QAD Enterprise Applications
Enterprise Edition

User Guide
QAD Costing

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Chapter 1

Introduction to Costing

Costing covers how costs are applied and tracked. It provides information for setting up and using costing features with the Cost Management module, as well as using standard inventory functions.

Overview

A key factor influencing whether a company manufactures a product is the cost of making that product. Costs also determine the level of production output.

The cost of producing at a specific level of output depends not only on the price of needed resources—materials, labor, fuel, transportation, and so on—but also on the quantities of resources needed to produce that output. The level of output also depends on how the company uses fixed resources, such as the size of the plant, in combination with variable resources, such as labor, material, or equipment. It is important to know the total cost of production at varying levels of output along with per-unit costs.

Direct costs are all costs that can be traced to a single product. This includes the cost of all material and direct labor that go into that product, as well as the cost for any outside processing. All production costs other than direct costs are considered *indirect costs*, or overhead. Overhead costs are classified as either fixed or variable.

- Fixed overhead costs do not vary with changes in production output and cannot be avoided in the short term. These costs must be paid even if production output is zero. Some examples are rent, insurance premiums, and interest payments.
- Variable overhead costs, also called burden, change with the volume of production output. Variable costs can be controlled and altered in the short run by changing the level of production output. Some examples are supplies, power, fuel, and transportation costs.

Tracking these costs is important in determining product costs, total cost of production, inventory values, and productivity.

Chapter 2

Cost Sets and Methods

Cost data is collected and calculated using cost sets and costing methods. A *cost set* is a collection of related cost data. A *costing method* defines how cost data in a cost set is calculated and maintained.

This chapter discusses the cost sets and methods that are used to calculate costs.

Cost Sets

There are two default cost sets for each site: general ledger (GL) and current.

- GL cost distinguishes costs used to value inventory and determine cost-of-goods sold from other costs such as current costs or planning costs.
- Current cost is normally based on recent production and/or purchases. Current costs are the actual costs from inventory receipts and work order labor transactions.

The system supports GL and current costs by item and site. Only one GL and one current cost set can be active for each site.

Standard costing provides one GL and one current cost set for each site. GL cost sets and current cost sets must have the same name at all sites. For example, if the name for the GL cost set is *Standard*, it must be Standard for all of the sites. Use Item Cost Set Name Change (1.4.14) to change the name of a cost set as needed.

The Cost Management module lets you create and maintain additional GL and current cost sets for each site beyond the default sets. You can also use different names for current and GL cost sets at each site. See Chapter 5, “Cost Management,” on page 31.

You can use Cost Management functions to create an unlimited number of cost sets for:

- Maintaining different GL and current cost sets for each site
- Cost planning
- Cost simulations
- Historical cost comparisons

Cost Management also has inquiries that display which sites use a particular cost set and the GL and current cost sets in effect at each site.

Costing Methods

Companies use costing methods for managing business as dictated by business conditions or, in some cases, law. Costing methods include:

- Standard Cost
- Average Cost
- Last Cost
- Periodic Cost

Standard Cost

Standard costs measure how much an item should cost. Typically, standard costs are used for general ledger (GL) transactions and are not automatically updated by the system. The standard cost for an item is used as the basis for all inventory-related accounting transactions as they are processed. Actual expenses are tracked and measured against this standard.

Standard Cost Variances

Because the standard is only a target or estimate of item costs, the actual costs incurred rarely match the standard exactly. In order to account for the difference between standard and actual costs, variances are calculated and recorded.

Total variance is the difference between standard cost and actual cost. Total variance can result from a difference in purchase price, quantity used, or both. A *rate variance* occurs when the actual cost of a resource differs from the standard rate. A *usage variance* occurs when the actual quantity of the transaction differs from the standard quantity. For example, a usage variance occurs when components are issued for a different quantity than those defined on the standard bill of material (BOM), or when additional non-standard components are issued.

Average Cost

With average costing, costs are recalculated during item receipts and other inventory-related activities using a simple weighted-average calculation.

These system activities can update item costs:

- Receiving inventory from a work order or repetitive schedule or using Receipts–Backward Exploded (3.12).
- Running the accounting close function for a work order or cumulative order to consider any costs posted after the last receipt.
- Transferring inventory between sites; for example, using distribution orders or inventory transfer functions.
- Receiving quantities from purchase orders or supplier schedules or returning items to a supplier using functions such as Purchase Order Returns (5.13.7).
- Finalizing matching of a purchase order receipt with a supplier invoice. This reverses the effect of the corresponding purchase order receipt and applies only when Current Cost from AP is Yes in Inventory Accounting Control (36.9.2).

The following equation is used to calculate average costs for materials:

*(Receipt Quantity * Receipt Cost) + (Item Quantity on Hand * Current Material Cost)*

The result is then divided by the new quantity on hand (including the receipt) to determine the new average cost of the item.

For manufactured items, current labor, subcontract, and burden costs are calculated for each work order or repetitive operation using the following equation:

*(Item Quantity Received / Cumulative Quantity Completed at the Operation) * Operation's Cumulative Work-In-Process (WIP) Cost*

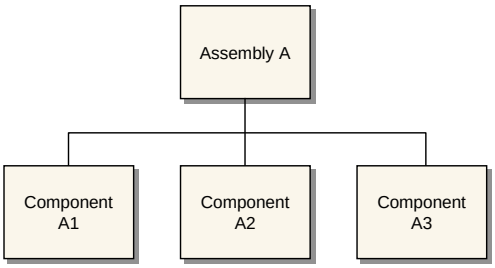
If you are using the Cost Management module, you can use the average costing method to calculate site-specific GL costs as well as current costs. Otherwise, the average costing method is used only for current costs. See Chapter 5, "Cost Management," on page 31.

The following example illustrates how average costs are calculated when receiving items on a work order.

Average Cost Example

Assembly A has three components: A1, A2, and A3.

Fig. 2.1
Assembly A Product Structure



A quantity of 20 is received for an assembly A work order. First, the labor, burden, and subcontract cost categories are calculated. Table 2.1 uses labor as an example.

Table 2.1
Operation Costing, Labor

Operation	Cum. Qty. Completed	Cum. WIP Labor Cost	Work Order Receipt Cost Calculation
10	100	$100	20/100 * $100 = $20
20	75	$150	20/75 * $150 = $40
30	50	$20	20/50 * $20 = $8
40	40	$50	20/40 * $50 = $25

Next, material cost is calculated.

Table 2.2
Operation Costing, Material

Component	Qty. Per Assembly	Unit Cost	Work Order Receipt Cost Calculation
A1	1	$5.00	20 * $5.00 = $100
A2	1	$1.00	20 * $1.00 = $20
A3	2	$1.00	40 * $1.00 = $40

For this work order, the cost of Assembly A is:

(93 + 160) / 20 = $12.65

For a quantity of 10 in stock at $12.00 each, the new average cost for each assembly A would be:

*(10 * $12.00) + (20 * $12.65) / 10 + 20 = $12.43*

Last Cost

The last cost method is used only for current costs and is not available for costing in the general ledger. Costs are updated each time the item is received. For example, an item’s material cost is updated to the purchase order (PO) cost each time a PO is received.

Periodic Cost

Periodic costing provides functions that can meet local requirements and business practices when companies revalue and recalculate inventory, transactions, and cost of goods sold.

Periodic costing is a part of the Costing Menu (30) within the Financials module. Programs in the Periodic Costing menu (30.5) calculate the actual cost of an item based on recorded data—inventory transactions, BOMs, routings, purchase prices, labor/burden expenses—over a certain user-defined period, which can be any length, up to an entire GL period. Under most circumstances, it also takes into the account the beginning balance of the item while it is performing the calculation of the period costing. It then batch generates GL transactions based on the cost calculations.

In periodic costing, costs are recalculated for each period, and a new average cost is defined according to what happened during that period—so no amounts need to be posted to variance accounts.

Periodic costing includes functionality to meet IFRS requirements. You can set the costing method to weighted average (WAVG), first in first out (FIFO) or last in first out (LIFO) and print numerous reports, including legal reports. Periodic costing calculates the cost of items periodically and generates GL transaction according to the period costs for all costs. For more information, refer to the Periodic Costing chapter of this user guide.

Using Costing Methods with Cost Sets

In standard costing, only the standard cost method is used for the GL cost set. If you are using the Cost Management module, you can use either the average or standard cost method for GL costs.

The current cost set tracks the running average or the last cost to determine next year’s standard cost or to provide a record of recent actual costs.

Costing methods that can be used with the current cost set are:

- Average. Whenever an item is received, the system calculates the new average cost and stores it in the cost set.
- Standard: Costs are not updated automatically; they must be maintained manually. Updates are typically performed no more than a few times per year.
- Last. For each receipt, the system sets the current cost to the last cost of that item. In the case of purchased items, this is the purchase or invoice price.
- None. The system does not maintain the current costs; they must be maintained manually.

Cost Set Categories

Five categories of costs are tracked for each cost set. These categories maintain cost for both this-level and lower-level costs. *This-level cost* is the cost added at the current stage of manufacturing or the cost of a purchased item. *Lower-level cost* represents cost added at prior stages of manufacturing.

A purchased item has this-level material and, optionally, material overhead cost, but no lower-level costs. A manufactured item has this-level labor, subcontract, burden, and overhead cost, but normally no material cost. A manufactured item has lower-level material cost for components and any subassemblies, and possibly lower-level labor, burden, subcontract, and overhead from the cost of making any lower-level subassemblies.

The following are the various cost set categories:

- Material. The total cost of purchased material. For purchased items, material costs are maintained for each item or item and site. For manufactured items, lower-level material costs are maintained by rolling up the product structure costs.
- Labor. The cost of direct labor applied to an item. Labor cost is calculated from labor rates, setup time, and run hours at each operation of a product's routing.
- Burden. The total variable overhead cost for an item, based on burden rates for labor and/or machines.
- Overhead. The fixed overhead cost, if any, for an item. For purchased items, overhead can be assigned to cover the expense of purchase operations, which can then be recovered as fixed overhead on all purchased items based on a percentage of their cost. Overhead cost can be maintained for each item, or by assigning it as a percentage of other cost categories.
- Subcontract. The cost of outside processing as entered in the routing operation for manufactured items.

Chapter 3

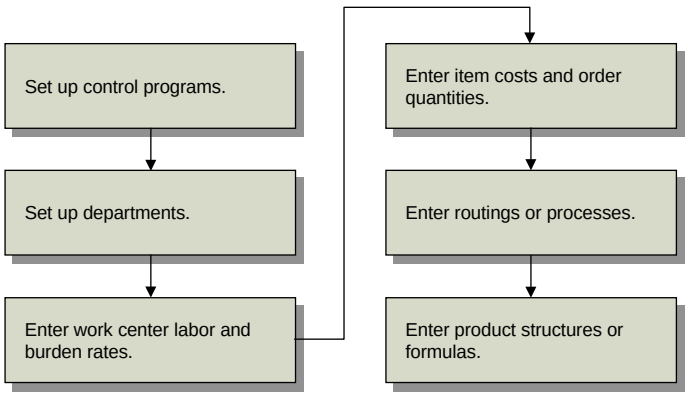
Setting Up Product Costing

This chapter discusses the steps involved in implementing product costing.

Set Up Workflow

Figure 3.1 shows steps for setting up product costing. Each step is discussed in detail in the following sections.

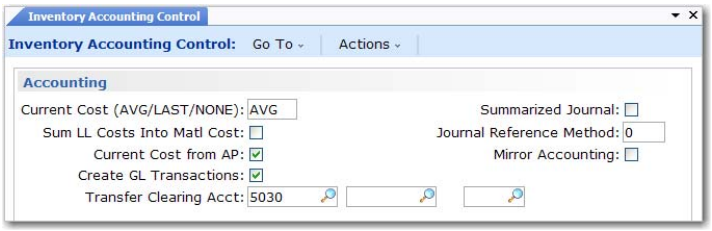
Fig. 3.1
Setting Up Product Costing



Defining Inventory Accounting Control Settings

Use Inventory Accounting Control (36.9.2) to specify how current costs are maintained. These settings are described in detail in the chapter on Inventory Control in *User Guide: QAD Master Data*. This section highlights the issues related to costing.

Fig. 3.2
Inventory Accounting Control (36.9.2)



Current Cost. Current material, labor, and burden costs are maintained as either Average, Last, or None. Because this setting is database wide, all current costs for any site in the database are maintained using the selected costing method.

Sum LL Costs Into Material Cost. Cost-of-goods sold amounts are usually maintained separately for each cost component—material, labor, burden, overhead, and subcontract. However, some companies consider the material cost for an end item to include all costs associated with purchasing or manufacturing components, as well as any direct material costs. To report all lower-level costs as material costs (as if all components were bought from outside suppliers), set this field to Yes.

Current Cost from AP. To update the current material cost when receiver matching is complete, set this field to Yes. When the invoice price differs from the purchase order price, the current material cost is adjusted.

Create GL Transactions. Indicate whether inventory activities create GL transactions. This field does not impact memo-item transactions.

Yes: All inventory issues, receipts, count adjustments, and transfers create GL transactions reflecting the change in inventory asset balances. In addition, any transactions that affect work-in-process inventory create GL transactions, including work order issues and receipts.

No: GL transactions are not created by any of these activities.

Companies using perpetual inventory accounting should set this field to Yes, taking advantage of the automatic journal transactions created by the system.

Companies using periodic inventory accounting normally set this to No. Entries are made manually.

Transfer Clearing Account. Specify the GL account code used to track transfers within the same company (entity). This field cannot be blank when multiple sites are defined. In a single-site environment, the Purchases account is used when this field is blank.

Mirror Accounting. If set to Yes, mirror accounts are used. Whenever an inventory transaction is processed, the system checks to see if mirror accounts are set up in Mirror Table Maintenance (3.20). If they are, the mirror GL transaction is created automatically. If set to No, mirror accounts are not used. Mirror accounting is used in some European countries.

Defining Work Order Control Settings

If you are reporting labor in the Shop Floor Control module, use Work Order Accounting Control (36.9.11) to specify when variances in labor and in burden rate and usage are posted. You can choose to calculate and post variances only when a work order is received or whenever shop floor labor feedback transactions are entered.

Post variances at SFC. Indicate when labor and burden rate and usage variances are calculated and posted.

No: Variances are calculated and posted only when the work order is received. This reduces the number of variance transactions posted to the general ledger, particularly if many shop floor labor transactions are processed before material receipts are recorded.

Yes: Labor and burden rate and usage variances are posted whenever shop floor labor feedback transactions are entered.

See *User Guide: QAD Manufacturing* for more information on work orders.

Setting Up Departments

A department groups similar work centers. Set up departments so that you can review labor capacity and costing in a meaningful way.

Use Department Maintenance (14.1) to define departments and set up labor capacity and GL accounts for each department. Labor, burden, and cost of production are posted to the GL by department. Capacity Resource Planning (CRP) uses labor capacity to calculate capacity and load by department.

See *User Guide: QAD Manufacturing* for more information on departments.

Setting Up Work Centers

A work center identifies a group of resources (people, machines, production lines, and so on) that are capable of doing the same processes. Labor and burden rates are specified at the work-center level. See *User Guide: QAD Manufacturing* for more information on work centers.

Use Work Center Maintenance (14.5) to define labor and burden rates. The fields that are of particular importance from a costing perspective are the following:

Machines/Op. Used in calculating burden costs. This value indicates the number of machines at this work center that can work at the same time to process a given operation.The setup labor rate is multiplied by this number to determine the machine burden from setup cost.

Machine Burden Rate. Used in calculating burden costs. This is the burden rate per hour applicable to machine run time and setup at this work center. Standard machine burden cost at the operation is calculated as:

*(Setup Time / Order Quantity * Routing Machines per Op + Run Time) * Work Center Machine Burden Rate*

Setup Rate. The standard hourly labor rate for personnel who perform setup functions in the work center. Used in calculating labor and labor burden.

Labor Rate. The standard hourly labor rate for personnel who run operations at this work center. Used in calculating labor and labor burden.

Labor Burden Rate or Percentage. The labor burden rate or percentage per hour applicable to both setup and run time at this work center. Used in calculating labor burden.

Defining Item Costs

Use Item Cost Maintenance (1.4.9) to enter cost information for purchased material directly into either the current or GL cost sets. Use Item-Site Cost Maintenance (1.4.18) if you have multiple sites. You can also enter material, labor, and burden costs for manufactured items if product structures or routings have not been entered. See *User Guide: QAD Master Data* for more information on items and sites.

You can use Item Master Maintenance to enter all data pertaining to an item, including cost, inventory, shipping, and item planning data.

Note Other than overhead cost, you should not enter costs manually for manufactured items, only purchased items. If you do enter costs for manufactured items, you cannot use the roll-up functions to update these costs.

The site associated with an item in Item Master Maintenance (1.4.1) is considered the primary site. However, you can create different cost records for any site. Use the item-site programs to enter and maintain data for items at sites other than the primary site.

If you are using the Cost Management module, one site can be used as the source for GL costs of items held in inventory at multiple sites. This eliminates the need to set up duplicate GL cost records for the same items at all sites. When GL costs are updated at the source site, the system automatically updates costs at the linked sites. See “Cost Linking” on page 37.

Entering Item Costs

1 In Item Cost Maintenance, Item-Site Cost Maintenance, or Item Master Maintenance, enter the item number and move through the screens until you reach the Current Cost Data frame.

   It is recommended that you initially enter costs in the current cost set so that the GL is not affected. If you change the GL cost set and have inventory on hand, inventory is revalued in the GL.

2 Enter purchased material costs in the this-level field of the current cost set.

3 Enter the overhead cost, if any, for the item.

   Overhead can be assigned to cover the expense of purchase operations, which can then be recovered as fixed overhead on all purchased items based on a percentage of their cost.

   Overhead cost can be maintained manually for each item, or by assigning it as a percentage of other cost categories using Item Overhead Cost Update (1.4.21). See “Updating Burden and Overhead Costs” on page 24.

Effect of Purchase/Manufacture Code on Cost

In order to roll up costs correctly for manufactured items, the Purchase/Manufacture code must be set to M (Manufactured), L (Repetitive line), W (Flow), or R (Routable).

If the Purchase/Manufacture code for a manufactured item is incorrectly set to P (Purchased) or D (DRP), all lower-level costs for material, labor, burden, overhead, and subcontract are set to zero. This occurs even when routing and product-structure cost rollups were performed. Additionally, this-level costs for labor and burden are zeroed out.

Effect of Phantoms

Phantom items are used in manufacturing to define items that are made and consumed in the production process without being kept in inventory. For example, a wire harness that exists only briefly on the assembly line as a separate subassembly is defined as a phantom. Phantoms can be defined as local, global, or both. See *User Guide: QAD Manufacturing* for more information on phantoms.

Global phantoms identify an item as a phantom on all bills of material. You can perform routing cost rollups on global phantom items. Only lower-level labor, burden, and subcontract costs of a global phantom item are included in the parent item’s cost when the product structure cost rollup is performed.

In some cases, a global phantom can also require the issue of work orders to build the item as a stockable item, such as a service part. If you need to build and stock a phantom item, the routing and product structure cost rollups calculate this-level costs correctly.

Local phantoms are treated like phantoms only in specific product structures. The use of local phantoms is discouraged because this-level labor and overhead costs for local phantoms roll up into the parent item’s cost, causing manufacturing variances.

