAT registration number and your own. Deliveries of this type must be declared separately in the advance return for tax on sales/purchases.

Note the following for outgoing invoices:

- **Fields in the line item**
  The fields for the entry of the VAT registration number and further specifications are only ready for input if this is necessary. The requirements that must be met for this are described in the following topics.

- **Tax code**
  The requirements for tax-exempt delivery to other EU member states must be documented both in the appropriate ledger and in the document. For this reason, you must post a tax item with a separate tax code using the tax rate zero in the FI document.

Fields in the Line Item

The customer's VAT registration number must be specified in the FI document. The VAT registration number field is not ready for input in the line item. This value can only be retrieved from the customer master record. This is done when you enter a reporting country. The reporting country is the country in which the customer was assigned his or her VAT registration number.

The *Reporting country* field is ready for input if the following conditions are met:

- The company code country is identified as an EU country

- The posting is sales-relevant

- The terms of payment field is ready for input

If, in addition, the country key contained in the customer master record is different from the country of the company code and if this is an EU country, the VAT registration number specified for the customer's country is defaulted as the tax number. If the reporting country is deleted from the line item, the VAT registration number is also deleted. The country of the company code is always adopted as the delivering country if a VAT registration number exists in the line item. The *Delivering country* field is not displayed in the line item.

All specifications must be entered for the customer item on an **additional screen**. If the additional screen is not called up when you enter a document, the system automatically adopts the default values.

For postings to a **one-time account**, the VAT registration number is not displayed on the additional screen but on the screen for the one-time data. It can be entered directly here. There is no field for the reporting country.

For **recurring documents**, the country in which the customer is located is adopted as the reporting country, and the relevant VAT registration number is also determined from the master record.

The system is so configured that the fields *Reporting country* and *Tax number* are only displayed if the posting is sales-related. This information is contained in the posting key. These fields are also ready for input if terms of payment can be entered in a non-sales-related posting. The system needs these postings to be able to enter tax data in the cash discount items. This is

necessary for a residual item that is paid at a later date with cash discount deduction, for example. These non-sales-related postings are not included in the reports for the tax authorities.

What to Consider When Entering the G/L Account Line Item

The new tax rules are only relevant for postings for cash discount paid. By using a separate field status group for these accounts, you can ensure that the necessary tax data can only be entered for these accounts. When you enter documents for all other G/L accounts, these fields are hidden.

In the case of automatic postings, the system automatically copies the tax number and the delivering country from the open item account line item to the cash discount items.

When you enter cash discount paid manually, you cannot enter the tax number directly. It is determined on the basis of a customer number and the reporting country. Both specifications must be entered in the cash discount paid item to call the customer's VAT registration number.

Tax Codes and Tax Accounts

Deliveries to customers with a VAT registration number in other EU member states are exempt from tax. To be able to furnish proof of such a delivery, however, and to be able to report according to legal requirements, you must post a tax item. You need a separate tax code to do this. You must also specify an account for this code.

So that the type of delivery can be recognized, specify for every tax code whether it is a delivery of goods, subcontracting, or a service. Currently only deliveries of goods are displayed in the returns.

Preparations for Posting Outgoing Invoices

To be able to complete outgoing invoices correctly for the reports for the tax authorities in the FI application component, you must:

- Enter the assigned VAT registration number under a country key for every **customer.** The customer's reconciliation account must be indicated as tax-relevant.

- Create a **tax code** for output tax, which shows a tax rate of zero percent. For this tax code, you specify the type of delivery in question (goods delivery, service, or subcontracting).

To be able to complete outgoing invoices in Financial Accounting so that the documents contain the necessary specifications for the new tax rules, proceed as follows:

1. Enter the VAT registration number of every **customer** under the corresponding country key in the customer master record.

   To do so, go to the Accounts Receivable menu and select the customer master records in the change function, or transfer these specifications with the other master data by batch input from a legacy system or a non-SAP system.

2. Create accounts for output tax, if you have not already done so or if you are posting to separate accounts according to tax code.

3. Create tax codes for posting output tax with a percentage rate of zero by choosing the activity *Define Tax Codes for Sales and Purchases* in the Implementation Guide for *Financial Accounting.*

Preparations for Incoming Invoices

For deliveries imported from other EU member states, no import tax is posted, but acquisition tax is. This tax amount can be deducted as input tax. If the buyer is entitled to deduct the full amount of input tax, he does not have to debit from his profit/loss any tax for acquisitions within the EU.

For the tax postings you need special tax codes and, if you want to manage the acquisition tax in separate accounts, special tax accounts.

Preparations for Posting Incoming Invoices

You create the tax codes for acquisition tax the same way as you create output tax codes. For more information, see Preparations for Posting Outgoing Invoices [Page 136].

You should note the following:

- In this case, the tax type you must specify for the properties of the indicator is **V** for input tax.

- You enter the percentage rate for acquisition tax on the entry screen for the percentage rates in the line *Acquisition tax outgoing ESA*. This may be 15 percent, for example. Insert a minus sign ("**-**") after the figure, since the tax must be posted to the opposite side of the account to the expense line item.

- In the line *Acquisition tax incoming ESE*, enter **100-** if you are entitled to deduct 100 percent of input tax. This results in a line item being created with the same amount as the "outgoing" acquisition tax but which is in turn posted to the other side of the account.

Repeat this transaction for each tax code you require for acquisition tax. You may also have to maintain the accounts in other charts of accounts.

If you now post a vendor invoice with the new acquisition tax code and select the *Calculate tax* field for the tax amount, the system generates two line items for the tax posting.

VAT Registration Number in the Vendor Master Record

You can define several VAT registration numbers in the vendor master record. The VAT registration number is not currently being used in the FI application component.

Delivery of Goods as Part of Triangular Deals

Deliveries of goods as part of triangular deals must be listed separately in the EC sales list. You must identify these deliveries as such when you enter the line item. To do this, select the *EU triangular deal* field when entering the line item. This indicator causes the transaction to be identified as a triangular deal in the EC sales list.

When the incoming payment is posted, the indicator is also copied to any resulting postings for cash discount paid or residual items.

Reports for the Tax Authorities

Advance Return for Tax on Sales/Purchases

Since January 1st 1993, every company has to list tax-exempt export deliveries and tax-exempt EU-internal deliveries separately. They must also specify the base value of the goods on which the acquisition within the EU was taxed in the reporting period. As before, the advance return for tax on sales/purchases is created from FI documents. The necessary information is taken from tax codes set up specifically for these business transactions.

EC Sales List

The EC sales lists form the basis of the information supplied by domestic tax authorities to other member states.

Since January 1st 1993, every organization has to send an EC sales list to the relevant tax authorities, providing information on the tax-exempt deliveries of goods within the European Union and goods movements to registered organizations made in the reporting period. You create the EC sales list using the RFASLM00 program.

The Calculation Procedure

The following topics describe the basic structure of a calculation procedure and how it is maintained, including the settings you need to make in Customizing. For detailed information on how to make these settings, see the Implementation Guide for *Financial Accounting* under *Financial Accounting Global Settings → Tax on Sales/Purchases*. See also Configuring the System Using the Implementation Guide [Page 121].

Calculation Procedure: Overview [Page 142]

The Condition Type [Page 143]

The Process Key [Page 144]

Calculation Procedure: Overview

A calculation procedure is defined for each country, each containing the specifications required to calculate and post tax on sales/purchases. Each calculation procedure contains several tax types, which are called condition types in the procedure.

The system defaults condition types when you define a tax code. The condition type (such as input or output tax) specifies the base amount on which the tax is calculated and the account key that is used to post the tax. The specifications necessary for calculating and posting tax have been defined for the condition type and account key.

Level	Cntr	CndTy	Name	From	To	Man.	Act Ky	Stat	Reqt.
100		BASB	Base amount						
110		MWAS	Output tax	100			MWS		
120		MWVS	Input tax	100			VST		
130		MWRK	Travel expenses (fr.hm)	100			VST		
140		MWVN	Input tax n.ded.,n.ass.	100			NAV		
150		MWVZ	Input tax n.ded.,assign.	100			NVV		
160		NLXA	Output acquisition tax	100			MWS		
170		NLXV	Input acquisition tax	100			VST		

Condition type Input tax

☐ Condition type —— *Condition type MWVS*   determines:

* Calculation rule
* Side of account for tax posting
* . . .

☐ Base amount —— *Fr.level 100*:

☐ Account key/ —— *Acount key*   determines
  process key   *VST*

* Tax type: Input or output tax
* Non-deduct.input tax
* Posting indicator
  (separate posting or distribution
  of tax amount)

The calculation procedure determines the amount on which the individual condition types are calculated. This can be the **base amount** (total of expense and revenue items) or a **subtotal**. Incoming acquisition tax, for example, is not calculated based on the expense or revenue items, but on the tax amount for outgoing acquisition tax. The column *Fr.level* determines the amount on which tax is calculated.

The Condition Type

You define the following information for each condition type:

- **Condition type** and **condition class**. For example, where tax is to be calculated, the condition type might be "base amount" (K) or "tax" (D), and the condition class "base amount" (A) or "tax" (D).

- **Calculation rule**: Either "percentage included" (A) or "percentage separate" (I)

- The **side of the account** to which the tax amount is posted. This need only be specified for additional taxes, since these (in contrast to input, output, and acquisition tax) can be posted to either side of the account. If you want tax to be posted to the opposite side of the account, select the +/- sign field.

- Whether it is possible to **change** the **tax amounts** and **percentages** (which are displayed on a special screen) when you enter a document. To make this possible, choose the *Manual entries* field, then choose either *Rate/percent* (to make the percentages changeable), or *Value* (to make the tax amounts changeable).

The Process Key

The process key contains the following properties:

- **Tax type**. This is required for reporting purposes, to be able to determine where the individual tax line items in a document are to be displayed. As tax type you can specify either output tax (**1**), input tax (**2**), additional tax (**3**) or not relevant to tax (**4**).

- **Non-deductible input tax**. This specification is also required for reporting. When input tax and non-deductible input tax is posted, separate line items are created if the non-deductible part is not to be distributed to the G/L account line items and asset line items. For tax reporting, you must indicate the input tax line items that do not display the non-deductible portion of input tax.

- **Posting indicator**. You specify whether the tax amount is posted separately (**2**) or distributed between expense and revenue line items (**3**).

The system posts tax to the tax accounts automatically. You can specify tax account numbers for each process key. This is not necessary for process keys for which it has been specified that the tax amount is to be distributed (posting indicator **3**). Therefore, these keys are not offered in the function for entering the tax account numbers.

PrKy	TxTyp	Non-deduct.	Posting ind.
ASB	3		2
MWS	1		2
NAV	2	X	2
NVV	2	X	3
VST	2		2
ZUG	3		2
ZUS	3		2

Withholding Tax

Definition

Tax that is charged at the beginning of the payment flow in some countries. Usually, the party that is subject to tax does not pay the withholding tax over to the tax authorities himself.

When a customer that is authorized to deduct withholding tax pays invoices from a vendor subject to withholding tax, the customer reduces the payment amount by the withholding tax proportion. The customer then pays the tax withheld directly to the appropriate tax authorities (see diagram).
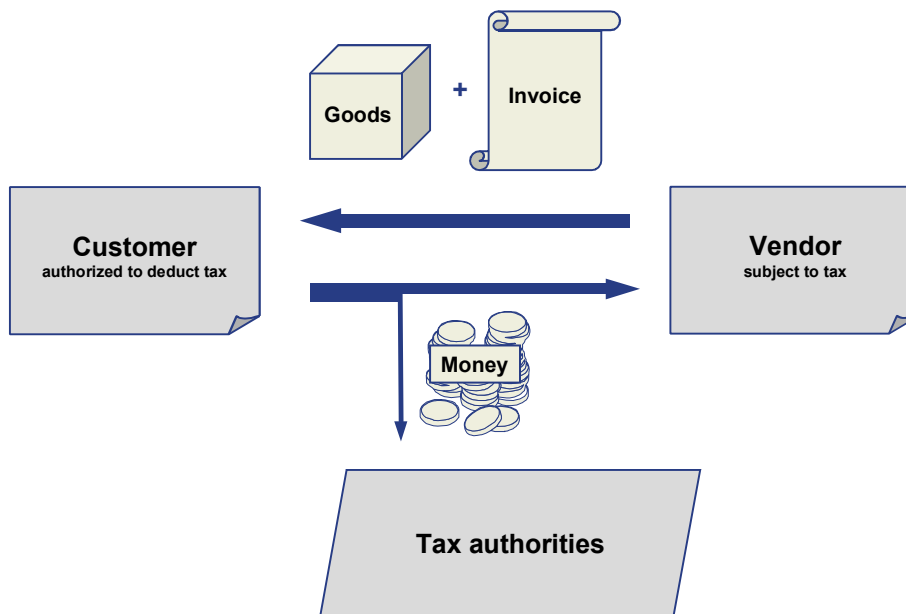
An exception to this rule is self-withholding. The vendor subject to tax then has the right to pay the tax to the authorities himself.

Use

To calculate, pay, and report the withholding tax, the SAP System provides two functions:

- Classic Withholding Tax [Page 148] (all Releases)
- Extended Withholding Tax [Page 163] (from Release 4.0)

For each company code, you can decide whether you want to use classic or extended withholding tax. Since the extended withholding tax option includes all the functions of classic withholding tax, SAP recommends the use of extended withholding tax (see below: Table of Classic and Extended Withholding Tax Functions).

Withholding Tax

If you have previously used classic withholding tax, and now wish to change over to extended withholding tax, you must first convert the withholding tax data in all the company codes affected.

Do **not** activate extended withholding tax before you have converted the data.

SAP has developed a special tool to support the withholding tax changeover. For more information, see Withholding Tax Changeover [Page 190]

Classic and Extended Withholding Tax Functions

Individual Functions	Classic Withholding Tax	Extended Withholding Tax		
Withholding tax on outgoing payment	X	X		
Withholding tax on incoming payment		X		
Withholding tax posting at time of payment	X	X		
Withholding tax posting at time of invoice		X		
Withholding tax posting on partial payment		X		
Number of withholding taxes for each document item	Max. 1	Several		
Withholding tax base:	Net amount	X	X	
	Modified net amount		X	
	Gross amount	X	X	
	Tax amount		X	
	Modified tax amount		X	
Rounding rule		X		
Cash discount considered		X		
Accumulation		X		
Minimum/maximum amounts and exemption limits		X		
Number assignment on document posting (certificate numbering)		X		
Calculation formulas	X	X		

Country-Specific Requirements

Due to legal requirements, the following countries use **extended withholding tax**:

America	Europe and Africa	Asia/Pacific
Argentina	United Kingdom	The Philippines
Brazil	Turkey	Thailand
Chile		
Colombia		
Mexico		
Peru		
Venezuela		

Classic Withholding Tax

Use

In some countries, the law provides that invoice recipients must withhold a certain portion of the payment amount and pay this to the tax authorities as withholding tax on behalf of the vendor. This requirement exists in the United Kingdom, for example. In other countries, withholding tax need only be reported to the tax authorities for certain vendors, such as self-employed people. Withholding tax is not posted in these countries. This is the case in France, for example.

Withholding tax amounts are reported to the tax authorities at regular intervals and a statement is also sent to the vendor periodically. These reporting periods vary from country to country.

The way in which withholding tax is calculated depends on the type of service. Transactions may:

- Have a variable base for tax/SI contributions

- Have different tax rates

- Not relevant for withholding tax

Prerequisites

Make the required system settings for classic withholding tax in the Implementation Guide for *Financial Accounting*. For more information, see Specifications for Withholding Tax [Page 149]

Features

For more information about the functions of classic (in comparison to extended withholding tax), see Withholding Tax [Page 145]

Withholding Tax Specifications

To enable withholding tax to be posted and the amounts to be reported to the vendor and the tax authorities, you must enter certain information in the system.

You must specify a **withholding tax code** to enable the system to calculate the tax amount. This code is defaulted from the vendor master record when you enter a line item if the vendor is subject to withholding tax.

If a vendor is exempt from withholding tax, you must specify this in the master record. The basis of the **withholding tax exemption** is an exemption certificate, possibly temporary. In the master record of the vendor, you enter the number of this certificate and the date up to which the exemption is valid. If an exemption exists, the system either posts no withholding tax or the reduced tax rate.

Withholding tax is only relevant for specific posting transactions in certain countries and even there, only for some groups of vendors. You therefore determine, depending on your company code, business partner, and the business transaction, the cases in which the **fields for withholding tax** become ready for input.

For more information, see:

Withholding Tax Codes [Page 150]

Withholding Tax Fields [Page 151]

Displaying Withholding Tax Fields [Page 153]

Defining Forms and Sender Specifications [Page 154]

Withholding Tax Exemption [Page 155]

Parameters in the Tax Account [Page 156]

Withholding Tax: Automatic Postings [Page 157]

Withholding Tax Codes

The withholding tax code defines the following:

- **Calculation of the Tax Base**
  You specify whether the invoice amount, including the tax on sales/purchases, is to be used as the tax base amount.

- **Taxable Amount**
  You specify the percentage of the tax base to be used to calculate withholding tax.

- **Rate of Taxation**
  You specify the percentage of the taxable amount to be paid or reported to the tax office.

- **Reduced Rate**
  A reduced tax rate can be entered in place of the alternative tax rate. Given a valid exemption certificate, the system calculates the withholding tax amount using this rate.

- **Posting Withholding Tax**
  You determine whether the amount is to be paid to the authorities (in which case it must be posted to a separate account) or only reported.

The above information is country-specific. These codes are used for the following purposes:

- To determine the tax amount automatically

- To determine automatically the tax accounts to which the tax amount is to be posted

- To assign a certain tax rate to a line item

> The definitions for the codes for withholding tax must not be changed or deleted while there are still outstanding items in the system posted under the code in question. If you do not observe this rule, you may find errors occur when carrying out payment transactions.

For information on how to define and maintain withholding tax codes, see the Implementation Guide for *Financial Accounting* under *Withholding Tax → Maintain Tax Codes.* See also
Configuring the System Using the Implementation Guide [Page 121].

Withholding Tax Fields

When you enter a document, there are three fields that are significant for withholding tax:

- Withholding tax code

- Withholding tax base amount

- Amount exempt from withholding tax

You use the system settings to determine whether these fields appear when you enter business transactions. You specify this information at three separate levels:

- For every **business transaction** on vendor accounts, you specify whether it is subject to withholding tax or not. You use the field status definition for the posting key and for the reconciliation account to do this, by suppressing the fields for withholding tax or defining them as optional fields.

- For **company codes** that have business with vendors liable to withholding tax, you choose a special screen variant.

- For every **vendor** liable to withholding tax, you enter a withholding tax code in the master record. The system defaults this indicator when you enter a document for this account.

```
┌──────────────────────────────┐
│ Business trans. „Vendor invoice" │
│ Field status definition (PKy 31) │
└──────────────────────────────┘
```

Enter accounting document: Create vendor item

Vendor	**78900**	**Bell Plastics**	
Company code	**0001**	**Pasadena**	

Invoice amount　**31**　USD　　　　　　　　　　　　　　**Item**　**1**

Tax code　******　　　**W/tax code** **37**

W/hld tax base　　**USD**　　**No wthld tax**

Bus.area		**Disc.amount**	
Discount base		**Days/percent** **14**	**3,000 / 30 2,000 / 45**
Payment terms	**ZB01**	**Set**	
Base date	**21.05.1999**	**Invoice ref.**	**/ /**
Pmnt block			
Pmnt method			
Assignment			
Text			

Next line item

PKey　　　**Account**　　　**Sp.G/L**　　　**TransType**　　　**New CoCd**

```
┌──────────────────┐
│ CoCd 0001        │
│ Screen variant   │
└──────────────────┘
```

```
┌──────────────────────────┐
│ Vendor master record     │
│ Withholding tax code 37  │
└──────────────────────────┘
```

If, when entering an invoice, you make no entry in the fields for the withholding tax base and the tax-exempt amount, the system calculates these amounts. If the system is supposed to calculate these amounts and you do not want to enter the amounts manually, you must suppress the fields by means of the field status definition in the reconciliation account.

Withholding Tax Fields

You should not suppress the field for the withholding tax code, as it is needed for entering transaction-related indicators when making postings.

Displaying Withholding Tax Fields

Withholding tax fields are displayed when you enter a line item if the following conditions are met:

- You have chosen an appropriate screen variant for your company code.

- You have entered a withholding tax code in the vendor master record. The *FI - Accounts Payable* documentation explains how to create or change a vendor master record.

- You have defined the fields as ready for input via the field status definitions for the posting key with which you post the business transaction. For information on how to define or change the field status for posting keys, see the Implementation Guide for *Financial Accounting* under *Financial Accounting Global Settings*. See also Configuring the System Using the Implementation Guide [Page 121].

Defining Forms and Sender Specifications

Forms defined with SAPscript are required for the withholding tax report to tax authorities and vendors. You define the form names in the Implementation Guide for *Financial Accounting*, as well as the sender specifications for your company code. For more information, see the Implementation Guide for *Financial Accounting* under *General Ledger Accounting → Business Transactions → Closing → Reporting → Extended Withholding Tax: Reporting.*

Withholding Tax Exemption

If a vendor is exempt from withholding tax for a certain period, you specify the exemption certificate number and the validity date in the *Exemption number* and *Valid to* fields in the master record. These fields are company code-dependent.

If the vendor is not completely exempt from withholding tax, you can specify a code that represents the reduced tax rate.

These specifications are needed for the payment transaction. If the exemption is valid on the date of payment, the tax is either not posted at all or only the reduced rate is posted. The exemption certificate number is entered in the payment document automatically.

Parameters in the Tax Account

If withholding tax is to be paid/reported, you must create an account to which it can be posted. The posting is made to this account automatically.

There are two fields in account master records that are important for withholding tax specifications:

Tax category
As the withholding tax account is not tax-relevant, you cannot make an entry in this field.

Post automatically only
This field determines how the account is posted to; either automatically only or both automatically and manually.

Withholding Tax: Automatic Postings

If withholding tax is to be withheld, the system automatically posts the amount to a tax account. This takes place only if you have created the appropriate account and defined the account number for account determination in the system. You can post the tax to different accounts according to the withholding tax code.

For tax posting, the posting keys for debit or credit postings are defined in the system.

For information on how to set up the automatic posting of withholding tax, see the Implementation Guide for *Financial Accounting* under the activity *Define Accounts for Withholding Tax*. See also Configuring the System Using the Implementation Guide [Page 121].

Entering and Posting Withholding Tax

Two transactions are to be distinguished for withholding tax:

- Invoice entry

- Invoice payment

When you enter the invoice, the system determines the base amount for withholding tax and stores it in the document. You can also enter the base amount directly.

When the invoice is paid, the tax amount is calculated from the base amount and your specifications for the tax code. If the tax amount is to be paid to the tax authorities, the system automatically posts the amount to the tax account. The system reduces the payment amount to the vendor by the withholding tax to be paid. If the amount is only to be reported to the tax authorities, no posting is made and the whole invoice amount is paid to the vendor.

Invoice entry

When you enter a document, the withholding tax code from the vendor master record is defaulted. You can overwrite this code. In addition, you can enter a withholding tax base amount and a tax-exempt amount. If you enter both amounts, the system checks whether the total of the amounts exceeds the invoice amount. If this is the case, a warning message is issued.

If you do not enter any amounts, the system determines them by means of the tax code. To do this, it determines the base amount. The withholding tax exempt amount results from the difference between the invoice amount and the withholding tax base amount.

All specifications for the withholding tax refer to the document currency.

Invoice payment

If the tax amount is to be paid to the tax authorities, the system automatically posts the amount when clearing the item to the tax account. The posting is made when using the payment program to make payment, or with manual payment settlement.

When using the general clearing function, you must select a clearing procedure. This transaction influences the posting of withholding tax. Withholding tax is posted for all transactions which are relevant for payment. For these transactions, at least one of the posting keys you specified for the transaction must be characterized as relevant for payment. Otherwise, no taxes are posted. See also Example: Posting Withholding Tax [Page 159].

Example: Posting Withholding Tax

You received an invoice to the amount of 1140 DEM from a vendor who is liable to withholding tax. The invoice amount contains 14 percent input tax. For posting withholding tax, you defined withholding tax code 10 as follows:

- The base for tax/SI contributions is net. That is, the tax on sales/purchases is not taken into account when calculating the withholding tax

- The taxable portion is 100 percent

- The tax rate is 30 percent

- The tax is to be posted

No tax exemption exists for the vendor. You have entered the withholding tax code in the master record of the vendor.

The posting procedure is as follows:

1. You post the invoice amount of 1140 DEM to the vendor account and to an expense account. The input tax (140 DEM) is automatically calculated and posted. The system stores the withholding tax base amount (1000 DEM) and the withholding tax code in the line item.

2. When clearing the open item, the withholding tax (300 DEM) is calculated from the base amount and posted to the withholding tax account. On the vendor account, the open item is cleared. For the bank posting, the invoice amount is reduced by the withholding tax portion. 840 DEM is paid.

Vendor	
② 1,140.00	1,140.00 ①

Bank	
	840.00 ②

Expense	
① 1,000.00	

① Document

Withholding tax base	1,000.00
Withholding tax exempt amt	0.00
Withholding tax code	10

Input tax	
① 140.00	

Withholding tax	
	300.00 ②
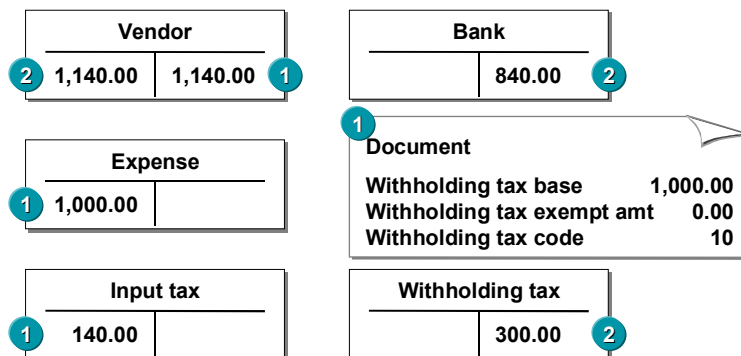
Tax Returns to Tax Authorities and Vendors

You have to create a tax return for tax authorities on a regular basis. For more information, see the country-specific documentation.

You have to send a tax statement to vendors either monthly or annually, depending on the country-specific laws. For more information, see the country-specific documentation.

In Customizing, you need to specify the company code's form and sender details for tax returns.

Generic Withholding Tax Reporting

Use

You can use generic withholding tax reporting irrespective of whether you use classic or extended withholding tax in your organization.

Prerequisites

If you wish to use the program for generic withholding tax reporting, make the relevant Customizing settings in the Implementation Guide for *Financial Accounting*.

- For **classic withholding tax**, you make these settings in the activities under *Financial Accounting Global Settings → Withholding Tax → Withholding Tax → Withholding Tax Reporting (Generic).*

- For **extended withholding tax**, you make these settings in the activities under *Financial Accounting Global Settings → Withholding Tax → Extended Withholding Tax → Withholding Tax Reporting (Generic).*

Features

You can use generic withholding tax reporting for **internal reporting purposes** in any country.

You can also use generic withholding tax reporting to create your **official withholding tax return**. This is also possible in all countries, but you may have to make country-specific adjustments in some cases.

SAP already provides country-specific settings in the form of BADIs and similar techniques for the following countries:

- United Kingdom [Ext.]

- Colombia [Ext.]

- Mexico [Ext.]

- Philippines: Generic Withholding Tax Reporting [Ext.]

- Thailand [Ext.]

- Venezuela [Ext.]

You use program RFIDYYWT to create the reports and returns.

For more information on generic withholding tax reporting, see the program documentation for withholding tax reporting (RFIDYYWT).

Activities

1. Make the required Customizing settings.

2. Check whether the program meets your country-specific requirements, and make adjustments if necessary.

3. Carry out generic withholding tax reporting.

Extended Withholding Tax

Use

With extended withholding tax, you can process withholding tax from both the vendor and customer view.

In Accounts Payable, the vendor is the person subject to tax, and the company code is obligated to deduct withholding tax and pay this over to the tax authorities on the vendor's behalf. In Accounts Receivable, the company code itself is subject to tax, and the customers that do business with this company code deduct withholding tax and pay this over to the tax authorities on the company code's behalf. In both cases, the business partner of the person/entity subject to tax deducts the tax and pays it over to the tax authorities.

Integration

SAP provides the following support for transferring data from external or legacy systems with extended withholding tax:

Program	Extended withholding tax supported from Release	Comments
Batch input documents (RFBIBL00)	4.0	No direct Input
Batch input interface for vendors (RFBIKR00)	4.5	
Batch input interface for customers (RFBIDE00)	4.6	

Prerequisites

Make the required system settings in the Implementation Guide for *Financial Accounting*. For more information, see Settings for Extended Withholding Tax: Overview [Page 166].

Features

Withholding tax is calculated and posted to the appropriate withholding tax accounts at different stages, depending on the legal requirements in each country. As a rule, withholding tax is posted at the same time that the payment is posted, in other words the outgoing payment (Accounts Payable) or incoming payment (Accounts Receivable), is reduced by the withholding tax amount. In certain countries, such as Brazil, the Philippines, and Spain, withholding tax can or must be posted when the invoice is posted. This means that the amount receivable or payable is reduced by the withholding tax amount.
Extended withholding tax supports both concepts.

The key concept in extended withholding tax is the distinction between withholding tax type and withholding tax code. While withholding tax types represent basic calculation rules, specific features of these rules - in particular the percentage rate - are represented by the withholding tax code. You can define any number of withholding tax codes for a given withholding tax type.

If a particular transaction requires more than one kind of withholding tax, this is covered in the SAP System by defining more than one withholding tax type. When entering a line item, you can enter withholding tax data for each of these withholding tax types.

Extended Withholding Tax

For more information about the functions of extended withholding tax (in comparison to classic withholding tax), see Withholding Tax [Page 145]

The following special features also exist:

- In some countries, such as Argentina and Italy, other kinds of posting are required for certain business transactions. Instead of the payment amount being reduced by the withholding tax amount, the withholding tax is posted as an offsetting entry to an expense account You make the relevant settings in the withholding tax code.

- Where cleared items are reset, the clearing document is automatically reversed if it contains withholding tax data. For withholding tax types with accumulation, the accumulation base amount is adjusted if the payment document is reversed.

Example of Withholding Tax in Accounts Payable

Prerequisites

- Extended withholding tax is active in your company code

- Withholding tax types and codes have been defined for each country

- Withholding tax type(s) have been defined in the vendor master record

- The company code is authorized to deduct withholding tax for its vendors for these withholding tax types

- The withholding tax accounts have been defined for account determination

Process Flow

Invoice Entry

When entering documents, you can now enter withholding tax data for each vendor line item. The withholding tax is calculated, and where necessary, posted, for each withholding tax type for which a withholding tax code is defined in the withholding tax dialog box. If no withholding tax code is entered for a withholding tax type, the system does not calculate withholding tax.

Depending on the settings you have made for the withholding tax type, you can also enter the withholding tax base and withholding tax amount manually. If you do not enter any amounts, the system calculates them automatically.

Where withholding tax is to be calculated at the time payment is made, only the base amount is calculated when the invoice is posted. Where withholding tax is to be calculated at the time the invoice is posted, the system calculates both the base amount and the withholding tax amount when the invoice is posted.

Payment

For the withholding tax type **Posting at time of payment,** withholding tax is calculated using the data in the open items (withholding tax types, codes, and base amounts). This is the case whether payment is made manually or automatically. The payment amounts are reduced by the withholding tax amounts.

Where outgoing payments are made manually or payment proposals created by the payment program are processed, the withholding tax amounts calculated can be displayed in detail per open item. If you change your open item selection or edit the payment proposal, the withholding tax is recalculated automatically if necessary.

Result

When the payments are posted, the withholding tax data can be displayed in detail in the clearing line items in the payment document.

Withholding tax types with posting on invoice entry are not taken into account for payments. This means that there is no withholding tax data for these types in the payment document.

Settings for Extended Withholding Tax: Overview

In order to be able to use extended withholding tax, you must make various settings in Customizing and the master data of the business partners concerned in each of the company codes.

Activities

1. Activate extended withholding tax

   To be able to use extended withholding tax, you must first activate it

   For more information, see the Implementation Guide (IMG) for *Financial Accounting* under *Financial Accounting Global Settings → Company Code → Activate Extended Withholding Tax.*

2. Set up reporting

   Make the settings for withholding tax reporting. You do this in two places:

   − Under *Financial Accounting → Financial Accounting Global Settings → Withholding Tax → Extended Withholding Tax → Basic Settings* in the Implementation Guide for *Financial Accounting*, you define for example, the countries in which withholding tax is reported, the official withholding tax codes, and reasons for exemption.

   − Under *Financial Accounting → General Ledger Accounting → Business Transactions → Closing → Reporting → Extended Withholding Tax: Reporting* you make the settings for the forms for reporting the tax.

   For more information on reporting withholding tax, see *FI - Closing and Reporting*.

3. Define withholding tax types [Page 167]

4. Define withholding tax codes [Page 172]

5. Define minimum and maximum amounts [Page 174]

6. Define accounts for withholding tax [Page 176]

7. Define liability to tax and deduction authorization [Page 177] (master data)

8. Configure certificate numbering for withholding tax [Page 180]

Defining Withholding Tax Types

Use

In one business transaction, several kinds of withholding tax may have to be withheld. The SAP System uses **withholding tax types** to reflect this. Several withholding tax types can be defined in the system; one or more can be assigned in the vendor master record.

The withholding tax type governs the way in which extended withholding tax is calculated and is defined at country level. As far as the time of posting for withholding tax amounts is concerned, there are two different categories of withholding tax types:

- Withholding tax type for **posting at time of invoice**

- Withholding tax type for **posting at time of payment**

Procedure

To make the settings for the withholding tax types, proceed as follows from the Implementation Guide for *Financial Accounting*: *Financial Accounting Global Settings → Withholding Tax → Extended Withholding Tax → Calculation → Withholding Tax Types → …*.

Withholding Tax Type for Posting at Time of Invoice

Make the following entries:

- *General data*

    Define the *name* of the withholding tax type.

- *Calculation*

    Define the details for calculating the withholding tax base amounts and the rounding rules for the withholding tax amount.
    You also determine whether the withholding tax amount is to be both calculated and posted or only calculated (the latter is the case in France, for example).

    – *Base amount*

Field	Meaning
Net amount	The withholding tax base amount is the line item net amount.
Modified net amount	The withholding tax base amount is equal to line item net amount plus a number of specific tax amounts. The processing keys for the tax amounts to be totaled have to be specified for this withholding tax type in a separate activity in Customizing. For more information, see the Implementation Guide (IMG) for *Financial Accounting* under *Financial Accounting Global Settings → Withholding Tax → Extended Withholding Tax → Calculation → Withholding Tax Base Amount → Define Transaction Key for Modified Net Amount*.
Gross amount	The withholding tax base amount equals the line item gross amount.
Tax amount	The withholding tax base amount equals the tax amount of the line item.

Defining Withholding Tax Types

Field	Meaning
Modified tax amount	The withholding tax base amount is equal to the total of certain specific tax amounts. The processing keys for the tax amounts to be totaled have to be specified for this withholding tax type in a separate activity in Customizing. For more information, see the Implementation Guide (IMG) for *Financial Accounting* under *Financial Accounting Global Settings → Withholding Tax → Extended Withholding Tax → Calculation → Withholding Tax Base Amount → Define Transaction Key for Modified Net Amount*.

You can define dependencies between withholding tax types via the fields *Reduced base amount* or *Inherit base*. If the field *Reduce base* is selected in a withholding tax type, the withholding tax base amount is reduced by the withholding tax amount of the dependent type. Alternatively, you can select the field *Inherit base*. The withholding tax base amount then corresponds to the withholding tax amount of the dependent type.

You define the dependency between two withholding tax types in a separate activity in the Implementation Guide for *Financial Accounting*: *Financial Accounting Global Settings → Withholding Tax → Extended Withholding Tax → Calculation → Withholding Tax Base amount → Portray Dependencies between Withholding Tax Types*.

The final amount used for the withholding tax calculation is calculated by applying the proportion subject to tax (defined in the withholding tax code) to the base amount defined here in the withholding tax type.

– **Rounding rules**

You have the following options for rounding withholding tax amounts:

- Commercial (*W/tax comm. round.*)

- Rounding up (*Round w/tax amount up*)

- Rounding down (*Round w/tax amount*)

Furthermore, you can round withholding tax amounts according to the first decimal place for example, or you can apply rounding to amounts without decimal places. You define these rules in a separate activity in the Implementation Guide for *Financial Accounting*: *Financial Accounting Global Settings → Withholding Tax → Extended Withholding Tax → Calculation → Withholding Tax Type → Define Rounding Rules for Withholding Tax Types*.

- **Accumulation type**

Here you define whether withholding tax base amounts and withholding tax amounts should be accumulated for this withholding tax type, and if so, for what period.

If the law permits withholding tax exempt amounts over a specific time period (for example, monthly, annually), the amounts posted in this period must be retained. This ensures that withholding tax is posted as soon as the exempt amount is exceeded. In the SAP System, this is reflected by accumulation. You can accumulate amounts for calendar years, quarters, or months.

⚠️

Since with accumulation, accumulated amounts are already included in the calculation of the withholding tax amounts for the current payment in the period, the accumulation **cannot** be used for summation.

If you have activated accumulation for a withholding tax type, the accumulated withholding tax base amount in the current period (month, quarter, year) is added to the withholding tax base amount of the line item for which the withholding tax amount is to be calculated. The withholding tax amount is determined by applying the withholding tax rate or formula (scale) to this total, and subtracting the withholding tax amount accumulated in the period concerned. A formula is a series of staggered withholding tax rates valid for different withholding tax base amount intervals. The current withholding tax base amount and the tax amount itself are added to the corresponding values in the accumulation table. Accumulation is entered per customer/vendor account, withholding tax type, and withholding tax code in the local currency of the company code concerned.

To prevent a withholding tax posting as soon as the accumulated withholding tax amount exceeds a defined maximum, select the field *Acc. w/tax to max*.

- *Control data*

   Here you define

   – whether manually entering the withholding tax base amount or the withholding tax amount is permitted during document entry

   – whether you want to suppress withholding tax certificate numbering.

- *Information for regional withholding tax*

   You can enter regional codes here. The regional code ensures that the withholding tax is reported and paid to the relevant tax authorities.

- *Definition of minimum and maximum amounts*

   Here you define whether you want to maintain minimum and maximum amounts at withholding tax type level or withholding tax code level.