Effect of Item Planning Data

Material costs for product structures depend both on the quantity of each component used and on the scrap percentage and cumulative yield for the parent assembly. Products may have less than 100% yield through operation processing. Item planning data can be set up to recognize expected yield. If components are scrapped during the assembly process, expected loss can be recognized by the component scrap factor in Product Structure Maintenance (13.5).

The material portion of the Product Structure Cost Report (13.12.4) shows the impact of the component cost, scrap percentage, and yield.

Example Standard purchase cost for an item is $.05, but its 5% scrap percentage results in a total component cost of $.05555556 ($.05 / [100% – 5%] or .05/.95). Similarly, the sum of all components in a product structure (1.38) is divided by the inspection yield percentage (80%) to arrive at the total material cost (1.725).

Maintaining Item Costs

The system automatically posts labor, burden, and subcontract costs to this-level and lower-level item cost fields when you run Routing Cost Roll-Up (14.13.13) and Product Structure Cost Roll-Up (13.12.13). The system also rolls up lower-level material cost, assuming that the current or standard purchase price for an item has been added as a this-level material cost.

Defining Routings

Routings define the steps that a product passes through during the manufacturing process. A routing consists of one or more operations—steps needed to manufacture an item. See *User Guide: QAD Manufacturing* for more information on routings.

For costing purposes, routings provide the following information:

- Manufacturing setup and run times per operation
- Machines per operation
- Operation yield percent or yield at each operation
- Subcontract cost, if any, per unit

Each routing operation is associated with a particular work center, so it is not necessary to enter labor or burden rates for each operation.

Standard Operations

When routings share one or more operations that are essentially the same, you can create template steps called standard operations. The standard operation feature is a particularly useful tool for manufacturers. In many companies—even those that make to order—the same operations occur in more than one routing.

Use Standard Operation Maintenance (14.9) to set up standard operations. When you create a new routing operation, automatically copy the standard operation data to the routing by referencing the standard operation code. If you edit the standard information, the changes apply only to the new routing, not to the standard operation you copied.

When a standard operation is referenced on a routing, the routing cost rollup uses the standard operation data when calculating costs.

Routings and Processes

You can use three programs to create routings or processes.

- Typically, you define routings in Routing Maintenance (14.13.1) where production run time is expressed as the average time required to manufacture a single unit.
- Use Routing Maintenance (Rate Based) (14.13.2) in a high-volume production environment where run time is expressed in terms of an hourly production rate.
- Use Process Definition Maintenance (15.13) when run time is expressed as the average time to process an entire batch.

Subcontract Cost in Routings

Subcontract costs are entered in the routing at the subcontract step or operation. The cost is entered as the standard charge per unit from your subcontract supplier for performing the work. You can have multiple subcontract operations in a routing.

Actual management of subcontract processing requires that the work order be linked to a subcontract purchase order (PO) if you want to have charges applied to specific work orders. When the PO is received, the Inventory accounts are not affected. Instead, the standard subcontract cost is debited to Work in Process (WIP), and the PO amount is credited to PO Receipts. Any variance between the standard subcontract cost and the PO amount is calculated as a subcontract variance and posted accordingly.

If you open a subcontract PO and do not link it to a specific work order, then the subcontract cost is debited to Cost of Production instead of WIP.

Defining Product Structures or Formulas

Product structures attach component items to the parent item and define the quantity to use. The information in a product structure is used to calculate lower-level costs. See *User Guide: QAD Manufacturing* for more information on product structures.

For costing purposes, product structures provide the following information:

- Component items and the quantity required to make one of the parent item
- Start and end effective dates for component items
- Structure types defining component/parent relationships
- Component scrap factor
- The operation number in the routing or process where the component is used

Use Product Structure Maintenance (13.5) to identify raw materials or subassemblies required to produce a finished product or subassembly. Use Formula Maintenance (15.5) to identify ingredients or intermediates required to produce a finished product or intermediate.

Effective Dates

When components must be added or deleted from a product structure, you can manage this with start and end effective dates. You can specify when an old component will no longer be used in a product and when a new component is added. Product Structure Cost Roll-Up (13.12.13) can be performed as of a specific effective date, and most cost reports can be run by effective date as well.

Structure Types

Product structure relationships normally have a blank structure code and are used by manufacturing planning and control and product costing.

An X is a local phantom code and adds this-level cost to the parent item, as well as the component's cost. A global phantom adds only lower-level costs to the parent. See "Effect of Phantoms" on page 13.

Table 3.1 lists structure type codes that exclude the cost of a component from the product structure's cost rollup.

Table 3.1
Non-Costed Structure Types

Code	Description
A	Alternate. Set by the system as an identifier for an alternate structure.
D	Document. Records miscellaneous expense items or documents associated with the product structure.
O	Option. An optional component. Normally defined using Configured Structure Maintenance (8.1), options may also be entered on planning bills.
J	Co-product/By-product. This structure type is set in Co/By-Product Maintenance (13.22.1). You cannot enter J in other product structure programs or modify a relationship of type J.
P	Plan. Planning bill used for multilevel master scheduling.

Scrap Factor

The scrap percentage is used to indicate the expected additional quantity of a component required to produce an item. Scrap is specified by component and is costed as:

*Component Cost / (100% – Scrap%) * Quantity Per*

Use scrap percentage carefully, especially on discrete items, since both Material Requirements Planning (MRP) and inventory backflush calculations use it. If you specify a 2% scrap rate on a discrete item—for example, an engine—and you have a requirement for 80 engines, the system calculates the demand quantity to be 81.6. To prevent decimal order quantities for discrete items, enter an order multiple in Item Planning Maintenance (1.4.7). Also note that component requirement and issue quantities are inflated when a scrap percentage is used.

Operation

You must specify an operation for components if you are using repetitive manufacturing or want to use component yield calculations.

For repetitive environments, components are automatically backflushed (issued) when quantities for the parent item are reported in Advanced Repetitive or Repetitive reporting transactions. If a matching operation is not found, the component is not backflushed.

Entering an operation enables component yield cost calculations. Both Product Structure Cost Roll-Up (13.12.13) and Routing Cost Roll-Up (14.13.13) use this field when calculating material costs. If the operation yield is specified as less than 100% in an item's routing, then material costs are increased to reflect yield loss. If an operation is not defined, the system assumes components are issued at the first operation.

Chapter 4

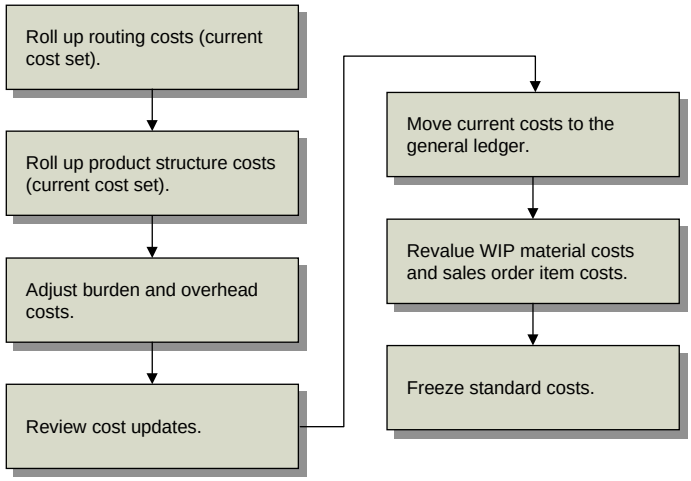
Product Costing Process

This chapter discusses how costs are applied and managed.

Product Costing Workflow

After you have defined item data, routings, and product structures, you can complete the product costing process. Figure 4.1 shows the steps for rolling up costs in the current cost set and using those costs to update the GL cost set.

Fig. 4.1
Product Costing Workflow



You should roll up costs, make any adjustments, and review the updated costs in the current cost set. This lets you validate the updated costs prior to committing them as new GL standards.

Each step in the costing process is discussed in detail in the following sections.

1. Run Routing Cost Roll-Up (14.13.13), which does the following:
   - Totals the labor/machine hours and cost, subcontract cost, and burden cost
   - Computes the cumulative operation yield for a routing or routings
   - Posts the cost data to this-level labor and burden fields for the specified cost set
2. Run Product Structure Cost Roll-Up (13.12.13), which does the following:
   - Obtains purchased material and this-level labor and burden costs from the item master.
   - Performs the level-by-level computation of costs for the five cost set categories. Cumulative lower-level costs are posted for all cost categories at each assembly level.
3. Run Item Burden Cost Update (1.4.20) to adjust item burden costs. Run Item Overhead Cost Update (1.4.21) to adjust item overhead costs.
4. Use Product Structure Cost Report (13.12.4) to review product structure costs to identify any abnormalities such as product structure or routing errors. The report shows costs for an item and its components by structure level.
5. Use Cost Set Move to GL Set (1.4.22) to copy the approved current cost set to the GL cost set.
6. Once standard GL costs are established, use Cost Roll-Up Freeze/Unfreeze (13.12.1) to prevent the system from recalculating the costs the next time routing or product structures rollups are performed.

7 Use WIP Material Cost Revaluation (16.22) to revalue work-in-process material costs. Use Sales Order Cost Revaluation (7.1.12) to revalue line items in sales orders.

Rolling Up Routing Costs

Routing Cost Roll-Up (14.13.13) calculates the manufacturing costs, lead times, and total yield for one or more items at a particular site. Costs are calculated for each operation after accessing the item master, work center, routing, and standard operation data.

You can roll up either current or GL costs. The default is to roll up current costs. Although you can roll up GL costs when they change, it is safer to roll up current costs and then copy them to the GL.

Note If you are using cost linking in the Cost Management module, you must roll up costs in a GL cost set that uses the standard costing method. See “Effect of Linking on Routing Cost Rollups” on page 42.

Expected yield losses can be factored into cost calculations. The system computes the cumulative yield percentage based on multiplying together the operation yields for all operations. This value is posted to the item master and is used for material planning purposes. For example, yield percentages for a two-operation routing are both 90%, so the cumulative yield percent posted to the Yield% field in the item master is 81.00% (.90 * .90).

Note Only one field for run time exists on the routing. You cannot divide run time into machine run time and labor run time. For burden calculations, the machine and the labor are both assumed to be in use for the entire run time.

Recalculate manufacturing costs whenever work center rates, routings, or processes change.

Other important fields in Routing Cost Roll-Up are:

As of Date. Enter an effective date. Roll-up calculations only consider operations that are effective on the specified date. You can enter a question mark (?) to have the system use the current date. This lets you submit the selection criteria once and then run the same batch whenever a new cost rollup is required. Any time the batch is submitted, the system sets this field to the date the batch is run.

Roll-Up Labor Time, Setup Time, and Lead Time. Often, you should set these fields to No so that the manufacturing lead time entered in the item planning data is not overwritten. This should be discussed with the planners to determine how these fields should be set. The default is Yes.

Roll-Up Item Yield. When set to Yes, the system calculates yield based on operation yield. This value is posted to the item master and is used for material planning purposes. The order quantity planned is increased to cover the expected losses, which requires more components and production time.

Include Yield in Cost. If you set the Roll-Up Item Yield field to Yes, the operation yield can be calculated into the costs. Set Include Yield in Cost to Yes to include operation yield in the cost process or No to exclude it.

Roll-Up Labor, Burden, and Subcontract Cost. This-level costs can be rolled up for individual elements or for all elements—labor, burden, and subcontract. Normally, set these fields to Yes.

Update Items Without Routings. This field determines whether cost calculations include only those items with routings, or all items. Setting this field to Yes lets you clear costs associated with obsolete routings. For example, your company decides to stop making an item and acquire it from another source. Simply deleting the routing does not clear out all of the manufacturing costs. To reset those costs to zero, set this field to Yes and run the routing cost rollup. If this item is a component, also run the product structure cost rollup.

Update Items At This Site Only. You can include only those items that exist at the specified site in the cost rollup, or create cost details at the specified site for all items in the item number range regardless of whether the item is defined at the site.

Routing Cost Calculations

- Labor cost per operation

  The total labor cost is the combined cost of setting up the operation and running it. Since setup time applies to the whole operation rather than per unit, setup time is divided by the item order quantity, then multiplied by the setup rate.

  *Labor Cost = (Setup Hrs / Order Quantity * WC Setup Rate) + (Run Hrs per Unit * WC Labor Rate) / Item Yield%*

- Labor burden cost per operation

  Burden costs apply to both setup and run time. Labor burden is calculated as a rate per labor hour and/or a percentage of total labor. Labor burden percent is most commonly used in a labor-intensive environment. Labor burden rates are commonly used in a high-volume production environment. Both types of burden can be applied—as a rate per hour and/or as a percentage of labor cost.

  *Labor Burden Rate = [(Setup Hrs / Order Quantity + Run Hrs) * WC Labor Burden Rate] / Item Yield%*

  *Labor Burden Percent = [(Setup Hrs / Order Quantity * WC Setup Rate) + (Run Hrs * WC Labor Rate) * WC Labor Burden%] / Item Yield%*

- Machine burden cost per operation

  This is calculated based on the number of hours the machine is in use—both while it is being set up and while products are being run.

  *Machine Burden Cost = (Std. Setup Hrs / Order Quantity * No. of Machines + Std. Run Hrs) * WC Machine Burden Rate / Item Yield%*

- This-level labor and burden cost

  Labor and burden costs for each operation are simply added.

  This Level Labor = Op 10 Labor + Op 20 Labor + ...

  This Level Burden = Op 10 Burden + Op 20 Burden + ...

Rolling Up Product Structure Costs

Use Product Structure Cost Roll-Up (13.12.13) to update the costs of parent items based on the costs of their lower-level components. Each manufactured item has a standard product structure, formula, and/or co-product/by-product structure associated with it that describes the components or base process required to make the item.

Components have information for the quantity required, expected scrap percentage, and the operation where they are required. Purchased items have material and overhead costs. Manufactured items also have labor, burden, and subcontract costs. Product Structure Cost Roll-Up uses these costs to calculate total cost by item, and lower-level run and setup times.

The system displays a warning if you try to roll up an average current cost set, but allows you to continue. Rolling up average costs interferes with the averaging process. Although you can roll up an average current cost set, consider copying it instead. The system does not let you roll up an average GL cost set.

Note If you are using cost linking in the Cost Management module, you must roll up costs in a GL cost set that uses the standard costing method. See “Effect of Linking on Product Structure Cost Rollups” on page 41.

You can run a rollup for all items at a site, in one product line or all product lines, by item type or group, or for individual items.

Other important fields in Product Structure Cost Roll-Up are:

As of Date. The effective date is used to select parent/component relationships to update. Parent/component relationships are defined as effective over a period of time. Effective dates phase in engineering changes and maintain product structure history online. This lets you make changes to a product structure effective in the future, and then evaluate the cost effect of that change.

You can enter a question mark (?) to have the system use the current date. This lets you submit the selection criteria once and then run the same batch whenever a new cost rollup is required. Any time the batch is submitted, the system sets this field to the date the batch is run.

Low Level Material, Labor, Burden, Overhead, and Subcontract Cost. Set these fields to Yes to include lower-level costs in the cost rollup. Total cost includes all this-level and lower-level costs for an item.

Low Level Labor Time and Setup Time. Set these fields to Yes to include lower-level run times for manufactured items (not including global or local phantoms) in the cost rollup.

Print Audit Trail. A printed audit trail should normally be requested and filed. The audit trail prints a complete list of all changes made and can be used for reference should problems arise. When set to No, the system rolls up component costs, but does not produce a report of the actions taken.

Set Cost Update Field For All/Changed Only. You can update the costs for all items or only those items with cost changes. Setting this field to Changed Only provides a better audit trail of dates when costs change.

Include Yield%. Yield percentages from Routing Maintenance (14.13.1) can be used to calculate component costs. If set to Yes, component costs are adjusted to account for any yield percentage. This adjustment can be upwards (yield is greater than 100%) or downwards (yield is less than 100%).

Since you can use Product Structure Cost Roll-Up with simulated cost sets, you can set the options to provide only the output you require. See “Cost Simulation” on page 35.

Example You may want to determine the impact of changes in material cost only. Set the fields for other cost set categories to No so that the rollup only considers material cost changes.

Ideally, you run a rollup only when you know that material, labor, burden, overhead, or subcontract costs have changed. However, this is often difficult to determine. Consider running global rollups periodically for the current cost set to ensure that the top-level item costs are truly current. This is especially important if you have selected the average cost or last cost options in Inventory Accounting Control (36.9.2) or in Cost Set Maintenance (30.1) in the Cost Management module.

Note Roll up a copy of the current cost set if you are using the average cost method.

Updating Burden and Overhead Costs

You can calculate overhead and burden as a percentage of lower-level costs. This is useful for electronics manufacturers and other companies who calculate overhead and burden based on material cost rather than labor cost. Use the following programs to update burden and overhead:

- Use Item Burden Cost Update (1.4.20) to override item burden costs calculated in Routing Cost Roll-Up (14.13.13). You can change the burden cost for individual items, groups of items, or all items.
- Use Item Overhead Cost Update (1.4.21) to generate overhead allocations as a percentage of other costs.

You can test for the effect of a change in burden or overhead by simulating it. Do this by setting the Update field to No. The system calculates cost data using the specified parameters and prints a report, but does not actually update any cost fields.

Important Take care when making any global changes to ensure that only changes you want are made. Some items may have burden applied differently.

Calculate overhead and burden in three steps:

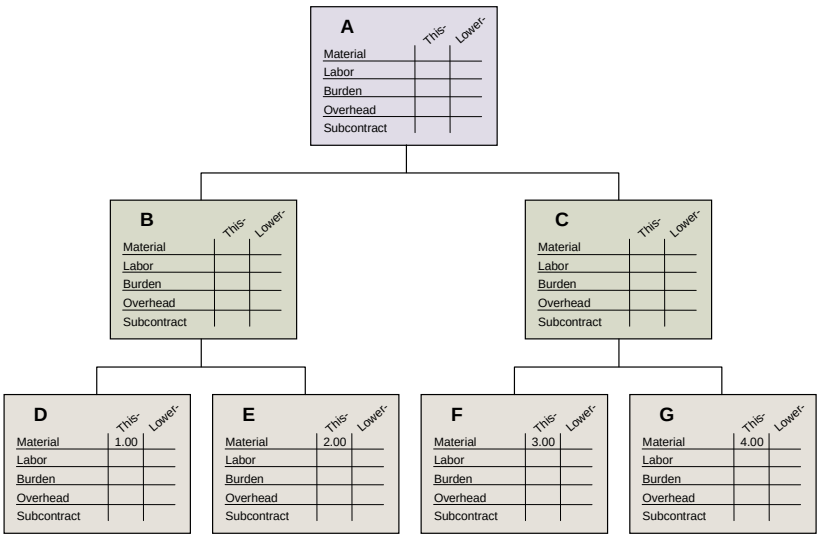
1. Roll up product structure costs to ensure that you calculate overhead from accurate lower-level costs. See “Rolling Up Product Structure Costs” on page 22.
2. Calculate this-level item overhead costs for the lower-level items by using Item Overhead Cost Update, or calculate this-level item burden costs by using Item Burden Cost Update.
3. Roll up the product structure costs again to add the calculated overhead to the lower-level costs.

The following example calculates overhead for a parent item with several components.

Example The product structure for item A, illustrated in Figure 4.2, consists of lower-level items B and C. The lower-level material costs originate in the components for B and C—items D, E, F, and G. This-level overhead is 150% of lower-level material cost. The lower-level material costs are:

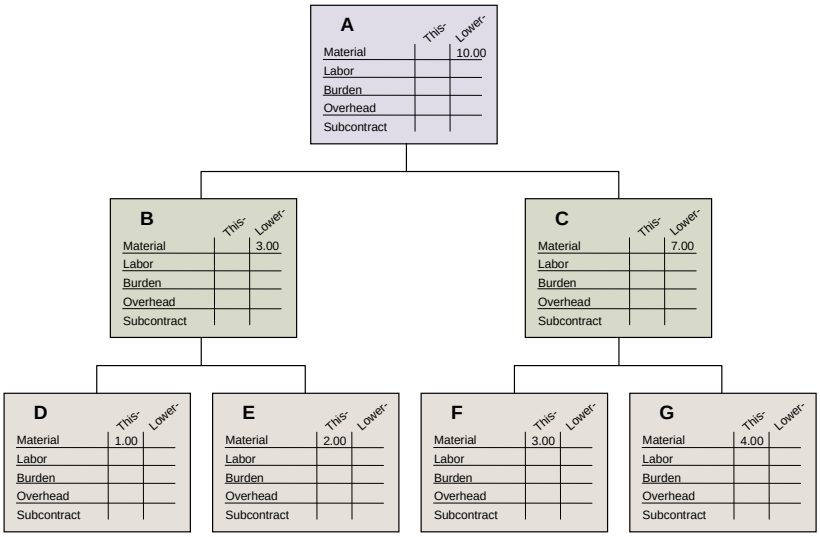
- Item D = 1.00
- Item E = 2.00
- Item F = 3.00
- Item G = 4.00

Fig. 4.2
Product Structure for A



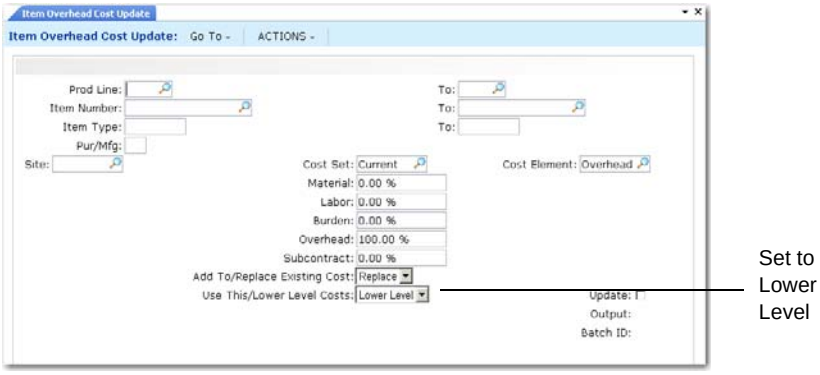
The first product structure cost rollup for item A calculates lower-level material costs of 3.00 for item B, 7.00 for item C, and 10.00 for item A.

Fig. 4.3
Results of First Product Structure Cost Rollup



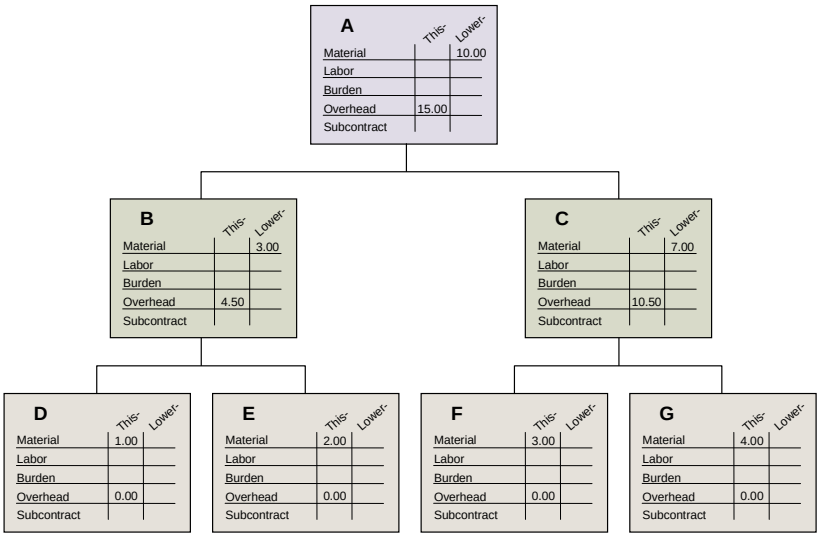
In Item Overhead Cost Update, the material percentage is set to 150% and the other percentages to zero. Use This/Lower Level Costs is set to Lower Level.

Fig. 4.4
Item Overhead Cost Update (1.4.21)



This calculation generates overhead costs of 4.50 (150% of 3.00) for item B, 10.50 (150% of 7.00) for item C, and 15.00 (150% of 10.00) for item A. Items D, E, F, and G have overhead costs of zero.

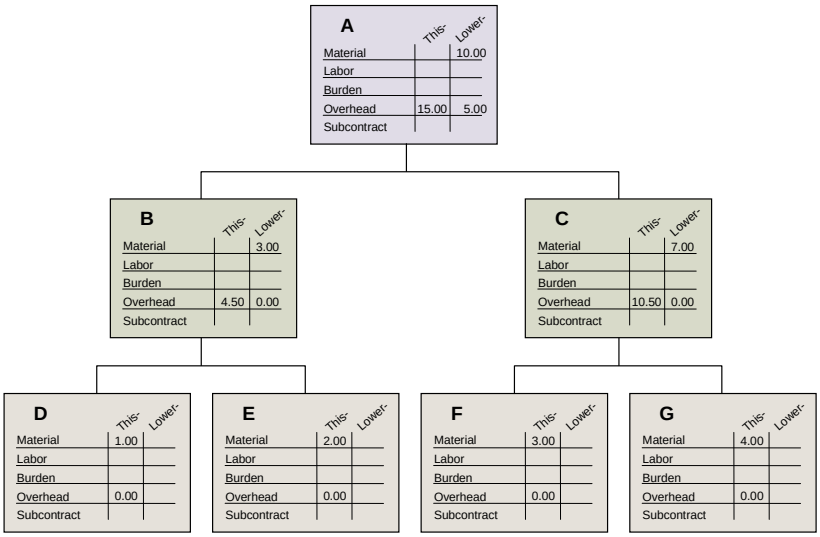
Fig. 4.5
Item Overhead Cost Calculation



The second product structure cost rollup adds the calculated this-level overhead costs for items D and E to B, then the costs of F and G to C, then the costs of B and C to A.

Note You cannot calculate this-level costs for a specific cost element based on both this-level and lower-level cost elements in the same calculation. Calculate this-level costs first for the lowest level, then the next highest level, and so on. Since you must do lower-level and this-level cost updates separately, check each level before going to the next.

Fig. 4.6
Results of Second Product Structure Cost Rollup



Processing Considerations

Before running the calculation, consider the following:

- At which level will you calculate overhead? The lowest level parent item? The highest level parent item? The planning level? This decision varies from company to company.

  It is important *not* to base costs indirectly on themselves. The previous example illustrates why you have to be careful. Item A has a lower-level overhead of 15.00 (4.50 + 10.50). However, Item Overhead Cost Update also calculated this-level overhead of 15.00 (150% of 10.00, the this-level material cost).

  When you run the calculation for item A, you would calculate an overhead cost that is too high, unless you want the overhead for A to be 300% of 10.00. In a product structure with many levels, the inaccuracies would be even more striking. To prevent this, calculate costs from only one level.

- Which overhead percentage will you use for each level?

  In the item burden and overhead cost update functions, the default percentage is 100%. When calculating lower-level costs, typically change this to 0%.

Moving Current Costs to the General Ledger

At least two cost sets are maintained for each item or item and site:

- The current cost set reflects today’s cost for an item.
- The GL cost set is used for all general ledger transactions and inventory valuation for an item.

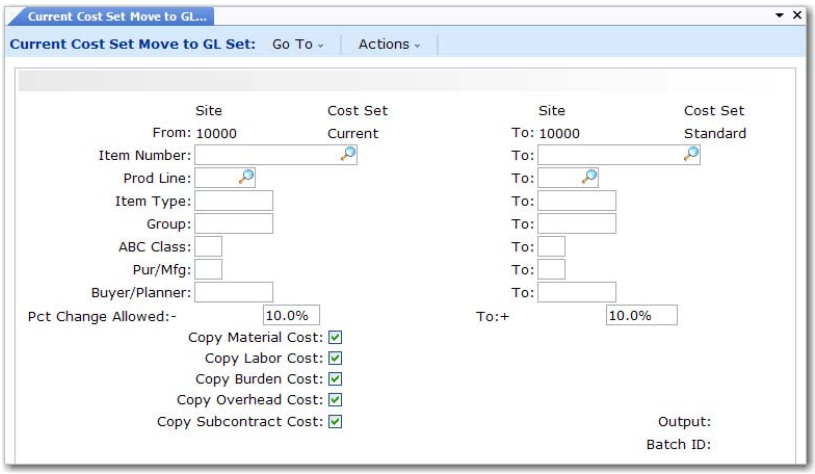
Update the current cost set during cost rollups first, verify the changes, and then copy the updated costs to the GL cost set.

Moving current costs can have significant effects on the general ledger. All changes to GL costs create a GL cost adjustment, updating the value of inventory.

Use Current Cost Set Move to GL Set (1.4.22) to copy data between the current cost set and the GL cost set. You can move the costs of all items, individual items, or groups of items. Optionally, you can specify a range of percentage difference in cost for which copying is allowed. You can also inhibit copying of one or more cost set categories.

This function is most commonly used only at regular, widely spaced intervals. At the beginning of the year, many companies set current and GL costs equal.

Fig. 4.7
Current Cost Set Move to GL Set (1.4.22)



Percent Change Allowed. Enter a percentage range of allowable cost differences between updated current costs and the previous GL costs. Only updated costs within this range are moved to the GL. To accept the movement of all costs, regardless of the difference from the previous GL costs, enter a question mark in this field and in the corresponding To field. To review cost changes without updating GL costs, enter zero in this field.

Copy Material Cost, Labor Cost, Burden Cost, Overhead Cost, and Subcontract Cost.

Normally, set all fields to Yes. Each cost category is copied from the current cost set to the GL cost set, provided that the difference between the two total costs does not exceed the range specified in Percent Change Allowed.

Freezing GL Costs

After GL costs are established, you can prevent those costs from being recalculated the next time costs are rolled up. For example, you may want to set standard costs or create a reference cost set that does not change over a specific period. Any cost set can be frozen.

Freezing standard costs provides fiscal-year control over those costs. You can freeze approved or verified standard costs at the start of your fiscal year, and then track cost changes in variance accounts through the year. At the close of the fiscal year, copy the current cost set to the standard set.

Freezing costs also improves processing speed during cost roll-up calculations. After item costs are calculated and frozen, all subsequent cost roll-up calculations simply use the frozen cost.

Warning Freezing costs only prevents the system from recalculating costs. It does not prevent manual changes in item cost data maintenance functions, cost set copy functions, or operation cost calculation.

Run Cost Roll-Up Freeze/Unfreeze (13.12.1) to mark item costs for a cost set and site as frozen. You can freeze all items or groups of items. You can also selectively unfreeze items to allow cost updates only for the new or revised items.

Revaluing Costs

When costs change, sales order item costs and work-in-process (WIP) material costs are not revalued automatically.

Revalue Sales Order Costs

Use Sales Order Cost Revaluation (7.1.12) to change the sales order line- item cost when the prevailing GL costs are changed. Gross margin reports then reflect the proper difference between GL cost and selling price.

Since the system costs items for COGS purposes at the time of shipment, post any unposted invoices before running the cost revaluation program.

Revalue WIP Material Costs

Use WIP Material Cost Revaluation (16.22) to change the cost of material in work-in-process (WIP) when the prevailing GL costs are changed. You can control the revalue process by a range of accounts, sub-accounts, cost centers, projects, work orders, or item numbers. Specify the date for the GL transactions created, or use the default system date.

The output from the revaluation program is a two-part report. The first part shows the before and after data for all work order components regardless of whether cost changes were made. Part two shows the detailed GL transactions resulting from the revaluation.

Chapter 5

Cost Management

This chapter discusses how costs are managed.

Overview

You can use Cost Management functions to create and maintain an unlimited number of cost sets. Use additional cost sets to:

- Create and maintain different GL and current cost sets for each site and use different GL and current costing methods. Only one GL and current cost set can be active for each site.
- Establish cost planning sets to be automatically activated at specified dates to recognize expected material or other cost changes.
- Develop simulated item costs for planning purposes to evaluate the effects of differing scenarios, such as material price inflation, batch sizing, and labor or burden rate changes.
- Retain inactive cost sets for historical comparative purposes.
- Maintain frozen standard costs. Unlike GL costs, frozen standard costs do not change during the accounting fiscal year. Frozen costs and GL costs are identical at the beginning of the accounting year. The original standard costs at the start of a fiscal period can be retained as an historical cost set.

Cost Management also lets you create additional cost elements in the five cost categories—material, labor, burden, overhead, and subcontract. These provide additional reporting detail.

Creating Multiple Cost Sets

Multiple sets of costs can be maintained for any item, each identified by a cost set code. Data associated with a cost set code controls how these costs are updated and used.

Use Cost Set Maintenance (30.1) to set up GL, current, and simulation cost sets and to specify the costing method for each set.

Cost Set Type. Each cost set must be assigned one of four type codes, indicating its purpose.

GL: Cost sets of type GL, when associated with sites using Cost Set to Site Assignment (30.9), are used with GL transactions to value inventory and determine the cost of sales.

Current: Current cost sets are typically system maintained and used for reporting purposes.

Simulated: Simulated cost sets are for reporting only and are typically used for planning, developing new standards, or simulating the effects of a cost change. Simulated costs cannot be system maintained. You must maintain them manually using functions on the Cost Simulation Menu (30.13).

PC: Periodic costing is in use. This functionality allows you to calculate costs over user-defined periods based on weighted averages, or averages calculated based on when material is received (LIFO or FIFO).

Period costing is the actual cost of an item based on inventory transaction information—transactions, BOMs, routings, purchase prices, expenses—that occurred during a certain period (usually a month). It also takes into the account the beginning balance of the item while it is performing the calculation of this period costing. Period costing does not include the concept of variations; the costs are recalculated each time.

When PC is the cost set type, the system displays an additional frame to indicate whether to use the PC cost set template. The system maintains a detailed cost set for every combination of cost-calculating period and currency. Each detailed cost set cost assumes all the elements

defined for the template cost set. You only need to set up one periodic cost set, so you use the template cost set features in the Periodic Costing Menu (30.5) and not Cost Management (30) features to create the periodic costing template cost set.

Costing Method. A costing method must be assigned to each cost set indicating how costs are defined and maintained. See Chapter 2, “Cost Sets and Methods,” on page 3.

Average: Costs are updated during item receipts and other inventory-related activities using a simple weighted-average calculation.

Standard: Costs are not updated automatically. Updates are performed manually and typically no more than a few times a year.

Last: Each item’s cost is equal to the unit cost from the last receipt or inventory update.

None: Costs are not updated automatically. They are maintained manually as needed.

WAVG: Weighted Moving Average method considers the previous period cost and the average of the cost incurred this period.

FIFO: First in first out method considers the receipt date of items for the existing inventory. This method assumes that the oldest (first) item in stock is issued first.

LIFO: Last in first out method considers the receipt date of items for the existing inventory. This method assumes that the latest (last) item in stock is issued first.

The cost set type determines which costing methods can be used:

- For current costs, the cost method can be Average, Last, or None.
- For GL costs, the cost method must be Average or Standard.
- For simulated costs, the cost method defaults to None and cannot be updated.
- For PC (periodic costing), cost method can be AVG (weighted average), FIFO (first in first out), or LIFO (last in first out).

After you have defined cost sets, you can assign them to separate sites using Cost Set to Site Assignment (30.9).

Important Only one active GL and one active current cost set per site are permitted. The system automatically updates average or last costs only for these two cost sets.

You cannot delete a cost set using Cost Set Maintenance, even if it was added by mistake. You must use Cost Set Delete (30.23) to delete all other cost information completely.

Multi-Element Costing

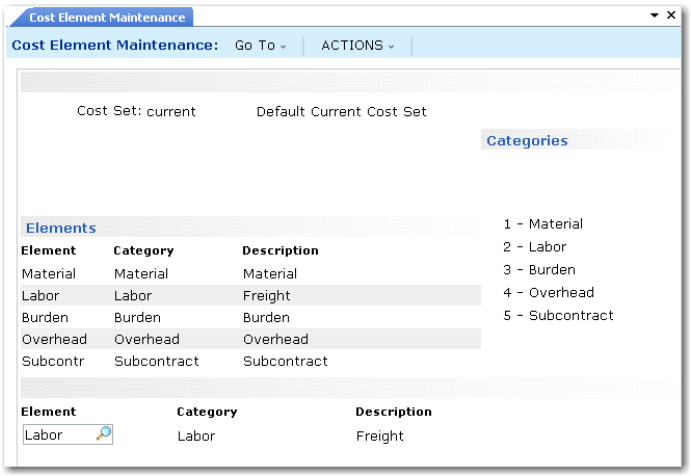
Costs for an item are always separated into five categories—material, labor, burden, overhead, and subcontract. An unlimited number of cost elements can be created as subsets of these categories. Item costs can then be assigned to these cost elements. See “Cost Set Categories” on page 7.

The use of cost elements is optional. You only need to introduce cost elements when you want additional reporting detail. For example, a company may want to split material cost into foreign and domestic content. Another company might want to split material costs for purchased items into purchase price and freight.

If you are using the Logistics Accounting module, you need to set up separate cost elements used for inbound logistics charge accruals. The cost elements must be in the Material or Overhead cost categories.

Create new cost elements for GL and current cost sets using Cost Element Maintenance (30.17.1).

Fig. 5.1
Cost Element Maintenance (30.17.1)



Every cost set starts out with five cost elements that match the cost categories. You can add others but you cannot delete these. Each of the cost elements you add must be associated with one of the five cost categories.

You can set up current and GL cost set with the same cost elements or each cost set can have its own set of cost elements, or each cost set can be set up the same. To use the same elements for all cost sets, enter the cost elements for one cost set, and then use Cost Element Copy (30.17.4) to copy them to the other cost sets. Additional elements can be added to these cost sets.

Entering Element Costs

After cost sets and elements have been created, you can enter costs. You can use Item-Element Cost Maintenance (30.17.5) to enter costs manually, or have the system calculate these costs based on other cost elements in the cost set.

Item-Element Cost Calculation (30.17.10) lets you calculate the value for a particular cost element as a percentage of one or more cost elements. For example, you can set up Freight as 10% of Domestic Material costs and 30% of Foreign Material costs. You can specify whether the system should calculate costs as a percentage of an item’s this-level or lower-level costs.

The ability to calculate a particular cost element as a percentage of lower-level costs is especially important for companies that calculate fixed overhead as a percentage of total material costs.

Comparing Cost Sets

You can compare the active GL cost set with either simulated cost sets or historical GL cost sets. For example, you can compare Quarter 1/2000 with Quarter 1/2001. The system can retain an unlimited number of inactive cost sets and make comparisons among them, or between inactive and simulated cost sets. Use Comparative Cost Set Report (30.22) to compare cost sets.