Withholding Tax Type for Posting at Time of Payment

The settings for withholding tax posting at time of payment are generally the same as for posting at the time of invoice entry with the exception of the following:

- *Calculation*

   In addition to defining the details for calculating the base amount and the rounding rules, you also define how *cash discount* is treated in connection with withholding tax. You determine whether the withholding tax amount is to be calculated before or after subtraction of cash discount.

- *Accumulation type*

   Here you can also select combined accumulation if amounts are to be accumulated over several vendors or customers.

- *Control data*

   Additional fields:

   – *Self-withholding*

Defining Withholding Tax Types

> This means that self-withholding is permitted for this withholding tax type (that is, vendors subject to tax can pay over the tax themselves).

– *Withholding tax withheld*

> Here you enter a withholding tax amount that has already been withheld (for example, by a subcompany); this amount is then deducted from the calculated withholding tax amount on payment (only possible with *No accumulation* and *Central invoice proportion*.).

– *W/tax acc. to payment*

> Here you can enter the withholding tax amount manually for incoming and outgoing payments for this withholding tax type.

- *Central invoice*

> The central invoice function is a special procedure for calculating withholding tax that is used in Argentina. Invoices and debit/credit memos that are linked via the field *Invoice reference* are processed separately.

> Here you can make the following settings:

– No central invoice

> The central invoice entry method is not used for this withholding tax type.

– Central invoice and first partial payment

> If you use this withholding tax type, the whole withholding tax amount is posted when the first partial payment is made for the open item. This function is used to calculate the withholding tax based on tax on sales/purchases (Sales Tax Withholding) in Argentina.

> The withholding tax base amount is compared to the minimum amount using the total amount of the withholding tax base amounts of the open item together with the related documents, whether or not these were previously selected.

– Proportional distribution of withholding tax (*Centr. Invoice prop.*)

> The withholding tax amount is distributed across all partial payments in proportion to the payment amount in the open items. In Argentina, this function is used to calculate withholding tax on income tax and social insurance tax.

- *Minimum check*

> Here you define at what level - invoice or payment - minimum checks are carried out. The specification is valid either for the minimum base amount check or the minimum amount check.

– If you select *Minimum check at item level*, the minimum amount check and withholding tax amount check is carried out for each item to be cleared.

– If you select *Minimum base amount check at payment document level*, the system uses the full withholding tax base amount for all items as the basis for the payment proposal for the relevant payment. The minimum base amount is then checked against this total withholding tax base amount. This function is used in Argentina to calculate withholding tax on income tax.

– If you select *Minimum base amount check at invoice document level*, when you pay a given invoice item, the system calculates the amount for the minimum base amount

check using the total of all items in the invoice. The minimum base amount is then checked against this total withholding tax base amount.

−   If you select *Minimum amount check at payment document level*, the system uses the full withholding tax amount for all items as the basis for the payment proposal for the relevant payment. The minimum amount is then checked against this total withholding tax amount.

Defining Withholding Tax Codes

Use

You define the tax base and rate in the withholding tax code. You make the settings for each country and withholding tax type. You can therefore define as many withholding tax codes as required for each withholding tax type.

Procedure

To make the settings for the withholding tax codes, proceed as follows from the Implementation Guide for *Financial Accounting*: *Financial Accounting Global Settings* → *Withholding Tax* → *Extended Withholding Tax* → *Calculation* → *Withholding Tax Codes* → *Define Withholding Tax Codes*.

Make the following settings:

- **General data**

  Define the description of the withholding tax code, and where necessary, the official withholding tax code.

  Official withholding tax codes are used on official forms when reporting taxes, You define the official withholding tax code in a separate section of the Implementation Guide for *Financial Accounting*: *Financial Accounting Global Settings* → *Withholding Tax* → *Extended Withholding Tax* → *Basic Settings* → *Define Official Withholding Tax Codes*.

- **Base amount**

  Define the portion to be taxed. This percentage rate is used to determine the final withholding tax base amount and is applied to the withholding tax base amount calculated as a result of the setting in the withholding tax type.

- **Posting**

  Define a posting indicator. This can have one of the following values:

Value	Name	Description
1	Normal posting	The withholding tax amount is deducted from the vendor line item amount (posting at invoice entry) or from the payment amount (posting at time of payment), and the system creates a line item for the withholding tax.
2	Offsetting entry to G/L account/No reduction in subledger	The withholding tax amount is multiplied by the factor $1/(1-p)$, where p stands for the withholding tax rate of the withholding tax code. The system creates two withholding tax line items with opposing debit/credit signs. This option is incompatible with withholding tax scales. (This function is only relevant for Argentina, when using the "grossing up" option).
3	Offsetting entry to G/L account:	The system creates two withholding tax line items with opposing debit/credit signs.

- *Calculation*

    Define the withholding tax rate or the information for using calculation scales (formulas).

    For the withholding tax rate, you can enter either a percentage rate between 0 and 100, or you can enter a fraction. The system then uses this rate to calculate the withholding tax amount from the withholding tax base amount.

    If you set the indicator *Withholding tax formulas,* the system calculates the withholding tax amount from the withholding tax base amount using one of the scales defined for this withholding tax type/code combination.
    You define the withholding tax scales in a separate activity in the Implementation Guide for *Financial Accounting*: *Financial Accounting Global Settings → Withholding Tax → Extended Withholding Tax → Calculation → Withholding Tax Codes → Define Formulas for Withholding Tax Calculation*.

    All calculations are made in the respective local currency. This means that you have to maintain the minimum and maximum for the withholding tax amount, the minimum base amount, the withholding tax exempt base amount, and the scales in the local currency of the company code.

- *Reporting information*

    Where necessary, define the region, the provincial code, and the type of income.

Defining Minimum and Maximum Amounts

Use

If the legal requirements permit minimum, maximum, or exempt amounts for the withholding tax base amount or the withholding tax amount, you can define these here.

Procedure

You make the settings for the minimum and maximum amounts in the Implementation Guide for *Financial Accounting*: *Financial Accounting Global Settings → Withholding Tax → Extended Withholding Tax → Calculation → Minimum and Maximum Amounts*.

> All calculations are made in the respective local currency. This means that you have to maintain the minimum and maximum for the withholding tax amount, the minimum base amount, the withholding tax exempt base amount, and the withholding tax scales in the local currency of the company code.

You can define the minimum and maximum amounts at one of two levels, depending on the setting on the corresponding withholding tax type for base amounts or withholding tax amounts.

- *Define Min/Max Amounts for Withholding Tax Types*

- *Define Min/Max Amounts for Withholding Tax Codes*

Make the following settings:

- **Withholding tax minimum amount**

    If the withholding tax amount calculated is lower than the minimum amount you specify here, then the system calculates the withholding tax amount as being zero.

- **Withholding tax maximum amount**

    If the withholding tax amount calculated is higher than the withholding tax maximum amount you specify here, then the system uses this maximum amount in the withholding tax calculation.

- **Minimum base amount**

    If the withholding tax base amount is lower than the minimum base amount you specify here, then the system calculates the withholding tax amount as being zero. If the withholding tax base amount exceeds the minimum base amount specified here, the system uses the whole base amount to calculate the withholding tax (compare *Withholding tax base exempt amount*).

- **Withholding tax base exempt amount** (only possible at withholding tax code level)

    If the withholding tax base amount is lower than the withholding tax base exempt amount, then the system calculates the withholding tax amount as being zero.

    If the withholding tax base amount exceeds the withholding tax base exempt amount specified here, then the system uses the base amount as reduced by the exempt amount for the withholding tax calculation.

For accumulation, the total accumulated base amount is checked against the *minimum base amount* or the *withholding tax base exempt amount*. In contrast, the withholding tax amount as reduced by the values already accumulated is checked against the *withholding tax minimum amount* or the *withholding tax maximum amount*.

Defining Accounts for Withholding Tax

Use

You define accounts for the account determination for posting withholding tax.

Procedure

In the Implementation Guide for *Financial Accounting*, choose *Financial Accounting Global Settings → Withholding Tax → Extended Withholding Tax → Postings → Accounts for Withholding Tax*.

Depending on whether you have set the posting indicator in the withholding tax code or if you use self-withholding, define accounts for the following transactions:

- *Define accounts for withholding tax to be paid over*

  Here you define accounts for the normal withholding tax transaction (WIT). This transaction is required for every withholding tax posting.

- *Define accounts for withholding tax for "Grossing Up" offsetting entry*

  You define accounts here if you have selected value 2 for the posting indicator in the withholding tax code. An offsetting posting with the opposite +/- sign is then carried out for the withholding tax item (transaction GRU). The withholding tax amount is increased by a factor of $1/(1-p)$.

- *Define accounts for withholding tax offsetting entry*

  You define accounts here if you have selected value 3 for the posting indicator in the withholding tax code. An offsetting posting with the opposite +/- sign is then carried out for the withholding tax item (transaction OFF).

- *Define accounts for self-withholding tax*

  You define accounts here if you want to post self-withholding tax. An offsetting posting with the opposite +/- sign is then carried out for the withholding tax item (transaction OPO).

Defining Liability to Tax and Authorization to Deduct Tax

Use

Withholding tax is only posted for a withholding tax type if the vendor is defined as subject to tax for this withholding tax type, and the customer is defined as authorized to deduct tax for this type.

Prerequisites

Each withholding tax type assigned to a company code must have been defined for the country of the company code.

Procedure

The following differences apply to vendor and customer business transactions.

Vendor Business Transactions

In order to be able to post withholding tax in vendor business transactions, for each withholding tax type, the company code must be authorized to deduct withholding tax, and the vendor must be subject to withholding tax.

1. To make the required settings, proceed as follows from the Implementation Guide for *Financial Accounting*: *Financial Accounting Global Settings → Withholding Tax → Extended Withholding Tax → Company Code → Assign Withholding Tax Types to Company Codes*.

   For Accounts Payable, you specify whether and for how long the company code is authorized to deduct withholding tax for the specified withholding tax type.

2. Define the following in the vendor master record:

   – Make an entry for each withholding tax type

   – Define the vendor as subject to withholding tax

   – If necessary, also define the withholding tax code, type of recipient, withholding tax ID, and details of any withholding tax exemption

Customer Business Transactions

In order to post withholding tax in customer business transactions, the company code must be subject to withholding tax for the type concerned, and the customer must be authorized to deduct withholding tax.

1. To make the required settings, proceed as follows from the Implementation Guide for *Financial Accounting*: *Financial Accounting Global Settings → Withholding Tax → Extended Withholding Tax → Company Code → Assign Withholding Tax Types to Company Codes*.

   Similarly, for Accounts Receivable, you specify whether the company code is subject to withholding tax or if it is authorized for self-withholding tax. If necessary, you can also enter details concerning withholding tax exemption.

2. Define the following in the customer master record:

   – Make an entry for each withholding tax type

Defining Liability to Tax and Authorization to Deduct Tax

- − Define the customer as being authorized to deduct withholding tax and define the validity period for the authorization.

- − If necessary, also define the withholding tax code and the withholding tax ID.

Additional Notes

In the withholding tax master data of the company code and the business partner (customer/vendor), you define which withholding tax types are relevant for a business transaction.

A withholding tax type is relevant if the following conditions apply:

- The withholding tax type is entered in the master record of the business partner and defined as subject to withholding tax (vendor) or entitled to deduct withholding tax (customer).

- For this withholding tax type, the company code is defined as entitled to deduct withholding tax for vendors, and subject to withholding tax for customers.

- The posting date is within the validity period for the deduction authorization (customer master record or withholding tax data for the company code).

Due to the validity periods that you have to define, the withholding tax master data is time-dependent. This means that the withholding tax information saved in an open item may be different to the current relevant withholding tax types.

In the document display, the system displays appropriate warnings about the validity of the withholding tax information in the withholding tax dialog box.

If, between the time a document is entered and the time it is cleared, you have changed the list of relevant withholding tax types, the system will not clear the document.

The following situations can occur:

- A withholding tax type is no longer relevant

    This is the case where the company code is no longer authorized to deduct tax for a withholding tax type, although it was authorized to do so at the time the document was entered. The item in question is displayed in the withholding tax dialog box with all the withholding tax data stored in the database. The system displays a message telling you that this withholding tax type is no longer relevant.

- A withholding tax type is new

    This is the case if you have entered a new withholding tax type for a company code since the time of document entry. The system displays the withholding tax data not yet saved to the database in the dialog box with a message that the withholding tax type is new.

You have the following options for clearing documents despite these warnings:

- Change the posting date for clearing, so that the relevant withholding tax types are the same on the posting date and on document entry.

- Change individual documents using the document change function: To do this, you delete the withholding tax code in withholding tax types that are no longer relevant, and then save new withholding tax types.

- Start report RFWT0010.
  Once you have changed the relevant withholding tax types, this report adjusts the open items

to take account of the current relevant withholding tax types. It either creates new withholding tax information, or changes existing information.

Configuring Certificate Numbering for Withholding Tax

Use

Withholding tax certificates are proof for the vendor and the tax authorities that tax was withheld. In certain countries, such as Argentina, it is a legal requirement that withholding tax certificates are numbered clearly and consecutively.

To be able to exercise as much control as possible over the way withholding tax certificates are numbered, the SAP System offers you a range of numbering methods, of which three are currently available. You can assign one of these methods to any given country.

Each number is taken in sequence from a number range interval assigned to a numbering group.

The numbering groups are assigned to numbering classes. The number is then determined according to the numbering class the method is assigned to.

Method 1

Numbering class assigned to company code(s), with no distinction as to withholding tax type

Company Code	Numbering Class
0001	A
0002	A

Method 2

Numbering class assigned to combinations of withholding tax type/company code

Company Code	Withholding Tax Type	Numbering Class
0001	T1	A
0001	T2	B
0002	T1	A

Method 3

Numbering class assigned to a combination of withholding tax type/branch/company code

Company Code	Withholding Tax Type	Branch	Numbering Class
0001	T1	XXXX	A
0001	T2	YYYY	B
0002	T1	YYYY	A

Procedure

1. In the Implementation Guide for *Financial Accounting*, choose *Financial Accounting Global Settings* → *Withholding Tax* → *Extended Withholding Tax* → *Postings* → *Certificate Numbering for Withholding Tax*.

2. Choose a suitable numbering method and assign it to your company code country.

3. Define numbering classes,

   for example, one class per withholding tax type used.

4. Assign numbering groups to the numbering classes.

   In this activity, you specify the company code and numbering class. When you save the data, the system creates the numbering group and assigns it to a numbering class automatically.

5. Assign your numbering classes in accordance with the numbering method chosen.

Document Entry, Document Change, and Document Display

Use

Withholding tax is taken into account in all normal posting transactions. The withholding tax information must therefore be entered here.

Prerequisites

- The field status for document entry must be defined in such a way as to allow withholding tax data to be entered in at least one withholding tax field.

- You must select at least one withholding tax type.

    For more information about the relevance of withholding tax types, see Defining Liability to Tax and Deduction Authorization [Page 177].

Features

Extended Withholding Tax on Document Entry

When entering documents, you can enter withholding tax data for every customer/vendor line item. Once you have confirmed entry of the line item (on the customer or vendor screen), the system displays the dialog box *Enter Withholding Tax Information* which contains one line per withholding tax type.

During document entry, this withholding tax dialog box appears each time you create a new customer or vendor line item. If you edit one of these customer or vendor line items again during document entry, you will need to access the withholding tax dialog box by choosing *Extras* → *Withholding tax data*.

You determine the status of the fields *W/tax b/at* (withholding tax base amount) and *W/tax amnt* (withholding tax amount) displayed in the withholding tax dialog box when defining the withholding tax type.

Document Simulation and Posting

Processing withholding tax involves two separate activities, namely:

- Calculation of the withholding tax base

    The system determines the withholding tax base amount according to the Customizing settings for the combination of withholding tax type and withholding tax code. There is therefore only an entry for withholding tax once you simulate the document. The base amount can also be entered manually by the user (if the relevant Customizing settings have been made), and a manual entry overrides the amount calculated by the system.

    Where payments are made by installments, the withholding tax base is apportioned across the new customer/vendor line items.

- Calculation of the withholding tax amount

    The way in which withholding tax is calculated depends on the withholding tax type:

The withholding tax type controls when the withholding tax is calculated and posted for example. Withholding tax is calculated and posted either when the invoice is entered or when payment is made.

Withholding tax is generally calculated by the system. However, if you have made the appropriate settings in Customizing, it can be entered manually. A manual entry overrides the amount calculated by the system.

Special Transactions

- Down payment requests and payment requests

  When you post down payment requests and payment requests, the system only calculates the withholding tax base amounts.

- Document parking

  The system does not calculate any withholding tax base amounts when you save or change parked documents, only when they are posted.

- Document holding

  When documents are held, the system does not calculate any withholding tax amounts/base amounts.

- Posting with reference

  When you post documents using a reference, the system defaults withholding tax base amounts, but not any existing withholding tax amounts. The system does not calculate any withholding tax base amounts/tax amounts when you enter a reference document.

- Recurring entry documents

  The system does not calculate any withholding tax base amounts/tax amounts when you enter a recurring entry document.

Extended Withholding Tax: Changing Documents

Provided you have not already posted the withholding tax, you can change the withholding tax information in a document. This is only the case for withholding tax of the type **posting at time of payment**. You can only make changes however in transactions that are not relevant for payments.

When you change the document, the system enables you to change the selection date in the withholding tax dialog box. If you have made changes in the relevant withholding tax types, the withholding tax fields for this type are ready for input.

The settings you made in Customizing for the withholding tax type in question determine whether the amount fields such as *Withholding tax base, Withholding tax amount,* and *Withholding tax amount already withheld* can be changed or not.

If you enter a new withholding tax code and do not enter the withholding tax base amount manually, the system recalculates the withholding tax base amount automatically.

If you delete the withholding tax code, the system resets all withholding tax information for this withholding tax type.

Whenever you change withholding tax information, the system creates change documents.

Document Entry, Document Change, and Document Display

Extended Withholding Tax: Document Display

The same rules apply for displaying documents as for changing them, with the exception that you cannot enter any data in the fields. If, for example, when displaying the document, the list of relevant withholding tax types differs from the withholding tax types already defined in the withholding tax information for a line item, the same rules apply as for changing documents.

When displaying documents, you can display the withholding tax base amount and withholding tax amount in all the currencies maintained for that company code. You can call up the various currencies in the withholding tax dialog box by choosing the appropriate pushbutton.

Clearing with Extended Withholding Tax

Use

For withholding tax types with posting at time of payment, the withholding tax is calculated and posted when open items are paid.

> When you clear open items **without** a payment (transfer posting), no withholding tax is posted.

> If you implement extended withholding tax, you **cannot** carry out the following functions when processing open items or clearing items automatically:

- Distribution by *age*

- Automatic *search*

    If you select these functions, your selections are reset and the system displays an appropriate message.

Features

Manual Posting with Clearing

For postings with clearing, the system calculates and, if necessary, posts the withholding tax for the withholding tax types with **Posting at time of payment.** Any withholding tax amounts you may have entered manually override those calculated by the system.

An open item can only be activated if, at the time it is cleared, the withholding tax information it contains is still relevant. This will depend on the date the document was entered and the posting date of the payment. For more information about the relevance of withholding tax types, see Defining Liability to Tax and Deduction Authorization [Page 177]. If an open item is not active, all withholding tax amounts are zero.

The system recalculates all withholding tax amounts for all open items if you:

- (De-)activate one or more open items

- Change the cash discount for one or more open items

- Change the partial payment amount for one or more open items

If you recalculate the withholding tax amounts for an active open item, these amounts can change due to the Customizing settings for withholding tax types. This may be the case, for example, if you have defined withholding tax after cash discount or accumulation for this withholding tax type.

The total of withholding tax amounts for all open items is displayed in the appropriate field in the lower half of the withholding tax screen. The system takes this figure into account when determining the total amount to be cleared. Note however that this total amount does not include withholding tax amounts posted as *Offsetting entry to G/L account/No reduction in subledger, Self-withholding* or *Offsetting entry to G/L account.*

Clearing with Extended Withholding Tax

When you post or simulate the payment document, the total withholding tax amounts are subtracted from the payment amount. The withholding tax amounts are posted to the G/L accounts specified in the account determination in Customizing for the withholding tax types/codes.

Those withholding tax amounts posted as *Offsetting entry to G/L account/No reduction in subledger, Self-withholding* or *Offsetting entry to G/L account* do not reduce the payment amount, even though the system makes a posting to a withholding tax account. Instead of the payment line item being reduced, an offsetting entry is made to a G/L account in accordance with the account determination defined for the transaction key in question.

Automatic Clearing (Payment Program)

The payment proposal includes information about potential inconsistencies in a business partner's withholding tax status and in the open items. If the relevant withholding tax types for an open item are different to the relevant withholding tax types when the payment is posted, this is an inconsistency and the system adds these open items to the exception list. You have to change each document in the exception list individually.
For more information about the relevance of withholding tax types, see Defining Liability to Tax and Deduction Authorization [Page 177].

As is the case for manual payment transactions, the payment program also supports payment of withholding tax calculated for more than one document. In this case, the withholding tax amount is not calculated on a single line item but on all the selected line items linked by the invoice reference. With the exception of withholding tax types for which accumulation is active, this calculation method is restricted to open items cleared by a single payment document.

When you call up the payment proposal, you can have the system recalculate the withholding tax at any time. When you save the proposal, the system always recalculates the withholding tax. When you call up the proposal, you can display the withholding tax data for every individual document.

Special Features of Incoming Payments

Differences in Withholding Tax

If the withholding tax amount withheld by your customer differs from the withholding tax amounts calculated by the system, you can enter and post the tax amount withheld by your customer manually in place of the amount calculated by the system. In the withholding tax dialog box, you can enter the tax amount withheld by your customer for every open item. You can use this function for any withholding tax type (setting *WT acc. to payment* in withholding tax type); it is not dependent on the settings you made in Customizing for manual entry of withholding tax amounts during document entry (setting *Manual w/tax amount* in withholding tax type). If you enter withholding tax amounts in this way, the system posts them without checking these amounts.

Self-Withholding

If self-withholding applies to a given withholding tax type, the withholding tax amount is posted to a second G/L account instead of being deducted from the incoming payment amount.

In order to be able to use the self-withholding function, you must select the field *Self-withholding* in Customizing for the withholding tax type. You can select a standard self-withholding setting for each company code and withholding tax type (*Calc. self-withholding*): For manual payments, you can then decide in each case whether this setting should apply for all open items in connection with this withholding tax type. For automatic payments, postings are either generally made with

self-withholding if the field *Calc. self-withholding* is selected, or without self-withholding if the field is not selected.

Generic Withholding Tax Reporting

Use

You can use generic withholding tax reporting irrespective of whether you use classic or extended withholding tax in your organization.

Prerequisites

If you wish to use the program for generic withholding tax reporting, make the relevant Customizing settings in the Implementation Guide for *Financial Accounting*.

- For **classic withholding tax**, you make these settings in the activities under *Financial Accounting Global Settings → Withholding Tax → Withholding Tax → Withholding Tax Reporting (Generic).*

- For **extended withholding tax**, you make these settings in the activities under *Financial Accounting Global Settings → Withholding Tax → Extended Withholding Tax → Withholding Tax Reporting (Generic).*

Features

You can use generic withholding tax reporting for **internal reporting purposes** in any country.

You can also use generic withholding tax reporting to create your **official withholding tax return**. This is also possible in all countries, but you may have to make country-specific adjustments in some cases.

SAP already provides country-specific settings in the form of BADIs and similar techniques for the following countries:

- United Kingdom [Ext.]

- Colombia [Ext.]

- Mexico [Ext.]

- Philippines: Generic Withholding Tax Reporting [Ext.]

- Thailand [Ext.]

- Venezuela [Ext.]

You use program RFIDYYWT to create the reports and returns.

For more information on generic withholding tax reporting, see the program documentation for withholding tax reporting (RFIDYYWT).

Activities

4. Make the required Customizing settings.

5. Check whether the program meets your country-specific requirements, and make adjustments if necessary.

6. Carry out generic withholding tax reporting.

Withholding Tax Changeover

Purpose

In your company, you have been using an R/3 standard version of classic withholding tax. After upgrading to Release 4.0 or higher, you can use extended withholding tax instead of classic withholding tax.

For more information about the functions of classic and extended withholding tax, see Withholding Tax [Page 145]

In order to change over to extended withholding tax, you cannot just simply activate extended withholding tax; in this case, you would **not** be able to carry out further processing to items already posted in the system. All relevant Customizing, master, and transaction data must be converted so that it can then be used in extended withholding tax.

SAP provides a tool that supports the withholding tax changeover by automatically converting the relevant withholding tax data. The individual steps of the withholding tax changeover are listed below. You can find the tool for converting withholding tax data in the IMG for *Financial Accounting* under *Financial Accounting Global Settings → Withholding Tax → Withholding Tax Changeover*.

> **The individual steps of the withholding tax changeover must be carried out in the order specified.**

Prerequisites

> First carry out the withholding tax data conversion in a test system.
>
> Once you have converted the withholding tax data and activated the extended withholding tax function, the data conversion **cannot** be reversed.

> Activate the extended withholding tax function for the company codes for the changeover only when explicitly directed to do so.

Upgrade to Release 4.0 and Above

It is essential that you complete all tasks relating to the release upgrade before starting the withholding tax changeover.

System Block

You must ensure that no documents are posted in the company codes concerned during the withholding tax changeover.

> Block your system for all end users and carry out the conversion runs at the weekend.

Logistics Invoice Verification

If you do not use invoice verification in your organization, you do not need to take any action at this stage.

The extended withholding tax function is **only** supported by the Logistics invoice verification; it is not supported by the conventional invoice verification. You can therefore no longer use the conventional invoice verification once you have carried out the withholding tax changeover.

> Change over to the Logistics invoice verification before converting the withholding tax data and changing over to extended withholding tax.
>
> Note that the range of functions provided by the Logistics invoice verification has been extended with each release since Release 4.0B.

For more information about the combination of extended withholding tax and invoice verification, see notes 133426 and 133435.

For more information about replacing the conventional invoice verification and about the features of the Logistics invoice verification, see notes 127366 (for Release 4.0B), 116272 (for Release 4.5B), and 144081 (for Release 4.6).

Activities

1. In the Implementation Guide for *Materials Management*, choose *Logistics Invoice Verification.*

2. Make all the required system settings for the Logistics invoice verification.

Process Flow

The changeover process is made up of the following procedures:

Preparations

- Carrying out the Financial Accounting Comparative Analysis [Page 193]

- Archiving Cleared Items [Page 194]

- Checking the System Settings for Extended Withholding Tax [Page 195]

- Setting Up Authorizations for the Withholding Tax Changeover [Page 202]

- Blocking Users [Page 203]

Converting Data and Activating Extended Withholding Tax

Converting the Withholding Tax Data and Activating Extended Withholding Tax [Page 204]

- Creating and Editing a Conversion Run [Page 205]

- Preparing the Data Conversion [Page 207]

- Data Conversion [Page 214]

- Activating Extended Withholding Tax [Page 218]

Postprocessing

Carrying Out Postprocessing of Withholding Tax Data Conversion [Page 219]

Carrying Out the Financial Accounting Comparative Analysis

The customer carries out this step.

Use

You carry out the comparative analysis to ensure that all the required data can be converted without any errors. The consistency of the following data must be checked:

- The debit and credit transaction figures of the vendor and G/L accounts with the debit and credit totals of the documents posted

- The debit and credit transaction figures of the vendor and G/L accounts with the debit and credit totals of the application indexes

For more information about the financial accounting comparative analysis, see the report documentation.

Procedure

1. From the *SAP Easy Access* screen, choose *Accounting* → *Financial accounting* → *Accounts payable* → *Periodic processing* → *Closing* → *Check/count* → *Comparison* (Report SAPF190).

   The *Financial Accounting Comparative Analysis* screen appears.

2. Enter your selections for *Company code, Fiscal year*, and *Fiscal periods*, and also select the fields *Documents/transaction figures* and *Indexes/transaction figures*.

3. To start the analysis, choose 🕐.

   Make sure that there are no inconsistencies in the data.

Archiving Cleared Items

The customer carries out this step.

> Archive as many cleared items as you can. Documents that have already been archived are not converted, so you can considerably reduce the time required for the conversion run by doing so.

> The number of cleared items managed in a system is usually much greater than the number of open items. If, for example, a system contains a hundred times more cleared items than open items, it will take a hundred times longer to convert the cleared items than to convert the open items.

For more information about archiving documents, see the SAP Library under *Cross-Application Components → Archiving Application Data (CA-ARC) → Financial Accounting (FI) → Archiving Financial Accounting Data (FI) → Archiving FI Documents.*

Procedure

1. From the *SAP Easy Access* screen, choose *Accounting → Financial accounting → General ledger* (or *Accounts receivable* or *Accounts payable*) *→ Periodic processing → Archiving → Documents.*

2. Archive the required cleared documents.

System Settings for Extended Withholding Tax

The customer carries out these steps.

> Before you start the conversion of the withholding tax data, you must set up extended withholding tax in the Implementation Guide for *Financial Accounting*. Make the system settings described below.

> ⚠️

> Do not activate extended withholding tax yet.

> If you activate extended withholding tax before converting the withholding tax data, documents could be posted with extended withholding tax. This could result in your system containing documents with both classic withholding tax and extended withholding tax which, in turn, could lead to serious problems during the conversion of documents (see Converting Documents [Page 217]).

You should first consider how you wish to configure and implement extended withholding tax in your organization. You should also consider how you want to reflect the withholding tax codes for classic withholding tax in the withholding tax types and codes for extended withholding tax in your system.

> 💡

> For the purposes of the changeover, the system settings for extended withholding tax should correspond to the settings for classic withholding tax.

Make the following settings:

- Define official withholding tax keys [Page 196]

- Define withholding tax types and withholding tax codes [Page 197]

- Defining withholding tax formulas [Page 200]

- Define withholding tax minimum amounts [Page 201]

Additional System Settings

The following system settings are converted automatically (see Converting Customizing [Page 215]) so you do not need to take any action in these areas:

- Type of recipient for vendors

- Account determination

- Assignment of withholding tax types to company codes

Defining Official Withholding Tax Keys

Use

If you have not used any withholding tax keys for classic withholding tax, you do not need to take any action at this stage.

> The withholding tax key for classic withholding tax is contained in the withholding tax code.

Procedure

1. In the Implementation Guide for *Financial Accounting*, choose *Financial Accounting Global Settings → Withholding Tax → Extended Withholding Tax → Basic Settings → Define Official Withholding Tax Codes*.

2. Define the official withholding tax keys (also known as official withholding tax codes) for reporting withholding tax for those countries in which you wish to use extended withholding tax.

   Make sure that for all withholding tax keys (or withholding tax codes) that are used in the withholding tax codes for classic withholding tax, there is an identical entry in the withholding tax codes for extended withholding tax.

Defining Withholding Tax Types and Withholding Tax Codes

Use

Define **all** types and codes that you require for the countries whose company codes you wish to change over to extended withholding tax.

Note that when you convert the withholding tax data, you must assign a withholding tax type and a withholding tax code for extended withholding tax to each withholding tax code for classic withholding tax (see **Assigning Withholding Tax Codes and Withholding Tax Types [Page 210]**). This enables you to assign several different withholding tax codes for classic withholding tax to one withholding tax type, as long as the following settings for the withholding tax codes for classic withholding tax are the same:

- Tax base net

- Withholding tax on payment posting

  SAP recommends assigning withholding tax codes for classic withholding tax where the above settings are the same to the same withholding tax type for extended withholding tax.

  If, in the future, you want to post **several** kinds of withholding tax in one document, you need several withholding tax types.

If you require functions that were previously not provided by classic withholding tax, but that are covered by extended withholding tax (for example, accumulation), after the withholding tax changeover, you must define a new withholding tax type for each function required.

Procedure

Defining withholding tax types (required)

1. In the Implementation Guide for *Financial Accounting*, choose *Financial Accounting Global Settings → Withholding Tax → Extended Withholding Tax → Calculation → Withholding Tax Types → Define Withholding Tax Type for Payment Posting*.

2. Define the required extended withholding tax types as described in the table below, otherwise the system cannot assign them to the corresponding classic withholding tax codes.

Screen area	Select...	If...
Calculation/Base amount	*Net amount*	*Net base for tax contributions* is selected in the corresponding classic withholding tax code
	Gross amount	*Net base for tax contributions* is **not** selected in the corresponding classic withholding tax code

Defining Withholding Tax Types and Withholding Tax Codes

Screen area	Select...	If...
Calculation/Rounding rules	*W/tax comm. round*	
Calculation/Cash discount	*C/disc. pre W/tax*	
Calculation	*Post w/tax amount*	The flag *Posting on payment* is selected in the corresponding classic withholding tax code
Accumulation type	*No accumulation*	
Control data	*W/tax base manual* *No cert. numbering*	
Definition minimum/maximum amounts *Base amount*	*W/tax code level*	
Definition minimum/maximum amounts *Withholding tax amount*	*W/tax code level*	
Central Invoice	*No centr. invoice*	
Minimum check *or Minimum base amount check*	*Minimum check at item level* *No check on min. base amnt at doc. level*	

Do not select any other fields in the withholding tax type.

Defining withholding tax codes (required)

1. In the Implementation Guide for *Financial Accounting*, choose *Financial Accounting Global Settings → Withholding Tax → Extended Withholding Tax → Calculation → Withholding Tax Codes → Define Withholding Tax Codes*.

2. Define the required extended withholding tax codes as described in the table below, otherwise the system cannot assign them to the corresponding classic withholding tax codes.

Screen area	Field	Must contain...
General data	*Off. w/tax key*	The value of the *Withholding tax code* field from the corresponding classic withholding tax code.
Base amount	*Percentage subject to tax*	The value of the same field from the corresponding classic withholding tax code.

Defining Withholding Tax Types and Withholding Tax Codes

Screen area	Field	Must contain...
Posting	*Post. indic.*	The value 1
Calculation	*With/tax rate*	The value of the same field from the corresponding classic withholding tax code.
	W. tax. form.	Select this field if the same field is selected in the corresponding classic withholding tax code.
Reporting information	*Region*	The value of the same field from the corresponding classic withholding tax code.
	Prov. tax code	The value of the same field from the corresponding classic withholding tax code.
	Income type	The value of the same field from the corresponding classic withholding tax code.

If, in classic withholding tax, you have made an entry in the field *Reduced rate* in the withholding tax code, you must define this information in the vendor master record in extended withholding tax.

Make the required Customizing settings **after** the withholding tax changeover.

For more information about the system settings required for withholding tax exemption, see **Carrying Out Postprocessing for the Withholding Tax Data Conversion [Page 219]**

.

If, after the changeover, you wish to post withholding tax with reunification tax, note that reunification tax is not explicitly defined in the extended withholding tax function, but can be reflected by a separate withholding tax type.

Make the required Customizing settings **after** the withholding tax changeover.

For more information about the system settings required for withholding tax with reunification tax, see **Carrying Out Postprocessing of the Withholding Tax Data Conversion [Page 219]**

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Defining Withholding Tax Formulas

Use

If you have not used any withholding tax formulas for classic withholding tax, you do not need to take any action at this stage.

If you have selected the field *W.tax form* in the withholding tax code, you have to define the same formula for extended withholding tax as the one you defined for classic withholding tax.

Procedure

1. In the Implementation Guide for *Financial Accounting*, choose *Financial Accounting Global Settings → Withholding Tax → Extended Withholding Tax → Calculation → Withholding Tax Codes → Define Formulas for Calculating Withholding Tax* or *Define Calculation Types*.

2. Define the required formula to correspond with the formula in classic withholding tax.

> Note that when you maintain formulas in extended withholding tax, you have to enter header data for formula maintenance and for the formulas themselves. For each classic withholding tax formula for a country and withholding tax code, you have to make a corresponding entry in extended withholding tax. For each country and withholding tax code, you have to make header entries for each currency and withholding tax country defined in classic withholding tax, with the corresponding extended withholding tax type and code. In the formulas themselves, you enter amounts corresponding to the amounts in the classic withholding tax formulas.

Defining Withholding Tax Minimum Amounts

Use

If you have not defined a *Withholding tax minimum amount* in the classic withholding tax codes, you do not need to take any action at this stage.

If you have defined the *Withholding tax minimum amount* in the classic withholding tax codes, define the minimum amount for the extended withholding tax types and codes that you have defined.

Procedure

1. In the Implementation Guide for *Financial Accounting*, choose *Financial Accounting Global Settings → Withholding Tax → Extended Withholding Tax → Reporting → Define Minimum Amounts per Withholding Tax Code*.

2. Create a new entry for the withholding tax type and code that you later wish to assign to the classic withholding tax code.

    Make sure that the *Currency* field corresponds to the same field for the *Withholding tax minimum amount* in the classic withholding tax code.

    Define the amount in the field *Base min. reporting* to correspond with the withholding tax minimum amount in the classic withholding tax code.

Setting Up Authorizations for the Withholding Tax Changeover

The customer carries out this step.

Use

In this activity, you create authorization profiles for the people involved in the withholding tax changeover. To create these profiles, use the authorization object *Financial Accounting: Withholding Tax Changeover* (F_WTMG) provided by SAP.

> Once the withholding tax changeover is completed, take the precaution of withdrawing the change authorization for all the users involved.
>
> This prevents the conversion being started while the system is being used for normal day-to-day activities, for example.

Procedure

1. In the Implementation Guide for *Financial Accounting*, choose *Financial Accounting Global Settings → Maintain Authorizations*.

2. Make the required Customizing settings.

    The authorization object can be found in the *Financial Accounting* object class under the object name *Withholding Tax Changeover*.

Blocking Users

The customer carries out this step.

Use

You must block the system for normal activities while the conversion is being prepared and carried out. Documents must not be posted or processed, and master data must not be changed, otherwise your accounting documents and system settings may contain serious discrepancies.

Procedure

1. Ensure that all users involved in the withholding tax changeover have the appropriate access authorizations.

2. Block your SAP System for **all** other users.

    If it is not possible to take measures to ensure that there are no users working in the system, you should block the users and the whole system throughout the organization.

    Restart the SAP System so that all users are logged off.

Converting the Withholding Tax Data and Activating Extended Withholding Tax

To start the conversion of withholding tax data, in the IMG for *Financial Accounting*, choose *Financial Accounting Global Settings → Withholding Tax → Withholding Tax Changeover* (or choose transaction WTMG).

The *Withholding Tax Data Conversion: Initial Screen* appears.

Carry out the following steps:

- [Creating and Editing a Conversion Run [Page 205]](#)
- [Preparing the Data Conversion [Page 207]](#)
- [Data Conversion [Page 214]](#)
- [Activating Extended Withholding Tax [Page 218]](#)

Creating and Editing Conversion Runs

The customer carries out this step.

Use

The withholding tax data can be converted in several conversion runs. In each conversion run, you can select one or more company codes for which you want to convert the withholding tax data. The system automatically adds company codes that are in the same country and in which cross-company code clearing is possible.

> You cannot carry out any new conversion steps if conversion steps that have been started in other conversion runs have not yet been completed.
>
> The conversion of a previous run is considered complete when the conversion steps *Customizing conversion, Master data conversion*, and *Document conversion* have been carried out without any errors, and extended withholding tax has been activated for the relevant company codes.

> In any one conversion run, data can only be converted from company codes that are all in the same country. It is not possible to convert company codes from different countries in the same conversion run.

Procedure

Creating a Conversion Run

1. Choose 🗋.

2. Enter a description of your conversion run of no more than 40 characters, and choose ✅.

    The system automatically assigns a number for your conversion run. The conversion runs are numbered consecutively.

    The *Withholding Tax Data Conversion: Conversion Run Control* screen appears.

    > You carry out all the other steps for the withholding tax changeover from this screen.

3. Now carry out the individual steps for the withholding tax data conversion.

    For more information, see .

Displaying and Editing a Conversion Run

You can display conversion runs that have already been created at any point (🔍). Provided a conversion run has not yet been completed, you can also change (✏️) or delete (🗑️) it.

Creating and Editing Conversion Runs

You can only delete a conversion run if the *Customizing conversion* step has not yet been started (this does not apply to test runs).

To actually carry out a conversion step, deselect the *Test run* field and choose .

Preparing the Data Conversion

The customer carries out these steps.

Carry out the individual steps in the order specified. The symbol on the left-hand side shows you the status of the individual steps:

Icon	Meaning
🔓	Can be processed
🔒	Blocked for processing
●●🟢	Processing successfully completed
●🟡●	Processing completed with a warning. Analyze the log. If necessary, reset the step (🗑), rectify the error, and run the step again.
🔴●●	Processing completed with serious errors; the subsequent steps cannot be carried out. Analyze the log. Reset the step (🗑), rectify the error, and run the step again.
Running	Shows that the conversion step is being carried out.
🔄	Displays the current status at any point during the conversion step.
📄 *Log*	Displays the log. Once you have carried out a step, the system creates a log. Note that the log is continually updated, so you may have to scroll to see the information that you require.
ℹ	Displays the detailed documentation to the individual steps.

Carry out the following steps:

- Select company code [Page 209]

- Assign withholding tax types and withholding tax codes [Page 210]

- Analyze datasets [Page 211]

- Make settings in vendor master records [Page 212]

Selecting Company Codes

Use

In this step, you select the company codes for which withholding tax data is to be converted in the current run.

When selecting company codes, note that:

- All selected company codes must be in the same country

- All company codes for which cross-company code clearing is possible and which are in the same country are automatically processed in the same conversion run.

- Select only those company codes
  - for which extended withholding tax is not yet active
  - that have not been selected for any other conversion run
  - for which relevant country-specific withholding tax codes for classic withholding tax were already created before the conversion

Procedure

1. Choose 🖊.

   The selection screen appears.

2. Enter either the numbers of the selected company codes or a country key, thus selecting all the company codes for that country.

3. Choose ✔.

   The system checks whether the above selection requirements are met.

   The system automatically adds company codes for which cross-company code clearing with the company codes you selected is defined, and that are in the same country.

   The system deletes all company codes from the conversion run

   – in which the withholding tax data has already been converted in a previous run

   – for which extended withholding tax is already active

   – for which classic withholding tax has not been used

   The system then displays a list of the company codes to be processed in the current conversion run.

4. To return to the *Withholding Tax Data Conversion: Conversion Run Control* screen, choose 🔙.

Assigning Withholding Tax Types and Withholding Tax Codes

Use

In this step, you assign the withholding tax codes for classic withholding tax to the withholding tax types and codes for extended withholding tax.

Procedure

1. Ensure that all required settings described under System Settings for Extended Withholding Tax [Page 195] have been made.

2. Choose 🖉 .

    The *Assignment: Withholding Tax Types and Codes* dialog box appears. It displays all the existing withholding tax codes for classic withholding tax that were defined for the country in question.

3. Assign the required type and code for extended withholding tax to **every** code for classic withholding tax.

    If you have already converted company codes in the same country in a previous run, you can copy the assignment from this run. Choose 📋 *Copy assignment*, select the required run, and choose ✔ .

4. Choose ✔ .

    The system checks whether the withholding tax types and codes selected have already been defined for the relevant country in Customizing for *Extended Withholding Tax*.

    The assignment is saved, and you return to the *Withholding Tax Data Conversion* screen.

Analyzing Datasets

The SAP System carries out this step.

Use

The system analyzes the datasets of every company code for which you wish to convert withholding tax data in the current run. The system determines both the overall number and the number per withholding tax code of

- Vendors

- Open items

- Cleared items

- Parked documents

The system also checks the assignment of the classic withholding tax to the types and codes for extended withholding tax to see whether the characteristics of each combination of type and code for extended withholding tax correspond. If this is not the case, a warning is displayed in the log.

Procedure

1. Choose 🕒.

   The system performs the analysis in the background. To display the current status of the analysis, choose 🔲.

   When the analysis is complete, the *Withholding Tax Data Conversion: Conversion Run Control* screen appears.

2. Choose 📄 *Log*.

   A list is displayed containing the above-mentioned figures.

3. Check the list for possible discrepancies that could lead to later problems when making postings with extended withholding tax.

   You can use the list to determine

   – whether documents with missing withholding tax codes have been posted.
     If so, check whether the code has been deleted by mistake, thus requiring you to make the relevant system settings again, or whether you intentionally made the setting for "no" withholding tax code.

   – whether any withholding tax codes exist that are not used, and can therefore be deleted from the system

   – whether the system contains a large number of cleared documents, which would slow down the conversion run unnecessarily

   Rectify any errors or discrepancies and restart the analysis.

Making Settings in Vendor Master Records

The customer carries out this step.

Use

In this step, you determine whether one or more withholding tax types are to be permitted for a vendor.

With extended withholding tax, several withholding tax types can be used for each vendor. The withholding tax types permitted for a vendor are defined in the master record for that vendor. When a posting is entered for which withholding tax has to be calculated, the accounting clerk can enter data for all withholding tax types permitted for the vendor in question.

Your decision as to whether one or more withholding tax types are to be permitted per vendor should be based on the following considerations:

One Withholding Tax Type per Master Record Possible

Choose this option if you are sure you want to use just one withholding tax type for each vendor. Each different vendor can use a different withholding tax type.

When new documents are posted after the withholding tax changeover has taken place, withholding tax can only be posted for the withholding tax types that have been entered in the master record of the relevant vendor.
This option prevents the accounting clerks from making mistakes when entering data, since it is not possible to enter withholding tax types that are not permitted.

> The data is converted according to the rules you defined in the *Type/code assignment* step. When converting the documents, the system does **not** check whether the newly generated data only contains the withholding tax type that is permitted for each vendor.
>
> After the changeover, further processing (payment, for example) of documents entered before the changeover is only possible if the withholding tax types defined before the changeover have also been entered in the master record of the relevant vendor).
> You may have to process individual documents manually if a withholding tax code for classic withholding tax that is no longer permitted for the vendor in question has been used mistakenly. If this is the case, a non-allowed withholding tax type for extended withholding tax has been assigned to the withholding tax code for classic withholding tax.

Several Withholding Tax Types per Master Record Possible

Select this option

- if you want to use more than one withholding tax type for some or all of your vendors

- if you are not sure how many withholding tax types you want to use per vendor in the future

> since for technical reasons, it takes up much more memory space in your database.

Procedure

Choose 🖉, and select the required setting.

Data Conversion

The withholding tax data conversion is made up of three separate steps.

First carry out the individual conversion steps as a test.

A test checks the settings and picks up any errors that may exist. It is quicker to perform a test; if any errors are found, you can rectify them and then start the actual conversion step.

To actually carry out the individual steps as a test, select the *Test run* field and choose .

If you discover any erroneous data when you actually carry out a conversion step (that is, not a test), you can reset the conversion step ( ) and then correct the error.

You can only carry out the next conversion step when the preceding step has been successfully completed (with a green or yellow traffic light).

Once you have activated extended withholding tax for the relevant company codes, it is no longer possible to reset any of the conversion steps that have actually been carried out.

Carry out the following steps:

- Convert Customizing [Page 215]
- Convert master data [Page 216]
- Convert documents [Page 217]

Converting Customizing

SAP carries out this step.

Use

In this step, some of your system settings for classic withholding tax are assigned to the corresponding system settings for extended withholding tax. The system converts the following settings for extended withholding tax:

- Type of recipient for vendors

- Account determination

- Assignment of withholding tax types to company codes

Procedure

1. Make sure that the *Test run* field is **not** selected.

2. Choose .

    The system converts your Customizing settings.

Converting Master Data

SAP carries out this step.

Use

In this step, the vendor master records created in your system are converted. Master records are converted for those vendors

- that have been created in the company codes that you selected for the current conversion run

- for which a withholding tax code is defined for classic withholding tax in the master record

Using the settings you made in the *Type/code assignment* step, the system derives the withholding tax types to be assigned to the vendor for extended withholding tax from the withholding tax codes previously entered in the master record for classic withholding tax.

Using the option you selected in the *Master data settings* step, the system determines whether one or more withholding tax types are assigned to each vendor.

Procedure

1. Make sure that the *Test run* field is **not** selected.

2. Choose .

   The system converts the relevant vendor master data.

Converting Documents

SAP carries out this step.

Use

In this step, the documents previously entered in the system for which withholding tax is relevant are converted. The system converts open and cleared items, as well as parked documents.

> This conversion step is the most time-consuming.

Procedure

1. Make sure that the *Test run* field is **not** selected.

2. Choose .

   The system converts the documents.

Activating Extended Withholding Tax

The customer carries out this step.

Use

In this step you convert the company codes involved in the current run to extended withholding tax.

The current conversion run is completed when extended withholding tax has been successfully activated.

> Once extended withholding tax has been activated, no further changes are possible.
>
> As of this point, you cannot reset either individual steps or the whole conversion run.

Procedure

Choose ⏲.

⚫⚫🟢 is displayed.

The current conversion run is now complete, and extended withholding tax can be used in all company codes involved in that run.

Carrying Out Postprocessing of Withholding Tax Data Conversion

Activities

Checking the System Settings for Extended Withholding Tax

The customer carries out this step.

Make sure that all system settings for extended withholding tax have been made in the Implementation Guide.

Manually Postprocessing Exemption in the Master Data

The customer carries out this step.

The information about withholding tax exemption in the master data for classic withholding tax is not automatically copied into the master data for extended withholding tax during the conversion. You therefore have to define the information manually for each withholding tax type. In addition, the *Reduced rate* is defined at withholding tax code level for exemption in classic withholding tax. For extended withholding tax however, all information about exemption is defined in the vendor master record (including the exemption percentage rate).

Define the exemption information for all vendors concerned.

Manually Postprocessing Documents with Reunification Tax

The customer carries out this step.

Reunification tax is not explicitly defined in extended withholding tax. However, you can reflect the reunification tax using a separate withholding tax type:

- **Up to Release 4.6B**
  You have to define a separate withholding tax type for reunification tax and adjust the portion of the base amount or the withholding tax percentage rate subject to tax accordingly.

- **From Release 4.6C**
  You can define dependent withholding tax types when you post the payment. The *Inherit base* function for the withholding tax base amount provides the withholding tax amount from another withholding tax type.

Make the required Customizing settings for reunification tax:

1. Create a withholding tax type and a withholding tax code.

2. Define the withholding tax type in the corresponding vendor master records.

> You then have to manually process the remaining open items of the vendors concerned, since otherwise these items cannot be activated.

For more information about the procedure, see note 205311, point 1.

Manually Postprocessing Documents and Items

The customer carries out this step.

Carrying Out Postprocessing of Withholding Tax Data Conversion

Some documents and items cannot be converted. After you have carried out the conversion run and the withholding tax changeover, you have to post the following items again:

- Recurring entry documents

- Sample documents

- Noted items

Releasing the System

The customer carries out this step.

When you have successfully completed all the planned conversion runs and the necessary postprocessing, you release the system for the users. It is then possible to post documents again, and to carry out all other activities in the system.

Data Medium Exchange Engine

Use

The Data Medium Exchange Engine (DMEE) enables you to define file formats that meet the requirements of your financial institution. This is particularly important as there is no worldwide or regional standard. In some cases, no country standard exists and the file must comply with bank-specific standards. With no ABAP programming knowledge required, this tool enables you to flexibly define new formats and to efficiently modify existing ones. In addition, DMEE can be used by calling applications to generate a DME file.

Integration

Formats can be defined for and DME files can subsequently be generated from the following application areas in *Financial Accounting*:

- Payment program
- Tax reporting
- Withholding tax reporting

Features

- Creation of formats with a graphical DME tool
- Single program interface for all formats
- No coding for additional layouts or changes
- Transport of layouts

Format Tree Definition

Purpose

This process describes the steps involved in defining a format tree in the DME Engine.

Process Flow

There are three main steps:

4. Data selection

    After you specify the application for which you wish to create a file format (such as the payment program) and assign a unique format tree ID, the system executes a selection step. It selects all R/3 fields that are predefined for the particular application. These fields form the source field inventory [Page 231] and are made available to you when you do the data mapping in step 3.

5. Definition of tree structure

    In this step, you define the layout of the format tree in a hierarchical structure. This tree stores all data that is relevant to describe this file structure: here you maintain the level structure of the file, the field structure, and the mapping and conversion of SAP source fields to file target fields.

6. Data mapping

    When you define your structure, you must link the fields in your file format to the corresponding fields in the R/3 System. This enables the DME Engine to extract the required data from the appropriate fields when you later generate a file. There are several mapping procedures; the most common ones are direct reference to R/3 fields or specification of a constant. You can also define more complicated mapping rules by including conditions, aggregation, or user exits.

After the above steps have been completed, you activate [Page 236] your format tree and it can then be used for generating DME files from the defined applications.

See also:

Creating Nodes [Page 227]

Data Mapping [Page 229]

Screen Layout

After you specify a tree type and a unique format tree ID on the initial screen of the DME Engine, the *DMEE: Create Format Tree <format tree>* screen appears. It is divided into three parts:

4. Tree structure

   On the left side of the screen, you define your format tree by inserting nodes in a hierarchical structure.

5. Detailed view

   When you insert a node in the format tree, detailed information is displayed to the right of the tree in the top frame. Here you specify additional data depending on the type of node. The information is displayed like a card index; you navigate between different areas by choosing the tabstrips along the top.

   You can display the details for any node by double-clicking it in the left-hand tree structure.

6. Source fields

   The bottom right frame contains all source fields made available by the data-selection step. These fields make up the source field inventory; you can select from them during the data-mapping process.

Nodes

Definition

Object that represents a hierarchy level in a format tree structure.

Use

Nodes are used to model a file defined by a certain external authority, such as a bank, government, or standardization organization. In most cases, it is possible to transfer to the format tree on a 1:1 basis the structure in the file description that the authority provides. SAP recommends that each file field corresponds to an element in the format tree.

Structure

Each format tree begins with a root node called the header [Page 225]. It appears automatically at the top of the tree structure when you create a format tree, and you can maintain the details on the right.

Below the header, you insert nodes to form the body of your format tree based on your file requirements. Likewise, details for the nodes can also be maintained on the right. For a description of the nodes and when to use each type, see Node Types [Page 226].

Header

The root node of the DMEE format tree contains technical settings and properties that apply to the entire file. Below is an overview of data that can be maintained on the detailed view to the right of the tree structure. For more information on the individual fields, refer to the F1 help.

Administrative data

You can document your format tree as needed. To do so, specify a name for your documentation text in the *Documentation* field; the name format *<format tree ID>_DMEE* is recommended. You can then maintain the text directly in the SAPscript editor by choosing ![icon]. The user documentation for a format tree can be displayed in the display or change modes by choosing *Goto → Documentation*.

The version [Page 240] of the format tree is displayed. The system assigns the fixed value 000 to an active version and 001 to a maintenance version.

Format attributes

Here you specify a DDIC structure in the case of format-specific parameters and delimiter information.

For format trees of the tree type PAYM, you can additionally specify that an accompanying sheet is to be printed when the file is generated. The system supports the printing of both simplified sheets and sheets with subtotals. If you specify an accompanying sheet with subtotals, you must maintain the key fields on the *Sort/key fields* tabstrip.

Levels

Here you specify the number of levels in the format. In addition, you can define a repetition limit for each level. This value specifies how often a certain level may be output. If this number is exceeded, the corresponding level cannot be output anymore. If the limit is reached for the uppermost level in the format tree and additional data is to be processed, a second file is generated. If the limit is reached for lower levels, the preceding level is repeated so that data can continue to be output for this level.

Sort/key fields

Here you can specify how certain fields are to be sorted. For the payment program, for example, you can sort according to currency or account by specifying the appropriate source field. If a sort field is additionally marked as a key field, then a change to the value in this field causes the corresponding format level to end.

If you indicate on the *Format attributes* tabstrip that an accompanying sheet is to be printed, you maintain the key fields here, which define how the subtotals are calculated.

File data

Here you specify whether segments are to be separated by carriage return or by line feed.

Node Types

Each node type performs a different function and various data can be maintained accordingly in the detailed view. For additional information on nodes and when to use certain node types, choose *Extras → Node legend* on the *DMEE: Create/Change Format Tree <format tree>* screen.

Below is an overview of node types in the DME Engine and their use:

Node	Use
Segment group	Used to group segments
Segment	Represents a record in the target file
Composite	Used to group elements
Element	Represents a target field of the DME file
Atom	Describes the link from the file definition to the internal R/3 structures
Technical node	Element that is not output to a target file; it stores values that are used in other tree nodes (elements, atoms) by a reference to this node

Creating Nodes

3. For the first node, position the cursor on the root node and choose the pull-down menu next to the ☐ icon, or do a right mouse click on the root node and select the node you wish to create.

4. For successive nodes, always position the cursor on the node above where you want to insert a node. You can then specify whether the node is to be inserted on the same level or as a subnode.

> When you insert a node, position the cursor on the node above where you wish to insert the new node by double-clicking. If you just highlight it with a single click, the details of another node may still be displayed to the right and the system recognizes this as the previous node.

4. Depending on the type of node you create, various data can be maintained in the detailed view to the right of the format tree. For more information on the individual fields, choose the F1 help for the field.

Conditions

Use

This function enables you to define conditions that control whether a certain format tree node is processed during file generation.

Conditions can be defined for any node type [Page 226]. If one condition applies to several consecutive elements, you should define a composite. If you assign a condition to a segment or a composite, it applies to the corresponding subtree. In this way, for example, you can control that a complete record (a segment, including all its elements defined as subnodes) is not output to the file.

Activities

You define a conditional relationship for a node in the detailed view under *Conditions*. Here you specify one of the following types of condition arguments and the corresponding arguments:

- Constant

- Field in a source structure (from the source field inventory)

- Reference ID (of another node already defined in the format tree)

When a file is generated from one of the predefined applications, the system processes the format tree and checks each node for conditions. If a condition is met, the system processes the node; if it is not, the node is ignored.

> If a condition for an upper-level node is not met, all subnodes are also ignored during processing.

Data Mapping

Purpose

This process describes how to map data from R/3 source fields to the target fields in a DME file. In most cases, you specify how data is to be mapped to elements, the nodes in the DMEE format tree that represent these target fields. You can also specify a mapping procedure and source information for atoms, which you define if an element contains several mapping rules.

Process Flow

4. You insert an element in the format tree structure on the left.

5. The system automatically displays the detailed view for an element in the right frame. This includes the following tabstrips: Attributes, Source, Conditions, and Aggregation.

6. After you enter the required attribute information, select a mapping procedure.

Mapping procedures:

Select mapping procedure	If
Constant	The value is to be set to a constant
Structure field	A value is to be retrieved from a specific source field in the R/3 System
Reference to tree node	An attribute (current value, length, or counter reading) of another DMEE format object that was already defined is to be used
Aggregation	A value related to a reference node is to be totaled and made available to this node
Exit module	The standard mapping and conversion rules do not meet your requirements and you wish to specify an exit module
Own mapping (atoms)	Your mapping rules are dependent on conditions or if different parts of the element are to be filled from different sources

5. Enter detailed source information:

   b. If you choose one of the following mapping procedures, enter source data in the appropriate fields on the *Source* tabstrip:

      - Constant

      - Structure field

      - Reference to tree node

      - Exit module

        In most cases, you specify that the target field is to be filled from one source field from the R/3 System, which corresponds to the mapping procedure *Structure field*.

Data Mapping

To specify the source field, you can enter the source field and structure directly under *Source*, or you can select a field from the source field inventory [Page 231].

d. If you choose *Aggregation* as the mapping procedure, enter data as required on the *Aggregation* tabstrip.

e. If you choose *Own mapping (atoms)* as the mapping procedure, you create as many atoms as you require in the form of subnodes to the element. You then specify a mapping procedure and source information for the atoms.

6. You can specify a conversion method used to convert source field data to a particular format for the DME file. This step is optional; if no conversion method is specified, data is transferred to the target field in the format it has in the R/3 System.

See also:

Aggregation [Page 234]

Exit Modules [Page 235]

Conversion of Source Field Data [Page 232]

Source Field Inventory

For each DMEE tree type, a set of possible source fields is predefined by SAP. These fields form the source field inventory, which is generated automatically during the data-selection step. You can select from these fields in the data-mapping process.

The source field inventory can consist of the following fields, depending on the tree type:

- Source fields for the application

    These fields are dependent on the particular application.

- ABAP system fields

    These fields are made available for each application. An example is the system date.

- Technical fields

    These fields are additional ABAP system fields that are usually not selected in the data-mapping process. However, they are still made available in the case that you require such source fields.

- Source fields for note to payee (internal table)

    These fields are specific to the tree type PAYM (payment program). If the appropriate settings are defined in Customizing for *Payment Medium Formats for the Payment Medium Workbench* and you select one of these fields as your source field, then a value will be filled in this target field.

- Parameters and source fields from Customizing

    These fields are specific to the tree type WTRE (withholding tax reporting). By choosing one of these fields, you map data that has been defined in Customizing and that remains unchanged.

Selecting fields from the source field inventory

To select a field from the source field inventory, double-click the document icon to the left of the field name, and the system transfers the structure and the field name to the mapping source above. For a description of the fields, choose 🛈. To branch from the structure directly to the ABAP Dictionary, choose ▦.

You can also insert a new element in the format tree directly from the source field inventory by highlighting the field name and dragging it to the format tree. The element is inserted after the last node in the structure and assigned the technical name of the field.

Conversion of Source Data

Use

This function converts source field data to a particular format for the DME file. You can specify a conversion method for any of the mapping procedures available for elements and atoms.

The system supports conversion rules for the following field types:

- Date

- Time

- Currency amount

- Character string

If you require an additional conversion method, you must specify an exit module for the node.

Activities

First enter the source information, then choose on the *Attributes* tabstrip; the system restricts selection criteria and displays the conversion rules that apply to the particular field type. Or, you can choose from all available formats via the input help.

Available formats

For field type	You can specify a combination of the following data:
Date	• Day, month, and year sequence • Number of characters for year: two or four • With or without separator • Type of separator: slash or period • Year, month, or day only • Year and number of days since January 1
Time	• Hour, minutes, and seconds sequence (with or without seconds) • With or without separator • Hour only • Conversion to time stamp
Currency amount	• Number of decimal places • Decimal formatting: period, comma or none • With leading zeros • Left- or right-justified • Output decimal value as 0 (round down)

Character string	• With leading zeros
	• Left- or right-justified
	• Replace leading zeros with space
	• Replace strange characters
	• All letters as capital letters

Aggregation

Use

This function enables you to aggregate values for specified format tree nodes (called aggregation nodes) and it makes this number available to a target field (element) in the DME file.

The aggregation function can be used at the end of a level or a file to:

- Add the total value of specified nodes

    In this case, you can only specify aggregation nodes that are filled with values (elements).

    This could be the amount of all payments in a level.

- Add the number of nodes

    In this case, you can specify any aggregation nodes because the system totals the number of occurrences, not specific values.

    This could be the number of payments in a level.

Activities

When you create an element, select the mapping procedure *Aggregation*. On the *Aggregation* tabstrip, you enter the reference IDs of the nodes you wish to aggregate and the aggregation type – how the aggregation nodes are to be totaled to the target node (either summation of values or of total number of occurrences).

Exit Modules

Use

You can implement exit modules for elements or atoms if the standard mapping and conversion rules do not support your requirements. Exits can also be used to select data from additional database tables not included in the standard selection step (such as customer database tables) and therefore not made available in the source field inventory. The exit module can, however, use the same source fields as the standard mapping rules.

Activities

When you create an element or an atom, select the mapping procedure *Exit module*. On the *Source* tabstrip, you then enter the name of the exit function.

> You write ABAP source code in the ABAP Workbench – not in the DME Engine. The function module DMEE_EXIT_TEMPLATE can be used as a template for your exit module.

Activating Format Trees

Use

You always maintain version 001 of the DMEE format tree. After you finish maintenance of your format tree, you activate the tree so that it can be used to generate a DME file from one of the defined applications.

Procedure

4. Complete maintenance of the format tree.

5. Choose *Format tree* → *Activate* or ✳️ .

6. The system performs a check [Page 237] of the format tree.

Result

If the check determines inconsistencies (errors or warnings), the system saves the format tree in the maintenance version, 001. To activate the tree, you must first correct all errors and then repeat the activation procedure.

If no errors are determined, the system activates the format tree and saves it as the active version, 000.

Checks

Use

Checks are carried out on the format tree to prevent inconsistent data from being used when a file is generated. You can execute a check manually at any time in the format-defining process. In addition, the system performs a check automatically when you activate your format tree.

Activities

To perform a manual check, choose *Format tr*ee → *Check* or 🔲. The system carries out the following checks:

- Syntax check

- Consistency check (such as reference to node attributes)

- Correct level distribution

- Check for completeness

If the check generates error or warning messages, the system displays a log. The log indicates the type of message (red for error, yellow for warning, green for information) and a short text. The text of an error message – which must be corrected in order to activate a format tree – is additionally highlighted in yellow. If a long text is available for the message, you can display it by choosing 🔵.

After a log has been generated, you can display it by choosing *Goto* → *Log* or 🗒.

Testing Active Format Trees

Use

The DME Engine includes a testing function, which enables you to test active <u>versions [Page 240]</u> of format trees before they are used to generate a file.

This function is intended for small-scale tests only. You can employ it, for example, to test the effects of new conversion rules or to determine if the offset is correct within a line or record. It is not intended to check an entire format tree – but rather a few lines – as it is very difficult to manually generate all application data correctly.

Activities

5.　On the initial screen of the DME Engine, choose *Format tree* → *Test active version* or 🖼.

　　The *DMEE Test Data* screen appears. The system displays the source structures for the particular application, each followed by the most commonly selected source fields for that structure. If you need to test fields not included here, you can add fields via the standard layout function.

6.　Next you enter the data you wish to test.

　　Only enter data in those fields that are specified in the format tree as actual source fields.

7.　To start the test, choose *File* → *Test* or 🖼.

8.　On the *Data output* dialog box that appears, the system displays in list form the results for the data you entered as they would appear in an actual DME file.

　　💡

　　If you do not enter data in the fields for which mapping rules are defined in the format tree, these fields remain empty when the test version is output. Fields defined as constants are output accordingly.

See also:

<u>Activating Format Trees [Page 236]</u>

Transporting Format Trees

You can transport both active and maintenance versions of format trees to other systems. The logical transport object for a DMEE format tree is R3TR DMEE; this contains all associated database tables. To transport a format tree, choose either *Format tree → Transport* or 🖥 on the initial screen of the DME Engine.

The DME Engine also supports an upload/download of format trees as an alternative to the transport:

- Upload format tree

    You can upload a format tree that you have as an XML file. To do so, choose *Format tree → Upload XML file* on the DMEE initial screen. You then specify the file name and the presentation server or URL address.

- Download format tree

    You can download a format tree and create an XML file on your PC that contains all format tree information. To do so, choose *Format tree → Download XML file* on the DMEE initial screen. After you specify which version you wish to download (active or maintenance), you enter the tree type, format tree ID, and a name for the XML file.

Format Tree Maintenance

Use

A DMEE format tree can be maintained with the transaction *DMEE*. You specify the tree type and the name of your format tree. A DMEE file specification can then be defined or modified in the form of a hierarchical tree structure.

Versions

When you create a format tree, the system automatically assigns it the version 001 (maintenance version). When you have finished maintaining the tree and wish to use it to generate DME files, you activate [Page 236] the tree. In the activation process, the system performs certain checks; if these are successful, an active version of the tree is stored under the version 000.

After you activate a format tree, two versions exist in the system: the active version (000) and the maintenance version (001). You always maintain version 001. When making changes to the maintenance version, you can always return to the last active version. You would want to do this, for example, if you make changes to the maintenance version, save it, and decide later that you do not want to keep these changes. To return to the last active version, on the DMEE initial screen choose *Edit → Maintain active version*.

> When you return to the last active version, it overwrites the maintenance version.
>
> Only two versions exist in the system at any given time. Once you modify a maintenance version and activate it, this is the only active version that exists – at this point it is not possible to return to an earlier active version.

Both the active and maintenance versions can be transported [Page 239] to other systems.

Generation of Data File Using DMEE

Purpose

The DMEE format tree can be used by a calling application to generate a DME file. The system currently supports the use of the DME Engine from three *Financial Accounting* applications: payment program, tax reporting, and withholding tax reporting.

Prerequisites

For the PAYM tree type, the format tree must be defined as a payment medium format in Customizing for *Payment Medium Formats for the Payment Medium Workbench*.

Process Flow

The calling application carries out the following steps:

5. Selects data and fills the transfer structure

6. Calls DMEE modules with the data that has been selected

7. Obtains an internal table with data in format structure

8. Writes data to a file or to File/TemSe/... and, in the case of PAYM, possibly updates DME administration

Document

Definition

The result of a posting in *Financial Accounting*. There are two types of documents: Original documents and processing documents.

Examples of original documents:

- Receipts

- Invoices

- Checks

- Bank statements

Examples of processing documents:

- Accounting documents

- Sample documents

- Recurring entry documents

The accounting document represents the original document in the system. The other processing documents can be used to simplify document entry. The document remains as a connecting unit in the system until it is archived.

Use

You can only check whether postings are correct in the compact journal and general ledger by means of documents. Every posting must therefore have a document.

Documents are the link between the business transaction and the posting in accounting.

> Only complete documents can be posted. A document is complete when its debit and credit items balance to zero. You must enter the minimum account assignments designated by the system: For example, document date, posting date, document type, posting key, account number, and amount. Data must also be entered in all other fields that were defined as required fields when making system settings.

Structure

A document consists of a document header [Page 244] and at least two line items [Page 247] .

Integration

As well as the accounting document described above, there are also special documents such as sample documents and recurring entry documents. These are documents that simplify the document entry transaction. For more information, see Posting with Sample Documents [Ext.] and Recurring Entries [Ext.].

You can transfer large volumes of document data from an external system into the SAP System. There are various methods for doing this. For more information, see Accounting Documents: Data Transfer Workbench [Ext.]

Document Header

Definition

The part of a document that contains information valid for the whole document, for example, document date and number. It also contains controlling information such as the document type.

Entering Document Headers

Use

The document header contains data that applies to the entire document. To enter a document, you must first enter the document header.

Procedure

1. From the *SAP Easy Access* screen, choose *Accounting → Financial accounting → General ledger → Document entry → Others → General posting*.

   To enter a document in *Accounts Receivable or Accounts Payable*, from the *SAP Easy Access* screen choose *Accounting → Financial accounting → Accounts receivable/Accounts payable → Document entry → Other → Invoice - general/Credit memo - general* or another business transaction.

2. Enter the data required on the *Enter G/L Account Posting: Header Data* screen. Depending on your settings in Customizing, the following entries are required:

- Document date

  The document date is the date the business transaction (such as a transfer posting, or the issue date of an invoice or payment) took place. The document date can be different from the posting date, which is the date that G/L account balances or the customer/vendor balances are updated.

- Document type

  For some document types, you also have to make entries in the fields *Reference* and *Document header text*.

- Document number

  Depending on the document type, document numbers are either internally assigned by the system or entered by you externally.

- Company code

  The system defaults this company code in all subsequent documents you enter that day.

- Posting date

  The system automatically defaults the current date as the document date. When you post the document however, you can enter any other date (past or future) from a permitted posting period. The posting date can be different to the document entry date and the document date (date the original document was created).

  The posting date determines the posting period.

- Period

  The periods that are permitted for posting are determined by your system configuration. You can also post to periods in a previous fiscal year. If you do this, the carry forward balance for the current year is automatically corrected in special periods.

- Currency/Exchange rate

Entering Document Headers

When you enter the first document of the day, you must enter a currency key. The system defaults this currency key in all subsequent documents entered on that day.

You have the following options when entering an exchange rate in a document header:

− Enter the currency key. The system automatically transfers the exchange rate valid on the posting date. The exchange rate must be defined in the system.

    or

− Enter the currency key and the translation date required. The system transfers the exchange rate valid on the translation date. The exchange rate must be defined in the system.

    or

− Enter the currency key and the exchange rate manually in the document header.

- Trading partner business area

    This entry is then defaulted in each G/L account item that is not generated automatically. It can however be overwritten if required.

- Other document header fields

    − Doc.header text

        The document header text contains explanations or notes that are applicable to the whole document, not just specific document line items.

    − Reference number

        The reference number could be the number of an invoice, for example.

    − Cross-company code no.

        Either you enter the number of a cross-company code document manually, or it is determined by the system.

        In the document header you can edit the following fields:

- Reference

- Doc.header text

- Cross-company code no.

- Trading partner business area

Line Items

Definition

The part of a document that contains information about an item. This includes an amount, an account number, the credit or debit assignment, and additional details specific to the transaction being posted.

Use

You can enter terms of payment, a cost center, or an explanatory text in a line item for example.

Editing Line Items

Use

Before you post a document, you can display the document overview and then edit one or more line items. In this way, you can correct any input errors.

See Document Overview [Page 310]

Features

In the document overview you can:

- Adjust individual items (for example, change an amount field)

- Add new items

- Delete items

- Hold an incomplete document.

Note that before you post the document, you can edit any field in any line item, except the following:

- *Pk* (Posting key)

- *Account*

- *Special G/L indicator*

- *Company code*

Activities

Correcting Line Items

Select an item and choose *Goto → Select.* Correct the line item and save your entries.

Adding Line Items

Enter the required data under *Other Line Items*.

Deleting Line Items

There are two ways to delete a line item:

- In the document overview, you can choose *Edit → Delete item*. You then enter the number of the item to be deleted in the dialog box that appears.

- You call up the line item in question and overwrite the amount with zeros in the *Amount* field. This item is then displayed in the document overview with the zeros you entered.

Generating Line Items Automatically

Use

Depending on your system's configuration, you can have the system generate and post line items automatically.

Integration

Which line items are generated depends on which business transactions you have entered:

Features

The following table gives you an overview of the different business transactions for which line items can be generated automatically.

Business transaction	Line items
Entering a customer or vendor invoice	• Tax on sales/purchases (output tax when posting a customer invoice, input tax when posting a vendor invoice) • Payables and receivables between company codes (when posting cross-company code transactions)
Posting a customer or vendor payment and clearing open items	• Cash discount (paid and received when posting payments) • Backdated tax calculation for tax on sales/purchases (after cash discount deduction) • Gains and losses from exchange rate differences (between invoice and payment) • Unauthorized deduction of cash discount (when a payment is slightly different to the amount due) • Residual items • Bank charges
Entering special G/L transactions	• Bill of exchange charges • Tax adjustment for a down payment

Activities

Adding Details to Automatically Generated Line Items [Page 250]

Adding Details to Automatically Generated Line Items

Use

You can add details to any automatically generated line item. For example, you can add text to a tax on sales/purchases line item.

If you are permitted (or required) to make additional account assignments to the automatically generated line items, the system branches directly to the document overview. Here, the automatically generated items are highlighted.

Prerequisites

Make sure that the G/L account is marked as adjustable and that the appropriate field is defined as optional or required in the field status group.

Procedure

1. Select the item for which you want to make an additional account assignment by placing the cursor on an automatically generated line item and choosing *Goto → Line item → Choose*.

2. Edit the line item.

3. Choose *Document → Post* to post the document.

> If you use fast entry to enter G/L account line items, and required fields are not displayed on the fast entry screen, you must add details to the G/L account line items. This process is the same as adjusting an automatically generated line item.
>
> You can also adjust line items after posting by changing the document.

Document Types

Definition

A key that is used to classify accounting documents and distinguish between business transactions to be posted. The document type is entered in the document header and applies to the whole document.

Use

The document type has the following functions:

- Differentiating between business transactions. The document type tells you instantly what sort of business transaction is in question. This is useful, for example, when displaying line items for an account.

- Controlling the posting to account types (vendor, customer, or G/L accounts). The document type determines which account types that particular document can be posted to.

- Assigning document numbers. A number range is assigned to every document type. The numbers for the documents you create are taken from this number range. The original documents from one number range should be stored together. In this way, the document type controls document storage.

  For more information, see Document Number Assignment [Page 258] and Controlling Document Storage Using the Document Type [Page 267]

- Applying the vendor net procedure. This means that any discount and the net amount are calculated (and posted) when the vendor invoice is posted.

The following figure illustrates the significance of the document type:

Document Type

Document number range	Net posting	Account type
Determines the number range	Net posting required: Yes/No?	Limits the account types to be used; one of the account types must match the posting key
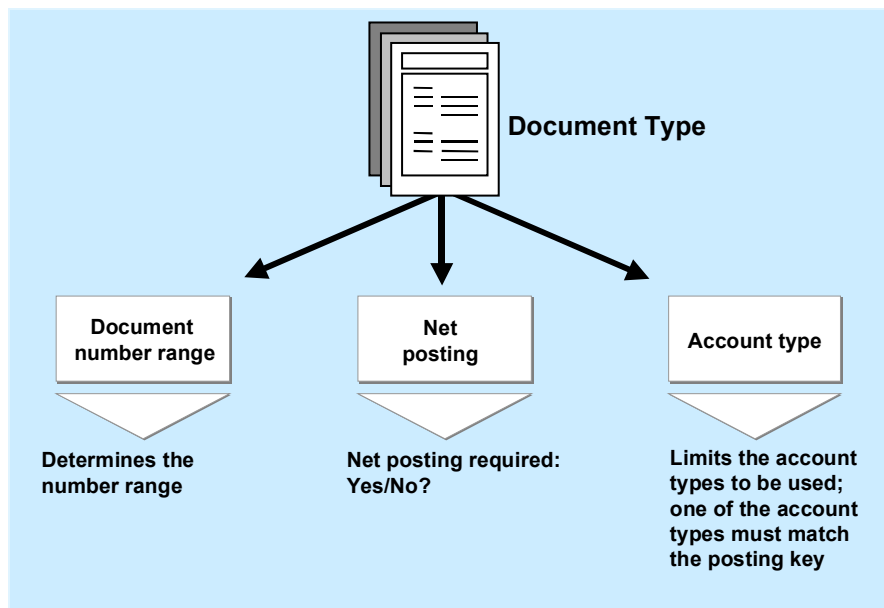
Document Types

Document types are defined at client level. The standard system already contains document types which you can use or change. Before deleting document types, check whether they are currently used in the system.