Note An enhanced version of Comparative Cost Set Report is available at menu 30.46 for .NET UI users only.

Cost Simulation

Cost simulation functions let you set up different cost scenarios and test the impact of cost changes. Unlike the other cost rollup and update functions, cost simulation calculations look at an entirely different set of cost standards. You can set up different work center labor and burden rates, different subcontract operation costs, and different item material and overhead costs. Simulation roll-up functions use these costs rather than the standards.

Note The Cost Simulation menu does not let you modify current or GL cost sets. It is used only for simulations. This lets you set up menu security so that many users can have access to the simulation functionality, while only a few have the ability to actually affect the GL or current cost sets.

1. Create a simulation cost set.

   Use Cost Set Maintenance (30.1) to define a simulation cost set with a Cost Set Type of SIM.

2. Copy costs to the simulation set.

   Use Cost Set Copy to Cost Set (30.3) to copy user-specified item cost data for each cost element into the simulation cost set. Enter a question mark (?) in Percent Change Allowed to disable the check for percentage difference between the two cost sets.

3. Copy routing and work center data.

   Use Item/Routing to Simulation Copy (30.13.23) to copy work center rates for labor, burden, and subcontract cost from user-specified routings into the simulation cost set.

   This program creates direct item costs for material, labor, burden, subcontract, and overhead. Use Cost Set Maintenance to vary these costs by a positive or negative percentage.

4. Modify cost elements.

   In the simulation process, you can split material or overhead into multiple elements. For example, divide purchase cost into two elements, material and shipping cost, so you can add and maintain amounts separately.

   The cost of any sub-elements is added to existing direct material cost, so you first need to zero out any existing material cost.You can then use Simulation Cost Element Maintenance (30.13.1) to create the two new material elements. Enter costs for them with Simulation Item-Element Cost Maintenance (30.13.5).

5. Modify direct item costs.

   Use Simul Item-Element Cost Update (30.13.8) to change item element or sub-element costs directly by a positive or negative percentage.

Example You identify TRANS as a sub-element of material cost. Examine the impact of a 10% increase in transportation cost by entering 10% in the Change field.

6 Modify work center rates.

Use Simul Work Center Rate Maintenance (30.13.13) to change labor, labor burden, or machine burden rates. You could, for example, evaluate the impact of a 15% increase in labor cost by multiplying the existing labor rate by 1.15 and entering that value for the labor cost element.

Note To examine the impact of improved efficiency for an operation, create an alternate routing with different standard hours rather than changing the labor rate.

7 Modify subcontract costs.

Use Simulation Subcontract Cost Maintenance (30.13.10) to change routing subcontract costs.

8 Roll up simulation costs.

Use Simulation Cost Rollup (30.13.18) to combine sub-elements before rolling up product structure costs.

9 Roll up simulation product structure costs.

Use Simulation Structure Cost Rollup (30.13.19) to roll up costs for the simulation cost set.

10 Review simulation cost set data.

You can perform this task several times depending on the number of changes you have made to costs and work center rates.

11 Copy work center and subcontract costs to your production database.

Use Simulation to WC/Routing Copy (30.13.22) to copy the work center and subcontract costs to the production database. Enter a question mark (?) in Percent Change Allowed to allow all changes.

The program copies the work center setup rate, labor rate, labor burden rate, machine burden rate, and labor burden percentage to user-specified work center records. It also copies subcontract costs to specified routings. Use Work Center Report (14.7) and Routing Cost Report (14.13.14) to verify that expected changes have been made.

12 Copy simulation costs to GL cost set.

Use Cost Set Copy to Cost Set to copy the simulation data into the GL cost set. Review the data with Cost Set Report (30.21) or Item Cost Report (1.5.6). The Item Cost Report shows both the current and GL cost data for items.

Cost Planning

You can phase in different GL cost sets by date. For example, you can change GL costs to reflect seasonal commodity price fluctuations.

1 Create a new cost set.

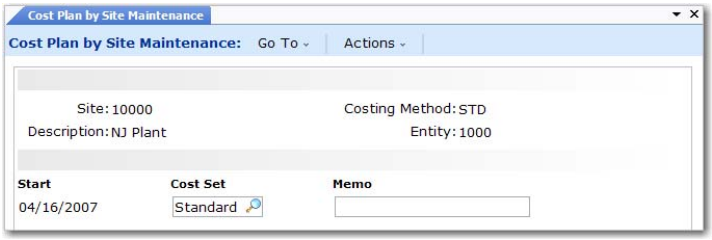
Suppose you experience a 10% cost increase in the first quarter. You can create a cost set with costs that are 10% higher than normal and name it 1st Qtr or whatever seems appropriate. Similarly, you might want to create a cost set for the third quarter (3rd Qtr) if costs for that quarter are expected to be less than normal.

If you have costs set up at multiple sites, the active GL cost set at all sites should use the same name.

2 Create a cost plan.

Use Cost Plan by Site Maintenance (30.15.1) to enter the cost set names you want to activate in the future and their start dates. Figure 5.2 shows a plan with special costs for the first quarter. Standard costs display with Standard in the Cost Set field.

Fig. 5.2
Cost Plan by Site Maintenance (30.15.1)



Note The same cost set can appear more than once, as the standard cost set does. Setting up a cost plan does not actually make a cost set active with respect to GL transactions. It only provides Material Requirements Planning (MRP) and Master Production Schedule (MPS) with the costs to appear on costed reports.

3 Activate cost set.

Use Cost Plan by Site Update (30.15.3) to activate the cost set according to the cost plan. This program also changes the inventory to reflect the new costs and posts the cost revaluation amount to the general ledger.

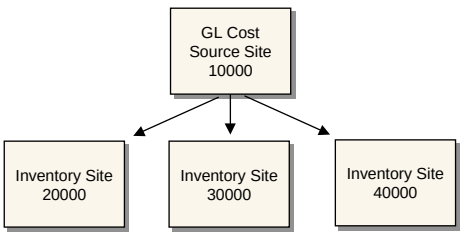
4 Revalue work-in-process (WIP).

Assuming that WIP exists, revalue it using the newly activated cost set with WIP Material Cost Revaluation (16.22).

Cost Linking

Linked-site costing functions let you specify default cost source sites for items held at multiple sites in one database. An *inventory site* is any site where items are held in inventory. Linking an inventory site to a primary costing site eliminates the need to set up duplicate GL cost records at all sites. This functionality only affects the active GL cost set. Current, simulated, and inactive GL cost sets are not affected.

Fig. 5.3
Inventory Sites Linked to a Cost Source Site



Linked-site costing is especially useful when items are held in inventory or manufactured at one primary site, but are also held or manufactured at secondary sites. You can also assign different primary sites for different product lines, item types, or Purchase/Manufacture code designations.

Updating the active GL costs at a cost source site triggers a cost adjustment (CST-ADJ) transaction for the item at any other inventory site linked to the cost source site.

Updating the active GL costs at a target site has no effect on the cost source site. No CST-ADJ transactions are created at a cost source site if a target site's GL cost set is updated.

Note You cannot use linked-site costing for a site if you use the average cost method for GL transactions, since the average cost calculation does not consider inventory at multiple sites.

An inventory site can be a cost source site or a target site, but not both for the same item. If an inventory site has been used as a cost source site for an item, it must remain a cost source as long as there are links to it from target sites. Conversely, an inventory site for an item cannot be a cost source site as long as it is a target site.

Site-Linking Rules

Use Linked-Site Rules Maintenance (30.18.1) to set up site-linking rules for inventory sites. The rules you set up here determine the default cost source site in Item-Site Cost Maintenance (1.4.18). These are defaulting rules for linked target sites, not strict data enforcement rules. You can change the GL cost source site for individual items.

Three site-linking rules determine the default GL cost source site for items:

- Linking rule 1 sets the inventory site as the default cost source site.

  The inventory site is also the default site if you are not linking costs. However, if you implement linking rules, this setting lets you retain the inventory site as the default site for some item attributes, while linking other attributes to alternate sites.

  For example, you may want to set up the inventory site as the default cost site for manufactured items (Purchase/Manufacture code M), and set up another site as the default cost site for configured items (Purchase/Manufacture code C).
- Linking rule 2 sets the site in Item Master Maintenance (1.4.1) as the default cost source site.

  This setting lets you set up costing on a per item basis easily. For example, if your business manufactures an item at one site and distributes that item from several sites, you can set up the manufacturing site entered in Item Master Maintenance as the default cost source site for that item. This eliminates the need to set up separate GL standard costs for the same item at each distribution site.
- Linking rule 3 sets any site you designate as the default cost source site.

Important Set up linking rules for inventory sites only. To avoid setting up chained or circular links, do not assign linking rules to the cost source site. A warning message displays in Linked-Site Rules Maintenance, and the site code fails to default to the GL Cost Source Site field in Item-Site Cost Maintenance.

Fig. 5.4
Circular Link

Fig. 5.5
Chained Link

You can specify a default cost source site for all items at an inventory site, or you can associate a linking rule at an inventory site with one of the following item attributes:

- Product line
- Item type
- Purchase/Manufacture code

You can select only one item attribute for a particular inventory site. Existing linking rules for an item attribute must be deleted before you can associate a different attribute with an inventory site.

Example Linking rules for inventory site 20000 are associated with the product line attribute. Linking rules for the item type or Purchase/Manufacture code attribute cannot be assigned as long as the product line attribute is associated with the site.

This lets you determine different primary sites for different item classifications depending on your business requirements.

Fig. 5.6
Linked-Site Rules Maintenance (30.18.1)

Inventory Site. Enter the code for the site where inventory is held.

Item Attribute. Optionally enter an item attribute identifying the items to associate with linking rules. You can select according to product line, item type, or Purchase/Manufacture code. You can select only one item attribute for each site. Enter None, the default, to select all items without regard to attribute.

Linked Site Costing Active. Enter Yes to activate linked-site costing for this site. The default is Yes.

Item Attribute Code. If an attribute has been selected, enter the product line, item type, or Purchase/Manufacture code associated with the linking rule.

Warning It is possible to assign a blank value to product lines and other item attributes. Do not assign blank values if you use linked-site costing, since you cannot use blank to specify all other attribute values.

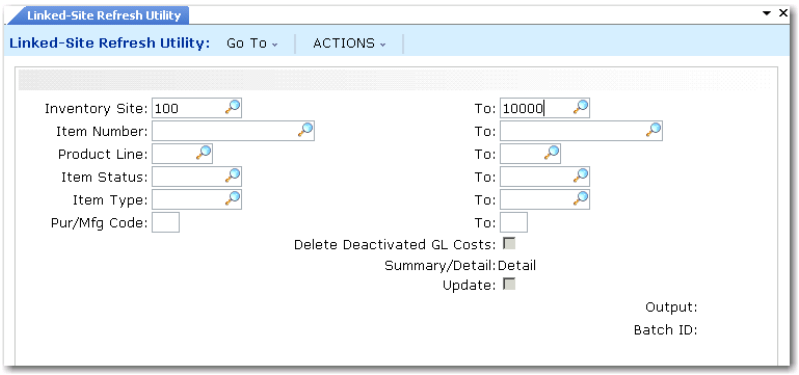
Linking Rule. Enter the linking rule to assign to this site. See “Site-Linking Rules” on page 38.

Default GL Cost Site. If you have selected linking rule 3, specify the default cost source site for items or designated item attributes.

Refreshing Cost Sets

Use Linked-Site Refresh Utility (30.18.5) to update the GL cost source site and GL cost set records after entering rules in Linked-Site Rules Maintenance. Running this utility creates CST-ADJ transactions for records that meet the range of criteria you specify and generates a report of updated GL costs for the selected criteria.

Fig. 5.7
Linked-Site Refresh Utility (30.18.5)



You can run a report at two levels of detail. A detailed report lists all old and new costs and cost source sites. A summary report provides only the cost source site changes. Set Update to No to generate a simulation report before running the refresh utility to show what records will be updated.

Because updates in systems with large volumes of data can be time consuming, consider running the refresh utility at the close of the day or whenever system resources are highest.

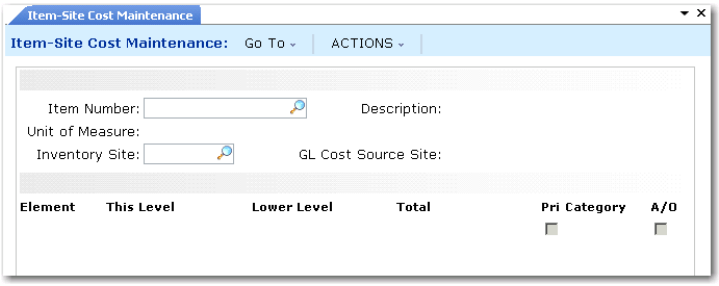
As part of the update process, you can also delete GL costs at inventory sites deactivated by linked-site costing by setting Delete Deactivated GL Costs to Yes. Deleted records are reported in detail only.

Important To facilitate GL cost set management with linked-site costing active, use the same active GL cost set name at all sites. Only deactivated GL costs with the active GL cost set name are deleted when Delete Deactivated GL Costs is Yes.

Defining Source Sites for Individual Items

You set up the rules that define the default cost source site in Linked-Site Rules Maintenance. However, you can change this value manually in the GL Cost Source Site field in Item-Site Cost Maintenance (1.4.18). Use this field to enter a valid site code to specify which site to set as the GL cost source site for any specified item. This lets you assign costs for any item from any valid designated GL cost source site. Access to this field can be security restricted.

Fig. 5.8
Item-Site Cost Maintenance (1.4.18)



For linked-site costing to function in Item-Site Cost Maintenance, the following must be true:

- Valid item, site, inventory, and GL standard cost information exists for the sites and inventory you want to link.
- Linked-site costing is active and linking rules are defined for the inventory site.
- The inventory site and the GL cost source site are in the same database.
- GL cost set costing method is not average for the cost source site or the inventory site.
- The GL cost source site is not linked to another cost source site.

Otherwise, the linking rule is not applied, you cannot update GL Cost Source Site, and the GL standard cost site and inventory site remain the same.

Item-Site Cost Relationships with Linking Rules

When linked-site costing is activated and an item at the inventory site is assigned GL standard costs from another site, other cost set information—including current costs, old GL costs, and simulated costs—remains associated with the inventory site.

Effect of Linking on Product Structure Cost Rollups

Product Structure Cost Roll-Up (13.12.13) uses the costs of an item's components and any subassemblies to calculate this-level and any lower-level costs.

When cost linking is used, the target site is linked to the source site for active GL costs only. Product Structure Cost Roll-Up recognizes the links for any GL cost set using the standard costing method, regardless of whether the cost set is active or inactive. Since you cannot take advantage of cost linking using a simulation cost set, you should set up an inactive GL standard cost set and use it to prepare costs for future periods instead.

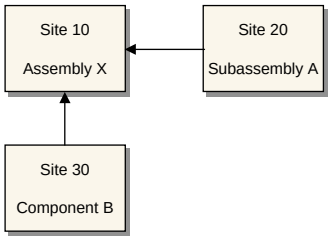
Important Product Structure Cost Roll-Up does not recognize links when the rollup is performed for current or simulation cost sets. In order to roll up costs correctly for linked items, you must use a GL standard cost set.

When items are linked, the system uses the cost set specified at the GL cost source site to find the cost. If the GL cost record does not exist at the source site, costs are not created and a zero cost value is used for the linked item.

Performing a product structure cost rollup at one site does not roll up costs for a linked subassembly at another site. The GL cost for the subassembly at the source site is used to calculate the parent item's cost at the inventory site.

Example Figure 5.9 shows that assembly X at Site 10 uses subassembly A, manufactured at site 20, and component B, held at site 30. Site 20 is the cost source site for subassembly A and site 30 is the cost source site for component B.

Fig. 5.9
Example of Cost Rollup with Linked Costs



At site 20, costs are rolled up for subassembly A in the current cost set and then the updated costs are moved to the GL standard cost set. Updating the GL cost set at site 20 automatically updates the linked GL cost for subassembly A at target site 10. Similarly, updating the GL cost of component B at site 30 automatically updates the linked cost at site 10.

Since assembly X contains linked items, its cost at site 10 must be rolled up for the active GL standard cost set. The system locates the GL cost for subassembly A at site 20 and component B at site 30. These costs are used in the cost calculation.

Effect of Linking on Routing Cost Rollups

Routing Cost Roll-Up (14.13.13) calculates this-level manufacturing costs, lead times, and total yield for an item at a particular site.

If a GL standard cost set is specified for the rollup, then:

- The routing cost rollup does not update this-level costs if the item at the rollup site is linked.
- Lead time and yield for all selected items are calculated whether they are linked or not.
- The operation cost calculation recognizes linked costs.
- Updating the active GL standard costs at a cost source site automatically updates the costs at target sites.

Important Routing Cost Roll-Up does not recognize links if the rollup is performed for current or simulation cost sets. In order to roll up costs correctly for linked items, you must use a GL standard cost set.

Chapter 6

Cost Accounts

Transactions in several modules create GL transactions for accounts involved with item costing. This chapter summarizes these accounts.

Inventory Accounts

Cost Revalue. This account records the GL impact of item cost changes on inventory. When you change the GL costs for items using Item Cost Maintenance or Item-Site Cost Maintenance, the system automatically creates adjusting transactions. An increase in cost creates a debit to the Inventory account and a credit to the Cost Revalue account.

Note GL item cost changes do not automatically revalue material in WIP. Use WIP Material Cost Revaluation (16.22) to revalue this material.

Inventory. Use this account to maintain inventory value. Inventory accounts can be different for each product line, site, and location within each site. If site/location Inventory accounts are specified, all inventory transactions use them. Otherwise, the product line Inventory accounts are used.

Transactions affecting Inventory accounts include purchase order receipts, work order issues/receipts, sales order shipments, physical inventory counts, and manual inventory transactions. Each transaction affects inventory by creating a GL transaction that either debits or credits the account value.

Inventory Discrepancy. Use this account to post the value of cycle counts or physical inventory differences. Positive count adjustments debit the Inventory account and credit the Inventory Discrepancy account. Negative count adjustments do the reverse.

Purchasing Accounts

Accounts Payable Rate Variance. This account records variances between supplier invoice and purchase order price. If the invoice is higher, this account is debited in addition to the Purchase Order Receipts account to balance the credit to the Accounts Payable account.

Accounts Payable Usage Variance. This account records variances between the quantity on a supplier invoice and received quantity. A positive variance (invoice quantity larger than received quantity multiplied by the invoice unit price) is debited to this account to offset the higher than expected invoice amount credited to the Accounts Payable account.

Overhead Applied. This transaction applies to both purchase order and work order receipts whenever the standard cost includes overhead. When receipt transactions are made, the system credits this account and debits Inventory for the this-level overhead amount.

Purchase Order Receipts. This account records purchase order receipts before receipt of a supplier invoice. The Inventory account is debited for the GL cost of the item less any overhead amount multiplied by the quantity received. This account is credited for the purchase order price times the quantity received.

Purchase Price Variance. This account records the variance between the GL cost of an item less any overhead and the purchase order price. When a purchase order item is received, the system creates a debit to Purchase Price Variance in addition to a debit to Inventory if the PO price is higher. It does so to balance the credit to Purchase Order Receipts.