> The system usually defaults the appropriate document type when a business transaction is entered. With some transactions (such as clearing transactions), you define document types that are required for automatic postings yourself.

Differentiating Between Business Transactions Using the Document Type

Document types reflect the different business transactions in your organization. Since the document type can be displayed for every line item, you can immediately find out the type of business transaction in both document display and line item display. You can also use the document type for evaluation purposes.

In the following figure, the document types show that there are customer invoices (document type DR), customer payments (document type DZ) and customer credit memos (document type DG).

```
                               Line Items
 Customer    Evans       Basic list
 Dwight Evans
 Boston                  Line Items 74

 Assignment Doc. No.      DT  Doc.date   PK  G/L   Curr.   Amount      Cl.doc
 ------------ ---------------  ----  ----------------  ----  -----  -----   ----------
 19920408    1600000120     DR  08.04.92   01        DM     1,000.00
 19920408    1600000120     DR  08.04.92   01        DM     1,000.00
 19920409    1600000129     DR  09.04.92   01        DM    10,000.00
 19920409    1600000130     DR  09.04.92   16        DM     1,140.00
 19920410    1600000135     DG  10.04.92   11        DM       145.45-
 19920410    1600000121     DR  10.04.92   01        DM       112.99

 Cleared line items .....................................................
 19920331    1400000077     DZ  31.03.92   15        DM     1,140.00-
 19911216    0100000013     AB  16.12.91   01        DM       200.00     051
 19920323    1600000051     DR  23.03.92   15        DM       200.00-    051
 19920331    1600000093     DR  31.03.92   01        DM     1,140.00     077
 19920401    1400000079     DZ  01.04.92   15        DM     1,140.00-    079
 0                                    5/6                                      1
```

Document types have already been defined in the standard system. The most important document types are:

Document Types in the Standard System

Document type	Description
AB	General document
DG	Customer credit memo
DZ	Customer payment
DR	Customer invoice
KZ	Vendor payment
KG	Vendor credit memo
KN	Vendor net invoice and credit memo
KR	Vendor invoice
SA	All G/L accounts

Differentiating Between Business Transactions Using the Document Type

To differentiate between business transactions using the document type, you specify for each document type, what type of account that document can be posted to. Document type AB allows you to post to all accounts. All other document types limit the types of accounts you can post to. Document type DA, for example, only allows you to post to customer and G/L accounts.

> The document types delivered with the standard system have already been limited to specific types of accounts. You do not have to use these document types. You can modify them or define your own document types.

Defining Authorizations for Document Types

Use

You can define a special authorization for every document type. To do this, you need to determine what document types in which form employees are allowed to process.

Authorizations are checked for the following activities:

- Posting documents

- Document display and line item display

- Changing documents

- Programs that evaluate documents.

The system does not check the authorization for document types that are not assigned an authorization group.

Procedure

1. In Customizing for *Financial Accounting*, carry out the activity <u>Maintain Authorizations [Ext.]</u> under *Financial Accounting Global Settings*.

2. Enter an authorization group in the document type. You then assign authorization for this authorization group to the employees who will work with this document type.

   For each document type, you can specify whether users are required to enter a reference number or the document header text.

Defining the Document Type for the Vendor Net Procedure

Use

When you post a vendor invoice, you use the document type to specify whether you want to use the vendor net procedure. In this procedure, the system automatically splits the offsetting postings into the net amount and the cash discount due. This is done when the document is posted.

> The vendor net procedure can be used for example, to post vendor invoices to assets. The exact acquisition amount, less any cash discount, is posted to asset accounts.

Prerequisites

You have defined that you want to use the vendor net procedure. To do this, you specify a document type that is defined as a net document type. Document type KN has already been defined for the net posting procedure in the standard system.

Activities

To define your own net document type, you need to set it as such by choosing *Net document type* in Customizing. In addition, make sure that the required account types are specified in the *Account type* field. In the standard system, these are G/L accounts, asset accounts, and vendor accounts.

> The vendor net procedure cannot be used when posting to customer accounts.

Document Types for Postings to Affiliated Companies

You can use the document type to check the consolidation ID for affiliated companies. You can also use it to check whether the field *Trading partner* in the G/L account item is ready for input for manual G/L account postings.

Multiple Companies in a Document

To eliminate IC sales for the consolidation of several internal trading partners, the system must be able to recognize receivables and payables between affiliated companies.

You therefore define a consolidation company ID in your customer and vendor master records.

When you post to these accounts, the system automatically transfers the ID from the master record to the customer, vendor, and G/L account line items. The consolidation company ID, however, is not displayed in the line items.

When you post these receivables and payables, the system must be able to assign the revenue or expense items to exactly one affiliated company. During document entry, the system checks whether you are posting to companies that have the same consolidation company ID. If this is not the case, you cannot continue with the document entry.

For postings where you do not have to differentiate between affiliated companies, for example, incoming or outgoing payments, you can use a bank posting for clearing between customers and vendors of several affiliated companies.

You use the document type to control whether the system checks the consolidation company ID. To allow users to post documents with different consolidation company IDs by using a particular document type, select the *Multiple companies* checkbox for that document type. Otherwise, only one consolidation company ID can be used in each document.

Trading Partner in the G/L Account Item

For consolidation, the system requires that the consolidation company ID is maintained in the G/L account item when posting revenue and expense items for affiliated companies. The consolidation company ID is needed to eliminate IC sales.

The system determines this ID from the customer or vendor master record and automatically enters it in the trading partner field in the line item. When you are manually posting to G/L accounts only, the system cannot determine the ID from the master record. You therefore must be able to enter it in the G/L account item yourself. It must also be possible to enter the ID in the trading partner field for automatic adjustment postings, for example, for foreign currency valuation. The system determines the ID from the customer or vendor master record.

You use the document type to control whether an entry can be made in the *Trading partner* field. To allow users to enter a trading partner in G/L account items, select the *Enter trading partner* checkbox for the document type.

Document Number Assignment

Use

In the SAP System, every document is assigned a number that identifies it uniquely within a fiscal year and company code.

Document No.	Fiscal year	Company code
1600000209	1999	0001
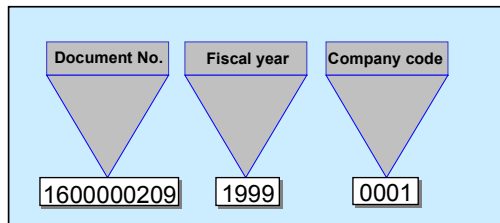
There are two types of number assignment:

- **External (by the user)**

    The accounting clerk enters the number of the original document during document entry, or the number is transferred automatically from a pre-invoicing system. A prerequisite is that the document numbers are unique. The system checks whether the number entered already exists and prevents users from assigning the same number twice. Numbers assigned to documents that have been archived however, can be reused.

- **Internal (by the system)**

    The system automatically assigns a sequential number. The accounting clerk transfers this SAP document number to the printed original document and then files it using this number. This method is used if the original documents do not have a unique document number. This is the case, for example, with vendor invoices.

You use a number range to define how the document number is assigned. Each document type has a specific number range from which the document number is selected.

Integration

Reversing Documents

When you reverse documents, the system automatically assigns a number for the reverse document. To do this, the system requires a document type that has internal number assignment. Every document type with external number assignment must therefore be assigned a reverse document type that has internal number assignment.

> Documents posted with a document type that has internal number assignment are reversed by the system using the same document type if you do not specify a separate reverse document type.

Sales and Distribution (SD)

If you have installed the *Sales and Distribution* (SD) component, your system administrator can configure the system so that either the invoice number from SD is used for the accounting document, or separate document numbers are assigned to invoices from SD. For more

information, see the *SD - Sales and Distribution* documentation Number Assignment for Material Master Records [Ext.] and Validity Period for the Document Number Interval [Page 260]

Validity Period for the Document Number Interval

For each document number interval, you must specify a validity limit (year value).

You can define the same number range for several fiscal years (see following illustration). After changing fiscal years, the system starts assigning numbers again from the lower limit of the interval. The same document numbers are assigned in each fiscal year, but are uniquely identified by the year specification.

If you do not want to have numbers assigned based on each year, you must specify a year which lies far into the future, for example "9999". Documents are then assigned numbers from an interval that is unaffected by changes in fiscal year (see the following illustration).

> External number assignment is automatically year-specific. A unique number results from the document number and fiscal year. You can therefore reuse your number ranges for external number assignment in each fiscal year without having to define them based on the year.

To edit or display a document, you must specify the fiscal year in addition to the document number on the request screen if your system assigns numbers based on each year. You can also have the system automatically default the fiscal year. To implement this function, you must specify it for each company code.

The following overview shows the effects of defining different number ranges.
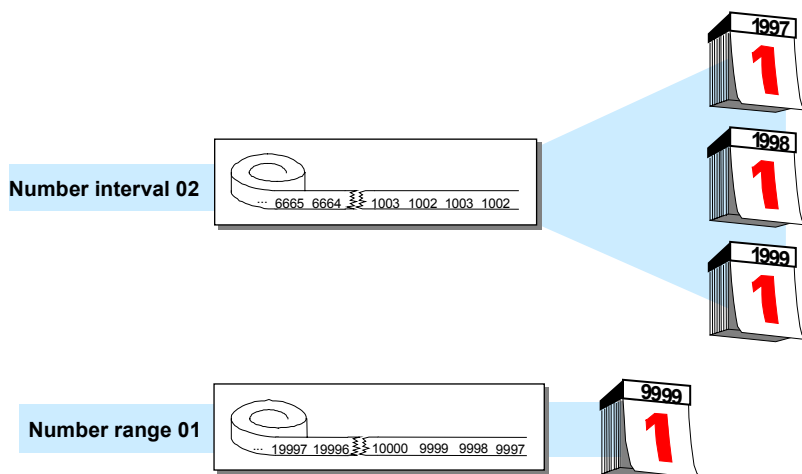
Number range	Year	Interval	
01	9999	0010000000	0019999999
02	1997	0020000000	0029999999
02	1998	0020000000	0029999999
02	1999	0020000000	0029999999

Defining Number Ranges

Use

You can define number ranges as follows:

- You can define number ranges for each company code. Thus, each company code can use the same number interval.

- You can define number range intervals as year-specific.

You define number ranges in the system separately for master records and documents. You can therefore use the same number range keys for both master records and documents.

In the *Financial Accounting* (FI) component, you can also define alphanumeric number ranges. In this case, however, the document numbers can only be assigned externally.

> It is advisable to select year-specific number ranges. You therefore only need smaller intervals and can store the document numbers separately according to fiscal years. You therefore avoid documents from the old and new year alternating in January.

Procedure

Since documents may be kept in the system for an indefinite amount of time, you need to define intervals that are large enough to handle this factor.

1. To do this, you need to determine the volume of documents created each year for document types that use the same number range.

2. Multiply the number of documents by the number of years the system can retain a document for. This gives you the required interval capacity.

3. Specify an interval a little larger than that to make sure it is sufficient.

4. In Customizing for *Financial Accounting*, carry out the activity *Define Document Number Ranges* under *Financial Accounting Global Settings → Document → Document Number Ranges*.

5. For every number range, you must specify the following parameters:

   - A key (see **1** in the following diagram)

   - A validity date (a year value) until which the number range is valid (see **2** in the following diagram)

   - An interval from which the numbers are chosen (see **3** in the following diagram) The intervals for number ranges must not overlap.

   - Whether the number range is used in internal or external number assignment (see **4** in the following diagram)

Defining Number Ranges

Number range object　Accounting document
Company code　　　　0001

No.	Year	From No.	To number	Current number	Ext
00	1999	0000000001	0099999999	10000000	X
01	1991	0000003000	0199999999	100000037	
01	1992	0000006000	0199999999	100001025	
01	1993	0000009000	0199999999	100000002	
02	9999	0200000000	0299999999		X

Defining Number Ranges for Recurring Entry and Sample Documents

Use

Sample documents are used as a reference when you enter accounting documents manually. They simplify document entry. You can post regularly recurring entries using the recurring entry program. To do this, the program requires a recurring entry document. Transaction figures are not updated by a sample document or recurring entry document. They are special documents that are only used to create accounting documents.

For sample and recurring entry documents, you need to set up special number ranges in every company code in which these special documents are used.

Procedure

1. In Customizing for *Financial Accounting*, carry out the activity Define Document Number Ranges [Ext.] under *Financial Accounting Global Settings → Document → Document Number Ranges*.

2. Define the number range for sample documents using key X2, the number range for recurring entry documents using X1.

> ⚠️
>
> You cannot use these number ranges for your document types.

For more information on recurring entry and sample documents, see Posting with Sample Documents [Ext.] and Recurring Entries [Ext.].

Changing and Deleting Number Ranges

Use

You can change the specifications for a number range, for example the number interval or the validity period.

Changes may be necessary if a number range is not large enough. In this case, you can

- Increase the upper limit of the number range or specify a new lower limit as long as another range does not already have the desired numbers

- Assign a new number range to the document type

Features

- Changing number intervals

  You can change the lower and upper limits for number range intervals. Changing the lower limit in a number range with internal number assignment is advisable only if a number has not been assigned yet. In changing the upper limit, make sure the new number does not fall below the current number. The system ensures that the intervals do not overlap after you change the limits.

- Changing the current number level

  The current number is updated by the system for number ranges which are set up with internal number assignment. Changing the current number is only permitted in special cases. This may be necessary if the system starts assigning numbers from the lower limit of the interval again and finds that a number was not released yet. A document with this number therefore already exists in the system. In this case, you can increase the current number. Generally however, you should **not** change it.

- Changing the validity period

  Changes to the validity period are usually not necessary. If you use a number range which is independent of the fiscal year, you have already specified a year far into the future. If you use number ranges that are based on the fiscal year, you only need to define the number range for each fiscal year.

- Deleting number ranges

  You can delete number ranges if no numbers were assigned from it. If numbers have already been assigned from this range, if it is a range with internal number assignment, the system prevents deletion. If the range has external number assignment, a warning message is issued. If you delete a number range, you must assign new number ranges to the document types affected by the deletion.

Organizing Document Storage

Use

If you store your documents correctly, you can ensure a clear link between the original document and the processing document.

Always store your original documents under the processing document number (see the following illustration).

Original document
Outgoing invoice

Invoice

No. 2122

DP doc.

Doc.No. 2122

2000
-
3000
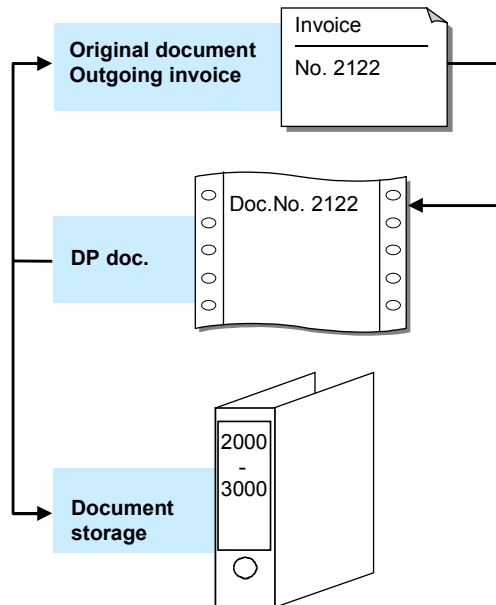
Document
storage

Depending on whether you want to store customer or vendor documents, you can choose from different types of document storage.

For **customer documents**, you either use the document number created by a pre-invoicing system, or have the system assign numbers using the internal number assignment function.

For **vendor documents**, have the system assign the processing document number. Record the processing document number in the original document (see the following illustration). Enter the number of the original document in the reference number field in the header of the processing document. The original document number can then be used in correspondence and system queries. You can use the reference number to search for the corresponding document in line item display.

Organizing Document Storage

Original document	*1130*
Incoming invoice	Invoice
	No. 76814

| **DP doc.** | Doc.No. 1130 / Reference No. 76814 |

| **Document storage** | 1000 - 2000 |
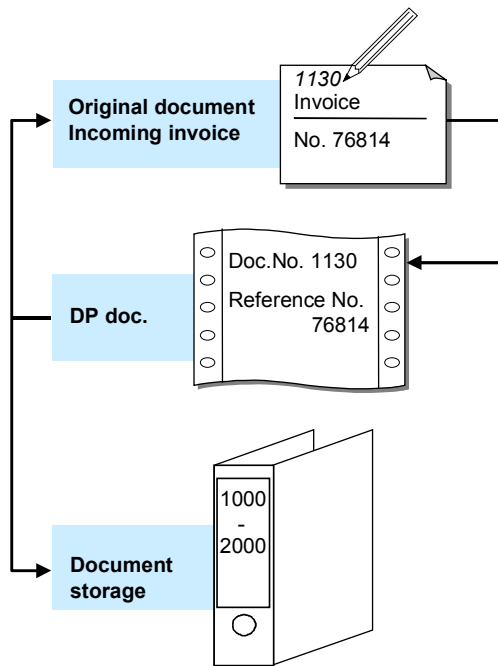
Controlling Document Storage Using the Document Type

Use

If you always store original documents under their processing document number, you can control how these documents are filed by using document types. All original documents that are posted with the same document type in the system are filed together. However, you also have the option to store several document types together.

You use document types to differentiate postings according to the different business transactions.

If you want to file documents separately by document type, you need to assign a separate number range to each document type.

> In the following illustration, document type KG (vendor credit memo) was assigned to number range 02, and document type KR (vendor invoice) was assigned to number range 01. The original documents are stored accordingly.
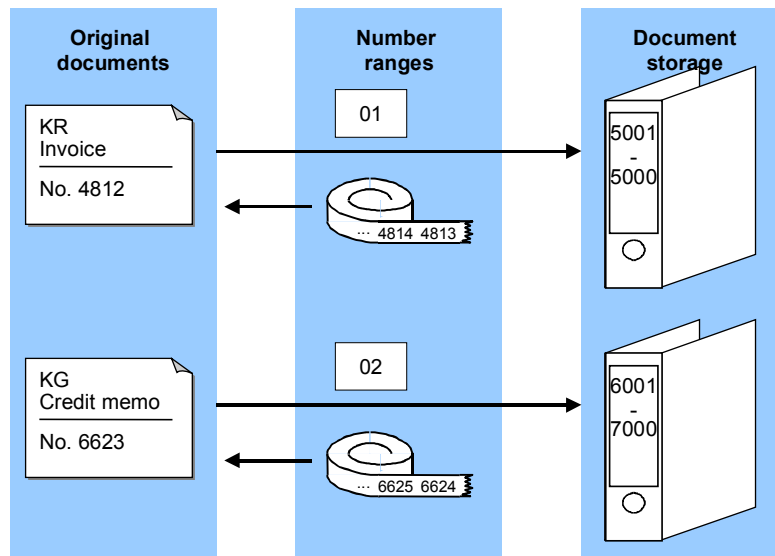
If you want to file several document types together, you need to assign the same number range to them. For example, you can differentiate between the posting of vendor credit memos (document type KG) and vendor invoices (document type KR) using document types and then file these documents together using a joint number range.

Controlling Document Storage Using the Document Type

Original documents	Number ranges	Document storage

KR
Invoice

No. 4812

··· 4902 4901

KG
Credit memo

No. 4900

4000
–
6000
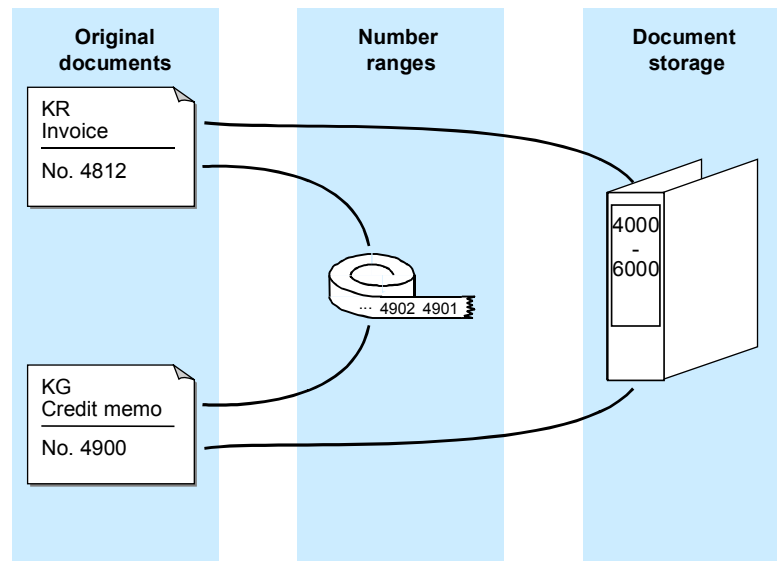
See also Document Number Assignment [Page 258]

Document Entry

Use

When you enter documents, the system checks whether the minimum account assignments have been made, for example, document date, posting date, document type, posting key, account number, and amount. If you enter a key that is not defined in the system, the system issues an error message. You have to correct your entry before you can enter any more documents. These checks prevent incorrect, inconsistent, or incomplete entries from being made.

To be able to post the document, the debits and credits must balance to zero. This updates the account balances. If the debits do not equal the credits, you can **hold** the document, or park it until it is complete, without updating G/L account balances.

Features

You can use the following functions when you enter documents:

- Holding documents [Page 281]

- Simulating documents [Page 284]

- Parking documents

Default Values in Document Entry

When you enter documents, several fields already contain values. The system gathers these values from various data sources:

- **User master record and parameter memory**

    The parameter memory is a user-oriented memory in which the system saves data entered at one sitting. When you log on to the system, this memory is filled immediately from the user master record. Data from the parameter memory is used for identical fields in other functions. If you post to the vendor account 4711, for example, this account number is defaulted when you display line items. The data in the parameter memory is deleted when you log off.

- **The system**

    The system automatically defaults the current date as the document date. In certain functions, the system, using manual entries, determines and defaults a special G/L indicator, a transaction type for clearing, and the account type.

- **Account master record**

    Some fields are filled with data from the master record of an account. For example, if you have entered terms of payment in a customer master record, the system defaults these terms when you enter a document. The relevant documentation sections inform you of the default values that you can define in a master record.

- **Default values for accounting functions**

    In the Implementation Guide (IMG) for *Financial Accounting Global Settings*, you can define the document type and posting key as default values for each of the accounting functions. In the standard system for example, the document type and posting key are defined as default values when entering an incoming invoice.

Editing Options - Enjoy Transactions

Use

You can use this function to make user-specific settings for:

- Document entry

- Default document currency

In addition to the functions of the standard transaction, you can also use special options for the single screen transaction.

Features

To set the editing options in accordance with your requirements, from the *SAP Easy Access* screen, choose *Accounting → Financial accounting → General ledger/Accounts receivable/Accounts payable → Document entry* and then the required business transaction. Choose ✐ *Editing options*.

1.) The *Accounting Editing Options* screen contains the following editing options for document entry:

- Documents only in local currency

- Amount fields only for document currency

- Exchange rate from first line item

- No special G/L transactions

- Documents not cross-company code

- Documents must be complete for parking

- No partner business area in header screen

- Calculate taxes on net amount

- Copy text for G/L account entry

- Fast entry via POR number

2.) You can choose from the following default document currencies:

- Local currency

- Last document currency used

- None

3.) If you require control display, select *With control display*.

4.) You can select the following special options for single screen transactions:

- Suppress transaction

- Propose final amount

- D/C indicator as +/- sign

- Display periods

Editing Options - Enjoy Transactions

- Posting in special periods possible

5.) You can choose from the following document type options:

- Document type suppressed

- Document type displayed

- Document type ready for input

- Display with short name

- Entry with short name

You can also set the following indicators:

- Document date same as posting date

- Complex search for vendor

- Propose last tax code

Activities

To define user-specific settings, set or delete the relevant indicator by clicking it. Then choose 🖫.

Editing Options

Use

You can use this function to make user-specific settings for:

- Entering documents

- Processing open items

- Displaying line items

- Displaying data in the credit management area

- Displaying payment advice notes.

Features

From the *SAP Easy Access* screen, choose *Accounting → Financial accounting → Accounts receivable/Accounts payable → Document entry → Others* and then the required business transaction. On the initial screen, choose *Settings → Editing options*.

The *Accounting Editing Options* screen contains editing options for the following areas:

- Document entry

- Document display

- Open items

- Credit management

- Payment advice notes

To select or reset editing options, select or deselect them on the respective tab.

Activities

To define **Display variants**, make your selection on the *Document entry* tab under *Screen templates and line layout variant* using the possible entries help.

To save **editing options in your user master record**, choose *Options → Change user master*. The changes take effect from the next time you log on.

Holding and Setting Data

Use

You can hold (retain) or set (specify) data in various screens. The system then defaults this data when you re-enter the relevant screen. For example, you can hold the document date or a special G/L indicator.

Procedure

Holding Data

To do this, choose *System → User profile → Hold data* from any menu bar. The next time you call up this screen with the same function, the system automatically enters the data in the appropriate fields. You can overwrite the held data.

Setting Data

To set data on a screen, choose *System → User profile → Set data* from any menu bar. The next time you call up this screen with the same function, the system automatically enters the data in the appropriate fields. You cannot overwrite the set data.

Resetting Data

To reset the held or set data, choose *System → User profile → Delete data* from any menu bar.

Fast Entry of G/L Account Line Items

Use

When you are entering line items in *General Ledger, Accounts Receivable*, or *Accounts Payable*, you can call up a special screen for fast entry of G/L account line items.

To do this, choose *Goto → G/L item fast entry.* On the next data entry screen, you can make entries in the following fields:

- *Pk* (Posting key)

- *Account* (account number)

- *Amount*

- *Tx* (tax on sales/purchases)

- *BA* (business area)

- *Cost ctr* (cost center)

- *Order*

Features

You can enter a screen layout variant for fast entry of G/L account line items by selecting *Settings → Editing options*. The screen variant determines which fields are displayed on document entry.

Note that you are only required to enter data in the following fields for G/L account items:

- *Pk* (Posting key)

- *Account*

- *Amount* (in the line item)

The standard system contains screen variants for the fast entry of G/L account line items. For more information, see the *Financial Accounting Global Settings* Implementation Guide and the documentation for the activity Maintain Fast Entry Screens for G/L Account Items [Ext.]. You can also define your own screen templates in Customizing.

Activities

Using *Editing options*, you can make additional settings for document entry. See Editing Options [Page 273]

Control Functions for Entering and Posting Documents

Use

There are special check routines for the fields in the document header and the individual line items. Pure information fields, such as the text field in the document header are excluded. In addition, the system carries out checks on the entire document during posting. You cannot post the document until all the checks have been carried out successfully.

The following control functions are available:

- The checks that the system carries out automatically when you enter and post a document

- The control totals check that you select from the *Financial Accounting* menus.

Features

Automatic Checks

There are four different types of check:

- **Formal Checks**

    The system checks whether all the required fields have entries. The fields that must be filled are specified partly by the system. These include the fields for the document type and the posting key. For some fields, you can determine whether they are required or optional. Required fields are marked with a question mark in the entry screen. The system checks all data entries for format errors. It would reject an invalid date, for example.

- **Authorizations**

    The system also checks authorizations and tolerances. An employee might only be authorized to post to certain accounts within one company code. You can define tolerances for each employee or for a group of employees. Tolerances include a maximum cash discount percentage rate, a maximum amount per customer or vendor line item and a maximum amount per document.

- **Field-Specific Checks**

    The system checks whether entries in each individual field are correct. This applies to the document header and the individual line items. For example, you can only enter document types that are already available in the system. If you work with external number assignment, you can only use document numbers contained in the specified number interval that have not yet been assigned.

    The system also checks the combination of certain entry values. For example, if you enter the tax amount manually, the system checks, via the tax code and the entered posting amount, whether the tax amount is correct. The system also checks that the entries in the control fields agree. For example, you must specify which account types each document type is permitted for. As a result, you can only use posting keys that belong to one of the permitted account types.

- **Balance Verification**

    For an accounting document, the balance of the document must be zero at the time of posting. If this is not the case, the document is not posted.

Control Totals

You can use the control totals function to check whether amounts have been entered correctly or not. You can choose whether the system

- Adds all posting amounts. When you have posted a document, you can compare the total you calculated with the control total in the system.

- Deducts the posted amounts from a given amount. After posting, the control total in the system should be zero.

- Adds the posted amounts to a predefined amount (opening balance). After posting, the control total in the system must correspond to the closing balance of the account.

You can enter control totals for individual accounts or for a group of accounts. In addition, you can choose whether the posting amounts are totaled in local currency, foreign currency or in all currencies.

You can also use an update counter to check whether the asynchronous update of the document is complete.

Activities

Displaying Control Totals [Page 278]

See also:

Simulating Documents [Page 284]

Displaying Control Totals

Use

You can use control totals to post documents and check whether the data has been entered correctly (for example, invoices or checks).

You use the following data to do this:

- The amount to be posted (a total that you calculate before you enter a series of documents)

- Posted amounts (the total debits and credits that the system calculates from the data you actually enter in the system)

- Difference (difference between the expected total and the sum of the amounts actually posted)

- The opening balance of an account

Procedure

You can use control totals in one of two ways:

1. You enter the total to be posted and the system then displays the difference after the amounts have been posted.

2. You enter an opening balance, post the amounts and the system then displays the closing balance.

> To be able to use the control totals function, you should not select the *Do not update control totals* option within the editing options for document entry. Control totals are updated in the standard system.

See also:

Entering Totals

If for example, you want to post and check a series of bank statements, you can use a control total to verify that the actual sum of the amounts posted equals the total you calculate in advance. Proceed as follows:

1. Calculate the **total** of the bank statements **to be posted**.

2. From the *SAP Easy Access* screen, choose *Accounting → Financial accounting → General ledger → Document entry → Others → General posting*. On the initial screen, choose *Settings → Control totals*.

3. Choose *Goto → Maintain control totals*.

4. You can enter either a customer and vendor balance you expect or at least one control total for the fields *AccTy* (account type), *From acct*, *To account*, *Debit amnt*, *Credit amnt*, and *Curr*.

5. After entering the control totals, post your business transaction.

    The system automatically calculates the total debits and credits you post.

6. After you have entered the business transactions, go back to the control totals function by choosing *Settings → Control totals* from the *General Ledger* menu.

7. Select *Goto → Display difference* to display the differences.

    The system then displays the difference between the control total that you defined in advance and the posted amounts. If they are not equal, you have made a mistake either calculating the control total, or posting the business transactions.

If you have a difference after posting all the required business transactions, double-check the total you expect again. (Add up the individual checks again). If this total is the same as before, check to make sure that you have entered all the documents and also to see whether you have perhaps entered a document twice. You can then enter any missing documents and reverse any documents that have been entered twice. If you do not find any differences with either of these, check the amounts posted for each document.

Entering Opening Balances

You would use this procedure if, for example, you wanted to post a bank statement manually. You can then enter the old account balance in the control totals function, post the relevant debits and credits, and then compare the balance updated by the system with the balance on the account statement.

Account statement for the following example:

Old account balance	10,000.00
Posting 1	+1,000.00
Posting 2	-　500.00
Posting 3	- 1,500.00
Posting 4	-　700.00
New account balance	**8,300.00**

Proceed as follows:

1. From the *SAP Easy Access* screen, choose *Accounting* → *Financial accounting* → *General ledger* → *Document entry* → *Others* → *General posting*. On the initial screen, choose *Settings* → *Control totals*.

2. Choose *Goto* → *Maintain control totals*.

3. Under *Amounts per account*, enter the account type, account number, and the opening balance of the account as well as the currency. In our example, this is account type **S**, account number **113100**, opening balance **10,000,** and currency **USD**.

4. Post the debits and credits as specified on the account statement.

   The system automatically calculates the total debits and credits you posted and adds them to the opening balance that you entered. For this example, the total of the amounts you actually entered is 1,700 USD.

5. After you have posted all the amounts, go back to the control totals function by choosing *Settings* → *Control totals* from the *General Ledger* menu.

6. Choose *Goto* → *Display end balance*.

   The closing balance of the bank account is shown under *Amounts per account*. Compare this with the new balance of the account statement.

Holding Documents

Use

When you are entering data, you may be interrupted, or you may not have all the data you need for entering a document, for example bank charges or the appropriate cost center.

In this case, you can temporarily save the data you have entered, and then continue with the document entry at a later time. If you want the system to **hold** a document, it does not have to be complete. Account balances are not updated and the document data is not available for evaluation. A document number is not assigned.

Prerequisites

You have entered the document header and at least one line item.

Activities

1. Enter the document as usual. You have entered the document header and at least one line item.

2. From the menu bar of the document overview screen, choose *Document → Hold*.

    The *Hold Document* dialog box appears.

3. Enter a number in the *Temporary document number* field and choose *Hold document*.

See also:

Completing Held Documents [Page 282]

Deleting Held Documents [Page 283]

Completing Held Documents

Prerequisites

You have entered an incomplete document and held it.

Procedure

1. From the initial screen of the posting transaction, select either *Held document*, or *Document* → *Get held document* from the menu.

    The *Post Held Document: Header Data* screen appears.

2. Enter the number of the incomplete document in the *Temporary document number* field and choose *Enter*.

    The system then displays the document overview of the held documents.

    If you do not know the name of the document, choose *Document* → *Display list* to display a list of all the documents held under your user name.

3. Edit or add line items as necessary.

4. Choose *Document* → *Post* to post the document.

Deleting Held Documents

Procedure

1. From the initial screen of the posting transaction, select either *Held document*, or *Document* → *Get held document* from the menu.

   The *Post Held Document: Header Data* screen appears.

2. Enter the number of the incomplete document in the *Temporary document number* field.

   If you do not know the name of the document, choose *Document* → *Display list* to display a list of all the documents held under your user name.

3. Choose *Document* → *Delete*.

   A dialog box appears, asking if you really want to delete the document.

4. Choose *Enter* to delete the document.

Simulating Documents

Use

You can simulate a document before you actually post it. This gives you an overview of the document items you have already entered, and you can check whether they are complete and correct. During simulation, the document goes through all the checks required for posting. For more information, see: Control Functions for Entering and Posting Documents [Page 276]

> When you simulate a document, the automatically generated items, such as input tax and tax on sales and purchases, are displayed.

Prerequisites

You have entered the document header and at least one line item.

Activities

1. From the *SAP Easy Access* screen, choose *Accounting → Financial accounting → General ledger → Document entry → Others → General posting*.

   The *Enter G/L Account Posting: Header Data* screen appears.

2. Enter the header data and at least the first line item and choose *Enter*.

   The *Enter G/L Account Document: Add G/L Account Item* screen appears.

3. Choose *Document → Simulate*.

   The *Enter G/L Account Document: Display Overview* screen appears. The following system message appears: `Posting is only possible with a zero balance; correct document.`

4. To correct the document, select a line item and choose *Goto → Choose*.

   The *Enter G/L Account Document: Correct G/L Account Item* screen appears.

5. You can correct the document by entering at least one more line item and then choosing *Enter*.

   The *Enter G/L Account Document: Add G/L Account Item* screen appears again.

6. Choose *Document → Simulate* to simulate the whole document.

   The *Enter G/L Account Document: Display Overview* screen appears. The line items are displayed as they would be posted.

   You have the following options for processing the document further:

   − Correcting individual line items entered

   − Adding line items

   − Holding, parking, or posting the document

   − Deleting automatically generated line items

To delete an automatically generated line item, first reset the item to be deleted, select the item, and then choose *Edit → Delete item*.

Parking Documents

Use

You can use document parking to enter and store (park) incomplete documents in the SAP System without carrying out extensive entry checks. For more information, see Document Parking [Page 288]

Parked documents can be completed, checked, and then posted at a later date - if necessary by a different accounting clerk.

When documents are parked, data (for example, transaction figures) is not updated. The only exception to this is in *Cash Management* (TR-CM).

Data from parked documents can however be used for evaluations by the system. For example, amounts from parked invoices can be used for the advance return for tax on sales and purchases. Using payment requests, parked invoices can be paid punctually and without loss of discount.

> You can use the tax amounts determined on the basis of the data in parked documents to apply in advance to the tax authorities for any tax receivables that are due to you. From the *SAP Easy Access* screen, choose *Accounting → Financial accounting → General ledger → Reporting → Tax reports → General → Input tax from parked documents*.

Integration

In contrast to document parking, the holding documents [Page 281] function is merely designed to allow you to interrupt your work on a document and temporarily save the data you have entered so far until you can resume posting. No document number is assigned. You cannot use data entered in this way for evaluations.

Substitution is not supported in document parking. Substitution takes place via the posting transaction after you generate an accounting document from the parked document.

Prerequisites

You make the appropriate settings in Customizing for Financial Accounting under *Financial Accounting Global Settings → Document → Parked Documents*.

Activities

Displaying Parked Documents [Page 290]

Posting Parked Documents [Page 292]

Parking Documents [Page 293]

Changing Parked Documents [Page 294]

Deleting Parked Documents [Page 296]

Document Parking

Use

You can park data relating to customer, vendor, G/L, and asset accounts. There is an additional fast entry function for G/L accounts. For assets, you can only enter acquisitions. In addition, you can park tax information and special G/L indicators, although you cannot park special G/L indicators for bills of exchange and down payments.

SAP provides two transactions for document parking: The standard transaction and the single screen transaction (Enjoy).

⚠️

You cannot switch between both transactions.

Integration

Document parking is linked to the account display and reporting functions in *Financial Accounting*. You can:

- Display parked documents in the document journal

- Display parked documents in the line item display

- Evaluate payables from parked documents and, if necessary, post them *en bloc* with program RFPKDB00.

Features

You can also park cross-company code transactions. A parked document is only created in the initial company code for such transactions. Several documents [Page 242] are then created when the parked document is posted. You cannot enter a cross-company code number for cross-company code transactions.

Information entered as part of a parked document is only checked as to whether it exists.