Sales Accounts

Five accounts contain the standard portion of Cost of Goods Sold (COGS).

- COGS Burden
- COGS Labor
- COGS Material
- COGS Overhead
- COGS Subcontract

For each shipment, the Inventory account is credited for the total GL cost of the item times the quantity shipped and debited for the appropriate COGS portion.

Work Order Accounts

Labor. This account records labor cost for a department based upon standard hours reported at the work center labor rates. When labor is reported in the Repetitive and Shop Floor Control modules, the following types of transactions are made using the standard hours earned multiplied by the work center labor or setup rate.

Table 6.1
GL Transactions Generated by Labor Reporting

Setup and Run Labor		Downtime	
Debit:	Work in Process (Standard Labor + Burden)	Debit:	Cost of Production (Standard Labor + Burden)

Labor Rate Variance. This account records variances resulting from a difference between the actual employee pay rate and the standard work center labor rate. This variance is calculated as:

*(Actual Labor Rate – WC Labor Rate) * Actual Hours*

At posting, a positive variance (unfavorable) is debited to the Labor Rate Variance account and credited to WIP.

Labor Usage Variance. This account records variances resulting from a difference between the actual hours needed to complete an operation and the standard hours. This variance is calculated as:

*(Actual Hours – Std. Hours) * WC Labor Rate*

Where:

*Std. Hours = Run Hours / Unit * Number of Units Completed*

At posting, a positive variance (unfavorable) is debited to the Labor Usage Variance account and credited to WIP.

Note Both labor rate and usage variances are normally posted at the same time as labor. However, if Post Variances at SFC is No in Work Order Maintenance (16.1), variance posting is delayed until work order receipt. Delaying posting can be useful if an operation requires more than one shift to complete. See “Defining Work Order Control Settings” on page 11.

Burden. This account records the variable overhead associated with production operations. The Burden account is used to accumulate accrued burden for a department. Each operation may have labor burden and/or machine burden depending on how variable overhead is applied. Machine burden is applied as a machine hour rate. However, labor burden can be applied either as a labor burden rate or as a percentage of direct labor cost.

The standard hours reported are multiplied by the standard work center labor or machine burden rate.

- Labor Burden using Labor Burden Rate:

  *Labor Burden = (Std. Setup Hrs. / Order Qty. + Std. Run Hrs) * WC Labor Burden Rate*

- Machine Burden using Machine Burden Rate:

  Machine Burden = (Std. Setup Hrs / Order Qty. No. of Machines + Std. Run Hrs.) * WC Machine Burden Rate*

  Note This option assumes that the machine hour rate applies to both setup and run. If this is not true, create a separate setup operation that has zero run hours per unit.

- Labor Burden Percentage:

  *Labor Burden = (Std. Setup Hrs. * WC Setup Rate * Labor Burden%) + (Std. Run Hrs. * WC Labor Rate * Labor Burden%)*

Burden Rate Variance. This variance applies to burden application using burden rate percentage. It requires the actual employee labor rate.

*Burden Rate Variance = Labor Burden% (Actual Labor Rate – WC Labor Rate) * Actual Hrs.*

Burden Usage Variance. This variance applies to burden calculated by any of the three allocation methods—burden rate, burden percentage, or machine hours.

*Burden Usage Variance = (Actual Hrs. – Standard Hrs.) * Standard Burden*

Note You can use any or all of the burden application methods to calculate standard burden.

Work in Process (WIP). WIP is the cost of open work orders. It includes the cost of component issues, labor, burden, and subcontract.

When labor is reported, WIP is debited and the Labor account credited for actual hours times actual labor rate. At posting, positive (unfavorable) labor rate and labor usage variance amounts are debited to the Labor Rate Variance account and credited to WIP. These transactions leave WIP at standard.

Cost of Production (COP). COP is the material or subcontract cost not associated with a work order and labor not associated with a work order or repetitive schedule.

- Material and Subcontract Items. The Cost of Production account is updated by unplanned issue transactions and purchase order receipts for subcontract items. For subcontract item receipts, when a work order ID is associated with the PO, the initial posting to COP is reversed and the purchase order price is posted to WIP. When work order ID is blank for the PO, the subcontract price remains in COP.
- Labor. Labor hours for maintenance, cleanup, meetings, and other labor reported in Non-Productive Labor Feedback (18.22.22) are charged to Cost of Production. The system creates a GL transaction that debits the COP account for the actual hours at the work center labor and burden rate and credits labor and burden absorption accounts.

Floor Stock. This is a clearing account for bulk issue items that are part of the product structure, but are not issued in the normal manner. These items are defined in Item Master Maintenance with Issue Policy set to No. They are issued to the floor using an unplanned issue transaction. However, the default Cost of Production account is changed to the Floor Stock account so that the material is not expensed. The issue transaction debits Floor Stock and credits Inventory. When a work order is closed, the cost of the bulk issue items is automatically credited to the Floor Stock account, and WIP is debited.

Material Rate Variance. This account records variances between costs of a component issued to the work order and the cost stored on the work order bill of material. This variance would occur if materials were issued from another company site with costs that differ from costs at the using site.The variance is computed when material is issued to a work order.

Chapter 7

Costing Impact by Module

This chapter summarizes the relationship between costing and other QAD modules.

Overview

Costing interacts closely with several modules. This section summarizes these relationships.

Items/Sites. This module contains item master data used in some computations.

- Order/batch quantity
- Yield percent
- Site code
- Routing code
- Bill of material code
- GL cost set data
- Current cost set data
- Product line/account data

Order/batch quantity and yield percent are used in the cost computations. The routing code and bill of material code are optional fields where you can specify a default routing and BOM other than the same code as the item.

You can specify different characteristics for the same part at different sites using the item-site maintenance programs (1.4.16, 1.4.17, 1.4.18).

Items/Sites also maintains the product line records, which specify the default GL accounts—inventory, sales, purchasing, and work orders—for each product line at a site.

The system provides separate programs to make finer account distinctions:

- Use Purchasing Account Maintenance (1.2.5) to specify different accounts for purchases, applied overhead, PO receipts, PO price variances, and accounts payable variances by product line, site, and supplier type.
- Use Work Order Account Maintenance (1.2.9) to specify different accounts for floor stock, cost of production, WIP, and subcontract by product line and site.
- Use Inventory Account Maintenance (1.2.13) to specify different accounts for inventory, scrap, inventory discrepancy, and cost revalue by location at a site.
- Use Sales Account Maintenance (1.2.17) to specify different accounts for sales, sales discount, and COGS accounts by customer type and sales channel.

Configured Products. This module works with the Sales Orders/Invoices module to create unique product structures for individual sales orders. Once a configured item is constructed during order entry, the system accesses item master and product line data to determine and maintain the cost of the configured item for COGS purposes.

Cost Management. Use Cost Management to create multiple cost sets beyond the GL cost set and the current cost set provided with standard inventory functions. These cost sets can be GL sets, current cost sets, or they can be simulated cost sets. The system can access data from the item-site records, product structures, and routings/work centers in the development of various cost sets.

Flow Scheduling. This module lets you create flow scheduled orders and specify the sequence in which they are produced on a flow production line. Recording flow completions creates GL records for inventory receipts and issues on the associated system-maintained work order. The system uses item/site cost data to cost a GL debit or credit transaction.

Formula/Process. This module defines the contents of formula items in the same way as bills of material define fabricated and assembly items. The system uses content information, process definition data, and work center data to calculate level-by-level costs.

General Ledger. This module maintains GL transactions originating in other modules for financial reporting.

Inventory Control. This module creates GL records for receipts, issues, and cycle count adjustments. The system uses item/site cost data to cost a GL debit or credit transaction.

Kanban. This module lets you create kanban transactions that track the movement of items in and out of the production process. Kanban transactions create GL records for inventory receipts and issues. The system uses item/site cost data to cost a GL debit or credit transaction.

Physical Inventory. This module uses physical inventory counts to establish the new work-in-process and stocking location inventory balances. Costed item counts are used to determine the beginning GL amounts for the Inventory and Finished Goods accounts and inventory variance accounts.

Product Structures. This module creates and maintains multilevel parent/component relationships of manufactured products. Product structure rollup determines the item cost (GL, current, or simulated) by adding up purchased material costs and routing labor and overhead costs for each assembly level. The program posts cost data to this-level and lower-level buckets for the five cost categories in the cost set specified in the rollup.

Purchasing. This module provides the prices used to determine purchase price variances. Actual item costs can be used to compute average item inventory amounts. Users of the Accounts Payable module can include differences between invoice cost and purchase price in the average cost computation.

Repetitive and Advanced Repetitive. These modules let you charge labor, material, and burden costs for a repetitively planned item and accumulate data for the WIP and variance accounts. Work Orders and Shop Floor Control perform the same functions for work orders.

Routings/Work Centers. This module maintains the standard hours for setup and run time for manufacturing or subcontract operations used to make an item. The module also maintains the labor and overhead rates for cost centers where an operation is performed. This data is used to determine current costs and GL costs, and can also be used to create simulated costs.

Sales Orders/Invoices. This module provides shipping transaction data that results in GL transactions affecting inventory, accounts receivable, cost of goods sold, and sales accounts.

Shop Floor Control. This module lets you accumulate actual labor costs against work orders or downtime for the WIP account and assorted variance accounts.

Chapter 8

Cost Reporting

The system provides many cost-related reports to facilitate cost analysis. This chapter summarizes the types of available reports.

Accounts Payable

Table 8.1
Accounts Payable Cost Reports

Report	Description
Matching Variance Report (28.2.7)	Shows the variance between an item's supplier invoice cost and either the standard cost or purchase order cost.

General Ledger

Table 8.2
General Ledger Reports

Report	Description
GL Transactions by Account (25.15.1.2)	Provides posted transaction detail for the selected account or accounts for a specified effective date horizon.
Cost Center Trans Detail Report (25.15.3.2)	Lists posted cost center account activity.
Project Trans Summary Report, Project Trans Detail Report (25.15.3.3, 25.15.3.4)	Summary lists project activity over a period. Detail also lists individual transactions.

Inventory

Table 8.3
Inventory Reports

Report	Description
Average Cost Accounting Report (3.21.17)	Lists transactions involving average cost computations. Quantity, unit cost, and inventory value data are shown for the beginning balance data, the change data, and the ending balance data.
Item ABC Status Report/Update (3.6.3)	Calculates item ABC class codes. Lists items in either descending sales or issue value, and shows an item's old and new ABC classifications.
Current Surplus Inventory Report (3.6.8)	Lists current surplus quantities and GL value of items. Surplus is determined by absence of issue activity after a user-specified date.
Projected Surplus Inventory Report (3.6.9)	Lists projected surplus inventory based on either MRP requirements or average use. Choose either current cost or GL cost for surplus cost computations.
Inventory Valuation (3.6.13, 3.6.14, 3.6.15)	Lists inventory valuation for a product line or lines, or for sites and locations.
Transactions by Order Report (3.21.13)	Shows transaction information for selected orders (work orders, sales orders, and so on).
Transactions by Item Report (3.21.14)	Shows transaction information for selected item numbers.
Transactions Accounting Report (3.21.16)	Shows the costed GL transactions created for each selected inventory transaction.

Report	Description
Frozen Inventory Valuation Report (3.16.16)	Shows costed inventory balances prior to conducting a physical inventory.
Tag Inventory Valuation Report (3.16.17)	Shows the value of counted inventory.
Inventory Variance Report (3.16.18)	Shows the variance between physical counts and the frozen inventory count.

Items

Table 8.4
Item Cost Reports

Report	Description
Item Cost Report (1.5.6)	Shows item cost information for current and GL cost sets for each site and product line, as well as for other cost sets created with Cost Management.
Product Structure Cost Report (13.12.4)	Shows costs for an item and its components by structure level.

Manufacturing

Table 8.5
Manufacturing Cost Reports

Report	Description
Operations Accounting Report (16.20.13.10)	Shows the GL transactions resulting from discrete manufacturing downtime and labor transactions.
Rep Operations Accounting Report (18.4.10)	Shows the GL transactions resulting from repetitive work order downtime and labor transactions.
Down Time Report (16.20.13.16)	Shows transactions for each work center or machine in transaction sequence by date. Total downtime for each work center is shown for the specified period.
Down Time by Reason Report (18.4.6, 16.20.13.17, 18.22.4.7)	Shows downtime transactions for each reason code. The system charges downtime to the Cost of Production account. Use Operations Accounting Report (17.13.10) to list details on the GL transactions for the COP account.
Efficiency by Work Center Report (18.4.23, 18.22.4.24, 16.20.13.19)	Shows setup and run efficiency by work center.
Efficiency by Work Order Report (16.20.13.20)	Shows setup and run efficiency by ascending work order number.
Efficiency by Employee Report (18.4.22, 18.22.4.23, 16.20.13.21)	Shows the setup and run efficiency for all setup and run transactions for an employee during a specified period.
Routing Cost Report (14.13.14)	Provides a detailed cost record for a routing. It shows cost detail for each operation in the routing, and total labor, burden and subcontract costs.

Report	Description
Work Order Cost Report (16.3.4)	Provides a detailed cost record for a work order while it is in process and after it has been closed. It shows cost detail for material by component and labor operation detail, labor burden, and subcontract costs.
Work Order WIP Cost Report (16.3.5)	Shows the accumulated amounts for material, labor, burden, and subcontract cost for a work order for each WIP account, sub-account, cost center, and project. A similar report, Repetitive WIP Cost Report (18.4.12), is available for repetitive WIP costs.
Work Order History Report (16.3.6)	Shows the current status of a work order in terms of schedule, material consumed, and labor expended.

Purchasing

Table 8.6
Purchasing Reports

Report	Description
Purchase Order Commitment Report (5.9.4)	Shows the commitment to suppliers for open purchase order line items. Blanket orders are not included in this report.

Sales Orders

Table 8.7
Sales Order Cost Reports

Report	Description
Sales Order Gross Margin Report (7.15.5)	Shows the gross margin for all open sales order item quantities by line item and order. Order totals are shown for the extended price and gross margin.

Cost Management Reports

Table 8.8
Cost Management Reports

Report	Description
Simulation Cost Element Report (30.13.3)	Shows cost elements for selected cost sets.
Simul Item-Element Cost Report (30.13.7)	Shows direct item costs by part number for selected cost sets.
Simul Subcontract Cost Report (30.13.12)	Shows subcontract costs by routing code and operation for selected cost sets.
Simul Work Center Rate Report (30.13.15)	Shows work center rates by work center for setup and run labor and burden cost elements for selected cost sets. Note: This functionality is also available in Simul Work Center Rate Browse (30.13.14), which offers enhanced browse capabilities to .NET UI users.

Report	Description
Cost Set Report (30.21)	Lists this-level and lower-level costs by category and total item cost for part numbers in cost sets at selected sites.
Comparative Cost Set Report (30.22)	Lists costs by cost element category and total cost for each part number in a selected cost set. The percent difference is shown for each element and for the total unit cost. **Note** An enhanced version of Comparative Cost Set Report is available at menu 30.46 for .NET UI users only.

Note Periodic Costing Menu (30.5) reports are listed in the “Periodic Costing” chapter.

Chapter 9

Periodic Costing

This section covers periodic costing and includes the following topics:

Overview

Periodic costing is a cost method for inventory valuation that calculates periodic item unit costs based on inventory and shop floor transactions. Periodic costing uses cost-calculation formulas such as weighted average (WAVG), first in first out (FIFO), and last in first out (LIFO) that support:

- Local legal requirements for certain countries
- International Financial Reporting Standards (IFRS) guidelines
- Business practices in corporations with regards to inventory valuations

Programs on the Periodic Costing menu (30.5) optionally calculate the cost of an item based on recorded data, such as inventory transactions, BOMs, routings, purchase prices, and labor/burden expenses over a certain user-defined period. The period can be any length, up to an entire GL period. Under most circumstances, periodic costing considers the beginning balance of the item while it is performing calculations. It then batch generates GL transactions based on the calculations.

Background

Globalization presents challenges to global manufacturing companies. QAD Enterprise Edition helps companies master these challenges by offering a solution that accommodates international variations in language, financial practices, business practices, and regulatory compliance.

Traditionally, ERP systems provided support to international customers using the localization approach, in which specific solutions were developed for individual country requirements. There is a move away from this approach, however, toward internationalization that is driven by legal considerations and by more cost reduction in total cost of ownership when supporting operations for different countries in a multi-national company.

QAD Internationalization addresses these issues by maintaining a single generic product in which processes and systems are standardized, and functions are optimized across a global company. QAD has introduced additional functionality to address requirements that vary globally in the field of costing and inventory valuation.

Multi-country companies need to know the total cost of production at varying levels of output along with per-unit costs. Companies use costing methods for managing business as dictated by business conditions or, in some cases, as dictated by their country’s laws. These companies must find costing methods and reporting functions that can meet local requirements and business practices when companies calculate inventory, transactions, or cost of goods sold. For example, in some countries, there are legal business and tax audit requirements for period costing, or the concept of standard cost variances may not be allowed.

IFRS guidelines—specifically, IFRS for inventory valuation (IAS-2)—recommend that companies use either specific identification or the periodic cost formulas FIFO or WAVG. The usage of LIFO is prohibited, although allowed under US generally accepted accounting principles (USGAAP).

Techniques to measure the cost of inventories, such as the standard cost method, can be used for convenience if the results approximate actual costs.

Complexities arise, though, as some countries require WAVG costing, while other countries require FIFO costing, and still other countries continue to use LIFO costing.

In some of these countries, the use of standard costing to value inventory is not acceptable, so companies must process inventory movements through the profit and loss account and not directly to the balance sheet.

Even when multi-national companies use standard costing for management accounting, internal audit, or performance evaluation requirements, they still require a costing method that provides reporting for legal (end of period) accounting requirements, tax audit, or company requirements of actual costs.

In periodic costing, costs are recalculated for each period, and a new actual cost is defined according to what happened during that period—so no amounts need to be posted to variance accounts.

Periodic Costing Features

Periodic costing includes functionality to support IFRS requirements. You can set the costing method to WAVG, FIFO, or LIFO, and numerous reports are provided, including legal reports. Periodic costing calculates the cost of items periodically and generates GL transaction according to the period costs for all costs, using any of the following periodic costing methods:

- Weighted Average (WAVG)
- First in First Out (FIFO)
- Last in First Out (LIFO)

Refer to “Costing Methods” on page 64 for more information.

Depending on your company’s preferences, you can set up periodic costing in two modes:

- Complete Mode. Periodic inventory costs are posted to the GL as calculated. In this mode, Create GL Transactions is set to No in Inventory Accounting Control (36.9.2). Complete mode is not frequently used and typically depends on local best practices, such as practices in Brazil.
- Adjustment Mode. The system performs unit cost adjustment on adjustment periods.

  Note In general, customers have adopted standard costing before implementing periodic costing functionality. When they do, they can continue to use standard costing plus periodic costing calculations. These customers should then use the adjustment mode for periodic costing.

When you use adjusted mode, you have instantaneous costing data; that is, you have GL transactions when you create the inventory transactions (as part of the standard costing functionality); with complete mode, you have transactions only at the end of the period. The instantaneous data approximates the periodic calculated unit costs.

Refer to “Complete and Adjustment Costing Modes” on page 63.

Multinational companies can use standard costing to meet their management (online) accounting, internal audit, and company requirements, while also using periodic costing functions for legal (end of period) accounting, or actual costs requirements, using periodic cost calculations.

Periodic costing functions address legal and business requirements for companies on many continents, including:

- Periodic inventory revaluation based on FIFO, WAVG, or LIFO cost formula methods
- Selection of complete period costing or standard costing plus adjustment

- Generation of:
  - GL transactions for all inventory
  - Shop floor transactions to adjust inventory value transactions (adjusted mode)
  - Inventory value transactions (complete mode)
- Batch processing to calculate costs and generate GL transactions
- Grouping of several sites as one for costing purposes
- Full absorption of indirect costs
- Absorption of logistics expenses—such as freight or insurance—into material cost
- Provision of several types of cost adjustments, including:
  - Item’s unit and total cost adjustment
  - Work order’s component and operation cost adjustment
- Creation of a unit or total cost adjustment transaction for specific elements, related to additional cost of purchase or other costs not directly included in the supplier invoice
- Cost corrections through cost adjustments and redo of calculation
- Calculation, storage, and reporting generation of item costs in base and statutory currencies for various periods
- Periodic inventory and work-in-process valuation
- Report on:
  - Period costing data and its impact on the inventory value before posting
  - The type of transactions—whether it is a cost analysis or final posted information
  - Per-period aspects that meet legal report requirements, such as inventory movement and balance, costs per transaction, WIP balance per item and site, and so on
  - Inventory by account with company and item data, unit measure, company address, and so on
  - Actual Cost analysis of all items

Periodic costing functions absorb normal hours activity. For each GL period, the labor/burden amount—either rate or total—considers the normal hours activity.

For currency, calculations are done in the base and statutory currency; see “Statutory and Base Currency Calculations” on page 63.

Concepts

The following topics discuss concepts used in periodic costing.

Periodic Costing Template and Detailed Periodic Cost Sets

Within periodic costing, you can define a period costing template cost set that includes several detailed periodic (child) cost sets. The template cost set acts like an umbrella cost set in that it holds the cost set definition to be applied to all detailed periodic cost sets.

You use Cost Set Maintenance (30.1) to set up the template periodic cost set and define additional cost elements for the template periodic cost set. The system maintains a detailed periodic cost set for every combination of cost-calculating period and currency. Each detailed periodic cost set assumes all the elements defined for the template cost set.

You only need to set up one template periodic cost set; therefore, all detailed periodic cost sets do not require specific settings that are defined in cost management (menu 30). You use the features defined in periodic cost settings to make changes on detailed periodic cost sets.

The naming of the detailed cost sets is determined from the periodic costing template cost set, the currency, and the GL period; see “Setting Up Financial Data” on page 75.

For more information on cost sets, see “Cost Set Categories” on page 7.

Complete and Adjustment Costing Modes

There are two modes available for periodic costing:

- Complete Mode. Periodic inventory costs are posted to the GL as calculated. In this mode, Create GL Transactions is set to No in Inventory Accounting Control (36.9.2).

  In complete mode, the system continues to post Purchase Order Receipts transactions. This is required so that AP subledger accounts will always match correctly, without having to wait until the periodic costing close process posts to the GL.
- Adjustment Mode. The system generates standard costing GL transactions when regular daily events occur. Periodic costing then creates an adjustment to Standard cost based on the difference between Standard and calculated Periodic costs. Create GL Transactions is set to Yes in Inventory Accounting Control (36.9.2)

In addition to setting Create GL Transactions, you also set the Layer Code field in Periodic Costing Control File to reflect either the Adjustment or Complete mode; see “Layer Code” on page 77.

Statutory and Base Currency Calculations

QAD Financials provides functions to support monetary amounts expressed in three currencies:

- Domain base currency
- Non-base transaction currency
- Statutory currency used for reporting

The three-currency system lets you display a transaction or create a report in any of the defined currencies. When creating GL accounts, you specify that the account accepts transactions in all currencies, in the base currency only, or in a specific currency.

For more information on statutory currency, refer to *User Guide: QAD Financials*.

In periodic costing, the system calculates, stores, and reports generation of item costs in base and statutory currencies, if defined, for various periods. For example, you can maintain the labor and burden rates or total amounts for labor and burden for each current periodic cost period in base currency or in statutory currency when periodic costing is enabled at the domain level.

Cost-Calculating Periods

For period-based costing, costs are expensed in the period in which they are incurred. Using periodic costing features, you can define as many periods, or *buckets*, as there are days in a GL calendar period. Periods shorter than the GL period are only used by FIFO and LIFO. The system uses the periods to determine the time buckets in which all transactions during the period are summarized and averaged during FIFO and LIFO cost calculations. WAVG is always calculated by GL calendar period only. For more information, see ‘“Costing Methods” on page 64.

The system maintains a cost set for every cost-calculating period. Periods can be of any length, up to the total length of the GL period. By default, the start and end dates of the first period are the dates defined for the GL period. If you want the cost calculation period to be the same as the GL period, you do not have to define additional records. For more information, see “Setting Up Periodic Costing Periods” on page 80.

Costing Methods

Three formulas or periodic costing methods are available:

- WAVG
- FIFO
- LIFO

For WAVG, you can determine the item unit cost by analyzing initial inventory before period start as all received inventory during the calculation period, but for FIFO and LIFO, item unit cost is based on how inventory is consumed.

For FIFO and LIFO, there are key differences in theoretical calculations and the QAD approach. The QAD approach approximates the theoretical calculations but considers practical issues, such as:

- The number of daily transactions, which can be very large
- The large number of users for which transaction sequencing can be cumbersome
- Asynchronous physical receipts or issues versus data captured
- Complexities when calculating production transactions

In the QAD solution, the system averages the unit costs by bucket, so that the total quantity received and the unit cost for the single bucket are depicted. With FIFO and LIFO, the system consumes by bucket:

- FIFO: First consumes the beginning QOH at the GL calender period start, then the received quantity of bucket 1; the received quantity of bucket 2, if it exists; and so on.
- LIFO: First consumes the received quantity of the last bucket of the GL calendar period, then the received quantity of bucket 1, then the beginning QOH at the GL calendar period start.

The topics within this section explain each method and provide examples in tables. In the tables, goods for sale (or quantity to issue) considers the beginning inventory and the quantities received during that period, which are the inbound receipt transactions. The different formulas to define the periodic costs are illustrated using the example shown in Table 9.1.

Table 9.1
Formula Example

Beginning Balance	Qty QOH	Unit Cost	Value
	300	2	600
Receipts	**Qty Received**	**Unit Cost**	**Value**
May 1	200	2.2	440
May 8	300	2.3	690
May 14	200	2.5	500
Total Received	700		1630
Goods for Sale	1000		2230
Issues	**Qty Issued**	**Unit Cost**	**Value**
May 8	-150		
May 22	-200		
May 28	-400		
Total Issued	-750		
End Balance	**QTY OH**	**Unit Cost**	**Value**
	250		

WAVG

Weighted average (WAVG) considers the previous period cost and the average of the cost incurred this period. WAVG assumes that the material or production of a given kind is so intermingled that an issue cannot be made from a particular lot and cost should therefore represent an average of the entire supply. The calculation considers the previous period cost and the average of the cost incurred this period.

Average cost produces results that typically fall somewhere between results for FIFO and LIFO costs. The calculation is as follows:

*This period material cost = (Sum of this period (Receipt Quantity * Receipt Cost) / (this period receipt quantity)*

Note You define the period using PC Periods Maintenance (30.5.1.1).

Received Quantity	*Unit Cost at receipt*
200	*2.20*
300	*2.30*
200	*2.50*

*This period material cost = (200 * 2.20 +300 * 2.30 + 200 * 2.50) / (200 + 300 + 200) = 2.32857*

The unit cost calculation is as follows:

*(This period material cost * this period receipt quantity + last period Unit cost * last period item quantity balance + this period material cost adjustment) / (this period receipt quantity + last period item quantity balance)*

Opening Inventory Balance	*Last Period Unit Cost*
300	*2.00*

*This period Unit Cost = (700 * 2.33 + 300 * 2.00) / (700 + 300) = 2.23*

Table 9.2
WAVG Example

Beginning Balance	**Qty QOH**	**Unit Cost**	**Value**
	300	2	600
Receipts	**Qty Received**	**Unit Cost**	**Value**
May 1	200	2.2	440
May 8	300	2.3	690
May 14	200	2.5	500
Total Received	700	2.32857	1630
Goods for Sale	1000	2.23	2230
Issues	**Qty Issued**	**Unit Cost**	**Value**
May 8	-150	2.23	-334.5
May 22	-200	2.23	-446
May 28	-400	2.23	-892
Total Issued	-750	2.23	-1672.5
End Balance	**QTY OH**	**Unit Cost**	**Value**
	250	2.23	5575

FIFO

The FIFO method considers the receipt date of items for all existing inventory. This method assumes that the oldest (first) item in stock will be issued first. The following table provides the theoretical way that FIFO is calculated.

Table 9.3
FIFO Theoretical Example

Beginning Balance	**Qty QOH**	**Unit Cost**	**Value**
	300	2	600
Receipts	**Qty Received**	**Unit Cost**	**Value**
May 1	200	2.2	440
May 14	300	2.3	690
May 31	200	2.5	500
Total Received	700	2.33	1630
Goods for Sale	1000		2230

Issues	Qty Issued	Unit Cost	Value	Value Calculations
May 8	-150		-300	(150 * 2)
May 22	-200		-410	(150*2 + 50*2.2)
May 28	-400		-906	(150*2.2 + 250*2.3)
Total Issued	-750		-710	

End Balance	QTY OH	Unit Cost	Value
	250	2.34	615
Beginning Balance	0	2	0
May 1	0	2.2	0
May 14	50	2.3	115
May 31	200	2.5	500

The ending inventory was received at two occasion's costs:

Quantity	*Receipt Unit Cost*
50	*2.3*
200	*2.5*

*Ending Inventory Value: 50 * 3.3 + 200 * 2.5 = 615*

Unit cost: 615 / 250 = 2.34

The FIFO method provides a good indication of the balance-sheet value of ending inventory. However, in an economy with rising prices, it also increases net income because older inventory is used to value the cost of goods sold—potentially increasing the amount of taxes that a company should pay.

The following example shows the QAD FIFO solution.

Table 9.4
FIFO QAD Solution

Beginning Balance	Qty QOH	Unit Cost	Value
	300	2	600

Receipts	Qty Received	Unit Cost	Value
May 1	200	2.2	440
May 14	300	2.3	690
May 31	200	2.5	500
Total Received Bucket 1	700	2.32857	1630
Goods for Sale	1000		2230

Issues	Qty Issued	Unit Cost	Value	Value Calculations
May 8	-150		-300	(150 * 2)
May 22	-200		-416.3	(150*2 + 50*2.32857)

May 28	-400		-931.43	(150*2 + 50*2.32857)
Total Issued	-750		-710	

End Balance	QTY OH	Unit Cost	Value
	250	2.32857	582.14
Beginning Balance	0	2	0
Balance Bucket 1	250	2.32857	582.14

The QAD FIFO solution considers buckets with a weighted average that is calculated based on all receipts and specific related costs.

In the example, the system created only one bucket. The system first calculates the weighted average of the bucket; then, consumes inventory based on FIFO principles.

Note The smaller the buckets, the closer the QAD FIFO value approximates the theoretical FIFO value; however, it makes the system more difficult to maintain and periodic costing calculations longer. So, it is a business consideration to decide the number of buckets to define by GL calendar period.

LIFO

LIFO calculations consider the receipt date of items for the existing inventory. This method assumes that the latest (last) item in stock is issued first. Inventory value is made up of the earliest purchases or production at the earliest prices. Closing inventory is valued at the price of the first goods purchased. Periodic cost calculations work back from the most recent item or batch of items received.

Note Italian Year End LIFO is not available.

LIFO is not a good indicator of ending inventory value because the leftover inventory might be extremely old—perhaps even obsolete. In an economy with rising prices, this results in a valuation that is much lower than today's prices. LIFO results in lower net income because cost of goods sold is higher.

Note For IFRS, no matter which calculation method is chosen, companies are not allowed to change the method from period to period. Also, IFRS does not allow the LIFO cost calculation method.

The following table provides the theoretical way that LIFO is calculated.

Table 9.5 LIFO Theoretical Example

Beginning Balance	Qty QOH	Unit Cost	Value
	300	2	600

Receipts	Qty Received	Unit Cost	Value
May 1	200	2.2	440
May 14	300	2.3	690

May 31	200	2.5	500
Total Received	700	2.33	1630
Goods for Sale	1000		2230

Issues	Qty Issued	Unit Cost	Value	Value Calculations
May 8	-150		-300	(150*2.5)
May 22	-200		-470	(50*2.5+150*2.3)
May 28	-400		-885	(150*2.3 +200*2.2 +50*2)
Total Issued	-750		--710	

End Balance	QTY OH	Unit Cost	Value
	250	2.34	500
Beginning Balance	250	2	500
May 1	0	2.2	0
May 14	150	2.3	0
May 31	0	2.5	0

The ending inventory was received previous to period:

Quantity	*Receipt Unit Cost*
250	*2.0*

*Ending Inventory Value: 250 * 2 = 500*

Unit cost: 500 / 250 = 2.0

The following example shows the QAD LIFO solution.

Table 9.6
LIFO QAD Solution

Beginning Balance	Qty QOH	Unit Cost	Value
	300	2	600

Receipts	Qty Received	Unit Cost	Value
May 1	200	2.2	440
May 14	300	2.3	690
May 31	200	2.5	500
Total Received	700	2.33	1630
Goods for Sale	1000		2230

Issues	Qty Issued	Unit Cost	Value	Value Calculations
May 8	-150		-349.29	(150 * 2.32857)
May 22	-200		-465.71	(200*2.32857)
May 2\8	-400		-915	(300*2.32857 + 50*2)

Total Issued	-750		710

End Balance	**QTY OH**	**Unit Cost**	**Value**
	250	2	500
Beginning Balance	250	2	500
Period Bucket 1	0	2.32857	0

Grouped Sites

You can group sites in periodic costing so that the groups share the same unit cost. This is useful when you have factories, one or more warehouses, or one or more distribution centers as separate sites, but you want the same unit cost applied to them. The system calculates one set of costs for the grouped sites as a whole by aggregating inventory and shop floor transactions and adjustments for all sites in the group as if calculating for a single site.

Example You define site 10000 as primary and associate two other sites to it; for example, 20000 and 30000. When you process the cost calculation, the system considers all transactions that occurred at sites 10000, 20000, and 30000 as if all sites were in one site, and it determines a new unit cost that applies to all three sites. In the end, an item that has movements in any of the three sites will use this unit cost for its transactions.

Cost Calculating Periods

The cost calculating periods by default are set up based on GL calendar periods. For WAVG, only one periodic costing period can be used per GL calender period; however, when using FIFO or LIFO as the periodic costing method, you can split the GL calender into multiple buckets. You choose the number of buckets as long as there is a minimum of one bucket per GL calendar period and a maximum of one bucket per calendar day.

As explained earlier, the system uses the periodic periods (buckets) to determine the time periods to use for cost calculations. The system maintains a cost set for every cost calculating period. So, if you want to use the complete GL period for each costing period, you do not have to define additional records. For more information, see “Setting Up Periodic Costing Periods” on page 80.

Labor/Burden Actual Costs Absorption

Actual absorbed cost for labor and burden in GL can be used to calculate labor and burden rates for the period. These rates will be applied to labor transactions recorded at the respective work centers and machines.

The total amount is prorated according to the setup/run time in the period for each work center, machine, or department. The system applies the rate provided over actual run/setup time per transaction.

Supplier Invoices

If you receive raw material and match invoices to them in the current period, Periodic Costing calculates the unit cost as the invoice price, deducting recoverable taxes and including logistics expenses. When the receipt date is within the current period, the system also assigns both AP rate variance and AP usage variance to the PO receipt cost for each calculation.

In countries other than Brazil, supplier invoices may not be received before periodic cost calculations take place. In this case, the system calculates costs based on the PO prices at PO receipt for the inventory valuation.

Periodic costing functionality does not prohibit you from calculating the periodic cost before supplier invoices have been received. You can verify this through reports.

Note Some countries—for example, Brazil—require that the system use supplier invoice prices, not PO prices, at PO receipt for inventory valuation for periodic cost calculations. These countries may also require that the receipt and invoice always matched at time of receipt. In these cases it should be a procedure during month end closing to verify that these requirements are met.

When calculating PO receipt transactions (RCT-PO) for statutory currency:

- Only invoices matched within the same period are captured in the calculation of RCT-PO transactions.
- When an invoice matches a PO receipt for the current period, the system uses the statutory rate of the invoice. When there is no matched invoice in the current period, the system uses the statutory rate at PO receipt.

Freight, Logistic, and Trailer Codes as Material Cost Elements

Periodic costing captures logistics expenses generated using the Logistics Accounting module. Logistics costs are the costs incurred when a product is moved from one location to another. These costs can include not only the freight charges paid to carriers, but also insurance, duty, customs clearance, handling charges, overhead, and so on. Depending on the freight terms, these costs can be paid by the supplier and recharged to the customer within the item price or as a trailer charge. They can also be paid by the customer directly to the carrier, insurer, customs, and so on. Inbound logistics charges are the transportation costs associated with purchasing items from external suppliers.

Periodic costing lets you receive invoices from carriers who charge freight expenses, prorate the expenses to received or issued items, then absorb the expenses in inventory in separate elements of the material cost category. This can be a requirement for some countries and an option for other countries. Before periodic costing, the system captured freight and logistics charges as expenses, not costs. Using periodic costing, you can now capture them and adjust costs as well as track other costs, such as insurance and logistics costs.

Note Logistics Accounting in QAD EE does not support apportion methods by weight.

Purchased Items versus Manufactured Items

Periodic costing calculations do not distinguish a purchased item from a manufactured item. Instead, the system handles transactions that exist for the item and treats them accordingly. The system calculates RCT-PO and RCT-WO transactions without validating whether the item in the

transaction is a purchased item or manufacturing item—according to the item-site planning configurations—because the focus is on the actual operations that occurred for that item in the GL period. The item cost is calculated, beginning from the bottom of the BOM; then, typically purchased components and raw materials, level by level via subassemblies, to the top of the BOM—finished goods. The MRP item-level definition is assumed for this.

Period Costing

It is important that you do not confuse periodic costing features with period costing.

In QAD applications, period costing omits the valuation of inventory transactions and uses the values of the incoming and outgoing GL transactions from accounts payable and invoicing functions. Costs are expensed in the period in which they are incurred.

Before periodic costing features, period costing was not commonly used for financial valuation because it required manual entry of transactions and did not take advantage of automatic entries created by the system.