💡

You can also check the document for completeness (optional). For example, the system checks whether the document balance is zero, and whether entries have been made in all required entry fields (such as posting key and account number).

The authorization checks carried out for document parking are basically the same as those made for standard document entry and processing. This is sufficient to enable you to assign authorizations which differentiate between clerks who only have parking authorization and those who can post documents too.

💡

No tolerance checks are carried out.

The system then carries out checks for erroneous entries. You are not, for example, permitted to enter an undefined business area.

You can use account assignment models when parking documents, but not reference documents.

Batch input is possible for parked documents.

Displaying Parked Documents

Use

You can display parked documents. From the *SAP Easy Access* screen, choose *Accounting* → *Financial accounting* → *General ledger/Accounts receivable/Accounts payable* → *Document* → *Parked documents* → *Display*.

Prerequisites

You are authorized to display posted documents.

Features

You can display parked documents individually, using a list, or using the line item display function. To display them in the line item display, you must select the parameter *Parked documents*.

You can display changes to parked documents both before and after they have been posted. You can also display the original parked document after you change the document number.

See also:

Displaying Changes to Parked Documents [Page 291]

Displaying Changes to Parked Documents

Changes to parked documents are logged and can be displayed both before and after the document is posted.

- To display changes to parked documents **before** posting, from the *SAP Easy Access* screen, choose *Accounting → Financial accounting → General ledger/Accounts receivable/Accounts payable → Document → Parked documents → Display changes*. Enter the document number and choose ENTER.

  The system displays any changes that have been made.

- To display changes to parked documents **after** posting, from the *SAP Easy Access* screen, choose *Accounting → Financial accounting → General ledger/Accounts receivable/Accounts payable → Document → Display changes*.

  You can also have the system display a special list containing all the changes made to parked documents. To do this, choose *Document changes → Parked document* from the list of changes to posted documents.

  The system then branches to a list of the changes made to the parked document. If changes were only made when the document was parked and not once it was posted, the system informs you of this, searches automatically for the changes to the parked document, and lists them.

  If the number of the document was changed - for example as part of changes to the document header - you can search for the changes made to the document under its original number via the menu path *Document changes → Earlier document no..*

Posting Parked Documents

Use

Using the standard transaction, you can post parked documents individually our using a list selection. If you post several parked documents using a list, the system issues a list when you have finished. This list details which documents were successfully posted.

From this list, you can then carry out any necessary post-processing to parked documents that could not be posted due to missing information such as a cost accounting assignment. You can also create a batch input session to post the parked documents.

Features

The data in parked documents is deleted when they are posted, a document is written to the document database, and the appropriate data, (transaction figures and so on), is updated. The number of the parked document is transferred to the posted document.

Parked documents are always posted by batch input or using Call Transaction.

Parking Documents

1. To use the standard transaction, from the *SAP Easy Access* screen, choose *Accounting → Financial accounting → General ledger/Accounts receivable/Accounts payable → Document entry → Others → General document parking/Invoice parking - general/Credit memo parking - general.*

   The *Document Parking: Document Header* screen appears.

2. Enter the document header and line item data.

3. To save the parked data, choose *Document → Park*.

   The message `Document xxx (document number) was parked` appears. Document numbers are assigned in the same way as in the standard document entry function.

   Transaction figures, assets values, control totals and so on are not updated when you save a parked document. No automatic postings are generated. No balance checks are carried out, but the balance is displayed in the parked documents overview.

Changing Parked Documents

Use

You can change a parked document and complete it step by step. A large number of header and item fields can be changed during this process, including the amounts.

You can make changes to:

- Individual documents

- Individual items

- Several documents simultaneously using a list

- Other values via the line items

However, you cannot change the currency and company code.

> The internal system change rules governing document entry are not used in document parking.

Procedure

1. From the *SAP Easy Access* screen, choose *Accounting → Financial accounting → General ledger/Accounts receivable/Accounts payable → Document → Parked documents → Change*.

   If you know the document number, enter the company code, document number, and fiscal year.

   If you do not know the document number, choose *Document → List*. On the selection screen that follows, enter the appropriate selection criteria and choose *Execute*. The system generates a list with the required documents. Select the required document and then choose *Edit → Select*.

2. To process the **document header**, choose *Goto → Document header.*

   If you want to change an **item**, first select this item. The fields you can change are highlighted on the screen.

   You can add new line items.

   You can mark line items for deletion by setting the amounts to zero.

   You can change the line layout variants in the document overview by choosing *Settings → Line layout.*

3. Save your changes.

   > The old document number cannot be reused when changes are made to the document header, for example, to the posting date or fiscal year (by changing the posting date).

If you use internal document number assignment, when a new fiscal year results from changes made to the document header, the document number is changed automatically.

If document numbers are assigned externally, you will have to assign a new number yourself.

Deleting Parked Documents

1. From the *SAP Easy Access* screen, choose *Accounting* → *Financial accounting* → *General ledger/Accounts receivable/Accounts payable* → *Document* → *Parked documents* → *Post/Delete*.

2. If you know the document number, enter the company code, document number, and fiscal year and choose ENTER.

    If you do not know the document number, or if you want to delete more than one document, choose *Document* → *List.* On the selection screen that follows, enter the appropriate selection criteria and choose *Execute*. The system then generates a list containing the documents that match these criteria.

3. Select the required document(s) and then choose *Document* → *Delete.*

    You cannot reuse the document number of a deleted document.

Document Release

Use

The *Workflow* (WF) component is used for document release in *Financial Accounting* (FI). For more information on SAP Workflow, see the *WF SAP Business Workflow* documentation.

There are two types of document release:

- Amount Release [Page 302]

- Account Assignment Approval [Page 303]

Prerequisites

Before you can use document parking and release in the *Financial Accounting* component, you must make certain settings in the *Workflow* component. For further information, see Document Parking and Release with Workflow [Page 306]

You make the following settings in Customizing for Financial Accounting under *Financial Accounting Global Settings* → *Document* → *Parked Documents*:

- Create workflow variants

    Create a workflow variant. Assign this variant to a workflow model for account assignment approval. You must also specify whether the document release function is active and from which amount this is necessary. For more information, see the *Financial Accounting* Implementation Guide under the activity *Create Workflow Variants for Document Parking.*

- Assign company codes to workflow variants

    You can also assign company codes to workflow variants. If a company code is not assigned to a workflow variant, the document release process is not carried out. For more information, see the *Financial Accounting* Implementation Guide under the activity *Assign Company Code to Workflow Variants for Parking Documents* and *Create Workflow Variant for Document Parking.*

You must make the following additional specifications for the **amount release** function:

- Release approval groups

    Define these in the customer and vendor master records.

    For information on defining release approval groups, see the *Financial Accounting* Implementation Guide under *Define Release Approval Groups for Document Parking*.

- Release approval paths

    Assignment of documents using the document type and release approval groups.

    For information on defining release approval paths, see the *Financial Accounting* Implementation Guide under *Define Release Approval Paths for Document Parking* and *Assign Release Approval Paths for Document Parking*.

- Release approval procedure

    Determining the release approval procedure using the release approval path and the release approval amount: Single-level or multi-level release (dual control principle).

Document Release

For more information, see the *Financial Accounting* Implementation Guide under *Assign Release Approval Procedure for Parking Documents.*

- Persons with release authorization, defined on the basis of release approval paths, release approval level, and the amount in question.

    For more information, see the *Financial Accounting* Implementation Guide under *Define Users with Release Authorization for Parking Documents.*

- Fields which should cause the release to be canceled if they are changed

    Here you can specify, for example, that after an amount has been changed, the whole release procedure must be restarted. For more information, see the *Financial Accounting* Implementation Guide under *Reset Release Approval (Customers/Vendors/G/L Accounts/Asset Accounts)*.

For more information, see the *Financial Accounting* Implementation Guide under *Financial Accounting Global Settings → Document → Document Parking*.

Features

You can:

- You can define from which amount a document should be released.

- Define your own release approval procedure within the workflow

- Define the release approval procedure to be used for the account assignment approval for each workflow variant

- Display the document and release or reject it if you have the authorization.

See also:

Document Release: Settings in Customizing

Before you can use document parking and release in *Financial Accounting*, you must make certain settings in the *Workflow* component. These are described in Document Parking and Release with Workflow [Page 306]

If you want certain parked documents to be subject to a release process **before** being posted, you must specify this in Customizing for *Financial Accounting.* To do so, make the following specifications:

- Create workflow variants

    Create a workflow variant. Assign this variant to a workflow model for account assignment approval. You must also specify whether the document release function is active and from which amount this is necessary.

- Assign company codes to workflow variants

    You can also assign company codes to workflow variants. If a company code is not assigned to a workflow variant, the document release process is not carried out. For more information, see the *Financial Accounting* Implementation Guide [Ext.] under

    Financial Accounting Global Settings → Document → Parked Documents → Assign Company Code to a Workflow Variant for Parking Documents.

You must make the following additional specifications for the **amount release** function:

- Release approval groups

    Define these in the customer and vendor master records.

    To find out how to define release approval groups, see the *Financial Accounting Implementation Guide* under the activity *Define Release Approval Groups for Document Parking*.

- Release approval paths

    Assignment of documents using the document type and release approval groups.

    To find out how to define release approval paths, refer to the *Financial Accounting Implementation Guide* under the activity *Define Release Approval Paths for Document Parking*.

- Release approval procedure

    Determining the release approval procedure using the release approval path and the release approval amount: Single-level or multi-level release (dual control principle).

    For more information, see the *Financial Accounting Implementation Guide* under *Assign Release Approval Procedures for Document Parking.*

- Persons with release authorization, defined on the basis of release approval paths, release approval level and the amount in question.

- Fields which should cause the release to be canceled if they are changed

    Here you can specify, for example, that after an amount has been changed, the whole release procedure must be restarted.

For more information, see the *Financial Accounting Global Settings* Implementation Guide under *Document Parking*.

The Document Parking Process with Document Release: Example

The following graphic shows an example of the document parking process in conjunction with the document release function.

A document is first parked by an accounting clerk, then sent to the person responsible for authorizing payment amounts to vendors, so that the amount can be approved for release. Next the document may be returned to the clerk for completion. Finally, the document is passed on to the person responsible for account assignment approval. He releases the account assignment and this in turn triggers the posting.
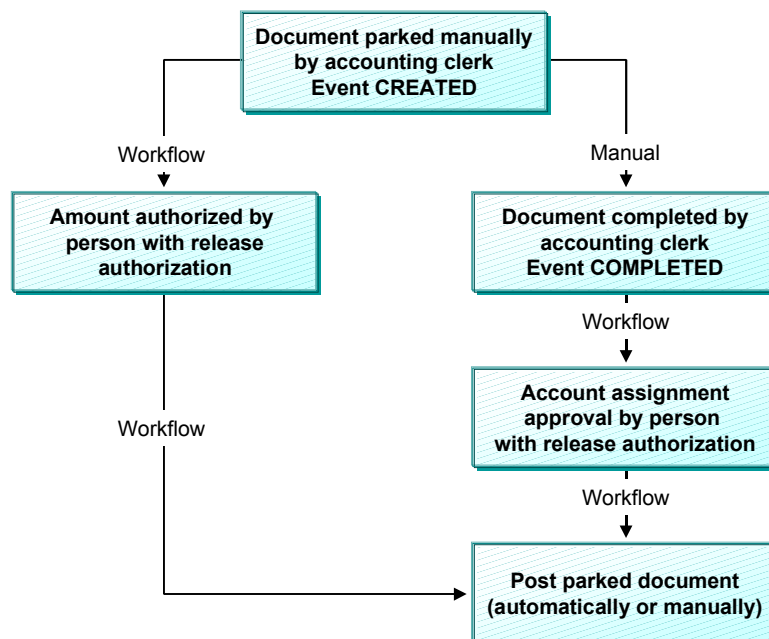
The above diagram depicts the standard procedure and does not cover special scenarios.

Examples of special scenarios are:

- The parked document is deleted

- Following release, a document is changed, and must therefore be re-released

- The release is refused and the document is corrected to enable it to be released at the second attempt

Amount Release

Use

Amount release is triggered when the document is first parked.

You can distinguish between single-level, two-level, and three-level amount release. This would determine whether one, two or three people are required to release the document (based on the amount). This ensures that the principle of dual or even triple control is duly observed.

You can define which release procedure should be used in Customizing. Among other things, the selection of the release procedure depends on the workflow variant selected, the document type, and the amount.

The amount of a parked document is the largest line item for customers or vendors, or the debit or credit balance.

You can summarize several persons authorized to release amounts in a release approval group. You can then enter these release approval groups in the customer or vendor master record.

You can assign various organizational objects for persons authorized to release amounts (job, position, organizational unit) in Customizing depending on the release approval group, document type, amount, and release approval level. In addition, users can use user exits to determine and assign other release authorizations.

Account Assignment Approval

Use

The account assignment approval is not triggered until the user has finished all necessary data entry and confirmed this in the parked document.

This account assignment approval applies to all organizational objects (for example, job, position, organizational unit) that are assigned to this release step. You can assign persons responsible for release to cost centers in Organizational Management. The persons responsible must then release all documents. In addition, you can use user exits to determine and assign other release authorizations. If no employees with release authorization have been assigned, the account assignment approval is not carried out.

If all the amount releases and account assignment approvals have been carried out, you can post the document. If release is refused, the document is returned to the clerk who entered it in the first place so that he can carry out the changes required. Once it has been changed, the document is subject to both release procedures once again. If data relevant to the release has been changed in the document, all releases issued so far are canceled, and the release procedure must be started again for the document.

In Customizing, you define per account type (for example, G/L account) which changes affect the release and which changes lead to the document release being canceled.

Completing the Entries in a Document Using Workflow

Use

In the SAP R/3 System, you can park documents that are incomplete, and then gradually complete them with the addition of information originally missing.

When you enter an incomplete document, a workflow is started. This workflow contains the task "Complete". This task is assigned to all users that have the task of completing incomplete documents. When the workflow is triggered, these users receive a message to this effect and can then proceed to change the parked document. This message can then be forwarded to other employees to complete the document. The message stays in the inbox of every user concerned until one of them marks the document 'complete'.

There is a workflow model in the standard system (WS00400004) for completing parked documents.

Activities

Event Linkage for the Event CREATED

If you want to use a workflow to complete parked documents, you must create the event linkage for the event CREATED in the Workflow Workbench. You should enter the data as shown in the table below:

Data for Event Linkage

Object type	FIPP
Event	CREATED
Receiver type	WS00400004
Receiver module	SWW_WI_CREATE_VIA_EVENT

Check Function

Receiver type (function module)	
Global	X
Enabled	X

Standard Task for Completing Documents

Users who want to complete parked documents must be assigned the task "Complete parked document" (TS00407848). To do this, create the organizational object in Organizational Management, or use the Workflow Workbench. You then assign the relevant users and the above-mentioned standard task to this object.

Workflow Settings for Completing Parked Documents

Workflow Model for Completing Documents

There is a workflow model in the standard system (WS00400004) for completing parked documents.

Event Linkage for the Event CREATED

If you want to use a workflow to complete parked documents, you must create the event linkage for the event CREATED in the Workflow Workbench. The following overview shows the entries you need to make:

Data for Event Linkage

Object type	FIPP
Event	CREATED
Receiver type	WS00400004
Receiver module	SWW_WI_CREATE_VIA_EVENT

Check Function

Receiver type (function module)	
Global	X
Enabled	X

Standard Task for Completing Documents

Users who want to complete parked documents must be assigned the task "Complete parked document" (TS00407848). To do this, create the organizational object in Personnel Planning and Development or use the Workflow Workbench. You then assign the relevant users and the above-mentioned standard task to this object.

Document Parking and Release with Workflow

Use

Standard Workflow Model

The standard system contains several workflow models for **document parking**: One workflow framework (WS10000051) and five sub-workflows. In Customizing for *Financial Accounting*, you define which sub-workflow model is used by the workflow framework at runtime. You can also enter your own sub-workflows. They must however send and receive the same data from the workflow framework as the sub-workflow models do.

If you want to use the standard sub-workflow models for multi-level amount release (WS10000052, WS10000053, WS10000054), you can define between one and three levels for **amount release**. If you want to use more than three release levels, copy the workflow models for amount release and then expand them. If are not working with amount release, you can use a dummy sub-workflow model (WS20000006). You can use the fourth standard sub-workflow model (WS10000055) for the account assignment approval.

Standard Tasks

There are three standard tasks for document parking in the standard system. These can be triggered from the workflow inbox and used in the workflow models.

- Amount release

- Account assignment approval

- Changing a parked document after the release has been refused

You can search for these tasks using the short name "FIPP".

Activities

Entering the Event Linkage for the Event CREATED

If you require a release for a parked document, the event CREATED is triggered the first time you save the document.

In the Workflow Workbench, enter the event linkage for this event in the workflow framework. You should enter the data as shown in the table below:

Data for Event Linkage

Object type	FIPP
Event	CREATED
Receiver type	WS10000051
Receiver module	SWW_WI_CREATE_VIA_EVENT

Check Function

Receiver type (function module)	
Global	X

Enabled	X

Creating and Assigning Organizational Objects for Document Release

You can create the organizational objects (organizational units, jobs, positions) either in Organizational Management, using the Workflow Workbench, or in the Customizing for *Financial Accounting* (people with release authorization). In Customizing, you can assign organizational objects to workflow variants, release approval paths, amounts, and authorization levels; these objects release documents based on the criteria defined in the paths and levels.

If you create organizational units, you must assign jobs or positions to them. You can then assign users to the positions.

Examples for assignments:

Organizational unit X < Position Y < User

Organizational unit X < Job Y < Position Z < User

The organizational objects defined for the **amount release** in Customizing for *Financial Accounting* are **automatically** assigned (in the background) to the standard amount release task.

You assign the organizational objects for the account assignment approval and for changing parked documents to the corresponding standard tasks in Organizational Management, or using the Workflow Workbench. Alternatively, you can also define the task "Change" as a general task (*Additional data → Classification*).

If you want to use account assignment approval, assign the appropriate organizational objects to a cost center, for example, or the SAP G/L account organizational object (BUS3006) in Organizational Management.

Displaying Documents

Use

You can display posted or archived documents.

Prerequisites

You have posted or archived a document.

Features

When you change or display a document, the first screen you see is an overview screen containing the most important information from the document header and the line items. See Document Overview [Page 310]

Activities

Displaying Documents

1. From the *SAP Easy Access* screen, choose *Accounting → Financial accounting → General ledger/Accounts receivable/Accounts payable → Document → Display.*

    The *Display Document: Initial Screen* appears*.*

2. To display a specific document, enter the following data:

- Document number

- Company code

- Fiscal year

    The default value for the document number is the document number from the document processed last. The default company code is the company code that you used in the previous function. If you work with year-related document numbers, the system also defaults a fiscal year (if your system is so configured).

Finding Documents

If you do not know the document number, proceed as follows:

1. Choose *Document → List*.

    The *Document List* screen appears.

2. Enter the company code, fiscal year, document type, posting date or document entry date, reference number, and so on as selection parameters.

    You can also display held items or search for your own documents. To do this, select the corresponding fields under *Also display held items* or *Search for own documents*.

3. To determine the document number, choose *Program → Execute*.

    A list is displayed.

4. To choose the required document from the list, select a document and choose *Edit → Choose*.

The system displays the document overview first. To see the details of a line item, select the item.

Additional Functions

From the document display, you can create an **adjustment posting request**, that is, a request to change a document, via the Intranet. To do this, choose *Extras → Adjustment request*.

An Intranet window appears. Complete the form and then send it. The system determines the accounting clerk responsible for processing the request automatically.

For more information, see Request for Adjustment Posting via Intranet [Ext.]

Document Overview

Use

When you change or display a document, the first screen you see is an overview screen containing the most important information from the document header and the line items. You have a display line for each line item. You decide what data is displayed in this line by specifying the line layout. For more information, see

Prerequisites

You have entered the document header and the line items.

Features

To display the document overview, from the *Enter Accounting Document: Add Line Items* screen, choose *Goto → Document overview*.

At the end of the overview, you can see the fields D, with the total debit amounts, and C, with the total credit amounts. The credit entries have a minus sign to the right of the amount. The debit entries have no plus/minus sign.

At the bottom of the *Amount* column, the system displays the difference between the debits and the credits. To post a document, the balance of debits and credits must be zero.

You may use any of the following editing options:

- **Changing the Line Layout of the Document Overview**

    Using *Settings → Line layout*, you can call up a list of the defined line layout variants and choose one for displaying your document overview.

    To edit line layout variants, choose *General ledger → Environment → User parameters → Editing options.*

- **Changing the Display Currency in the Document Overview**

    If you work with several currencies, you can switch between items in local currency and items in document currency within the document overview by using *Settings → Display currency.*

- **Entering the Partner Business Area**

    You can enter a trading partner business area from the document overview before you post the document. This business area is then defaulted in all G/L account items which are not generated automatically and to which no partner business area has yet been assigned.

Line Layout Variants

You can define several variants for line layout. When displaying a document, you can switch between the variants. Choose *Settings* → *Line layout* from the document overview.

Using a variant, you can display the line item, the account number and name, and the posting amount. Using a different variant, you can display additional information such as tax information or the cost center.

The standard system then offers the following line layout variants:

- Account/Name

- Posting Key/Account/Business Area/Name/Tax

- Account/Assignment

- Company Code/Document

You can change these variants or add new ones in Customizing.

If you define your own variants, you need to carry out the following for each variant:

- You set the fields in the order in which they are displayed (see the following figure, **1**) and define the display format (see the following figure, **2**). If a field is not to be displayed in its full length, you can determine the area to be displayed using the display format.

- You specify the names of your variants and the column headings for field display (see following figure, **3**).

- You translate the names and column headings if you use functions where the variant is used in foreign languages.

If the names or column headings for a variant are missing, the system displays a message.

The following figure shows document information displayed using the account/name line layout. The column headings for the account name are displayed according to the definition with distance 1 and display length 19. The column heading and the

Line Layout Variants

corresponding display area for the amount are specified by the system. You cannot define the area.

Document No. . . . .100000001 Company code . . . .0001 Fiscal year . . .1999
Doc. date. . ... .13.03.1998 Cross-co.code No. . . . .
Reference . . . .   Debit/Credit 150.00
Currency . . . . .USD

④ Itm PK BusA Acct No.   Name ----------   TC ----- Tax ----
001 01   12300   Dwight Evans   A1   18.42-
002 50   1000 0000800000 Dom. Sales revenue   A1
003 50   1001 0000175000 Tax payable

Amt in USD
150.00
131.58-
18.42-

Distance 1

Display length 19

Predefined area

Line Item Display

Use

In addition to displaying the entire document, you can also look at the individual line items posted to an account in the FI component. The document line items from the account view are called line items in the FI component.

The system already contains the required specifications for all these functions. Since these functions can greatly simplify the processing of line items, you should check whether the SAP settings fulfill your company's requirements.

Features

You can use the following functions for the line item display:

- **Line Layout Variants**

  When you display or change line items, the first screen you see is an overview screen with one line displayed per line item. You decide what data is displayed in this line by specifying the line layout. You can define several variants.

- **Totals Function**

  In addition to displaying the total of all line items, you can display subtotals per currency, business area, or document type, for example. You must specify the fields to be used for calculating subtotals.

- **Selection Function**

  Before you call up line item display, you can specify which line items you want to see. When you call up the selection function, the system offers you fields for selection. You enter selection criteria for these fields; the line items are then selected and displayed according to these criteria. In the system, you can specify which fields you want to use for this function.

- **Sort Function**

  You can also sort line items. You must specify which fields you can sort by in the system. When you call up the sort function, a list of the possible sort fields is displayed. You select your fields from this list.

- **Search Function**

  You can also search for line items. The system offers you fields where you can enter comparison values. In the system, you specify the fields you want to use to search for line items.

These functions should support each user in his particular task. An employee working with customer accounts who is responsible for customer dunning requires for example, dunning information in the line item display. He requires a line layout with this information. Summarized information is important for a credit controller. He will first need to look at a totals sheet to get the information that he requires.

In order for each employee to receive the relevant information immediately on calling up line item display or change, specify **default values** in the user master record. These include the line layout

Line Item Display

variants, the totals variants, and the initial screen that is used to call up the functions for line item display.

See also:

Line Layout Variants in the Line Item Display [Page 315]

Totals Variants [Page 317]

Fields for Selecting, Sorting, and Searching [Page 319]

Sort Sequence [Page 320]

Line Layout Variants for the Line Item Display

For the line item display, you can choose between several line layout variants.

> If you choose standard line layout in the line item display for a customer account, the most important data from the document header and line items is displayed. This includes for example, document number, document type, dunning block, dunning key, amount, and clearing document number.
>
> If you select the variant with terms of payment, information about the terms of payment is displayed in addition to the document number, amount, and the clearing document number.

The above-mentioned and other variants are already defined in the standard system. You can change these variants or add new ones.

You can define variants for individual account types or generally, for all account types.

In addition to the information in the lines, you can also display other fields. The possible additional fields are already defined in the system. You can choose them from a selection screen in the display.

If you require fields other than those defaulted in the standard system, you must specify these separately by account type. In addition, you can specify the sequence of the fields on the selection screen. You place the fields that you require most often at the top of the field list.

Defining Variants

If you want to define your own variants, proceed as follows:

1. Set the fields in the order in which they are displayed (see the following figure, **1**) and define the display format (see the following figure, **2**). If you do not want a field to be displayed in full, you can specify the area to be displayed via the display format.

2. Specify the names of your variants (see the following figure, **3**), and the column headings for field display (see the following figure, **4**).

3. Translate the names and column headings if you use functions where the variant is used in foreign languages.

```
  Line layout . . . . .   A0      Standard        ③

  Field name   Name
  -----------  ---------------------------    ┌─────────────────────────────┐
  ZUONR        Assignment                     │        Display format       │
  BELNR        Document number                ├─────────────────────────────┤
  BLART        Document type                  │               Clearing document
① BLDAT        Document date                  │ Offset . . . . . . . . . . . . . . . . .7
  BSCHL        Posting key                    │ Display length. . . . . . . . . . 3    ②
  UMSKZ        Special G/L indicator          │ Distance . . . . . . . . . . . . . . .1
  WAERS        Currency                       │ Decimal places. . . . . . . . . . 0
  WRSHB        Amount                         │ Data type . . . . . . . . . . . . . . .CHAR
  AUGBL        Clearing document              │ Reference table. . . . . . . . .
                                              │ Reference field. . . . . . . . . . .
                                              └─────────────────────────────┘
```

Line Layout Variants for the Line Item Display

The figure below shows the definitions for standard line layout.

Line layout . . . . .   A0   Standard

Column heading

(4) Assignment Doc. No. DT   Doc. date   PK   G/L   Curr.   Amount   Cldoc.
    A_____ B_____   C__   D_____   E__   F___   G___   H_____   I___

Fields

A ZUONR Assignment   BELNR Document number
C BLART   Document type   BLDAT Document date
E BSCHL   Posting key   UMSKZ Special G/L indicator
G WAERS Currency   ANZMW Amount
 I AUGBL Clearing document

If you choose this line layout in line item display, item information is displayed as in the figure below. The header information is transferred from the definition (see figure 4 above). The clearing document number field is shortened because only the last characters are required. The clearing document number is shown starting with the eighth character (offset 7), in length 3, with distance 1 from the previous column (see figure **2** above).

Customer EVANS   Basic list
Dwight Evans
Boston   Line items 62

Assignment   Doc. No.   DT   Doc.date   PK   G/L   Curr.   Amount   ClDoc

19920110   0100001034   AB   10.01.92   01   DM   300.00   876
19920318   1600000050   DA   18.03.92   01   DM   100.00
19920318   1600000050   DA   18.03.92   01   DM   200.00   Abbreviated
19920319   0100000477   AB   19.03.92   16   DM   500.00-   display
19920323   0100000502   AB   23.03.92   01   DM   1,000.00
19920323   1600000051   DA   23.03.92   03   DM   100.00

Defined
column
heading

Totals Variants

You can calculate various subtotals in the line item display. For these subtotals, you can use the totals variants defined, or select the fields and their sequence yourself on the line item display screen. The fields presented for this are already specified in the system. You can change these specifications.

> In the following figure, the line items are subtotaled using the totals variant "Document type, posting key". The figure shows the totals for each posting key and for document type DA.

For the totals variants, you define the fields and the sequence in which they are used for calculating the subtotals. The following figure shows the definition of the totals variant used for the display in the above figure. The totals variant determines the criteria according to which the subtotals are calculated.

Totals variants are already defined in the standard system. If you want to change these variants or define your own, you must

- Enter a name for your variant in your logon language (see the following figure, **1**)

- Specify the fields used for calculating the subtotals and their sequence (see the following figure, **2**).

For each variant, you can specify a maximum of three fields for calculating subtotals. The possible fields are displayed when you maintain the totals variants.

In addition, you can specify which fields are offered in addition to the totals records **for calculating subtotals**. The fields are specified separately for each of the account types "customer", "vendor", and "G/L". This enables you to determine the fields you require per account type.

Totals Variants

The following figure shows the fields that are available for calculating totals in the line item display.

```
Field selec.   Display list      Total          Customer

Field name   Name
------------   ----------------------------
BLART          Document type
GSBER          Business area
BSCHL          Posting key
BLDAT          Document date
BUDAT          Posting date
WAERS          Currency
DMSHB          D/C amount in local currency
WRSHB          D/C amount in foreign currency
UMSKZ          Special G/L ind.
ZLSCH          Payment key
ZLSPR          Payment block
ZUONR          Assignment number
FILKD          Branch account
BELNR          Document number
FAEDT          Net due date
```

The system already contains fields for the subtotals function. If you require other fields, include them for the account types you require. In addition, you can specify the sequence of the fields on the selection screen. You place the fields that you require most often at the top of the field list.

Fields for Selecting, Sorting, and Searching

The standard system already contains fields for the selection, sort, and search functions. You can change them as you wish. The fields are specified separately for the account types "customer", "vendor", and "G/L". You can therefore specify which fields are relevant, specific to the account type.

In addition, you can specify the sequence of the fields on the selection screen. You place the fields that you require most often at the top of the field list.

Sort Sequence

When you display or change line items, they are displayed in a standard sort sequence. The standard sort sequence is determined internally by the system. The system uses selected fields within the document to do this.

You can change the sort sequence in the line item display. In addition, you can choose the fields you want to sort by. If you require any additional fields, you can specify them in the system.

Standard Sort Sequence

The system uses certain selected document fields for the standard sort sequence. These include:

1. Clearing date

2. Clearing document number

3. Assignment

4. Fiscal year

5. Document number

Cleared line items are always sorted according to clearing date, clearing document number, and the remaining fields. Clearing transactions can therefore be considered in context. Open items are always sorted according to the assignment field and the remaining fields, since the clearing date and clearing document number fields are not filled for open items.

Grouping Line Items

You can group line items from accounts that you want to process together. To do this, you make the same entry in the field *Assignment* for each line item in the group.

The contents of the *Assignment* field are used in particular

- To sort line items during display, clearing, and changing

- As a selection term

    - When clearing payments with the *Posting with clearing* and *Incoming or outgoing payment* functions

    - For account maintenance when clearing an account

    - For the functions for displaying and changing line items

- For the subdivision of one-time accounts and head-office accounts

Filling the Assignment Field

You are free to determine the content of this field. You have two options:

- You can have the system make an entry in the field automatically. To do this, you must enter a key in the master record of the account. This key represents the required layout rules for the *Assignment* field. This allows you to determine account-specific sort sequences for line item display.

- You can make an entry in the field manually when you enter the document if you do not want a line item to be filled according to the layout rule in the master record.

The layout rule in the master record specifies which entry from the document header or line item is entered in the field *Assignment* at the time of posting. You define the possible keys and the corresponding layout rules in the *Financial Accounting Implementation Guide*. Layout rules have already been defined in the standard system. SAP recommends that you use these layout rules.

> In the master record of the special G/L account *Down payments received*, you have specified that the customer account number is entered in the field *Assignment* when you post a document. All documents posted to this account are sorted according to customer account number and displayed in ascending order in the line item display.

Down payments received

Account control
.
Line items sort sequence
.
.

Document posting

Customer12300
.
.   .
Assgmt   12300
.

Assignment rules

Rule	Name
.	.
.	.
.	.
031	Customer No.
.	.
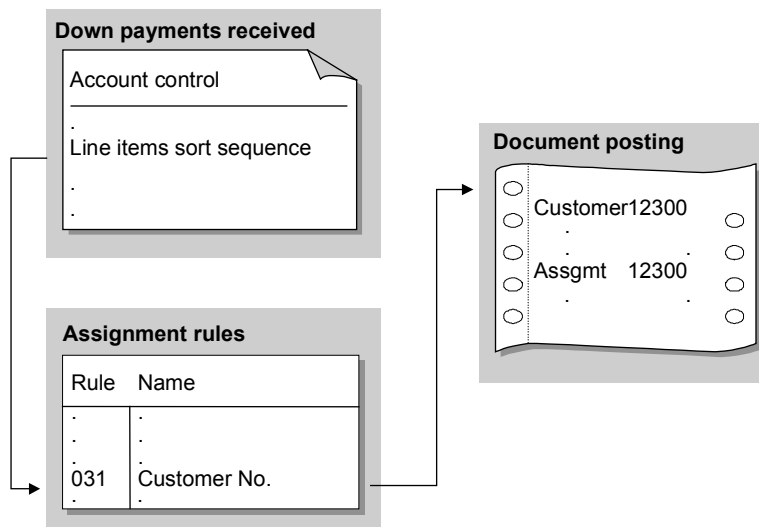
You can change the key for the layout rule in the master record at any time. The new layout rule takes effect from the time of the change: All line items posted after the change are displayed according to the new layout rule in the line item display. The assignment remains unchanged, however, for the documents that have already been posted.

Layout Rules for the Assignment Field

If you want to define your own rules for the *Assignment* field, for each rule you must enter a key and up to four fields, whose contents are then placed in the *Assignment* field. The field contents are transferred in the sequence in which you name them. For the layout rules, you can use all the fields in the document header and all the fields contained in the relevant line items.

If you wish, you can transfer only part of the contents of a particular field to the field *Assignment*. To do this, specify the position from which the field contents are displayed and the number of characters to be transferred.

> The length of the cost center is 10 characters in the standard system. If you use only six character numbers in your company, you can omit the first four characters for the display. Therefore, you specify for the field *Cost center* that six characters are displayed from the fifth character.

Sort Sequence

The layout rules for the field *Assignment* are valid for all clients.

Changing Documents

Use

You can change documents that have already been posted. To do this, however, certain conditions imposed by the system have to be complied with. This is necessary because random document modifications can lead to problems, preventing the possibility of reconciliation.

In addition, you can define your own conditions in the form of document change rules. We recommend that you use the standard rules.

> You can change documents or change line items in an account. If you want to change line items in an account, the account must be managed with line item display. The change rules apply not only to changing documents, but also to changing line items.

Integration

For more information about how other SAP applications are integrated with FI, see the SAP Library for the other applications.

Features

The system prevents the data in certain fields of a posted document from being changed. These are such fields as the posting amount, account, posting key, fiscal year, and tax amount. Because they have updated certain account balances during posting, these fields cannot be changed.

The system prevents other fields from being changed in certain transactions. With the net procedure, for example, you cannot change the cash discount amount when you post the payment.

Whether or not you can change data in those fields which *are* changeable still depends on the following factors:

- The document change rules defined by your system administrator

- Which other SAP applications, such as *Controlling* (CO) or *Materials Management* (MM), you have installed

- How these other applications have been customized.

The system prevents certain fields from being changed, depending on whether you use particular applications. For example, you can no longer change the account assignment to a cost center if you install the CO application for controlling.

All document changes are logged. This also applies to changes to sample and recurring entry original documents.

> With sample and recurring entry documents, you can change additional account assignments at any time. The restrictions do not apply to these special documents.

You can display changes to a document in the document overview.

Changing Documents

Activities

Defining Document Change Rules

Use

You can define your own document change rules for selected fields.

Procedure

Field Selection

1. To assign a rule to a field, you select the field using the field name in the column *Field name*.

Defining the Area of Validity for the Rule

2. Specify the account type for which the rule should be applicable.

   For example, you can differentiate the rules according to customer and vendor transactions. Do not specify an account type for the document header fields, since the change rules here generally apply for all account types.

3. You only make an entry in the *Transaction class* field if you use the special G/L transactions bills of exchange or down payments. The change rules then only apply for these special transactions.

   For example, you can prevent any change to the baseline date for making down payments but permit changes to the baseline date for paying bills of exchange.

4. To define change rules for special *company codes*, enter the company code for the required field. In all other cases, the rule applies that has no company code assigned to it.

Determining Whether a Field Can Be Changed

5. To define a field as changeable, select the field *Field is changeable*. If you want to prevent the field from being changed, you must leave this field blank.

Prerequisites for Defining Whether a Field Can Be Changed

6. You can set conditions for whether a field can be changed.

   The following conditions for a field change are already defined in the system:

   – The posting period is still open

   – The line item is not yet cleared (for accounts with open item management)

   – The document involves either a debit posting to a customer account or a credit posting to a vendor account

   – The posting is not a credit memo referenced to an invoice

   – The posting is not a credit memo from a down payment

   The latter three options are not offered for the account type S (G/L account), since they are not relevant.

   If you want a condition to apply to a field, you must select the condition for the field. If you select several conditions, they must all be fulfilled before you can change a field.

Defining Document Change Rules

AcType	Tran.class	Field name	Company code	Name
. . .	. . .	. . .	. . .	. . .
S		BSEG-SGTXT		Text
S		BSEG-ZUONR		Assignment number
S		BSEC-BANKL		Bank number
S		BSEC-BANKN		Bank account
S		BSEC-BANKS		Bank country
S		BSEC-BKONT		Bank control key
S		BSEC-LAND1		Country key
S		BSEC-NAME1		Name 1
S		BSEC-NAME2		Name 2

Field name   BSEC-FDLEV   Planning level

Rule applies to ... ---
Account type   D   Customer items
Transaction class   ☐   Payments, invoices, credit memos, ...
Company code   ☐   In all company codes

Changeability of field ---
◼ Field can be changed

Prerequisites for change --
☐ Posting period not closed
☐ Line item not cleared
☐ Debit posting
☐ No credit memo with invoice reference
☐ No credit memo from down payment

Changing Documents

Procedure

1. From the *SAP Easy Access* screen, choose *Accounting* → *Financial accounting* → *General ledger* → *Document* → *Change*.

    The *Change Document: Initial Screen* appears.

2. Enter the document number, the company code, and the fiscal year.

    The default is the document number from the last processed document in the session. The initial company code is the company code that was used in the previous function.