Periodic Costing Programs

Table 9.7
Periodic Costing Menu Programs

Menu	Menu Label	Program Name
30.5	Periodic Costing Menu....	
30.5.1	PC Set-Up Menu...	
30.5.1.1	PC Periods Maintenance	pcbucmt.p
30.5.1.2	PC Period Browse	pcbr431.p
30.5.1.4	PC Periodic Cost Set Maintenance	pccsmt.p
30.5.1.5	PC Periodic Cost Set Browse	pcbr021.p
30.5.1.13	PC Grouped Site Maintenance	pclsrmt01.p
30.5.1.14	PC Grouped Site Browse	pcbr436.p
30.5.1.23	Periodic Costing Initialize	pcinitmt.p
30.5.3	PC Work Center Rate Menu...	
30.5.3.1	PC Work Center Rater Maint	scwcmt01.p
30.5.3.2	PC Work Center Rate Inquiry	sciq13.p
30.5.3.3	PC Work Center Rate Report	scrp13.p
30.5.3.5	PC Work Center Rate Copy	scwccp01.p
30.5.3.13	PC Work Center Rate Update	scwcup01.p
30.5.5	PC Cost Adjustments Menu....	
30.5.5.1	PC Unit Cost Adjustment	pcptuadj.p
30.5.5.2	PC Total Cost Adjustment	pcpttadj.p
30.5.5.13	WO Component Cost Adjustment	pcwocadj.p
30.5.5.14	WO Operation Adjustment	pcwopadj.p
30.5.7	PC Calculation Menu....	
30.5.7.1	Periodic Cost Calculation	pccscalc.p
30.5.13	PC Inventory Reports Menu...	

Menu	Menu Label	Program Name
30.5.13.1	Inventory Valuation Browse	icbr999.p
30.5.13.2	Inv Detail by PC Cost Browse	icbr997.p
30.5.13.11	Current Surplus Inventory Browse	icbr901.p
30.5.13.12	Project Surplus Inventory Browse	icbr902.p
30.5.13.13	Inventory Trans Detail Inquiry	ictriq03.p
30.5.13.14	Inventory Trans By Item Report	ictrrp06.p
30.5.13.15	Inventory Trans By Order Report	ictrrp05.p
30.5.13.17	Item Transaction Report	NET UI only
30.5.15	PC Operations Reports Menu...	
30.5.15.1	PC Work Order WIP Cost Report	pcworp09.p
30.5.15.2	PC WO WIP History Report	pcworp03.p
30.5.15.3	WIP Adj Valuation Report	pcwadjrp.p
30.5.15.4	WIP Scrap Valuation Report	pcscraprp.p
30.5.15.5	Operation Trans Detail Inquiry	pcscrprp.p
30.5.17	PC Accounting Reports Menu...	
30.5.17.1	PC & Standard Costs Report	pcstdcs.p
30.5.19	PC Regional Reports Menu...	
30.5.19.1	Inventory and SF Movement Report	NET UI only
30.5.19.2	Inventory and WIP Balance Report	NET UI only
30.5.23	PC Calculation Reverse	pcrecalc.p
30.5.24	Periodic Costing Control File	pcctrl.p

Setup Considerations

Periodic costing can be activated at any time, independent of the QAD EE implementation.

Periodic costing is set up by domain. This means that all periodic costing considerations should be consistent for all entities and sites within the same domain. If this is not what you want, consider creating additional domains.

Also, you should consider:

- Which periodic costing method to use

  Only one periodic costing method can be set up. Once you have chosen a specific method, such as WAVG or FIFO, you cannot change the method after the system creates periodic costing GL transactions.
- Whether to operate in adjustment mode or complete mode

  In general, companies that have worked with standard costing tend to apply adjustment mode.
- Whether to group sites for determining periodic costs
- Whether to set up additional cost elements
- The date (period) to in which to start using periodic costing

Setting Up Periodic Costing

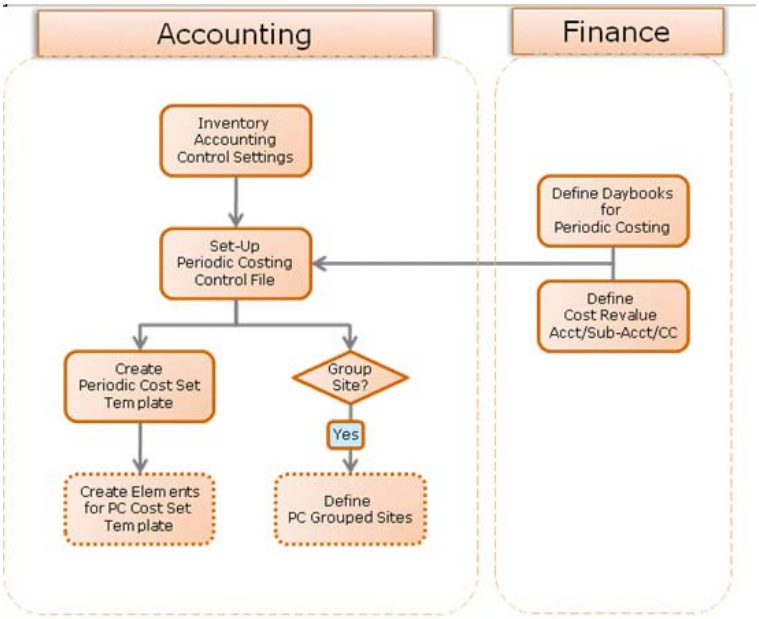
The following topics discuss setup tasks that should be completed before you can use periodic costing. Optional tasks are identified.

The following figure depicts the setup flow for accounting and finances. Refer to *User Guide: QAD Financials* for procedures to set up the data. In the figure, note the following:

- Define periodic costing calculation daybook and final daybook in Daybook Maintenance (25.8.1).
- When using complete mode, set Create GL transactions to No in Inventory Accounting Control (36.9.2)

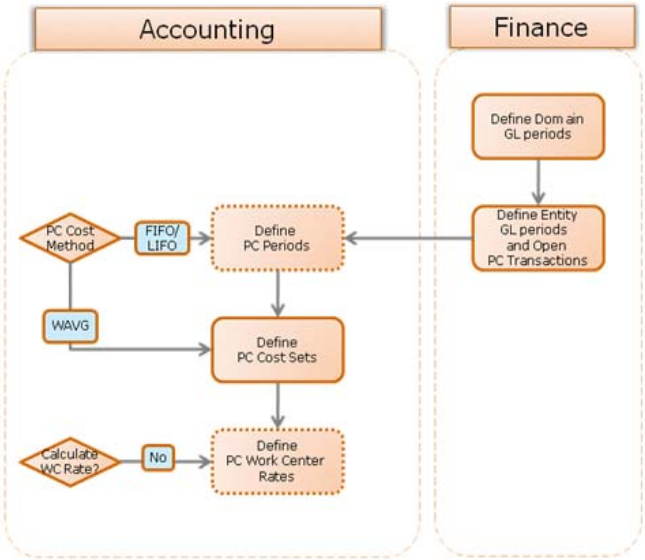
  Note Generally, you adopt standard costing and use periodic costing, too.
- Set controls in Periodic Costing Control File (30.5.24).
- Set up cost sets in Cost Set Maintenance (30.1).
- Set up cost set elements in Cost Element Maintenance (30.17.1).
- Group sites in PC Grouped Site Maintenance (30.5.1.13).

Fig. 9.1
Accounting and Finance Initial Setup Flow, Part 1



The following figure depicts the initial setup flow.

Fig. 9.2
Initial Setup Flow



Setting Up Financial Data

You should set up a new daybook type for periodic costing in Daybook Create (25.8.1.1). You create two daybooks:

- PC calculation daybook (transient layer)
- PC final daybook (official or management layer)

The system captures the periodic costing GL transactions in the transient layer (the PC calculation daybook). At the end of the period when the system completes all validations, it posts the periodic costing GL transactions to the PC final daybook by a mass layer transfer of GL transactions. The GL transactions in the transient layer are summarized when posting them to the PC final daybook.

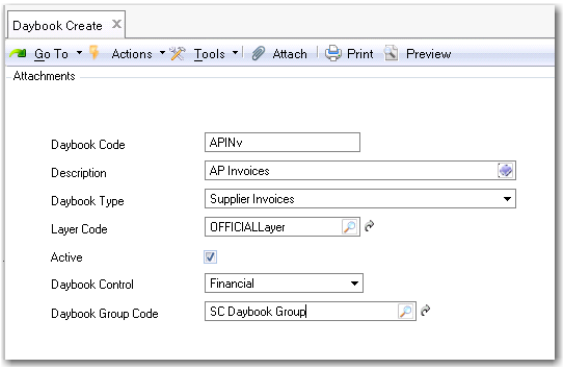
Depending on whether you use adjustment mode or complete mode, you need to define the PC final daybook in either official or management layer, respectively.

For journal entries of periodic costing in a transient layer:

- You cannot delete or change transient postings coming from periodic costing using the normal Journal Entry (JE) form.
- You cannot create transient postings in a daybook that point to periodic costing using the normal JE form.

The system ensures that no postings on a PC daybook are created in a period that is closed for periodic costing before it posts to the PC daybook.

Fig. 9.3
Daybook Create



Daybook Code. Enter a daybook code (maximum eight characters).

Note You enter the daybook code that you set up for PC here in Periodic Costing Control File (30.5.24) when you set up periodic costing.

Description. Enter a brief description (maximum 24 characters) of the daybook.

Daybook Type. Select the PC daybook type from the drop-down list.

Layer Code. Select an accounting layer: official, management, or transient.

Active. Indicate if this is an active daybook.

Daybook Control. Choose the type of daybook control from the drop-down list:

- Financial: Contains postings originating in the financial modules.
- Operational: Contains postings from operational functions.
- External: Contains postings originating from external, third-party systems; for example, payroll applications.

Daybook control types are used to clearly separate postings based on their source.

The transient layer daybook should be operational; other layers should be financial.

Setting Up Other Base Data

Periodic costing requires several types of prerequisite data setup outside of the Cost Management module:

- GL calendar periods
- Cost revaluation account, sub-account, cost center

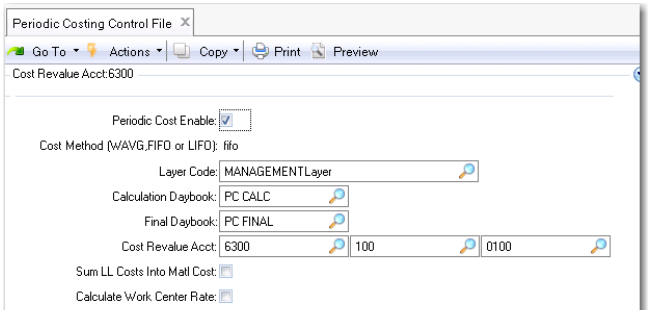
  This account is required for the system to use when calculating periodic costs.
- Inventory Accounting Control (36.9.2):

  Set the Create GL Transactions field based on whether you want to use periodic costing in Complete or Adjustment mode. When using complete PC mode set Create GL Transactions to No.

Setting Controls

Use Periodic Costing Control File (30.5.24) to enable periodic costing functionality and define several values used in processing.

Fig. 9.4
Periodic Costing Control File (30.5.24)



Periodic Cost Enable. Select this option to enable periodic costing cost methods for this domain. Periodic costing methods lets you calculate cost averages during a user-specified period using formulas that are based on FIFO, LIFO, or weighted average, specified in the Cost Method field. The system uses the period you define in PC Periods Maintenance (30.5.1.1).

This setting applies to the entire domain; you cannot use periodic costing for individual entities. Each domain can have its own data setup, calculation formula, adjustment settings, and GL entries. (Only one cost calculation method can be defined by domain.)

Cost Method (WAVG, FIFO or LIFO). Specify how periodic costing calculations are done in this domain:

WAVG: Considers the previous period cost and the average of the cost incurred this period.

FIFO: Considers the receipt date of items for the existing inventory. This method assumes that the oldest (first) item in stock is issued first.

LIFO: Considers the receipt date of items for the existing inventory. This method assumes that the latest (last) item in stock is issued first.

Note Once periodic transactions exist in the official or management layer, this field is read-only; you cannot update it any longer.

Layer Code. Specify which accounting layer is used for GL postings of periodic costs in this domain. The valid value depends on the setting of Create GL Trans in Inventory Accounting Control; that is, adjustment mode versus complete mode.

Management: This option is required when Create GL Trans is Yes and periodic costing is in adjustment mode.

Official: This option is required with Create GL Trans is No and periodic costing is in the Complete mode.

Calculation Daybook. Specify the daybook used for posting periodic costs during preliminary or test postings to the transient accounting layer. Amounts are posted to this daybook until final posting to the management/official layer. At that time they are moved to the Final Daybook.

Final Daybook. Specify the daybook used for posting final periodic costs to the management or official accounting layer.

Cost Revalue Acct. Specify the account, sub-account, and cost center used to record offset amounts to ensure that inventory accounts are properly balanced when the unit cost for the item in a site is changed. The GL type should be Standard.

Sum LL Costs Into Matl Cost. Specify how lower-level costs are posted to Cost of Goods Sold when periodic costing is in use.

Note This setting applies only to periodic costing. When you use another cost method, this function is controlled by the same field in Inventory Accounting Control.

No: Add lower-level costs to this-level costs for each cost component and post the total to Cost of Goods Sold.

For example, the total material cost (this-level plus lower-level) is posted to Cost of Goods - Material, the total labor cost is posted to Cost of Goods - Labor, and so on, for Cost of Goods - Burden, Overhead, and Subcontract.

Yes: Summarize all lower-level costs into Cost of Goods - Material. Only this-level costs are posted to Cost of Goods - Labor, Burden, Overhead, and Subcontract.

This field does not affect the way costs are calculated or stored in cost sets.

Usually this field is set to No. Cost of goods sold amounts are maintained separately for each cost component. However, in some companies, the material cost for an end item is considered to include all costs associated with purchasing or manufacturing components, as well as any direct material costs. Then this field is set to Yes.

Calculate Work Center Rate. Specify the method the system uses for calculating labor costs (including setup) and burden costs for the period:

Yes: The system bases the costs on work center labor and burden rates. The cost accountant provides total cost per labor/burden that is prorated across items produced in that work center.

For work centers, the labor rate is the standard hourly labor rate for personnel who run operations at this work center. The system uses this rate when calculating both labor and labor burden.

Burden costs apply to both setup and run time. Labor burden is calculated as a rate per labor hour and/or a percentage of total labor. Labor burden percent is most commonly used in a labor-intensive environment. Labor burden rates are commonly used in a high-volume production environment. Both types of burden can be applied—as a rate per hour and/or as a percentage of labor cost.

*Labor Burden Rate = [(Setup Hrs / Order Quantity + Run Hrs) * WC Labor Burden Rate] / Item Yield%*

*Labor Burden Percent = [(Setup Hrs / Order Quantity * WC Setup Rate) + (Run Hrs * WC Labor Rate) * WC Labor Burden%] / Item Yield%*

The labor burden rate or percentage per hour is applicable to both setup and run time at the work center.

No: The cost accountant provides the labor/burden cost rate that is applied directly to the hours reported in that work center. The work center rates/total should be provided per period.

The total labor cost is the combined cost of setting up the operation and running it. Since setup time applies to the whole operation rather than per unit, setup time is divided by the item order quantity, then multiplied by the setup rate.

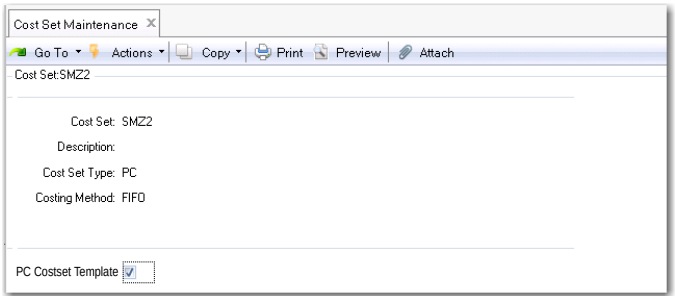
*Labor Cost = (Setup Hrs / Order Quantity * WC Setup Rate) + (Run Hrs per Unit * WC Labor Rate) / Item Yield%*

Creating a Periodic Cost Set Template

Use Cost Set Maintenance (30.1) to set up general ledger (GL), current, and simulation cost sets and specify the method for updating each set. Use Cost Management (30) features to create a periodic master cost set.

Set the Cost Set Type to PC (periodic costing) indicating its purpose. When PC is the cost set type, the system displays an additional frame to indicate whether to use the PC cost set template.

Fig. 9.5
Cost Set Maintenance (30.1)



PC Costset Template. Indicate Yes or No to define this cost set as the periodic costing cost set template when you use periodic costing to calculate inventory. The default is No. This field is editable only when you enable the periodic costing module. The field displays only when you set Costing Type to PC (periodic costing).

When the cost set is the first PC Cost Set Type and the cost set is the template, the system sets this field to Yes.

Creating Detailed Cost Sets

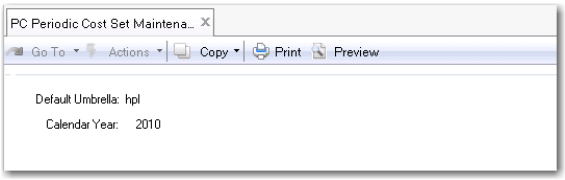
Optionally, you can use PC Periodic Cost Set Maintenance (30.5.1.4) to specify a detailed (child) cost set for a template cost set. You specify a template cost set in Cost Set Maintenance. In Cost Set Maintenance, the system displays the detailed cost set as the code of the template cost set plus three characters of currency, two characters of the fiscal year period, and three characters of a continuous number.

If you create a detailed cost sets for a template cost set, you cannot delete the template until you delete the detailed costs sets first.

When you run PC Periodic Cost Set Maintenance, the default template cost set displays. Enter a year, then select Yes when the system prompts you to create the detailed cost set; see Figure 9.6.

Before running periodic cost calculations, you must verify that a detailed periodic cost set has been created for the respective periods. Also, you can check periodic costing cost sets by using Cost Set Browse (30.1.2).

Fig. 9.6
PC Periodic Cost Set Maintenance (30.5.1.4)



Creating Cost Set Elements

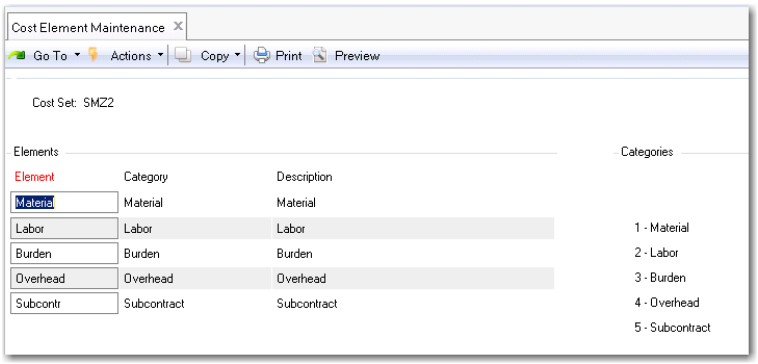
You can use Cost Element Maintenance (30.17.1) to set up separate cost elements for logistics charges in the GL cost sets assigned to sites that receive purchased items. The cost elements should be in the Material or Overhead cost category.

You create a cost element for each logistics charge you want to accrue. For example, you could create separate cost elements for domestic freight and overseas freight, or create only one cost element for freight.

For field descriptions and other information on Cost Element Maintenance, see Chapter 5, “Cost Management,” on page 31.

You create a template periodic costing cost set so that these extra settings are defined in the template for all periodic costing cost sets; the system automatically creates these elements.

Fig. 9.7
Cost Element Maintenance (30.17.1)



Setting Up Periodic Costing Periods

Use PC Periods Maintenance (30.5.1.1) to define start and end dates for the cost periods for each GL accounting period. The system uses these periods to determine the time periods (buckets) for cost calculations. The system maintains a cost set for every cost calculating period.