    If the document number is used in more than one fiscal year, an additional window displays the various documents that can be selected.

3. Choose *Continue*.

    The *Change Document: Overview* screen appears.

4. You may use any of the following editing options:

    − To edit the **document header**, choose *Goto* → *Document header*. In the document header you can only change two fields: *Reference* and *Document header text*.

    − To change a **line item**, select the item concerned and double-click on it, or choose it via *Edit* → *Select header/item*. You can change the fields that are highlighted.

    − To change the **line layout variant in the document overview**, choose *Settings* → *Line layout*. The *Line layout* dialog box appears. Select the required format.

5. Save your changes using *Document* → *Save.*

Mass Changes to Line Items

Use

You can use this function to speed up the process of making changes to customer and vendor line items. You can change a group of line items simultaneously, instead of having to change the line items of documents individually. You can change the following data en masse:

Changeable Data

Payment data	Dunning data
Terms of payment	Last dunning notice
Payment block (vendor only)	Dunning level (vendor only)
Payment method	Dunning block
House bank	Dunning key

Procedure

1. From the *SAP Easy Access* screen, choose *Accounting → Financial accounting → Accounts receivable/Accounts payable → Account → Display/Change line items.*

   The *Customer/Vendor Line Item Item Display* screen appears.

2. Under *Line item selection*, make selections from the following in accordance with your requirements:

   Under *Status*

   – *Open items*

   – *Cleared items*

   – *All items*

   Under *Type*

   – *Normal items*

   – *Special G/L transactions*

   – *Noted items*

   – *Parked items*

   – *Customer/vendor items*

3. Select *Program → Execute*.

4. Select the line items that you want to change.

   You can select individual items or all items. To select items, you can sort the list in ascending or descending order, or set a filter.

5. To enter the new values for the line items, choose *Environment → Mass changes → New values*.

   The dialog box *New Values* appears.

6. Enter new values for the line items under *Payment data, Dunning data*, or *Additional data*.

7. Choose *Execute changes* to complete the mass change.

Archiving Documents

Use

You can archive documents that have already been posted. For more information, see the SAP Library under *CA - Cross-Application Functions* and the section Archiving FI Documents (FI-GL, FI-AR, FI-AP) [Ext.]

You can display archived documents. See Document Display [Ext.]

Schedule Manager (CA)

The extensive automation features of the Schedule Manager facilitate the definition, scheduling, execution, and review of tasks that are executed on a regular basis, such as period-end closing.

The Schedule Manager consists of four independent components:

- Flow Definition [Page 365]
- Scheduler [Page 340]
- Monitor [Page 358]
- Worklist [Page 385]

Variables in Schedule Manager

By defining variables in Schedule Manager, you can minimize the amount of work that is required to make the necessary value changes (for example, Period) for tasks in the task list.

For more information, see:

Defining Global Variables for the Task List and Flow Definition

 [Page 333]Defining Selection Variables [Page 334]

Specifying Selection Variables in the Program Variants [Page 335]

Specifying Selection Variables for Flow Definitions With Parallel Branches

 [Page 371]

Defining Global Variables for the Task List and Flow Definition

Use

Normally the selection criteria for period-end closing do not change very often. Criteria that do change regularly are the closing period and the fiscal year. The period and fiscal year must be changed for each program or flow definition specified as a task in the task list.

To avoid having to change these values for every single program or every flow definition, you can define selection variables in the program variants.

Features

You can define selection variables for single programs that are included as tasks in the task plan, as well as for flow definitions.

You can specify global parameters for the task list, such as the company code or profit center.

In Schedule Manager, the same flow definitions (= workflows) can be run in parallel, such as for different plants. The definition of the global variables defined for the main workflow can also be used for the parallel branches.

Activities

You can display the currently defined selection variables. To do so, choose *Extras → Settings → Selection variables*. You can also define new selection variables. You can then choose these as selection variables in the variable attributes when creating variants for single programs.

For more information, see:

Defining Selection Variables [Page 334]

Specifying Selection Variables in the Program Variants [Page 335]

Specifying Selection Variables for Flow Definitions With Parallel Branches [Page 371]

Defining Selection Variables

Use

Normally the selection criteria for period-end closing do not change very often. Criteria that do change regularly are the closing period and the fiscal year. The period and fiscal year must be changed for each program or flow definition specified as a task in the task list.

To avoid having to change these values for every single program or every flow definition, you can define selection variables.

Prerequisites

You must assign a TVARV variable for the plant to each program that is to be run once for all plants.

Procedure

1. Call up the transaction **STVARV** (*Display table TVARV: Selection variables*).

2. Choose *Change*.
   You can create, change and delete new variables.

3. Define a parameter name for your variant.

4. Call up the transaction **SM34**.

5. Go to view cluster **VSMANTVARV**.

6. Specify the same parameter name for the variable as you did in transaction **STVARV**.

   > Changes to the global selection variables specified for the task list are transferred to all variables specified in tasks in the task list.

Result

You defined a global selection variable for Schedule Manager.

For more information, see:

Specifying Selection Variables in the Program Variants

Use

Normally the selection criteria for period-end closing do not change very often. Criteria that do change regularly are the closing period and the fiscal year. The period and fiscal year must be changed for each program or flow definition specified as a task in the task list.

To avoid having to change these values for every single program or every flow definition, you can define selection variables in the program variants.

Prerequisites

You have defined the variables already. For more information, see Defining Selection Variables [Page 334].

You are in flow definition [Ext.] in Schedule Manager (*Extras → Flow definition → Edit flow definition).*

1. Choose a processing step in the navigation area.
   On the right of the screen, you see *Flow definition: Task details*.

2. Enter a new variant for this processing step and define a name for this new variant in the *Variant* field .

3. Choose *Change variant*.
   The *Variant Maintenance* screen appears. *Program <program name>, variant <variant name>.*

Procedure

4. Choose *Attributes*.

5. Make an entry in the *Description* field.

6. Now you want to specify variables for the period and fiscal year that you can then change once centrally for all programs and flow definitions that use those variables. To do this, under the heading *Selection screen objects*, select the column S in the lines *Period* and *Fiscal year.*

7. Choose *Selection variables*.

8. To choose selection criteria for the variables P_FROM (period) and P_GJAHR (fiscal year), use the input help.

   > You previously entered these variables in table TVARV.

9. Save your entries.
   The *Variant Maintenance* screen appears. Program <program name>, variant <variant name>.

Result

You can no longer make entries in the *Period* and *Fiscal year* fields. These fields are now always filled through the current entries in table TVARV.

Specifying Selection Variables in the Program Variants

Specifying Selection Variables for Flow Definitions With Parallel Branches

Use

Normally the selection criteria for period-end closing do not change very often. Criteria that do change regularly are the closing period and the fiscal year. The period and fiscal year must be changed for each program or flow definition specified as a task in the task list.

To avoid having to change these values for every single program or every flow definition, you can define selection variables in the program variants.

You have five programs that must run with the same valuation for nine plants. That means that every program must run with a plant-specific variant for each plant. These variants differ only in their *Plant* specification*.*

As described below, you define global variables for *fiscal year*, *period* and *plant* . Create variants for the five programs and define the global variants that you created previously. Finally define a flow definition (A) for the five programs. Define a flow definition (B) with nine parallel branches (for the plants). Include the flow definition A in each of these branches. A dialog box appears that displays the three global variables (*fiscal year, period, plant*). Enter a value for the variable *Plant* and flag the entry as to be saved. The dialog box reappears when you plan flow definition B in the day view. Enter values for each fiscal year and period. Do not make an entry for the variable *Plant*. If you make an entry here, the system does not accept it. You defined the plant when creating the flow definition.

Prerequisites

You have defined the variables already. For more information, see Defining Selection Variables [Page 334].

You are in flow definition [Ext.] in Schedule Manager (*Extras → Flow definition → Edit flow definition).*

4. Choose a processing step in the navigation area.
    On the right of the screen, you see *Flow definition: Task details.*

5. Enter a new variant for this processing step and define a name for this new variant in the *Variant* field .

6. Choose *Change variant*.
    The *Maintain Variant: Program <program name>, Variant <variant name>* screen appears.

Procedure

9. Choose *Attributes*.

10. Make an entry in the *Description* field.

11. Now you want to specify variables for the period and fiscal year that you can then change once centrally for all programs and flow definitions that use those variables. To do this, under the heading *Selection screen objects*, select the column S in the lines *Period* and *Fiscal year.*

Specifying Selection Variables for Flow Definitions With Parallel Branches

12. Choose *Selection variables*.

13. To choose selection criteria for the variables P_FROM (period) and P_GJAHR (fiscal year),
    use the input help.

> You previously entered these variables in table TVARV.

10. Save your entries.
    The *Maintain Variant: Program <program name>, Variant <variant name>* screen appears.

Result

The system uses these entries for the following purposes:

- To feed these variables to a program created directly as a task in the workflow.

- To feed these variables to the parallel branches.

> The system mixes the variables of the parallel branches with those of the main
> workflow.
>
> If the parameter values of the main workflow are different from those of the
> subworkflows, the system uses the parameter values that were specified when the
> subworkflows were created.

Individual Functions of the Schedule Manager

Use

A number of periodic tasks are executed on a regular basis (daily, weekly, or monthly) in the SAP System. An example of such a task is period-end closing. This requires the processing of a large number of individual objects at certain times. This process is supported by the individual components of the Schedule Manager.

Features

Flow definition

In a flow definition, you can link tasks [Ext.] to each other if they are related or if you wish to use a worklist in them. You can therefore schedule a flow definition as a task in the scheduler.

See also Using the Flow Definition [Page 365] in the SAP Library.

Scheduler

In the scheduler, you can schedule tasks in a structure tree. You can use *drag-and-drop* in a daily overview to enable the system to execute the tasks at a certain time.

See also Using the Scheduler [Page 340] in the SAP Library.

Monitor

The monitor gives you an overview of the scheduled tasks during and after processing. You can correct faulty objects in a worklist.

See also Using the Monitor [Page 358] in the SAP Library.

Worklist

Objects that are to be processed in a processing step sequence are managed in the worklist.

The worklist monitor presents information such as which objects were processed without errors and which objects could not be processed. You can display information on the cause of errors, and thus control the way in which the object is processed further.

The worklist ensures that when a processing step sequence is processed again, the system only processes the objects which had errors or which you manually instructed the system to reprocess. Define the processing step sequence in the flow definition.

See also Multilevel Worklist [Page 385] in the SAP Library.

Individual Functions of the Schedule Manager

Using the Scheduler

Use

In the scheduler, you can execute and monitor complex business flows, for example, period-end closing. You can define task lists if you have the corresponding authorization.

Integration

- You can group tasks that are to be executed in the background in a particular order, (and which are controlled by the workflow) into a flow definition [Page 365].

- You monitor flows and jobs during and after processing in the monitor [Page 358]

- Use the multilevel worklist [Page 385] to improve performance and reduce error processing.

Prerequisites

Before using the scheduler, you need to create a task list in which you can later insert the tasks to be scheduled.

Features
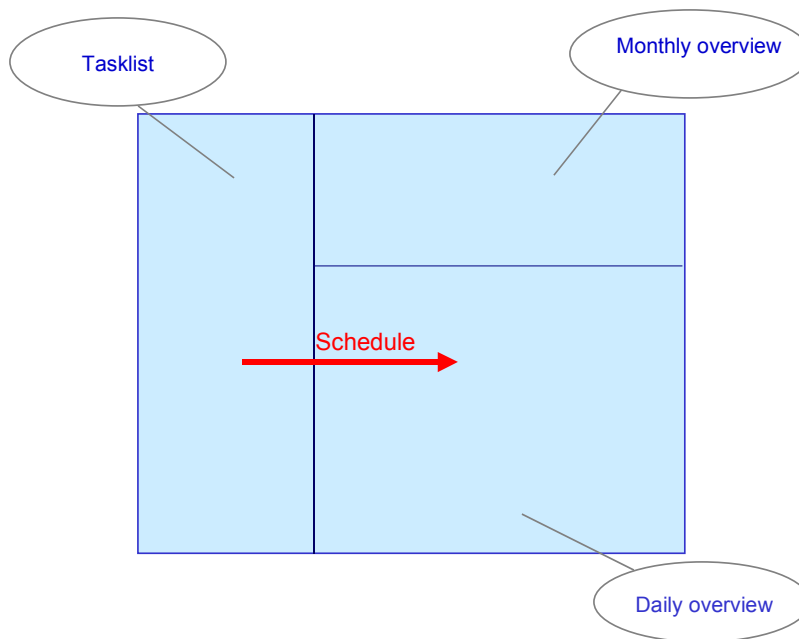
The scheduler is divided up into three areas:

- **Task list**

    Tasks structured into task groups in chronological order, which are executed periodically, possibly by more than one user to complete a certain process.

- **Monthly overview**

    An overview of the current and previous month.

    You can select a day from the monthly overview, which the system then displays in the daily overview in detail.

- **Daily overview**

    Overview of the tasks to be done during the day.

    Tasks created in the task list are scheduled in the daily overview. The system displays executed tasks in the daily overview with the time that they started.

Activities

Create a task list.

Schedule tasks in the daily overview and if required, have the system execute them.

Task List

Definition

A structured group of tasks, which are executed periodically, and possibly by more than one user to complete a certain process, such as, period-end closing.

Use

The task list enables you to schedule your process (split into tasks) in the daily overview (Scheduling in the Daily Overview [Page 353]).

Structure

The task list is displayed as a structure tree, into which you can insert different task types [Page 343].

Integration

The Schedule Manager [Page 331] consists of the daily overview and the monthly overview.

Task Types

You can use the following types of task in the task plan:

- Job chains executed in the background (= flow definition)

- Individual jobs executed in the background (= program with variant)

- Programs or transactions executed online.

- Notes as placeholder to describe a task that you do not process in the SAP System (such as "inform Mr. X")

It is only programs with variants that can be scheduled in the daily view and the system executes them automatically.The system **cannot** start programs and transactions. You can start these manually from the task list. To do so, use the right mouse button to choose *Execute*.

See also:

Inserting Your Own Programs into the Task List [Page 350]

Creating a Task List

Use

The task list [Page 342] forms the basis of the scheduler [Page 340]. This is where you arrange tasks or task groups into a chronological structure that represents an entire process (such as period-end closing).

Prerequisites

You have divided the process to be displayed into its components (programs, transactions, and jobs).

Procedure

1.　Choose *Task list → Create*.

2.　Enter a name for the new task list.

3.　Choose *Insert*.
　　A detail screen appears.

4.　Enter a description for the new task list.

5.　Specify the display format for the daily and monthly overviews.

6.　Save your entries.

Result

You have created a task list in which you can now insert tasks.

See also:

Creating New Tasks/Task Groups in the Task List [Page 345]

> To create and process a copy of the SAP task list in your own namespace, choose *Task list → Save.*

Inserting Tasks/Task Groups into the Task List

Use

To complete a process in Schedule Manager, you need to split the process into its parts (programs, transactions, jobs). You can then insert, delete and reorganize the tasks or task groups (tasks grouped according to content or time-based criteria) chronologically in the task list.

Prerequisites

You create a task list [Page 344].

Procedure

Inserting Tasks/Task Groups in the Task List

1. Choose *Change task list*.

2. Select the highest node under which the new task/task group should appear.

3. Use a right mouse click to choose *Insert task*.
   You can enter a different description for the task/task group and also choose the task type. You can specify the person responsible for the task.

4. Choose *Insert*.

5. Save the changes.
   The task types are displayed by various symbols in the structure tree of the task list.

Using Existing Tasks as Templates for New Tasks

1. Use a right mouse click to select the task that you want to use as the template for the new task.

2. Choose *Copy.*

3. Position your cursor on the node under which the new task is to be assigned.

4. Use a right mouse click to choose *Insert*.

5. Save your changes to the task list.

Changing or Deleting Tasks

1. Choose *Change task list*.

2. Use a right mouse click to select the task to be checked/deleted.

3. Choose *Change* or *Delete*.

4. Save the changes.

Reorganizing Tasks in the Task List

1. You can use *drag-and-drop* to move a task to another position in the task list.

2. Save the changes.

Result

You can now process the task plan by scheduling the tasks in the daily overview.

> Note that you can enter a relative start time [Page 355] when creating a task. You
> require this start time, if you want to schedule a complete task list [Page 354].
> To prevent tasks from being started at weekends or public holidays, you can restrict
> start dates to calendar days and weekdays.

Inserting Your Own Programs as Tasks

Use

You can include your own transaction directly in the task plan without having to make changes to the transaction.

If you run your own program periodically, you can extend the program so that it can be used in flow definitions (Workflows) and you can see the processing status in the monitor.

For the program to use the worklist, the programming guidelines for the job monitor and the flow definition must be met. You must carry out further program extensions.

Procedure

Connecting Your Own Program to the Monitor

The program **CUSTOMER_REPORT** is available in the system as standard. This shows you how to call two function modules that enable the easiest connection to the monitor (**without** a workflow connection).

Incorporate the two Includes **SCHEDMAN_INIT** and **SCHEDMAN_CLOSE** in your program. The program is connected to the Job Monitor.

Utilizing Your Program for Flow Definition

If you also want to utilize your program in flow definitions, you must incorporate the Include **RKASMAWF** in the selection screen.

At the beginning of processing, install the following coding **instead of** the Include **SCHEDMAN_INIT** mentioned above:

```
data: gs_key    like schedman_key.


data: ls_detail like schedman_detail_user.


data: ls_appl   like schedman_customer.


data: ld_dummy(20) value 'ABCDEFGHIJKL'.


constants: customer_appl like smmain-application value 'CUSTOMER'

   ls_detail-application  = customer_appl.

   ls_detail-repid        = sy-repid.

*  ls_detail-testflag     = true.    "Decide if testrun or not
```

Inserting Your Own Programs as Tasks

```
   ls_appl-customer_field = ld_dummy.



 CALL FUNCTION 'KPEP_MONI_INIT_RECORD'
        EXPORTING

           LS_DETAIL       = ls_detail

*          LS_WITEM        =

           LS_APPL         = ls_appl

*          LD_WORKLIST_FLAG = ' '

        IMPORTING

           LS_KEY          = gs_key.

*     TABLES

*          LT_SELKRIT      =

*          LT_PARAM        =
```

In the structure **SCHEDMAN_CUSTOMER**, you can define your own fields, which you fill with values at runtime.

At the end of program processing, install the following coding **instead of** the Include **SCHEDMAN_CLOSE**:

```
data: ld_aplstat    like smmain-aplstat.


data: LS_SCMA_EVENT LIKE SCMA_EVENT.


constants: c_status_ok              value '0'.


constants: c_status_undefined       value '2'.


constants: c_status_error           value '4'.
```

```
constants: c_status_aborted             value 'A'.

include schedman_events.



*.decide the status you want to send

  ld_aplstat = c_status_ok.

* ld_aplstat = c_status_undefined.

* ld_aplstat = c_status_error.

* ld_aplstat = c_status_aborted.


*.If the report ended with error -> stop whole workflow. Otherwise

*.start the next job

  if ld_aplstat = '4' or ld_aplstat = 'A'.

    ls_scma_event-wf_event = cs_wf_events-error.

  else.

    ls_scma_event-wf_event = cs_wf_events-finished.

  endif.



*.the variables wf_witem and wf_okey

*.are from include RKASMAWF and are filled AUTOMATICALLY

*.fill them into strcuture ls_scma_event

  ls_scma_event-WF_WITEM = wf_witem.

  ls_scma_event-WF_OKEY  = wf_okey.
```

Inserting Your Own Programs as Tasks

```
    CALL FUNCTION 'KPEP_MONI_CLOSE_RECORD'

        EXPORTING

            LS_KEY          = gs_key.
*           LS_MESSAGE     =

*           LD_OBJECTS     =

*           LS_EXT         =

*           LS_RL          =

            LS_SCMA_EVENT = ls_scma_event


*       TABLES

*           LT_SPOOL      =

        CHANGING

            LD_APLSTAT  = ld_aplstat

        EXCEPTIONS

            NO_ID_GIVEN = 1

            OTHERS      = 2.
```

For programs that you want to include in flow definitions, note the following:

- If it is a cross-application program, you need to copy the program that was already stored with an application, and then store the new program in the **SCMAPROG** table with the new application.

Enter the name of your program as a customer program in Schedule Manager. For more information, see .

You can include your own program in a flow definition using these settings, and see the results in the monitor.

Inserting Your Own Programs as Tasks

Prerequisites

To add your own programs to the task list and schedule them, you must store them in the system and make sure the Schedule Manager knows how to access them.

Procedure

1. To do so, choose *Extras* → *Settings* → *Customer Programs*.
   This brings you to the table *Registration of Customer Schedule Manager Programs*.

2. Choose *New entries*.

3. Enter the ABAP program name or search for it using the input help.

4. Use the input help to select an application.
   You can enter either a **CUSTOMER** application or a standard application. If you use a standard application, you must replace the constant value **CUSTOMER_APPL** in the coding for **SCHEDMAN_INIT** with your chosen value.

   ```
   constants: customer_appl like smmain-application value '********'.
   ```

5. You can set the following indicators:

   AVo (worklist)
   Determines that the program

- Receives the objects to be processed in the worklist of the Schedule Manager. This means that no scope of selection must be defined for the report itself. The scope of selection only has to be defined once in the flow definition.

- Processes these objects within the worklist, and that a processing status is set for each processing step and object during processing.

- Issues messages on the object within the worklist.

   To ensure that these requirements are met, certain programming guidelines must be followed when the customer program is written.

   Sel (Selection)

   A program for which this indicator is set is a selection program for the worklist (or for a flow definition with worklist) for a customer application. Programming guidelines must be followed for such programs as well.

   Rep (Reports)

   This indicator is set for programs that generate reports that are based on worklists. Programming guidelines must be followed for such programs as well.

6. Save your entries.

Essentially any program can be scheduled in Schedule Manager.

However, to enable information on the program to be output in the job monitor, the program must meet certain programming guidelines.

Additional programming guidelines must be met to enable the program to be scheduled with the workflow (flow definition).

For the program to use the worklist, the programming guidelines for the job monitor and the flow definition must be met. Further programming guidelines must also be noted.

For more information, see <u>Inserting Your Own Programs as Tasks [Page 347]</u>.

Storing Task Documentation

Use

You can attach Microsoft Office documents to the tasks where they are required for processing. You can also store straightforward long texts to document a task.

Procedure

Creating Microsoft Office Documentation

1. Choose *Change task list*.

2. Use the right mouse button to select the task to be documented.

3. Choose *Office document*.
    The required Microsoft Office document type appears. You can now enter your text.

4. Save the document and return to the scheduler by choosing *File* $\rightarrow$ *Close* $\rightarrow$ *Back to the Schedule Manager*.

Creating a Long Text

1. Choose *Change task list*.

2. Use the right mouse button to select the task to be documented.

3. Choose *Long text*.
    A window appears in which you can enter a note.

4. Choose *Continue*.
    The system returns to the scheduler.

> You can only store **one** long text and **one** Microsoft Office document **at the same time** for a given task.
>
> **All users** assigned to this task list have access to these documents.

Sending Long Texts

1. Use the right mouse button to select the task for which you have entered a note.

2. Choose *Send note*.

3. Enter the *recipient* and a *recipient type*.
    You can select the priority of the transmission and other attributes.
    You can view the note again and create attachments.

Result

You have stored a document for a task, which is now permanently available to you for reference.

Scheduling Tasks in the Daily Overview

Use

To enable the system to start tasks at certain times, you need to schedule the tasks from the task list in the daily overview.

Prerequisites

You have inserted tasks into a task list.

Procedure

1. Choose *Insert task*.

2. Use *drag-and-drop* to schedule a task from the task list in the daily overview, by dropping the task onto an appropriate time.

   ⚠️

   Transactions and programs can only be started **directly** by you. You **cannot** schedule these task types [Page 343] in the daily overview.

3. To start a transaction or program from the task list, select this task.

4. Use the right mouse button to choose *Execute*.

Result

The system executes the tasks at the times you specified.

Scheduling a Complete Task List in the Daily Overview

Use

You can schedule a complete task list. The advantage of doing so is that you can use the same task list each month for scheduling purposes simply by changing the start date and time.

Prerequisites

Before you can schedule the complete task list, you must specify a relative start time [Page 355] for each task in the task list. This schedules the sequence of tasks independently of the concrete start date of the task list.

Scheduling a Complete Task List in the Daily Overview

1. Select the highest node of the task list with the right mouse button.

2. Choose *Schedule*.

3. Specify when the task list should be run.
    You can choose between:

*   Starting on the current day

*   Starting on any other day

Scheduling the Complete Task List

Before actually scheduling the task list, you can run a simulation.

1. Select the highest node of the task list with the right mouse button.

2. Choose *Simulation of scheduling*.

3. Specify when the task list should be run.
    The system outputs a list showing the starting dates of the tasks in the task list.

Deleting the Scheduling of a Complete Task List

1. Select the scheduled task list in the daily overview.

2. Choose *Delete*.
    The system outputs a table showing the statuses of the tasks in the task list.

> You can decide when the jobs in the task list should be started. For more information, refer to Controlling Whether Jobs Are Started [Page 357].

Relative Start Time

Use

You can schedule complete task lists.

To do this, it is necessary to specify a *relative start time* for each task.

Features

The relative start time contains two time parameters:

- The number of calendar days or workdays (called the *offset*), such as 2 calendar days or 1 workday.

- The actual starting time, such as 12:15 pm.

Using these parameters, you can schedule and reschedule the individual tasks independently of the actual run date of the task list itself.

Example 1

You have created the task *foreign currency valuation* with the parameters *offset in working days: 1* and *start time: 12:15 pm*. If the task list is scheduled to start on a Friday and a factory calendar is being used, the task will be started the following Monday at 12:15 pm (weekends are not working days). If a Gregorian calendar is being used (in this case all days are working days), the task would be started on Saturday at 12:15 pm. If the same task list were scheduled to start on a Monday, in both cases the task would be started on the following Tuesday at 12:15 pm.

If the task list contains several tasks with relative start times, the actual start times are always calculated on the basis of the scheduled date and the specified calendar.

Example 2

The task *assessment* has an offset of 1 calendar day, and the task *settlement* has an offset of 2 calendar days. The schedule date of the task list is March 11. The task *assessment* is started on March 12 (March 11 + 1 day), and the task *settlement* is started on March 13 (March 11 + 2 days).

> The offset for the start time is always based on the **concrete** schedule date. The system then calculates the concrete start date from this offset using the schedule date and the specified calendar.

Runtime Analysis for Jobs

Use

Runtime analysis shows you the average runtime of jobs or flow definitions.
It also estimates the runtime of the next job to be executed.

Activities

1. Select a job with the right mouse button.

2. Choose *runtime analysis*.
   The system shows you the following information:

* The average runtime

* The number of runs executed

* The runtime of the last and next-to-last runs

* The estimated runtime of the next run

3. You can also enter your own estimation of the runtime.

> If any runtime information is available for tasks in the task list, it is displayed in the
> last three columns of the task list.

Controlling Whether Jobs Are Started

Use

If you schedule a job in the daily overview but do not release it, it is **not automatically started** by the system when the start time is reached.
This function is particularly useful for scheduling a complete task list [Page 354].

Features

You can release a job:

- When inserting it into the task list

- After scheduling the job in the daily overview

Activities

You are in the mode *task list - scheduling*.

1. You select a job with the right mouse button.

2. You choose *Schedule*.
   On the subsequent screen, you specify under *Release task* whether the job is executed automatically when the start time is reached.

Using the Monitor

Use

The monitor shows the information on an active or completed job that was scheduled in the scheduler.

To improve performance and facilitate error rectification, use the multilevel worklist [Page 385].

Integration

The monitor is part of the Schedule Manager [Page 331].

Other components are:

- **Flow definition**

    You can group tasks that are to be executed in the background in a particular order (and which are controlled by the workflow) into a flow definition [Page 365].

- **Scheduler**

    You can create individual tasks for business transactions (which for example, make up period-end closing) in the scheduler [Page 340] task list. By scheduling them in the daily overview, you enable the system to execute them.

Structure
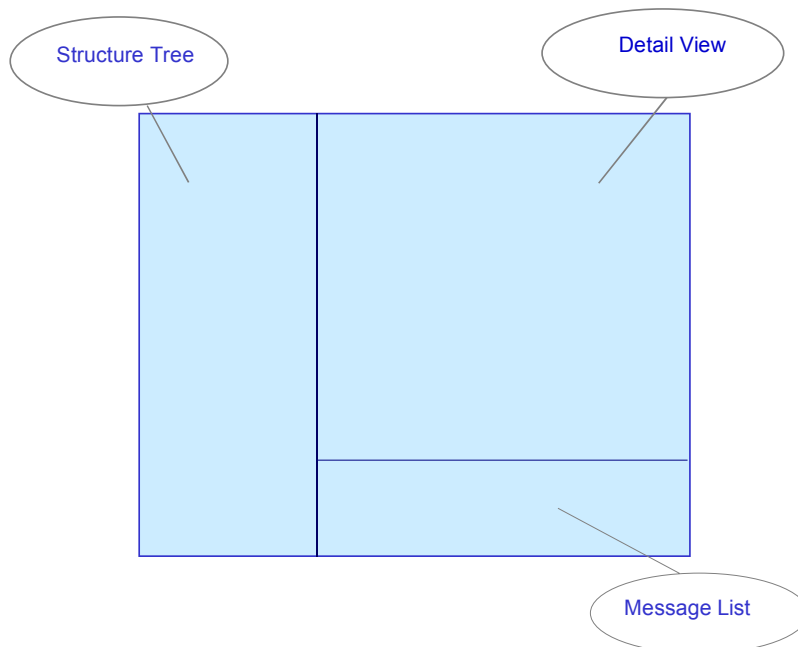
For detailed information on the functions of the monitor, refer to:

- Monitor - Monitoring Active and Completed Jobs [Page 360]

- [Monitor - Working with the Object List \[Page 400\]](#)

Monitor - Monitoring Active and Completed Jobs

Definition

The monitor shows the information on an active or completed job that was scheduled in the scheduler.

Prerequisites

To enable the system to start jobs or job chains, you need to schedule them in the daily overview of the scheduler.

Features

To determine the current status of jobs that are still running, you can repeat the database selection.

If you only wish to see jobs with a certain status, you can hide the other statuses.

The monitor is divided into three areas:

Structure
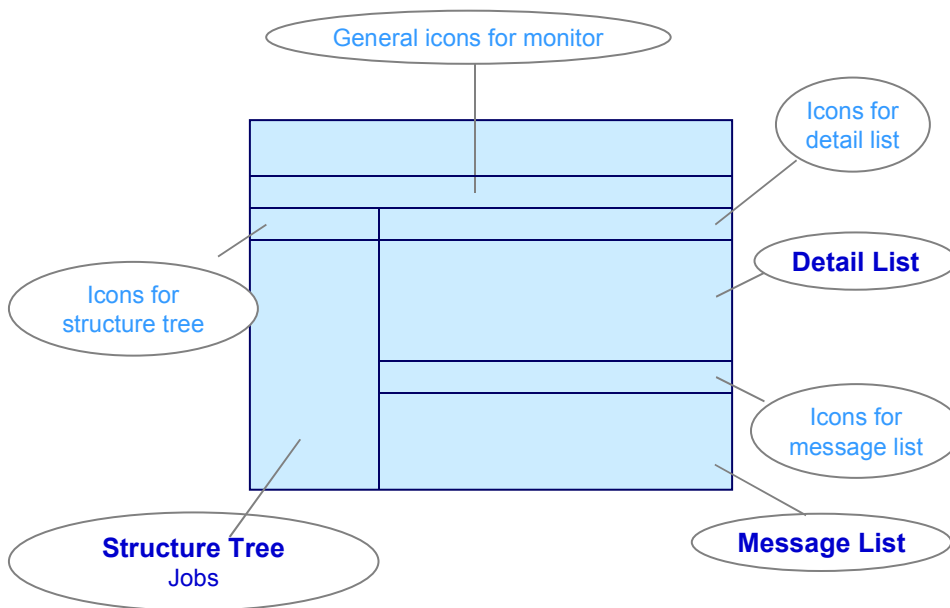
- **Structure tree**

    The structure tree displays the workflows (expanded into substeps) and jobs which ran at particular times, in chronological order.

    You receive information on:

- The job status

- The job runtime

- The update status

Use the right mouse button to see the different functions available for this job, such as:

- Start transaction

- Restart report

- Goto object monitor in the generalized worklist, and so on.

For more detailed information on a job, double-click on the required entry in the structure tree. The detail view appears.

- **Detail view of a job**

    By switching the tab titles you can select different detailed information (details, parameters, additional information) on a job.

    There are four pushbuttons underneath the tab page. These are only active if corresponding data for the selected job is available:

    - Spool list
      Display of batch spool list(s)

    - Job log
      Display of the job log belonging to the batch job

    - Extract
      Online display of results lists that were saved

    - Basic list
      Online display of a short list that was saved. This list contains the most important information on a job.

- **Message list**

    If messages occurred for a job and these were saved, then the system displays them in the message area.

    To go to a message long text, double-click on the corresponding message.

Activities

From a scheduled job, you call up the monitor from the daily overview of the scheduler.

You call up the required details for a selected job.

See also:

Monitor - Working with the Object List [Page 400]

Monitor - Working with the Object List

Definition

The monitor of the *Schedule Manager* is a tool for processing multilevel worklists. It contains information on active or completed jobs that were planned in the scheduler.

Use

This section provides information on using the object list in the monitor of the Schedule Manager.

For more information on jobs in the monitor, see .

The monitor performs the following functions:

- Displays the available worklists and their processing steps

- Keeps track of the processing status of each object (such as product cost collectors, WBS elements, internal orders, and production orders) and each processing step

- Assists you in analyzing the causes of errors for the objects and processing steps

- Displays the processing status of objects (particularly for the objects with errors)

- Shows the hierarchical relationships between the objects

- Compares object hierarchies with each other

- Controls whether objects enter the next processing step

- Sends objects to the responsible person for further processing

You can set the processing status so that objects of negligible value, for example, are not reprocessed in a processing step even if errors are issued for the objects in that step. In this case, it is not necessary to remove the cause of the error.

Structure

General icons for the monitor

Icons for the object list

Icons for the structure tree

Object List

Icons for the message list

Structure Tree
Worklists/processing steps/jobs

Message List

The monitor is divided into the following screen areas:

Structure Tree with Worklists/Processing Steps/Jobs

The structure tree containing the worklists, processing steps and jobs is displayed on the left side of the monitor.

In the system, the worklists are updated separately for each scope of selection and processing step sequence. The processing step sequence is specified in the flow definition. You can view the worklists of the application component in which you are working, including their functions and objects.

The system displays the following information on each worklist:

- Number of objects in the worklist

- Processing steps

- Number of objects processed in each processing step

- Number of objects with errors in each processing step

Object List

The object list is located in the top right area of the screen. The object list can display one or more processing steps of a worklist. You select the processing steps in a worklist in the structure tree *worklists/processing step*s/*jobs*.

The object list includes the following information:

Monitor - Working with the Object List

- The objects for the selected processing steps. You can control which objects are displayed for each processing step by means of a filter that takes the individual processing statuses into account. In application toolbar *icons for object list*, choose the icon *Objects*: *Set status filter*
  The system uses the last user-specific default setting of the dialog box. Note the default settings of this dialog window in the SAP standard system. The last user-specific setting of the dialog box is the default.

- The processing step performed for the object

- The processing status of the object for each processing step

- A check box you can select to indicate that you have processed the object in the worklist monitor

- The person responsible for the object (if any)

Message List

The message list is located in the lower right-hand portion of the screen. The message list displays messages for certain objects. You can use these messages to analyze the causes of error for each object and processing step.

See also:

Schedule Manager: Multilevel Worklist [Page 385]

Multilevel Worklist: Process Flow [Page 398]

For detailed information on using the monitor of the Schedule Manager, see the following section:

Processing Status of Objects and Processing Steps [Page 414]

Processing Worklists [Page 403]

Using the Flow Definition

Use

A flow definition consists of individual flow steps. These steps include scheduling programs with variants in the job control of the SAP System, and interaction with users by email.

The flow definition ia a graphical summary of several steps. A step in the flow definition corresponds to a task in the task plan, except that the individual step does not appear directly in the task plan, rather it is displayed in the flow definition, which is included in the task plan.

Integration

The Schedule Manager provides a multilevel worklist [Page 385]. The multilevel worklist improves performance and facilitates error finding. To use the Schedule Manager worklist, create a flow definition and schedule it in the scheduler. For further information about this worklist, see Choosing Objects for Processing [Page 413].

Prerequisites

Workflow profiles enable you to adapt the user interface of the flow definition according to your requirements. If required, the project team can create and provide this type of profile. To make individual processing available as flow steps, you need a program which provides all the processing parameters and displays an ergonomic user interface.

> ⚠️
>
> If you are using the workflow builder function for the first time in the SAP System, go into Customizing and choose *Basis → Business Management → SAP Business Workflow → Maintain Standard Settings for the SAP Business Workflow* and then *Automatic Customizing*.

For more information, see Creating a Flow Definition [Page 367].

For more information on error handling in flow definitions, see: Error Handling [Page 375].

Features

You can define individual flow definitions with as many flow steps as you like, or you can link flow definitions together within an "upper" flow definition. You must assign the "upper" flow definition to an application (or application component) that is on a higher level than the applications assigned to the lower-level flow definitions.

Flow Step Types

In the workflow builder, you can schedule four types of flow step:

Program with Variants

Enter a program and a variant.

User Decision

For a user decision, the system sends a message to a user. The system generates a text that creates a message header in the user's inbox. The system stops processing the individual tasks in the flow definition [Page 365] until the user confirms the message. The text should therefore contain the information required to make the decision, such as which task the system just executed and which data needs checking.

Fork

You can define as many tasks as you wish in each of the parallel branches. All of the parallel branches join at the end, although the task that follows the join is only processed when all of the tasks in each branch are completed.

You cannot subsequently change the number of parallel branches. However, you can delete a branch by deleting all of the tasks in the branch. You **cannot** add another branch.

Flow Definition

The flow definition consists of several tasks that the system executes in the specified order, once you schedule the flow definition in the daily overview of the scheduler. You can create further "sub-" flow definitions within a flow definition.

Creating a Flow Definition

Use

You use a flow definition [Page 365] in the Schedule Manager [Page 331]. You can insert a flow definition in the task list of the scheduler, then schedule it into the daily overview and run it.

Procedure

1. Choose *Extras → Process flow definition* in the Scheduler

    Enter a description for the flow definition

2. Choose *Create.*

    ⚠️

    > When creating without a template, the system generates a flow definition example (with flow steps) for the specified application. Do **not** delete the steps *Check objects in worklist* and *Renew worklist processing*, because these steps enable the recursive call of worklist processing. If the step *Renew worklist processing* is deleted, you **cannot** include it in the flow definition.

3. In the screen that follows, enter a description for your flow definition and then assign it to an application component.

    💡

    > Note that all flow steps in a flow definition (which is also assigned to an application) must also be assigned to this application or to the application on the next level up or down.

Creating a Flow Definition

SAP

Financial Accounting

Controlling

Internal Orders

Cost Center Accounting

Project System
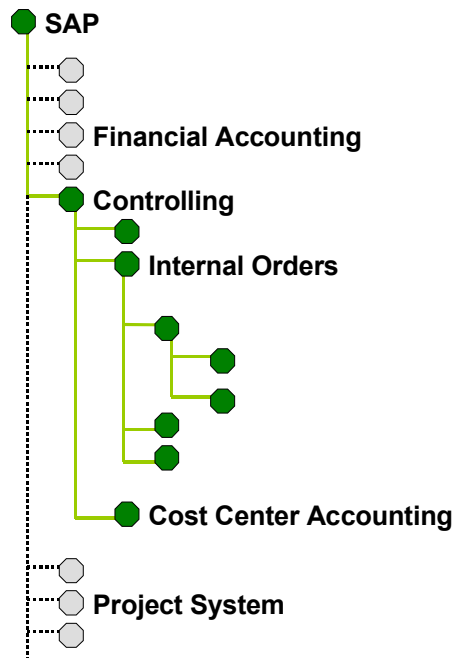
If you have chosen the application *Controlling* for the flow definition, you can only create flow steps in this flow definition if the application that you define for the steps is **above** or **below** *Controlling* (*SAP*) in the hierarchy (for example, *Internal Orders*, *Cost Center Accounting*…). In this flow definition for example, you cannot insert a report in which the application *Financial Accounting* is defined.

4. If required, indicate that you are working with a worklist [Page 385]. To work with a multi-level worklist, you must have chosen an application with a worklist and the function *With worklist* during creation.

5. Enter a development class in the dialog box *Create object catalog entry,* then save your entry.
    The workflow builder appears. Each node (step, event or operator) in the workflow builder has a menu that you can call up using the right mouse button. This immediately shows you the operations that are possible for a node, and cancels out the need for long menu structure or pushbutton paths.
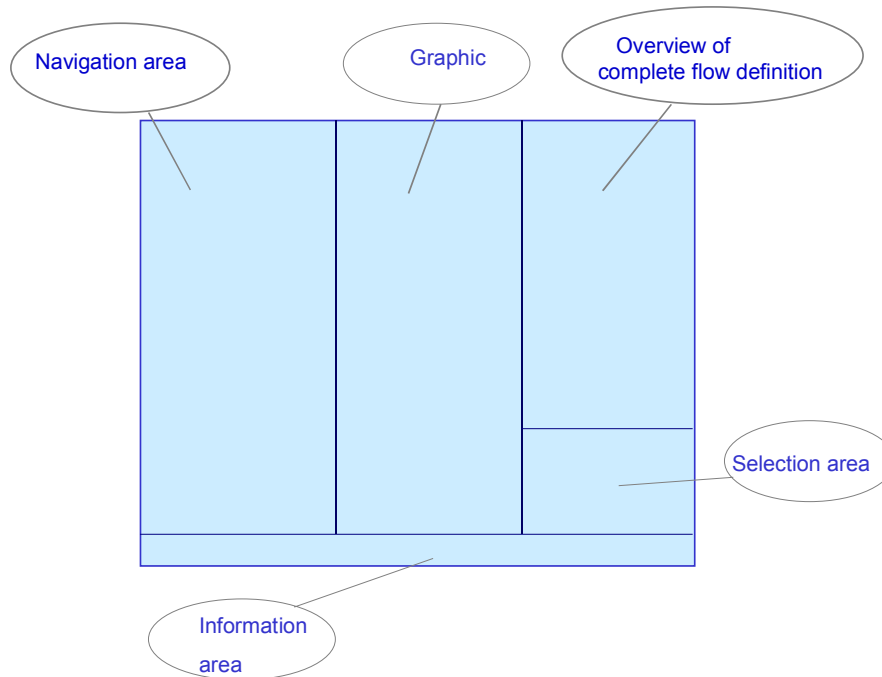
6. In the navigation area, select the node *Steps*.

7. Choose *Create step*.

8. Choose the flow step type [Page 366].

9. Specify the required information for the flow step.

> You can choose programs only using the input help. Programs are displayed in the input help only if you have registered them in the tables **SCMAPROGRAMS** (for SAP programs) or **SCMAPROG_CUST** (for your own programs).
> For more information about working with your own programs, see Inserting Own Programs as Tasks [Page 347].

10. Choose *Cancel* to return to the Workflow Builder.

11. You see the task in the structure tree of the task area. The task is integrated in the graphic of the flow definition. Move the task to the desired position in the flow definition.

12. Save your entries.

For more information on the Workflow Builder, see the SAP Library under BC-*Basis Components* → Business Management (BC-BMT) → SAP Business Workflow Navigation(BC-BMT-WFM) → **Workflow Builder [Ext.]**.

Creating a Flow Definition

⚠️

If you are using the workflow builder function for the first time in the SAP System, go to the Implementation Guide (IMG) and choose Basis → Business Management → SAP Business Workflow → Maintain Standard Settings for the SAP Business Workflow and then Automatic Customizing.
You can also use the SAP standard flow definitions. Variant names for these flow definitions begin with SAP& These variants only contain selection variables named SAP-SCMA Use the STVARV transaction or Schedule Manager, Extras → Settings → Selection variables to adapt the variable values according to your requirements. For further information on selection variables, see **Defining Global Variables for Task Lists/Flow Definitions [Page 333]** and Defining Selection Variables for Flow Definitions With Parallel Branches.

Specifying Selection Variables for Flow Definitions With Parallel Branches

Use

Normally the selection criteria for period-end closing do not change very often. Criteria that do change regularly are the closing period and the fiscal year. The period and fiscal year must be changed for each program or flow definition specified as a task in the task list.

To avoid having to change these values for every single program or every flow definition, you can define selection variables in the program variants.

You have five programs that must run with the same valuation for nine plants. That means that every program must run with a plant-specific variant for each plant. These variants differ only in their *Plant* specification.

As described below, you define global variables for *fiscal year*, *period* and *plant* . Create variants for the five programs and define the global variants that you created previously. Finally define a flow definition (A) for the five programs. Define a flow definition (B) with nine parallel branches (for the plants). Include the flow definition A in each of these branches. A dialog box appears that displays the three global variables (*fiscal year, period, plant*). Enter a value for the variable *Plant* and flag the entry as to be saved. The dialog box reappears when you plan flow definition B in the day view. Enter values for each fiscal year and period. Do not make an entry for the variable *Plant*. If you make an entry here, the system does not accept it. You defined the plant when creating the flow definition.

Prerequisites

You have defined the variables already. For more information, see Defining Selection Variables [Page 334].

You are in flow definition [Ext.] in Schedule Manager (*Extras → Flow definition → Edit flow definition).*

7. Choose a processing step in the navigation area.
   On the right of the screen, you see *Flow definition: Task details.*

8. Enter a new variant for this processing step and define a name for this new variant in the *Variant* field .

9. Choose *Change variant*.
   The *Maintain Variant: Program <program name>, Variant <variant name>* screen appears.

Procedure

14. Choose *Attributes*.

15. Make an entry in the *Description* field.

16. Now you want to specify variables for the period and fiscal year that you can then change once centrally for all programs and flow definitions that use those variables. To do this, under the heading *Selection screen objects*, select the column S in the lines *Period* and *Fiscal year.*

Specifying Selection Variables for Flow Definitions With Parallel Branches

17. Choose *Selection variables*.

18. To choose selection criteria for the variables P_FROM (period) and P_GJAHR (fiscal year), use the input help.

> You previously entered these variables in table TVARV.

11. Save your entries.
    The *Maintain Variant: Program <program name>, Variant <variant name>* screen appears.

Result

The system uses these entries for the following purposes:

- To feed these variables to a program created directly as a task in the workflow.

- To feed these variables to the parallel branches.

> The system mixes the variables of the parallel branches with those of the main workflow.
>
> If the parameter values of the main workflow are different from those of the subworkflows, the system uses the parameter values that were specified when the subworkflows were created.

Choosing Objects for Processing

Use

An advantage of this worklist [Ext.] is that the objects for processing only have to be selected once per flow definition.

Prerequisites

You are in flow definition [Ext.] in Schedule Manager (*Extras → Flow definition → Edit flow definition).*

Procedure

10. Choose a processing step in the navigation area.
    On the right of the screen, you see *Flow definition: Task details*.

11. Enter a new variant for this processing step and define a name for this new variant in the *Variant* field .

12. Choose *Create variant*.
    The *Variant Maintenance* screen appears. Program <program name>, variant <variant name>.
    Here you can determine the scope of selection of the program variants for the flow definition.

13. To be able to choose more extensive selection criteria, first complete the required entry fields, for example *Period* <006>, *Fiscal year* <2000>.

14. You can now define further selection parameters using the various pushbuttons that are offered in dialog boxes.

15. Choose *Attributes*.
    The *ABAP: Save Attributes of Variant <Variant name>* screen appears.

Defining Processing Options, Output Options and Execution Types

You are in flow definition [Ext.] in Schedule Manager (*Extras → Flow definition → Edit flow definition).*

16. Choose a processing step in the navigation area.
    On the right of the screen, you see *Flow definition: Task details*.

17. Choose *Change variant*.
    The screen *Variant Maintenance* appears. *Program <program name>, variant <variant name>.*

18. In the corresponding group frames, select the desired processing option, output option and execution type. For example, you can define whether parallel processing is allowed.

19. Perform variant maintenance for all programs that are linked to the flow definition.

For further information see Defining Selection Variables in the Program Variants [Page 335] and Selection Variables for Flow Definitions with Parallel Branches [Page 371].

Error Handling

Job error handling involves the following:

1. For checking purposes:

- Periodically reading the job status

- Checking the maximum runtime

2. When errors occur:

- User decision "Continue the flow with the next task"

- User decision "Reschedule the job"

> ⚠️
>
> The user decision "Reschedule job" is **not** available for worklists.

Error: A Job Stops

Cause

The job stops, if for example, the system is turned off.

Error Handling

The dialog for an error in the job administration is handled in its own sub-workflow, which consists of a user decision. This message is sent as a top priority mail to the person whose name is entered in the detail screen for maintenance of jobs in the flow definition, in the *When error, mail to* section (see also: Creating a Flow Definition [Page 367]). That person receives the mail that an error has occurred in *job XY* in their mail inbox.

There are two options in the user decision.

Continue the flow with the next task

You choose this option if:

- You corrected the error and rescheduled the job manually in a separate session, and are waiting for the job to be executed.

- You executed the transaction online.

- You decided that the error is not relevant.

    You can use this option without any problems, for jobs that have worklists. However, you need the worklist ID to be able to execute the job outside of the workflow.

Reschedule the job

You choose this option if you corrected the error and would like to use the Schedule Manager [Ext.] to control the rescheduling of the job.

Graphical Representation of the Flow
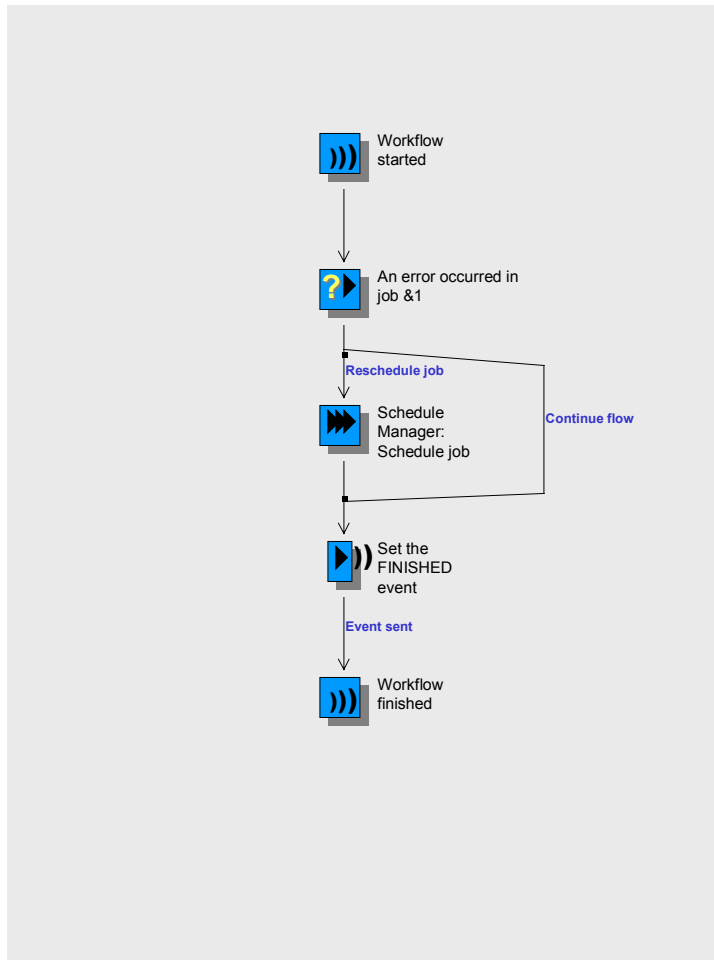
Error: A Job Becomes "Stuck"

Symptom

The program has a runtime that is far longer than expected.

Error Handling

The dialog for a processing error in the program is handled in its own sub-workflow. which consists of a user decision. This message is sent as a top priority mail to the person whose name is entered in the detail screen for maintenance of jobs in the flow definition, in the *When error, mail to* section (see also: Creating a Flow Definition [Page 367]). That person receives the mail that an error has occurred in *program X, variant Y* in their mail inbox.

There are two options in the user decision.

Continue the flow with the next task

You choose this option if:

- You corrected the error and rescheduled the job manually in a separate session, and are waiting for the job to be executed.

- You executed the transaction online.

- You decided that the error is not relevant.

You can use this option for jobs that have worklists. However, you need the worklist ID to be able to execute the job outside of the workflow.

Reschedule the job

You choose this option if you corrected the error and would like to use the Schedule Manager [Ext.] to control the rescheduling of the job.

Graphical Representation of the Flow

Workflow
started

Program &1, variant &2
contains errors

Reschedule job

Continue flow

Schedule
Manager:
Schedule
job

Workflow
finished

Error: An Executed Report Found an Error

Symptom

Due to an error in the content, the REPORTERROR workflow event was triggered.

Error Handling

The workflow executes an error dialog. This contains a user decision. The user decision is sent as a top priority mail to the person whose name is entered in the detail screen for maintenance of jobs in the flow definition, in the *When error, send to* section (See also: Creating a Flow Definition [Page 367]). That person receives the mail that an error has occurred in *program X, variant Y* in their mail inbox.

There are two options in the user decision.

Continue the flow with the next task

You choose this option if:

- You corrected the error and rescheduled the job manually in a separate session, and are waiting for the job to be executed.

- You executed the transaction online.

- You decided that the error is not relevant.

Reschedule the job

You choose this option if you corrected the error and would like to use the Schedule Manager [Ext.] to control the rescheduling of the job.

⚠️

No user decision is called up for jobs that have worklists. This is because the error handling for worklists is triggered by rerunning the task steps in the workflow. Therefore, programs written for worklists always trigger the FINISHED event.

Graphical Representation of the Flow

Workflow
started

Job started

Schedule Manager:
Start job

Fork

Schedule
Manager: Job
error handling

Wait for
REPORTERROR
event

Wait for
FINISHED
event

Schedule Manager:
Dialog for program
errors

1 from 3

Workflow finished

Error: Job Scheduling Was Unsuccessful

Cause

Scheduling a job can be unsuccessful if the technical name of the report or variant was changed after the flow definition was created. This means that the technical names in the flow definition no longer exist.

Error Handling

The workflow recognizes the error and issues an error message displaying the faulty technical name of the report or variant.

The message is linked to a user decision. This message is sent as a top priority mail to the person whose name is entered in the detail screen for maintenance of jobs in the flow definition, in the *When error, mail to* section (see also: Creating a Flow Definition [Page 367]). That person receives the message in their mail inbox.

There are two options in the user decision.

Continue the flow with the next task

You choose this option if:

- You corrected the error and rescheduled the job manually in a separate session, and are waiting for the job to be executed.

- You executed the transaction online.
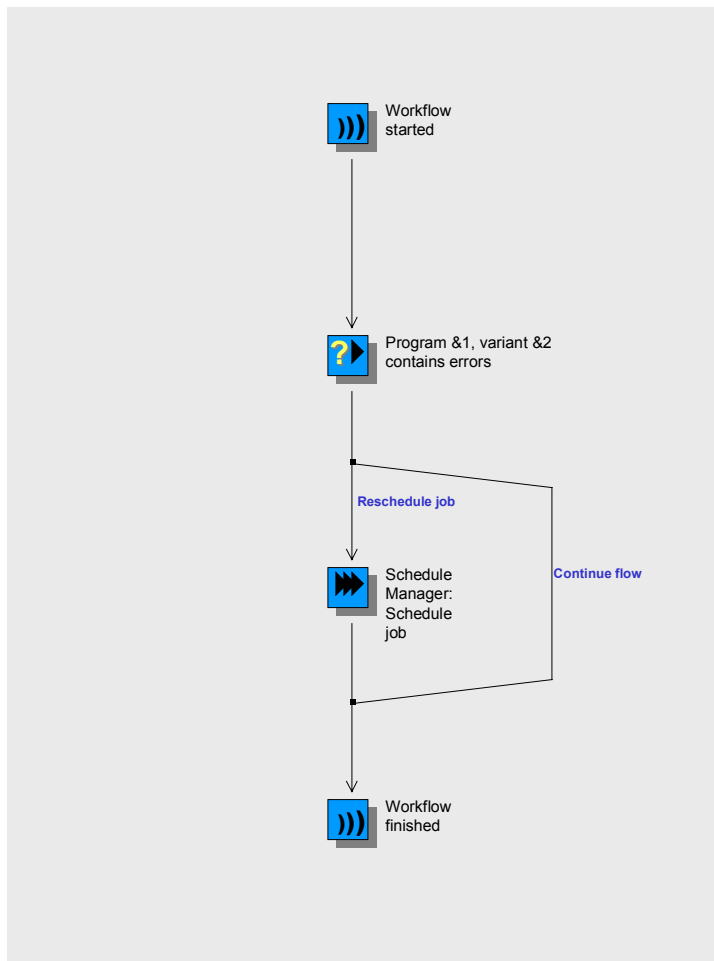
- You decided that the error is not relevant.

Reschedule the job

You choose this option if you corrected the error and would like to use the Schedule Manager [Ext.] to control the rescheduling of the job.

Error: The Workflow Stops

Cause

The workflow stops due to an error in the workflow runtime system.

Symptom

The job just scheduled is completed since the job control functions **separately** from the workflow. **However,** the following steps in the flow definition are **no** longer executed.

Error Handling

It is **not** possible to restart at the point where the workflow stopped. Therefore, you need to reschedule the whole flow definition.

Error: The Workflow Becomes "Stuck"

Cause

During job scheduling using the workflow, if an error occurs in the program section of the report and the report is being run at the AT SELECTION-SCREEN OUTPUT event, then the job is not scheduled.

Error Handling

The system issues an error message to notify you that scheduling is not complete.

The message is linked to a user decision. This message is sent as a top priority mail to the person whose name is entered in the detail screen for maintenance of jobs in the flow definition, in the *When error, mail to* section (see also: Creating a Flow Definition [Page 367]). That person receives the message in their mail inbox.

There are two options in the user decision.

Continue the flow with the next task

You choose this option if:

- You corrected the error and rescheduled the job manually in a separate session, and are waiting for the job to be executed.

- You executed the transaction online.

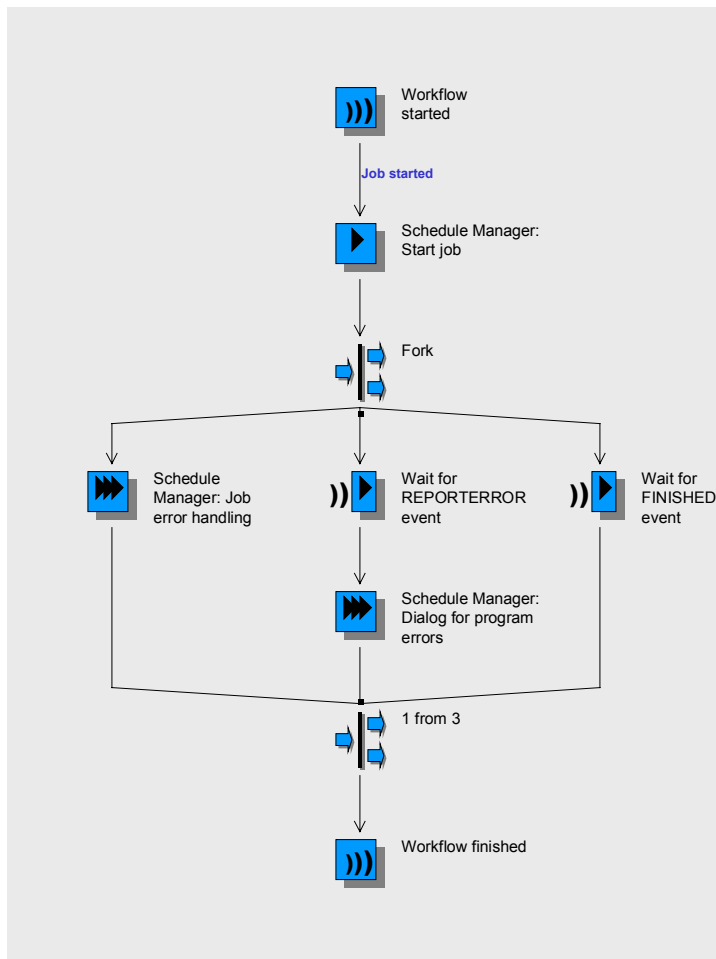- You decided that the error is not relevant.

Reschedule the job

You choose this option if you corrected the error and would like to use the Schedule Manager [Ext.] to control the rescheduling of the job.

Multilevel Worklist

Use

The worklist of the Schedule Manager is a **multilevel worklist**. This worklist is particularly useful for the period-end closing activities.

Why Is the Worklist Multilevel?

In previous releases, the period-end closing process in the R/3 system consisted of a series of batch jobs. The sequence of the processing steps was established by the order in which the jobs were called. The objects were selected separately for each job. Through the selection criteria entered, it was possible to specify a unified scope of selection. This scope of selection had to be respecified for each processing step (that is, for each individual function of period-end closing).

When an object was processed, errors that occurred in previous processing steps were not taken into account. For this reason, it was necessary to check the objects that had errors once a job was completed. Any errors had to be corrected and then the job restarted for the entire scope of selection. In some areas (such as the period-end close in *Product Cost by Period*), it was already possible to create a single-level worklist for individual processing steps. With this single-level worklist, the objects with errors could be called up for each processing step, and the causes of the errors determined. The processing step could then be performed again for the object after the error was corrected. This worklist did not prevent objects with errors from being processed in the subsequent processing step (that is, in the subsequent job).

Advantages of the Multilevel Worklist

The worklist of the Schedule Manager is a multilevel worklist. This means that the worklist is generated for a sequence of processing steps rather than for just one processing step. The worklist therefore enables efficient execution of processing step sequences. Processes such as period-end closing can be performed much more efficiently with a multilevel worklist.

The multilevel worklist has the following advantages:

- The processing step sequences (such as in period-end closing) can be performed **faster** than before.

  Manual processing after completion of each job is no longer necessary. Manual processing is only necessary after executing a sequence of processing steps that consists of multiple jobs (for example, complete closing of an application component).

  Furthermore, if errors were issued for objects in the single-level worklist, it was often necessary to repeat the processing steps for the entire scope of selection (and not just for the objects with errors). With the multilevel worklist, the processing steps are repeated only for the objects that have errors.

- CPU time is reduced because objects are selected only once for each processing step sequence, instead of for each individual processing step. Objects are selected before the first processing step is executed. The multilevel worklist provides performance benefits particularly with complex structures in which dependencies between objects must be taken into account (such as complex project structures).

As a rule, jobs are planned and monitored by members of the EDP team. In many cases, these employees are not responsible for the correcting the errors shown in the error logs. With the multilevel worklist, you can directly inform the employees responsible for correcting the errors.

Multilevel Worklist

This notification takes place by means of a mail message that is sent automatically through the workflow [Ext.].

Integration

The multilevel worklist is part of the *Schedule Manager* and is always used with the other functions of the Schedule Manager (see *Prerequisites*).

The following applications, functions, and objects are currently supported by the multilevel worklist:

Cost Object Controlling: Manufacturing Orders and Product Cost Collectors

Process Flow	Period-end closing for manufacturing orders and product cost collectors [Ext.]
Scope of Selection for Processing Objects	Closing encompasses production orders, CO production orders (production orders without a quantity structure), process orders; product cost collectors and QM orders. With co-products, some of the period-end closing work is performed at the level of the items of the manufacturing orders. A prerequisite is that the following requirements are met for these objects: • The objects are **not** assigned to a cost object hierarchy, or it is specified in the cost object category that the individual orders of a material are processed outside the cost object hierarchy *(see Product Cost by Period)*. • Account assignment can be made directly on the objects. This means that with regard to the selection of manufacturing orders, account assignment is made on the manufacturing orders themselves and not on a product cost collector. • The objects do **not** have status DLFL (deletion flag). Product cost collectors are objects of the *Product Cost by Period* subcomponent. Manufacturing orders (including manufacturing orders without a quantity structure) are objects of the *Product Cost by Order* subcomponent.
Processing Step	**Objects**
Template allocation	Order header (including product cost collectors)
Revaluation at actual prices [Ext.]	Order header (including product cost collectors)
Actual overhead [Ext.]	Order header (including product cost collectors)

Preliminary Settlement for Co-Products, Rework	• Preliminary settlement for co-products: Order header of manufacturing orders as processing objects; order items as receivers
	• Preliminary settlement of rework: Order header of manufacturing orders as processing objects, order header of manufacturing orders or product cost collectors as receivers; but not: Settlement of rework on product cost collectors or manufacturing orders assigned to a cost object hierarchy (see below)
	• Preliminary settlement of collective orders (old processing method without automatic goods movement) Header of manufacturing orders as processing objects, header of manufacturing orders as receivers
WIP calculation [Ext.]	Production and process orders or, in joint production, their items, as well as CO production orders and product cost collectors
Variance calculation	Production and process orders or, in joint production, their items, as well as CO production orders and product cost collectors
Settlement [Ext.]	Production and process orders or, in joint production, their items, as well as CO production orders and product cost collectors

Cost Object Controlling: Cost Object ID (Cost Object Nodes in a Cost Object Hierarchy and General Cost Objects)

Process Flow	Period-end closing for cost object ID

Scope of Selection for Processing Objects	Period-end closing includes:
	• Cost object nodes of cost object hierarchies and the single objects assigned to the cost object hierarchy These can be the following: Product cost collectors, manufacturing orders, production orders without quantity structure, and (if applicable) order items of manufacturing orders (with joint production) for which the following conditions apply: − Account assignment can be made directly on the objects. This means that account assignment for manufacturing orders is made on the manufacturing order itself and not on a product cost collector. − The objects do **not** have the status DLFL (deletion flag). Cost object hierarchies are part of the *Product Cost by Period* component. • General cost objects General cost objects are objects of the *Costs for Intangible Goods and Services* component.
Processing Step	**Objects**
Template allocation	Cost object nodes of **cost object hierarchies** or the single objects assigned to the cost object hierarchy (product cost collectors, manufacturing orders or production orders without quantity structure); **general cost objects**
Revaluation at actual prices	Cost object nodes of **cost object hierarchies** or the single objects assigned to the cost object hierarchy; **general cost objects**
Actual cost distribution	Cost object nodes of **cost object hierarchies**; the single objects assigned to the lowest cost object nodes are the final receivers
Actual overhead	Depending on the Customizing settings, cost object nodes of **cost object hierarchies** or the single objects assigned to a cost object hierarchy; **general cost objects**
Preliminary Settlement for Co-Products, Rework	Only for orders assigned to the **cost object hierarchy**: • Preliminary settlement for co-products: Order header of manufacturing orders as processing objects, order items as receivers • Preliminary settlement of rework: Order header of manufacturing orders as processing objects, order header of manufacturing orders or product cost collectors that are assigned to the cost object hierarchy as receivers
WIP calculation	The single objects assigned to a **cost object hierarchy**; but not: Order items in joint production (manufacture of co-products), CO production orders

Multilevel Worklist

Variance calculation	Depending on Customizing settings, cost object nodes of **cost object hierarchies** or the single objects assigned to the cost object hierarchy
Settlement	Depending on Customizing settings, the top nodes of a **cost object hierarchy** or all nodes of the cost object hierarchy; if applicable, all orders assigned to the cost object hierarchy, and in joint production the items of the manufacturing orders; All **general cost objects**

Project System

Process Flow	Period-end closing for Project System
Scope of Selection for Processing Objects	WBS elements, networks, and orders
Processing Step	**Objects**
Generation of settlement rule	WBS elements
Template allocation	WBS elements, networks, and orders
Actual overhead	WBS elements, networks, and orders
Revaluation at actual prices	WBS elements, networks, and orders
Cost forecast	Networks
Interest calculation	WBS elements, networks, and orders
Project earned value	WBS elements, networks, and orders
Results analysis	WBS elements and orders
Incoming orders	WBS elements
Settlement	WBS elements, networks, and orders
Reporting	WBS elements, networks, and orders

Multilevel Worklist

Internal Orders

Processing Step	Period-end closing for internal orders
Scope of Selection for Processing Objects	Internal orders, maintenance orders
Processing Step	**Objects**
Template allocation	Internal orders, maintenance orders
Revaluation at actual prices	Internal orders, maintenance orders
Actual overhead	Internal orders, maintenance orders
Interest calculation	Internal orders, maintenance orders
Results analysis	Internal orders, maintenance orders
Settlement	Internal orders, maintenance orders

Sales Orders

Processing Step	Period-end closing for sales orders
Scope of Selection for Processing Objects	Sales order items that carry costs and revenues
Processing Step	**Objects**
Template allocation	Sales order items that carry costs and revenues
Revaluation at actual prices	Sales order items that carry costs and revenues
Actual overhead	Sales order items that carry costs and revenues
Results analysis	Sales order items that carry costs and revenues
Settlement	Sales order items that carry costs and revenues

Prerequisites

You are working with the *Schedule Manager* and are using all of its functions*.*

A prerequisite for the use of the multilevel worklist is that a constant quantity of objects (or, in subsequent executions, their subset) is processed in a predefined sequence of processing steps.

The selection set of the objects is determined through the application you select (for example, Cost Object Controlling: Manufacturing orders and product cost collectors) (see above), as well as through any additional entries that you may make when creating report variants (see below).

The sequence of processing steps is specified in the flow definition.

This means that you proceed as follows:

1. Go into the Scheduler [Page 340] of the *Schedule Manager*.

2. From the scheduler, create a flow definition [Page 365]. In the flow definition, specify the processing step sequence (for example, a sequence of all single functions of period-end closing for product cost collectors). The creation of the flow definition is realized through the *Workflow Builder*.

    You access the flow definition with the menu options *Extras → Process the flow definition.* When you create the flow definition, you should:

- Specify which application the flow definition is intended for (such as *Cost Object Controlling: Manufacturing Orders and Product Cost Collectors*)

- Make sure you create a flow definition with a worklist

- The *Workflow Builder* appears. Depending on the application you selected, you receive a SAP template that you can modify to meet your requirements.

3. Create a task for each processing step in the flow definition. Such tasks can be, for example, reports for the single functions of period-end closing or user decisions.

> To facilitate maintenance of the flow definition, the system offers you a default template. This consists of a task placeholder at the beginning of the flow as well as a task placeholder in the feedback loop. You define the placeholder at the beginning of the flow before the feedback loop as a report task for selecting the worklist. You define the single functions of period-end closing as tasks in the feedback loop.

> To define the selection or a **single function** (such as overhead calculation) as a task, select the *Program* indicator when you create the task. Then, select the report from a proposal list that you want to include in the processing sequence (such as *Overhead: Worklist of Manufacturing Orders*)

> Then create a **report variant** for the execution of the report. Maintain the parameters for the variant. Here you can specify various parameters such as whether a detail list is output and whether processing takes place simultaneously on multiple servers.

> You can further filter the scope of selection of the object to be processed by using a selection profile.

> In addition, enter the period and fiscal year.

> You can use the same flow definition each time if you enter selection variables instead of fixed values for the period and fiscal year when you maintain the report variants. In this case, the system calculates the period and fiscal year of the single functions dynamically from the current values for these variables when it executes the flow definition. This is only possible if you use selection variables (called TVARV variables) for the period and fiscal year parameters. When you create the report variant, you specify that you are working with selection variables. You maintain the selection variables by entering the transaction STVARV, or by starting the transaction through *Extras →Settings → Selection Variables* in the menu of the Schedule Manager and changing the variables there to the period and fiscal year to be processed. This enables you to use the same job variant every month. You only need to update the TVARV variable before executing the job variant.

> You specify a **user decision** if you want the previous processing results to be checked after one or more processing steps. After executing the previous processing steps, the system automatically sends a mail message to the person responsible for checking the results (usually the cost accountant). When you create the flow definition, you specify which user receives this mail.

> When you use the multilevel worklist, the system always specifies a user decision and a feedback loop for the reentry into postprocessing as the last step of the flow definition.

> You can also insert user interactions at other points in the process definition if you want to check the objects processed up to a particular step before continuing with processing.

Multilevel Worklist

> If you approve (release) the check of the objects with errors, you make it possible for the objects with errors to automatically be reprocessed later.

4. Enter the flow definition as a task in the task list of the *Scheduler*.

5. Start the task (the flow definition) in the *Scheduler*.

6. You monitor the flows and jobs during and after processing in the <u>monitor [Page 358]</u> of the *Schedule Manager*.

Features

Basic Functions of the Multilevel Worklist

The multilevel worklist is generated for an entire sequence of processing steps.

The scope of selection is determined once and is valid for all processing steps. The worklist encompasses the objects of the scope of selection for which processing in the present processing step sequence is both possible and necessary. The scope of selection, therefore, equals the maximum scope of the worklist. Certain restrictions can be specified for individual processing steps in the scope of selection. These restrictions are usually determined through selection profiles that are specified when report variants are created.

The processing steps are performed in an order strictly defined in the flow control of the scheduler. A processing status is maintained for each object and processing step. The processing status indicates whether further processing of the object is allowed.

Each processing step only contains the objects for which (based on the processing status of the previous processing step) processing in this step is allowed.

In each processing step, dependencies between objects are interpreted according to the application. For this reason, it can be necessary to include other objects when processing an object in a step. The system accounts for such object dependencies automatically. You do not have to make any additional settings.

> You want to perform results analysis for a WBS element (nonvaluated project stock). Production orders whose actual costs should be included in results analysis are assigned to the WBS element.

There are individual worklists for each processing step sequence (that is, each flow definition). Typical processing step sequences are the period-end closing sequences for the individual application components. Individual worklists are created for each application (for example, for internal orders and projects).

The multilevel worklist fulfills the following basic requirements:

- The selected objects are processed as far as possible.

- The selected objects are only processed when processing is both necessary and possible.

- Object dependencies are taken into account.

    Object dependencies can be encountered, for example:

    – In engineer-to-order environments

    – When you are using cost object hierarchies

Suppose you are performing results analysis for WBS elements in an engineer-to-order environment. The system first determines which WBS elements are relevant on the basis of the selection criteria. These WBS elements are called *primary objects* because they are the original objects to be processed.

Results analysis also includes values that are posted to the production orders assigned to the WBS elements. These production orders are selected on the basis of their dependency on the WBS element. They are called secondary objects.

The determination of secondary objects depends not only on the type of worklist (for example, cost object hierarchies, projects), but also on the present business function and on the processed objects.

Suppose you are performing period-end closing for a cost object hierarchy.

You calculate the actual overhead at the level of the cost object nodes. In this case, there are no dependent objects because every cost object node is included in overhead calculation. Relationships to other cost object nodes do not play a role.

You also want to distribute the actual costs assigned to the cost object nodes to the lowest cost object nodes of the assigned product cost collector. The following situation arises during distribution:

As soon as a cost object node in a cost object hierarchy is a primary object, all other nodes are secondary objects (as long as they are not also primary objects).

During the execution of the flow definition, the individual processing steps receive a list of the objects to be processed. Each processing step sends the processing status of each object and a list of the displayed messages back to the worklist.

The scope of selection can contain all objects to be processed in a particular flow. However, in some situations you may want to perform the same flow more than once in parallel with different scopes of selection. This manual parallel processing can serve to reduce the overall run time.

Suppose you want to perform period-end closing for the application component *Product Cost by Order* in *Cost Object Controlling.* You can process all production orders and process orders in a plant, or all plants in a controlling area.

You create multiple scopes of selection in which you select by plant and order type. This means that, for example, one scope of selection includes all production orders in a plant, while another scope of selection includes all process orders in that same plant.

The previous processing step in the sequence must be fully completed before the next step can be started.

After the entire processing step sequence has been executed, the user forces a manual check.

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The user-defined flow of individual processing steps (specified in the flow definition), the check of the objects with errors, as well as the release of this check (for renewed processing of objects) should be repeated until all objects in all processing steps have the status *OK*. Once this is achieved, processing is completed.

Processing of Objects in the Worklist

You process the worklist in the *monitor*. The monitor shows a list of the faulty objects and the messages issued for the objects. This information is needed for analyzing and correcting the errors.

In the monitor, you can specify how objects are to be processed the next time the processing step sequence is executed. For example, you can specify the following:

- That objects marked as faulty in a given processing step are excluded the next time that processing step is executed, and instead enter the subsequent processing step.

- That objects processed without errors are nevertheless reprocessed if they are faulty in a business sense (for example, as a result of incorrect Customizing settings)

> If an object was processed without error in an update run for project interest calculation, new interest calculation can only be triggered if the previous interest calculation is first reversed. If no reversal is carried out, the object is not included in the recalculation of interest even though its processing status would normally allow this.

You control this through the processing status for the object and processing step.

> Note the following:
>
> If an object has been changed since it was processed in the processing step sequence defined by the flow definition (for example, additional costs have been assigned to the object), this change is not taken into account if the object has already been processed without error. In this case, you should change the processing status for the first processing step of the processing step sequence to force reprocessing.

See also:

See the following sections for additional information on the monitor and how to use it:

Schedule Manager: Monitor - Working with the Object List [Page 400]

Processing Worklists [Page 403]

Processing Status [Page 414]

Triggering Reprocessing of Objects

Automatic Reprocessing

Once all objects have been processed and you have corrected the errors or specified that the processing step for which errors were issued should be skipped, the processing step sequence can be repeated in order to reprocess the objects that had been faulty in the previous run. You initiate reprocessing from the mail.

The system then processes the objects in the selection scope that had been processed with errors in the first run of the processing sequence and those that you instructed the system to reprocess (processing forced manually). For each object, processing starts with the processing step that had errors or for which processing was forced manually. The only processing steps repeated for an object are those for which errors occurred in the previous run, those that have not yet been performed, and those for which reprocessing was forced.

Both in the first run and in the repeated run, the only objects that are processed in each processing step are those that were successfully processed in the previous step and that have not yet been successfully processed in the current step. This limits the number of objects to be reprocessed in each step to those for which errors appeared in that step or in the preceding steps of the first run. Dependencies between objects are also taken into account. That is, depending on the object to be processed and the processing step, it may be necessary to reprocess additional objects even though they were already processed successfully.

Administrative Data Reorganization of the Multilevel Worklist

The administrative data of multilevel worklists encompasses the scope of selection, the step information (flow step), the processing status for the object, and the error messages for the object. This administrative data is deleted together with the workflow data of the *Schedule Manager*. It is not possible to archive the worklists.

Activities

Once all processing steps have been executed, the system informs you by mail that the results of the processing steps are ready for review. After you have checked the results and corrected any errors, the system asks you whether you would like to repeat reprocessing.

To make the relevant checks, access the monitor of the Schedule Manager.

You can access the monitor in the following ways:

- From the mail
- Directly from the menu of the application component

See also:

Multilevel Worklist: Process Flow [Page 398]

Multilevel Worklist: Process Flow

Prerequisites

You have created a flow definition [Page 365]. In the flow definition, you define the sequence of processing steps that you want to perform. A processing step corresponds to a single function. Examples of individual processing steps are WIP calculation, variance calculation, and settlement. A processing step sequence is defined by linking these single functions to each other in a flow definition.

You have established the flow definition in the scheduler [Page 340].

Process Flow

1. The system starts the sequence of processing steps in accordance with the planning specified in the scheduler. The objects to be processed are selected on the basis of the following logic:

   – Objects that were processed successfully in the previous flow step but have not yet been processed successfully in the current flow step are transferred from the selection to be processed. These objects are called *primary objects*.

   – The system also reads the dependent objects for the current flow step for all selected objects. These dependent objects are called *secondary objects*. If a primary object has one or more secondary objects that were not successfully processed in the previous flow step, neither the primary object nor its associated secondary objects can be processed in the current flow step.

2. The system executes the processing steps.

3. When the system has executed all processing steps, you receive a mail to inform you that the planned sequence of processing steps has been completed. This mail is generated using the workflow link.

4. You can reprocess the faulty objects directly from the mail.

5. The user can view the processed objects with their processing status in the monitor of the Schedule Manager.

6. The user processes the objects with errors.

7. The user retriggers the processing step sequence from the mail in his office inbox.

8. The system now processes the objects in the selection that were processed with errors in the first run of the processing sequence, or whose processing was forced manually.

   For each object, processing starts with the step that was not processed correctly.

   The subsequent processing steps are then started automatically in the defined sequence.

   If an object that was processed without errors in the first run of the processing step sequence is changed before the second run of the processing step sequence, these changes do not result in an automatic reprocessing of the object. If you want the object to be reprocessed, manually set the corresponding processing status.

The production order 1000000 is included with all other production orders of plant 1000 in period-end closing of *Product Cost by Order*. Work in process for the order is calculated as EUR 1,000 and settled to *Financial Accounting* (FI). All processing steps (for example, *WIP calculation* and *settlement*) of the processing step sequence were also performed without out errors.

However, not all production orders were processed without errors. In this way, for example, the production order 1000005 receives the processing status *error* for the processing step *WIP calculation a*nd the production order 1000010 receives the processsing status *error* for the processing step *Settlement*.

After work in process has been settled for all production orders, including production order 1000000, additional costs amounting to EUR 200 are posted to production order 1000000.

Remove the errors for the production orders 1000005 and 1000010 and reinitiate the processing step sequence. The production orders 1000005 and 1000010 are reprocessed. Production order 1000000 is not processed as it was processed without errors in the first run.

If you want to force a reprocessing of production order 1000000, you can manually set the corresponding processing status.

See also:

Monitor - Working with the Object List

Definition

The monitor of the *Schedule Manager* is a tool for processing multilevel worklists. It contains information on active or completed jobs that were planned in the scheduler.

Use

This section provides information on using the object list in the monitor of the Schedule Manager.

For more information on jobs in the monitor, see .

The monitor performs the following functions:

- Displays the available worklists and their processing steps

- Keeps track of the processing status of each object (such as product cost collectors, WBS elements, internal orders, and production orders) and each processing step

- Assists you in analyzing the causes of errors for the objects and processing steps

- Displays the processing status of objects (particularly for the objects with errors)

- Shows the hierarchical relationships between the objects

- Compares object hierarchies with each other

- Controls whether objects enter the next processing step

- Sends objects to the responsible person for further processing

You can set the processing status so that objects of negligible value, for example, are not reprocessed in a processing step even if errors are issued for the objects in that step. In this case, it is not necessary to remove the cause of the error.

Structure

The monitor is divided into the following screen areas:

Structure Tree with Worklists/Processing Steps/Jobs

The structure tree containing the worklists, processing steps and jobs is displayed on the left side of the monitor.

In the system, the worklists are updated separately for each scope of selection and processing step sequence. The processing step sequence is specified in the flow definition. You can view the worklists of the application component in which you are working, including their functions and objects.

The system displays the following information on each worklist:

- Number of objects in the worklist
- Processing steps
- Number of objects processed in each processing step
- Number of objects with errors in each processing step

Object List

The object list is located in the top right area of the screen. The object list can display one or more processing steps of a worklist. You select the processing steps in a worklist in the structure tree *worklists/processing steps/jobs*.

The object list includes the following information:

Monitor - Working with the Object List

- The objects for the selected processing steps. You can control which objects are displayed for each processing step by means of a filter that takes the individual processing statuses into account. In application toolbar *icons for object list*, choose the icon *Objects*: *Set status filter*
  The system uses the last user-specific default setting of the dialog box. Note the default settings of this dialog window in the SAP standard system. The last user-specific setting of the dialog box is the default.

- The processing step performed for the object

- The processing status of the object for each processing step

- A check box you can select to indicate that you have processed the object in the worklist monitor

- The person responsible for the object (if any)

Message List

The message list is located in the lower right-hand portion of the screen. The message list displays messages for certain objects. You can use these messages to analyze the causes of error for each object and processing step.

See also:

Schedule Manager: Multilevel Worklist [Page 385]

Multilevel Worklist: Process Flow [Page 398]

For detailed information on using the monitor of the Schedule Manager, see the following section:

Processing Status of Objects and Processing Steps [Page 414]

Processing Worklists [Page 403]

Processing Worklists

Use

You process worklists in the monitor of the Schedule Manager.

Navigating to the Monitor

Procedure

1. You can access the monitor in the following ways:

    a. In the Schedule Manager, there are three ways of accessing the monitor from the screen *Schedule Tasks for Task List*: By selecting a calendar day, selecting the desired tasks in the daily overview, and then choosing *Monitor daily overview* in the application toolbar; by choosing the *Monitor* icon above the daily overview; or by double-clicking on a task in the daily overview.

    b. From the menu of the application component. For example, to access the worklists of the *Product Cost by Period* component, go to the menu of *Product Cost by Period* and choose *Period-End Closing → Schedule Manager → Worklist Monitor.* Choose the following: *Product Cost Collector* or *Cost Object Hierarchy.* The screen *Select Worklist* appears.
        In the selection screen, use the possible entries function for the *Application* field to select the application component for which you want to call up the worklist (such as *Cost Object Controlling: Manufacturing Orders and Product Cost Collectors*). Usually the appropriate application will already be shown as a default. Enter the additional selection criteria such as the period and fiscal year, and choose *Enter*. You can further restrict the selection with the icon *Further selection criteria.*

Result

The screen *Schedule Manager: Monitor* appears.

Working with the Monitor of the Schedule Manager

Using the Monitor

The monitor enables you to analyze the objects processed in a worklist and control how the objects are processed further. The focus is on the objects for which errors were issued.

Objects for which errors were issued in a processing step do **not** enter the next processing step.

You can analyze and correct the error, or you can instruct the system to skip processing (that is, not to process the objects in the corresponding step). Skipping processing can be appropriate for objects that have errors but whose value is negligible.

You instruct the system to skip processing by setting the processing status to *skip processing*. The system then processes the object in the next processing step as if it had been processed without errors in the previous step.

If the object is part of a hierarchy, this can also prevent the object from stopping the entire hierarchy from being processed.

The functions *hierarchy display* and *hierarchy comparison* provide support when you search for errors.

Processing Worklists

> When actual overhead rates were calculated in the period-end closing process, one production order was not processed due to faulty Customizing settings. The production order is assigned to a WBS element. When the cost accountant reviewed the objects in the monitor, he decided that the missing overhead is insignificant and can be disregarded, since the effort involved in finding and correcting the error would be out of proportion to the amount in question. The faulty production order should therefore be included in results analysis for the WBS element. To prevent the entire project to which the production order is assigned from being excluded from processing, the accountant sets the processing status of the production order for the step *overhead* to *Skip processing*.

On the other hand, it may sometimes be necessary to process an object again even though it has been processed without error. You do this by setting the status *Repeat processing*. This can be appropriate in cases where incorrect Customizing settings have resulted in improper values. The processing steps only recognize errors that are indicated as errors in the monitor. However, an object can be faulty in a business sense without necessarily generating an error message.

Such errors can only be found by checking the results by hand.

In the flow definition, you can specify that a manual check (usually by the cost accountant) should take place after certain processing steps.

To force renewed processing of the object after correcting the error (in our example, this would involve selecting another results analysis method in Customizing), you change the processing status to *Repeat processing*.

> Suppose you want to calculate results analysis data for a WBS element. In Customizing, you selected a results analysis method that causes unrealized profits to flow into inventory valuation. However, you don't want unrealized profits to be inventoried.

It may also be necessary to force an object to be processed due to the fact that postings which debited an object after period-end closing made the period-end closing data obsolete.

> Suppose you have performed period-end closing for a production order. All processing steps of the production order were performed without error. The production order is then debited with additional costs that must be accounted for in period-end closing. You must therefore force the system to repeat the processing steps for the production order. In this case, you only need to force a repeat of the first processing step of the sequence. The production order is automatically included in all subsequent processing steps.

The monitor of the Schedule Manager is divided into three screen areas:

- Structure tree with worklists/processing steps/jobs

- Object list

- Message list (you have the choice between object messages, step messages, and messages of the originating objects)

Structure of the Monitor
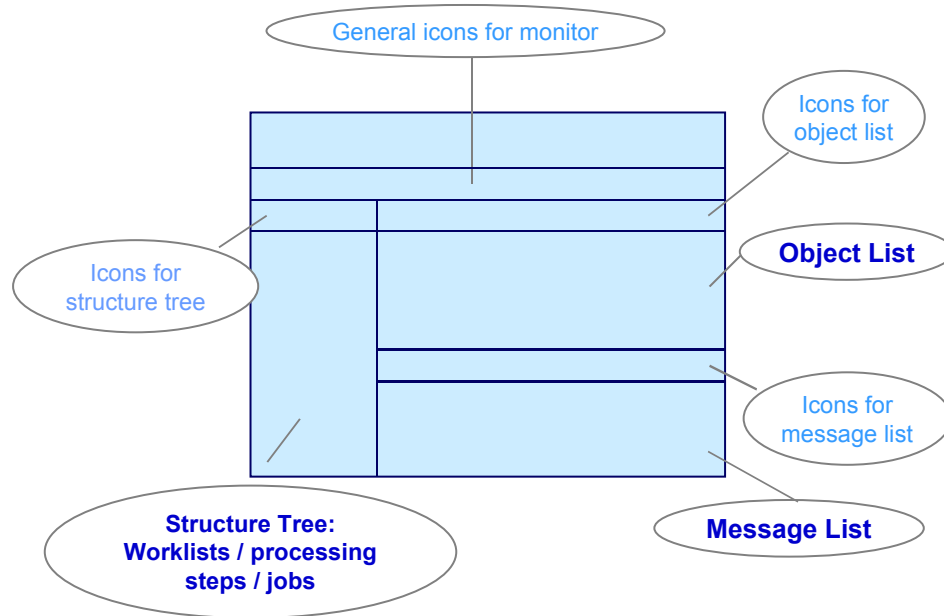
(see also: Schedule Manager: Monitor - Working with the Object List [Page 400])

Different functions are available in each screen area. These functions are described in the Procedure section below.

Procedure

Displaying Objects for One or More Processing Steps

You want to view the processed objects for one or more processing steps.

> In the object list, you can choose to view all processed objects or only the objects with errors, for example, for one or more processing steps. Since the worklist's primary function is to assist you in analyzing the objects with errors, you should limit yourself to viewing only the objects that have errors. If you choose to view all processed objects, this will reduce system performance.

With the default settings of the standard system, objects with the following processing statuses are displayed:

- Flagged for postprocessing

- Processing forced manually

- Error

- Followup error

Processing Worklists

- Hierarchy error

- Minor error

For detailed information on the processing statuses updated for the objects, see the following section: .

To view the objects, proceed as follows in the structure tree *worklists/processing steps/jobs*:

Double-click on a **processing step** in the *structure tree with worklists/processing steps/jobs* to generate the *object list* for that processing step. If there are any messages that refer to the processing step as a whole (rather than to specific objects), they are displayed in the *message list*.

Double-click on a **worklist** in the *structure tree with worklists/processing steps/jobs* to generate the *object list* for all processing steps. If there are any messages for the worklist, they are shown in the *message list*.

You can also select the processing steps with the context menu. Proceed as follows:

a) **To display all processing steps for the objects in a worklist:**

Select a worklist with the right mouse button and choose *Object list - All steps* in the context menu. The object list for the worklist is generated.

> The object list can display up to ten processing steps. If there are more than ten steps, the dialog box *Select Processing Steps* appears, in which you can select a maximum of ten steps.

a) **To display individual processing steps for the objects in a worklist:**

If you don't want to see all processing steps for a worklist, select a worklist with the right mouse button and choose *Object list - Select steps* in the context menu. The dialog box *Select Processing Steps* appears, in which you can select a maximum of ten steps.

> When you process worklists for manufacturing orders, the *object list* has a column for the material number. The material shown in this column is usually the material that is manufactured with the order shown in that row.

In joint production, the column shows the following:

- For the order header (i.e., for the object "ORD order"):

    - If a process material is being used, the process material is shown.

    - Otherwise the leading co-product is shown. The leading co-product is the co-product shown in the first order item.

- For the order item (i.e., for the object "OIT order item"), the material produced with that order item is shown.

Displaying the Processing Status for Each Object and Processing Step

The *object list* shows the processing status for each object and processing step. A column is displayed in the *object list* for each processing step selected in the structure tree

worklists/processing steps/jobs. This column shows the processing status of each object. The processing statuses are represented as icons. If you want to know which processing status is assigned to which icon, then click on the corresponding *Legend* icon above the *object list*. The screen *Processing Status: Icon Legend* appears. The ![i] icon in the dialog box provides explanations of the processing statuses.

For detailed information on processing statuses, including examples, see the following section:

Filtering Objects

You can also display objects of other processing statuses through a status filter. To do so, click on the filter icon (*Objects: Set status filter*) above the object list. Select the relevant processing status and press *Enter*. All objects that have the corresponding processing status are displayed in the object list.

You can also filter objects according to criteria other than the processing status (function of the ABAP List Viewer).

Deciding Whether to Process Objects Further

You now have a list of objects. These are normally the objects with errors. You must decide whether to continue processing these objects. You have the following options:

- You correct the errors.

- You instruct the system to continue processing the objects even though you have not corrected the errors. This is appropriate for objects whose value is insignificant.

Reports on the objects are available to help you reach a decision.

Executing Reports

Reports can help you determine the following:

- Whether the value of the object is negligible

    In this case, you instruct the system not to process the object. Otherwise, you correct the error.

- Whether the values calculated for an object are acceptable in a business sense. You may also want to do this for objects that were processed without error (processing status *OK*).

    If this is not the case, then once you have corrected the problem (the error may have been caused by faulty Customizing settings), you can force *further processing*. You can also assign further reports with the function *report assignment* (if supported).

To view a report on an object, position the cursor on the object in the *object list* and click on the *Execute report* icon above the *object list*. Then enter the required parameters and select the report you want to see (only for projects; production orders do not allow reports to be selected). On the basis of the data in the report, you can now decide how the object is to be handled.

To analyze the error for the objects with the processing status *Error*, look at the messages for the object and processing step.

Messages for One or More Objects

To see the messages that were issued for one or more objects:

1. Select the objects.

Processing Worklists

> In the *object list*, select an object by positioning the cursor on the object, holding down the left mouse button, and pressing the Ctrl key on the keyboard. Continue to select further objects in the same way.

2. View the messages.

> To see the messages for the selected objects, click the *Display object messages* icon above the *object list*. You can also display the messages for **one** line of the object list by double-clicking on the line.

> In the pull-down menu of the *Display object messages* icon above the object list, you can choose between the following types of messages:

> – *Object messages*

> – *Step messages*

> – *Messages of originating objects*

> The object messages appear in the *message list*.

3. View the long text of the messages.

> To analyze the error, you will normally need to look at the long text of the message. To see the long text, double-click on the message in the *message list*.

Step-Specific Messages (Messages Without Reference to a Specific Object)

To see the messages for a particular processing step, go to the object list and choose the drop-down menu of the *Display object messages* icon, and then choose *Display step messages*. The step-specific messages are displayed in the message list.

Messages of Originating Objects

You should look at the *messages of the originating objects* particularly when you want to analyze objects with the processing status *Followup error*.

Skipping Processing Manually

You have decided to have the system skip a processing step for one or more objects.

• In the *object list*, select the step statuses that you want to change. Click the icon *Set processing status*.

If you select the status *Skip processing*, the system changes the processing status to *Skipped manually*. The object is not included in this processing step during the next execution of the processing step sequence. The object enters the subsequent processing step as if it had been processed without errors.

Forcing Processing Manually

There are two ways to force the system to reprocess objects:

Position your cursor in the *object list* and press the right mouse button. In the context menu, choose *Repeat processing*. The system changes the processing status to *Postprocessing forced manually.* The next time the processing step sequence is performed, the object is included in that processing step and in all subsequent processing steps.

You can also force the system to process objects by selecting the objects and clicking the icon *Set processing status* (icon in the object list) and choosing *Repeat processing*. You can select multiple objects at the same time with the following methods:

- To select an entire column, click on the column header.

- To select individual columns, lines, or cells, hold down the *Ctrl* key and click.

The system changes the processing status to *Postprocessing forced manually.* The next time the processing step sequence is performed, the object is included in that processing step and in all subsequent processing steps.

Editing Master Data

From the *object list*, you can access master data maintenance for the object. To do so, position your cursor on the relevant object and click on the *Edit master data* icon above the object list. The system starts a new session. You are now in the change mode of the relevant object. You can close the session by going back (green arrow).

> The error message *Maintain the settlement rule of the sender* is issued for a production order for the processing step *Settlement*. To maintain the settlement rule, call up the production order.

Display as Hierarchy

In the hierarchy view, the objects are displayed according to their hierarchical relationship to each other.

Select one or more objects in the object list and choose *Display as hierarchy.* The screen *Object list - hierarchy view* appears. In the hierarchy view, the object or objects you branched from are selected.

Expand the object hierarchy. This provides a quick overview of the relationships between the faulty objects. You can process objects to which a particularly large number of faulty objects are assigned.

To go back to the object list from the hierarchy, choose *Back to object list*.

> In the *object list hierarchy view* screen, you can only change the processing status of individual objects. Mass changes to the processing status of the objects is only possible in the *object list*.
>
> In addition, a requirement for the *display hierarchy* function is that the objects have hierarchy information in the worklist. This is the case in the *Project System* and for cost object hierarchies.

Hierarchy Comparison

Objects that have hierarchy information (such as projects and cost object hierarchies) can be compared with each other using the *hierarchy comparison* function. This allows you to more efficiently find errors that are due to differences in the values of two periods. Comparing the data of two periods is particularly useful because the items and values of the objects in the hierarchy can change between periods.

Processing Worklists

In the project system, it is also possible to compare two versions of an original structure. The changes that were made to the version are shown in a separate window.

Before you start the comparison, you specify which two data structures you want to compare. You define one of the two structures as the original structure and the other as the version. During the comparison, the two structures are represented in the form of a hierarchical structure tree in a separate screen area. You can compare individual objects, subhierarchies, or the two complete structures. The results of the comparison are grouped into different categories:

- New objects (which objects were added to the version?)

- Changed objects (which object attributes were changed, and how?)

- Nonexistent objects (which objects do not exist or were deleted?)

- Hierarchy position of changed objects (which objects changed their position in the hierarchy?)

For detailed information on the hierarchy comparison, see the documentation under:

Logistics → Project System → Collaborative Engineering and Project Management → Monitoring → Comparing Two Folders

The Schedule Manager only supports the comparison function; synchronization is not possible.

Sending Objects

Select one or more objects in the object list and choose the *Send* icon above the object list. To receive a log of the transmission, choose *Send log*. If you choose *Send to agent*, the person responsible for the object receives a mail in his or her inbox (*Office → Workplace → Inbox*) with information on the required change. From this mail, you can access the screen *Schedule Manager: Monitor* which displays only the sent objects. Note that the filter function in the icons of the object list (*Objects: Set Status Filter*) is not available when you access the monitor through your office inbox.

To be able to use the function for sending objects, the following settings must be made in each client:

1. Choose *Tools → Business Workflow → Development → Definition Tools → Tasks/Task Groups → Change*.

2. Select task type *Workflow template* and enter task **20001060** (SCMA_WL_DISP). The screen *Workflow Template: Change* appears.

3. Select the tab *Triggering events*. Activate the event linkage by clicking the icon *Event linkage active* in the first column. The light symbol changes to green.

4. Save the data.

If no agent can be determined for the object, the dialog box *Entry of Responsible Agent* appears, in which you can specify the user responsible for further processing.

The object list contains the field *Agent ID* next to the existing column headers. This field shows the agent responsible for the object. The agent can be an R/3 user or a node in the organization plan.

On the basis of the organizational data of the objects (such as the plant, company code, and so on), you can specify criteria for each object type that are used to determine the agent.

You specify the agents responsible for the objects under:

Schedule Manager → Extras → Settings for worklist → Maintain responsibilities for objects.

For detailed information on maintaining responsibilities, refer to the SAP Library under:

Human Resources → Personnel Management → Organizational Management → Integration with SAP Business Workflow → Role Resolution → Role Definition → Define Roles Using Responsibilities

Define Roles Using Responsibilities [Ext.]

Flagging Checked Objects

You can flag objects to indicate that you have checked them.

To do this, either select the check box **Object checked** directly, or select one or more objects and click the icon *Change "checked" indicators* and then in the pull-down menu:

- *Select indicators*: selects the check boxes for the selected objects

- *Deselect indicators*: deselects the check boxes for the selected objects

- *Toggle checked <-> not checked: Toggles the status for the selected objects*

The indicators are only visual and have no effect on processing.

Displaying Other Worklists

To display other worklists, click the *Other worklist* icon at the top of the screen. The enter the required data and choose *Enter*. This function is only available when you access the Schedule Manager through the application components. When you access the Schedule Manager through a mail in your Office inbox, this function is **not** available.

Triggering Reprocessing of the Worklist

Prerequisites

Before you trigger reprocessing of the worklist, you must have done the following:

- Corrected the errors of the faulty objects, or instructed the system to skip processing for those objects

- Forced reprocessing of objects that are faulty in a business sense

Procedure

To trigger reprocessing, access the mail that was sent to you through the workflow. Start reprocessing from this mail.

Result

The following objects are processed:

- Objects that had errors in the previous execution of the processing step sequence and whose errors have been corrected

    These objects are processed starting with the processing step in which the error occurred.

Processing Worklists

- Objects that had errors in the previous execution of the processing step sequence and for which the processing status *Skip processing* was set

    These objects are processed starting with the processing step following the processing step for which the status *Skip processing* was set.

- Objects that received the status *Postprocessing forced manually*

    These objects are processed starting with the processing step for which the status *Postprocessing forced manually* was set.

See also:

Many of the icons displayed above the individual screen areas support the standard functions of the ABAP List Viewer (ALV). These icons are not explicitly explained here. The same applies to the standard ALV functions in the context menu (right mouse button). For information on the ALV, refer to the SAP Library under *Cross-Application Components (CA) -> General Application Functions -> ABAP List Viewer*, or under: Functions of the ABAP List Viewer [Ext.]

Choosing Objects for Processing

Use

An advantage of this worklist [Ext.] is that the objects for processing only have to be selected once per flow definition.

Prerequisites

You are in flow definition [Ext.] in Schedule Manager (*Extras → Flow definition → Edit flow definition).*

Procedure

20. Choose a processing step in the navigation area.
    On the right of the screen, you see *Flow definition: Task details*.

21. Enter a new variant for this processing step and define a name for this new variant in the *Variant* field .

22. Choose *Create variant*.
    The *Variant Maintenance* screen appears. Program <program name>, variant <variant name>.
    Here you can determine the scope of selection of the program variants for the flow definition.

23. To be able to choose more extensive selection criteria, first complete the required entry fields, for example *Period* <006>, *Fiscal year* <2000>.

24. You can now define further selection parameters using the various pushbuttons that are offered in dialog boxes.

25. Choose *Attributes*.
    The *ABAP: Save Attributes of Variant <Variant name>* screen appears.

Processing Status of Objects

Use

The processing status of an object tells you whether processing was successful in a specific processing step.

For every object listed in the worklist of the Schedule Manager [Page 385], a processing status is indicated for each processing step. The system sets the processing status during processing. This status can be changed manually in the monitor.

In addition to information on the success of processing, the processing status shows whether further processing of an object is allowed. This ensures that an object which was not processed in a processing step due to errors is not passed on to the next step.

Integration

The processing status is displayed in the monitor. The status is not updated to the processed object. For more information on the monitor, see the following section: Schedule Manager: Monitor - Working with the Object List [Page 400]

> The examples described below are based on the use of the multilevel worklist in *Cost Object Controlling* and the *Project System*.

Features

Through the processing status, the worklist of the Schedule Manager controls whether an object is processed in the following processing step. The system automatically sets the following processing statuses:

Automatic Processing Statuses

- Not processed

   The object has not been processed yet.

- OK

   The object was processed without errors.

- Minor error

   A warning or error occurred while the object was being processed. However, this error does not prevent further processing in a following step.

- Flagged for postprocessing

   This status is set in the following case:

   The object must be processed in a processing step because, for example, processing was forced. In the subsequent processing step, the object has one of the following processing statuses:

   – *OK*

   – *Not relevant*

– *Minor error*

– *Filtered*

Since the object normally would not be processed when it has this processing status, the system sets the processing status of the subsequent processing step to *Flagged for postprocessing.* This ensures that an object processed in one step is always included in the subsequent processing steps. The processing status is reset to *Flagged for postprocessing* regardless of whether the object was changed in the previous processing step.

- Error

An error occurred while the object was being processed that prevents further processing. You can either correct the error or instruct the system to include the object in the subsequent processing step despite the error (processing status *Processing skipped manually*).

- Followup error

An object receives the processing status *Followup error* for a processing step if it belongs to a group of objects that are processed together and this group contains one or more objects that were processed with errors (processing status *Error*), or were not processed, in the **previous** processing step.

The object with the processing status *Followup error* is not processed in the processing step for which it received that error. This ensures that the entire group of objects can only be processed when none of the objects contains an error that hinders the processing of an object in the group.

See the end of this text for an example of the processing statuses *Followup error* and *Hierarchy error*.

- Hierarchy error

An object receives the processing status *Hierarchy error* for a processing step if it belongs to a group of objects that are to be processed together and this group contains one or more objects that were processed with errors in the **current** processing step (processing status *Error*).

The object with the processing status *Hierarchy error* is not processed in the processing step for which it received that error. This ensures that the entire group of objects can only be processed when none of the objects contains an error that affects processing.

See the end of this text for an example of the processing statuses *Followup error* and *Hierarchy error*.

- Filtered

The user has excluded the object from processing by defining an application-specific filter.

- Not relevant

– The object is not relevant for processing in this processing step due to its attributes derived from Customizing or master data.

– The object is not relevant due to a status that has been set for it.

Processing Status of Objects

Example 1:

According to the selection parameters, all production orders of a plant are selected for variance calculation in period-end closing of *Product Cost by Order*. No variance key has been specified for some of the production orders. These production orders are not included in variance calculation. The production orders receive the processing status *Not relevant*.

Example 2:

According to the selection parameters, all production orders of a plant are selected for overhead calculation in period-end closing of *Product Cost by Order*. A system status or user status is set for some production orders, which does not allow processing. Examples of this are the system statuses *open*, *closed*, *deletion flag* and *locked*.

In some cases, a given status may make an object relevant or irrelevant only in certain processing steps.

Example:

A production order has a settlement rule with the settlement type FUL (full settlement). If neither the status DLV (delivered) nor the status TECO (technically completed) is set for the object, it is *not relevant* for *variance calculation* and receives the corresponding processing status. The order is relevant for the other processing steps of period-end closing such as template allocation, overhead calculation, calculation of work in process and settlement, regardless of whether one or none of the two statuses is set.

As a rule, with the processing status *not relevant*, no messages are issued for the object and processing step. To see the messages that caused the processing status to be set to *not relevant*, you can have the system process the object individually. Possibly, you can also force the issuance of messages through user-defined error management by putting the message type at the top.

For WIP calculation and results analysis, you can force the system to issue messages despite the status *not relevant*. You can guarantee the issuance of messages by setting the indicator *Log information messages*. If the indicator is set, all information messages are issued including those from processing within and outside of the multilevel worklist, even if the status *not relevant* is set for an object and processing step.

Manual Processing Statuses

You can set the following processing steps manually:

- Processing skipped manually

    In the object list, the user manually sets the processing status of an object and processing step to *Skip processing*. The system changes the processing status to *Processing skipped manually*.

The object with this processing status is not included in the relevant processing step, and enters the next processing step.

- Processing forced manually

In the object monitor, the user manually sets the processing status of an object and processing step to *Repeat processing*. The system changes the processing status to *Processing forced manually*. The object is processed in the relevant processing step again even if the processing step had been executed without error.

> If an object was processed without error in an update run for project interest calculation, new interest calculation can only be triggered if the previous interest calculation is first reversed. If no reversal is carried out, the object is not included in the recalculation of interest, despite its processing status.

Example

Example of the processing statuses *Follow-up error* and *Hierarchy error*:

During the calculation of actual overhead rates in period-end closing, a production order assigned to a WBS element was not processed due to deficient Customizing settings. The production order receives the processing status *Error* for the processing step *Actual overhead*.

In addition to this production order, other production orders are also assigned to the WBS element. All other production orders assigned to the WBS element receive the processing status *Hierarchy error* for the processing step *Actual overhead*. This status indicates that an object of an object group (all production orders assigned to a WBS element) contained errors in the processing step.

The processing step following the processing step *Actual overhead* is *Results analysis*. During results analysis for the WBS element, the data is included that was updated to the production orders assigned to the WBS element. Because one of the production orders assigned to the WBS element was marked as faulty and all other production orders received the corresponding processing status *Hierarchy error* in the processing step *Actual overhead,* the processing step *Results analysis* can not be carried out successfully for the WBS element.

The WBS element receives the processing status *Followup error* for the processing step *Results analysis.*

If you decide that the deficit resulting from the missing overhead is so low that it can be ignored, you can avoid time-consuming error analysis by specifying a processing status that prevents the production order from being included in the calculation of overhead. All production orders, including the one for which no overhead was calculated, are included in results analysis.

If the value of the production order is significant, you must remove the cause of error.

Additional Information

Note the following:

- There is no one-to-one assignment of message types to processing statuses in the worklist of the Schedule Manager. For example, not every message of message type "E" (error) results in the processing status *Error* for an object in the Schedule Manager in that processing step.

Processing Status of Objects

The system issues the message CK 214 as an error message.

If this message is based on target cost version 0 in variance calculation, the processing status *Error* is set in the worklist of the Schedule Manager.

If this message is based on a target cost version in variance calculation that is not 0, the processing status *Minor error* is set in the worklist of the Schedule Manager.

- Some messages are issued with different message types based on the object to be processed. Different processing statuses are set in the Schedule Manager.

In variance calculation, if message KV 158 is based on a single production order, the system issues this message as an error message. The processing status *Error* is set in the worklist of the Schedule Manager.

In variance calculation, if this message is based on a product cost collector to which multiple production orders are assigned, the system issues a warning message. The processing status *OK* is set in the worklist of the Schedule Manager.

Note the following:

If you are using the multilevel worklist of the *Schedule Manager*, the objects with the processing status *Error* for a processing step are not processed in the subsequent step. In many cases, the processing status *Error* is set because a message was issued with the message type "E" (error). When calculating variances and scrap variances, you can use *user-defined error management* to influence the message type for a large number of messages In the *worklist of the Schedule Manager*, this can result in a different processing status being updated to the processing step. This enables you to ensure that objects are processed in the subsequent processing step, for example.

A message was issued as an error message in variance calculation. The processing status *Error* is issued in the monitor.

The error is not serious, so you decide that the object should be processed in the next processing step. You therefore use user-defined error management to specify a message type of lower severity (such as "W" for a warning message). This ensures that the object does **not** receive the processing status *Error* for the processing step in the worklist due to this message. The object then enters the subsequent processing step.

No Processing Status Output

It may occasionally happen that no processing statuses are issued. See the following for an example of this: Separation of Value Calculation from Goods Movements: Effects on Cost Object Controlling [Ext.].

See also:

For information on the following topics and many others, see the section :

- When processing should be skipped or forced manually

- How to decide whether to do so

- How you can change the processing status

For detailed information on user-defined error management, see the following section:

User-Defined Error Management in Cost Object Controlling [Ext.]

Scenarios for the Schedule Manager

Purpose

You can use the elements of the Schedule Manager in different scenarios in various combinations.

Prerequisites

You are working on a complex process, which consists of many different business transactions (tasks).

Process Flow

You decide which functions (scheduler [Page 340], monitor [Page 358], flow definition [Page 365], multilevel worklist [Page 385]) you require to execute and monitor your process.

You can choose between three scenarios:

- Starting Transactions/Reports Online, Scheduling Jobs [Page 421]

- Starting Transactions/Report Online, Scheduling Jobs and Job Chains [Page 422]

- Starting Transactions/Reports Online, Scheduling Jobs and Job Chains, Worklist [Page 423]

Starting Transactions/Reports Online, Scheduling/ Monitoring Jobs

Use

Not only can you start transactions and reports online, and schedule jobs in the task list with this scenario, but you can also monitor the scheduled jobs in the monitor [Page 358] while they are being executed.

Integration

You need the scheduler [Page 340] and monitor from the Schedule Manager for this scenario.

Prerequisites

The application contains reports for your processing, which you can schedule as jobs.

Features

This scenario contains the following work steps:

- Creating a Task List [Page 344]

- Inserting a Task/Task Group in the Task List [Page 345]

- Scheduling Tasks in the Daily Overview [Page 353]

- Monitoring Jobs in The Monitor [Page 358]

Activities

In this scenario, you choose a task list in the scheduler or create a new task list.

You insert tasks in the daily overview. You can monitor the jobs in the monitor by selecting a task with the right mouse button and choosing *Monitor*.

Starting Transactions/Reports Online, Scheduling Jobs/Job Chains, Monitoring Jobs

Use

Not only can you start transactions and reports online, and schedule jobs/job chains from the flow definition in the task list with this scenario, but you can also monitor the scheduled jobs in the monitor [Page 358] while they are being executed.

Integration

For this scenario, you need the following elements: the scheduler [Page 340], the monitor of the Schedule Manager [Page 358], and the flow definition [Page 365].

Prerequisites

The application contains reports for your processing, which you can schedule as jobs.

Features

This scenario contains the following work steps:

- Creating a Task List [Page 344]

- Inserting a Task/Task Group in the Task List [Page 345]

- Scheduling Tasks in the Daily Overview [Page 353]

- Monitoring Jobs in The Monitor [Page 358]

- Creating a Flow Definition [Page 365]

Activities

In this scenario, you choose a task list in the scheduler or create a new task list.

You insert tasks in the daily overview. You can monitor the jobs in the monitor by selecting a task with the right mouse button and choosing *Monitor*.

You can also insert job chains (that you specified in a flow definition) into the task list and schedule them in the daily overview. You can also use the monitor to check processing of the job chains.

Starting Transactions/Reports Online, Scheduling Jobs and Job Chains, Worklist

Use

Not only can you start transactions and reports online, and schedule jobs in the task list with this scenario, but you can also monitor the scheduled jobs in the monitor [Page 358] while they are being executed. You can also use worklists and check them in the object monitor [Page 400] in the generalized worklist.

Integration

For this scenario, you need the scheduler [Page 340], the monitor of the Schedule Manager, the flow definition [Page 365] and the multilevel worklist [Page 385].

Prerequisites

The application contains reports for your processing, which you can schedule as jobs.

You are using worklists.

Features

This scenario contains the following work steps:

- Creating a Task List [Page 344]

- Inserting a Task/Task Group in the Task List [Page 345]

- Scheduling Tasks in the Daily Overview [Page 353]

- Monitoring Jobs in The Monitor [Page 358]

- Creating a Flow Definition [Page 365]

- Working with the Worklist Monitor [Page 400]

Activities

In this scenario, choose a task list from the scheduler, or create a new one. Only use task lists that have the task type *flow definition*.

You insert tasks in the daily overview. You can monitor the jobs in the monitor by selecting a task with the right mouse button and choosing *Monitor*.

In addition to the scheduler, monitor and flow definition, you can also work with a generalized worklist. Objects that are to be processed in a processing step sequence are managed in the worklist. Define the processing step sequence in the flow definition.

The worklist monitor shows you, for example, which objects were processed without errors, and which objects could not be processed. You can display information on the cause of errors, and thus control the way in which the object is processed further.

The generalized worklist ensures that when processing step sequences are repeated, the system only reprocesses the objects that previously contained errors and those for which you manually forced reprocessing.