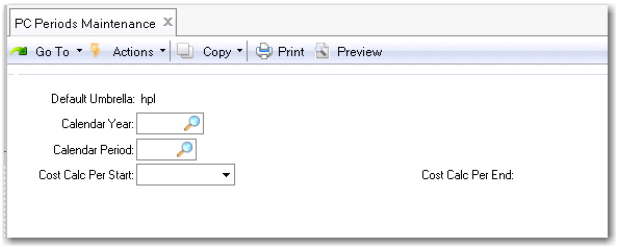
Note Unlimited periods per GL period only applies to FIFO and LIFO calculations with a minimum period length of one per day and a maximum length of one per GL Calendar Period.

If you attempt to enter periods with overlapping dates, the system displays an error message. If a gap exists between the end date of one period and the start date of the next period, the system automatically creates an additional period to fill the gap.

Important Periods should cover the entire GL period. If you do not create a period that includes the period start and end dates, errors will occur during cost calculations.

You can redefine periods during the calendar year as required, as long as no periodic costing transactions exist and the GL period is open.

Fig. 9.8
PC Periods Maintenance (30.5.1.1)



Calendar Year. Specify the GL calendar year for the cost period. This should be a valid year defined in GL Calendar Create.

Calendar Period. Specify the GL calendar year for the cost period. This should be a valid GL period defined in GL Calendar Create.

Cost Calc Per Start. Specify the first date in this periodic costing period.

When you set up a new record, the default for the first period is the first day of the GL period. Subsequent periods default to the day following the previous Period End value.

The first period should start with the first day of the GL period. Otherwise, errors will occur during cost calculations.

Cost Calc Per End. Specify the last date in this periodic costing period.

When you set up a new record, the default for the first period is the last day of the GL period.

The last period should end with the last day of the GL period. Otherwise, errors will occur during cost calculations.

Setting Up Grouped-Site Costing

Use PC Grouped Site Maintenance (30.5.1.13) to set up grouped-site costing.

All transactions are calculated according to process logic flow; however, to avoid conflicts with the standard QAD EE linked site costing, you enter the periodic costing grouped sites using PC Grouped Site Maintenance only. This is necessary for item attributes.

When the cost accountant changes rules for the site, a new site should be created and inventory transferred from the old site to the new site; grouped site rules do not apply.

When new sites are included in the already existing grouped rules, a new periodic calculation for the current period is mandatory before closing the period.

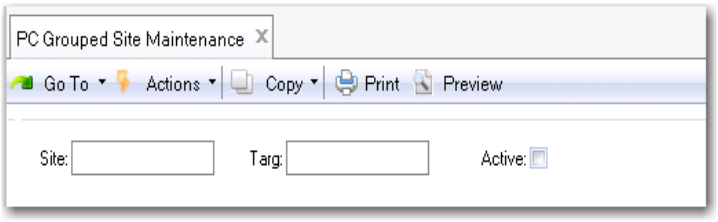
The same site cannot be part of multiple grouped rules, and all sites that are part of the grouped rules should be in the same domain.

You can activate/deactivate grouped-site rules. When an existing grouped-site rule is deactivated, a new recalculation for the current period is mandatory.

Note For some countries, such as Brazil, legislation dictates that you can apply the same cost to separate sites only when all sites have the same federal tax identification; otherwise, the sites can be considered different companies and costing cannot be consolidated.

Enter the source site in the Site field and the linked site in the Target field; then set the Active field to Yes.

Fig. 9.9
PC Grouped Site Maintenance (30.5.1.13)



Defining Work Center Rates

Use PC Work Center Rate Maint (30.5.3.1) to define setup and labor rates, as well as labor burden and machine burden rates, used in periodic costing calculations for a specified cost set.

You can maintain the following rates or totals by specified work center, machine, and element:

- Labor burden %
- Labor burden rate/total
- Labor rate/total
- Machine burden rate/total
- Set up rate/total

If you leave the machine field blank, the system assumes that all machines for that work center receive the rate.

When you provide work center rates as totals, the formulas to calculate production costs rates are as follows:

Total run time = accumulated total run time for the department/work center/machine

Total setup time = accumulated total set-up time for the department/work center/machine

Labor Rate = (total labor cost / total run time)

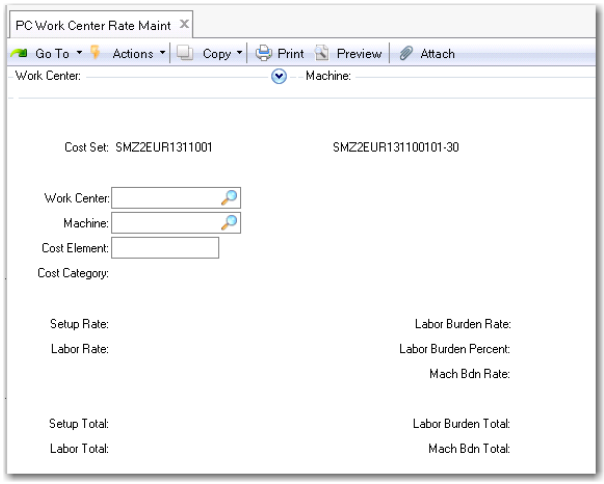
Setup Rate = (total setup cost / total setup time)

Burden Rate = (total labor burden cost / (total run time + total setup time))

Machine Burden Rate = (total machine burden cost / (total run time + total setup time))

Note The system can capture more data, resulting from cost allocation features; see Chapter 4, “Product Costing Process,” on page 19.

Fig. 9.10
PC Work Center Rate Maintenance (30.5.3.1)



Cost Set. Enter the cost set for which you want to maintain work center rate costs.

Note If using FIFO with multiple PC periods (buckets) for the same GL period, the rates/total should be provided per PC period (bucket) and not for the entire GL period, as each period is a separate cost set. The system can maintain work center rate amounts in base currency or statutory currency. When statutory currency is enabled for the domain, the system calculates for cost adjustment transactions that are created based on the effective date provided.

Once you set up PC work center rates, you can use these additional programs to manipulate the data:

- PC Work Center Rate Inquiry (30.5.3.2)
- PC Work Center Rate Report (30.5.3.3)
- PC Work Center Rate Copy (30.5.3.5)
- PC Work Center Rate Update (30.5.3.13)

Calculating Periodic Costs

The following topics explain things you need to do before you run calculations, tell you how to run periodic costing calculations, and describe calculation results.

Before You Begin Calculations

Before using periodic costing calculations, ensure that you have followed all set-up instructions as described in this user guide.

Before you start calculating the periodic costs for a specific GL period, run Periodic Costing Initialize (30.5.1.23) to initialize cost calculation data. This must only be done once, after installing and setting up periodic costing; however, you can re-initialize, if necessary. For example, if your company wants to start periodic costing from June, you can enter 05/31 as the initialize date, and as long as you have not closed June, you can re-initialize. Once a close is done on a periodic costing subledger, you cannot re-initialize.

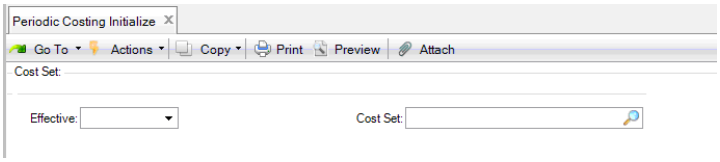
The system calculates and stores initial data for the first periodic cost calculation and links the cost set to the currency and period. The system automatically finds the last period for the last GL period, obtains the current GL period, and identifies all periods that you set up for the calculation in PC Cost Calc. Period Maintenance.

To initialize periodic costing using Periodic Cost Initialize, enter the effective date for periodic costing calculations; then, enter a reference cost set that the item unit costs must be copied from for initial cost valuation. You can enter either a current cost set, a standard cost set, or a simulation cost set. You should have defined the cost for every item on the cost set you enter.

Example You enter Standard for the cost set. For Item A in standard cost, the material portion is 1 and overhead is .5. In Periodic Costing Initialize, you enter a date of 05/31/2010. The system creates a new cost set for the period May 2010. If you enter the periodic costing template PCTEMPL for the cost set, the cost set for May 2010 would be PCTEMPLUSD1005001, and the cost for Item A for cost set PCTEMPLUSD1005001 is 1 for material and .5 for overhead.

Once you enter the cost set, press Go. The date you enter should be the as-of date of a GL calendar period.

Fig. 9.11
Periodic Cost Initialize (30.5.1.23)



Periodic Costing Calculation

Use Periodic Costing Calculation (30.5.7.1) to run periodic costing. To run periodic cost calculations, you should:

- Enable periodic costing in Periodic Costing Control and follow the set up instructions as described earlier.
- For the very first period, initialize inventory balance and costing; see “Before You Begin Calculations” on page 83.
- Ensure that the previous periodic cost calendar period is closed.

General Periodic Costing Procedure

Typically, you run periodic costing calculations to ensure that costs are acceptable. You can make adjustments when results are not as expected. You can make cost adjustments to items or WOs, or locate unrecorded transactions, for example, to make corrections. After the corrections, rerun the periodic costing calculations and review the results again.

The following provides a general procedure:

1 Retrieve all cost-related data.

2 Enter opening inventory balances and costs.

3 Run periodic costing, calculating—and if necessary, re-calculating—the unit cost for all items including raw material, semi-finished goods, and finished product by period labor/burden total.

4 Before posting periodic costing, ensure that all operative GL sub-ledger calendars have been closed.

5 Post periodic costing into the transient GL.

6 Run cost analysis by using report functions in the QAD Financials module.

7 Adjust costs.

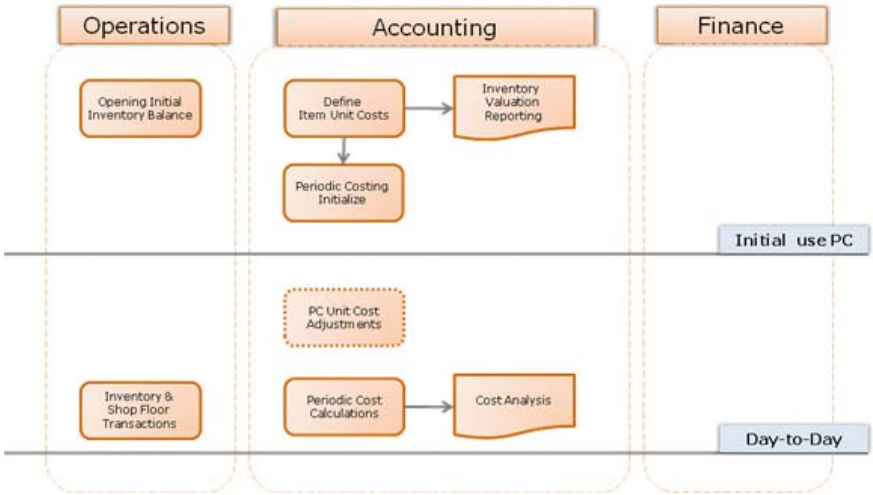
8 Run GL and operation reports.

9 Move the transient GL if satisfied.

10 Close the periodic costing subledger calendar.

The following figure depicts the flow for day-to-day transactions.

Fig. 9.12
Day-to-Day Flow



Running the Calculation

Use Periodic Cost Calculation (3.5.7.1) to calculate the actual cost of an item for a specific period, based on recorded data-inventory transactions, BOMs, routings, purchase prices, and labor/burden expenses over a certain period. Under most circumstances, the system considers the beginning balance of the item while calculating period costing. It then generates GL transactions in batch based on the cost calculations.

The system can consider all expenses regarding the production effort, including scrap that is common to the process and downtime that is predicted in the routings.

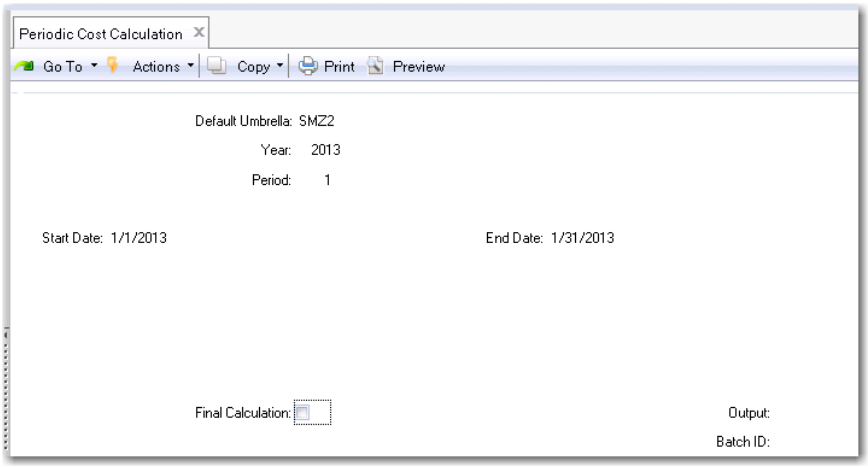
The system performs periodic costing calculations in base currency as well as statutory currency when either currency is in use.

You can run the periodic cost calculation multiple times within the current period until the periodic cost is closed. The system posts GL transactions from the transient layer to the GL management or official layer for the current period.

The system defaults the cost set template, year, and start and end dates; you cannot change these values.

Set Final Calculations to Yes to run the periodic cost calculation and generate GL transactions. Indicate No to run a simulation of the calculation.

Fig. 9.13
Periodic Costing Calculation (30.5.7.1)



Periodic Costing Calculations

Periodic calculation of actual costs for items is based on transactions. With periodic costing, the system applies the actual cost of labor, burden, and overhead for the period. You can run the periodic costing in batch mode to calculate the cost and create the GL transactions.

The periodic costing calculation process gathers all inventory and production transactions that happened during the period you set in PC Periods Maintenance (30.5.1.1) that impact costing. Periodic costing functions reorganize the transactions in a sequence that addresses the periodic costing method purposes. The cost sorting is as follows:

- Inbound with value:
  - (0) Unit cost adjustment
  - (1) Reporting of labor
  - (2) Scrap (repetitive)
  - (3) Receipts by value (PO, WO or returns)
  - (4) Reject (work order)
- Correction/adjustment transaction:
  - (5) Total cost adjustment
- Outbound with value:
  - (6) Issues by value (returns)
- Inbound using periodic cost:

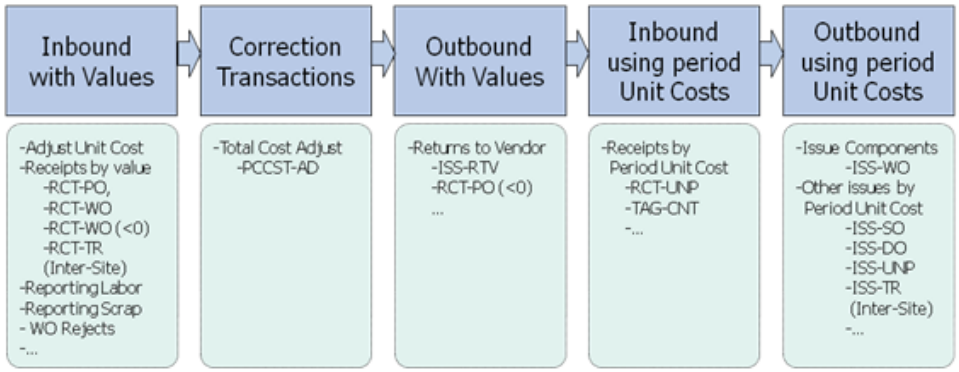
    - (7) Receipts by periodic cost
- Outbound using periodic cost:
    - (8) Issue components
    - (9) Other Issues by average (SO and so on)

The sorting applies to all cost methods for periodic cost calculation: WAVG, FIFO, and LIFO.

Period costing does not have the concept of variations because there are no fixed costs to be evaluated. Instead, it is recalculated every period and a new item cost is defined according to what happened that period.

The following figure depicts the flow and provides examples of transactions.

Fig. 9.14
Calculation Flow



The following figure depicts the selection among items during calculations. The sequence is by MRP level.

Fig. 9.15
Selection Among Items

Calculation Comparisons

When you use periodic costing, the calculation method used for determining the cost of inventory items can have significant effects on related calculations of COGS and gross margin. Examples of each method are provided in the following topics to help you make comparisons. The data in Table 9.8 applies to each example, to help you make distinctions among the calculations:

Table 9.8 Example Data

Beginning Balance	Qty QOH	Unit Cost	Value
	200	12	2400
Receipts	**Qty Received**	**Unit Cost**	**Value**
May 1	400	13	5200

May 8	300	13.7	4110
May 14	350	14.2	4970
Total Received	1050	13.6	14280
Goods for Sale	1250	13.34	16680
Issues	**Qty Issued**	**Unit Cost**	**Value**
May 22	-870		
Total Issued	-870		
End Balance	**QTY OH**	**Unit Cost**	**Value**
	380		

WAVG Example

Table 9.9
WAVG Example

Beginning Balance	**Qty QOH**	**Unit Cost**	**Value**
	200	12	2400
Receipts	**Qty Received**	**Unit Cost**	**Value**
May 1	400	13	5200
May 8	300	13.7	4110
May 14	350	14.2	4970
Total Received	1050	13.6	14280
Goods for Sale	1250	13.34	16680
Issues	**Qty Issued**	**Unit Cost**	**Value**
May 22	-870	13.34	-11605.8
Total Issued	-870	13.34	-11605.8
End Balance	**QTY OH**	**Unit Cost**	**Value**
	380	13.34	50692

FIFO Theoretical

Table 9.10
FIFO Theoretical Example

Beginning Balance	**Qty QOH**	**Unit Cost**	**Value**
	200	12	2400
Receipts	**Qty Received**	**Unit Cost**	**Value**

May 1	400	13	5200
May 14	300	13.7	4110
May 31	350	14.2	4970
Total Received	1050	13.6	14280
Goods for Sale	1250	13.34	16680

Issues	**Qty Issued**	**Unit Cost**	**Value**
May 22	-870		-11299
Total Issued	-870		-11299

End Balance	**QTY OH**	**Unit Cost**	**Value**
	380	14.16	5381
Beginning Balance	0	12	0
May 1	0	13	0
May 14	30	13.7	411
May 31	350	14.2	4970

FIFO QAD Solution

Table 9.11
FIFO QAD Solution

Beginning Balance	**Qty QOH**	**Unit Cost**	**Value**
	200	12	2400

Receipts	**Qty Received**	**Unit Cost**	**Value**
May 1	400	13	5200
May 14	300	13.7	4110
May 31	350	14.2	4970
Total Received	1050	13.6	14280
Goods for Sale	1250	13.34	16680

Issues	**Qty Issued**	**Unit Cost**	**Value**
May 22	-870		-11512
Total Issued	-870		-11512

End Balance	**QTY OH**	**Unit Cost**	**Value**
	380	13.6	5168
Beginning Balance	0	12	0
Period Bucket	380	13.6	5168

LIFO Theoretical

Table 9.12 LIFO Theoretical Example

Beginning Balance	Qty QOH	Unit Cost	Value
	200	12	2400

Receipts	Qty Received	Unit Cost	Value
May 1	400	13	5200
May 14	300	13.7	4110
May 31	350	14.2	4970
Total Received	1050	13.6	14280
Goods for Sale	1250	13.34	16680

Issues	Qty Issued	Unit Cost	Value
May 22	-870		-11940
Total Issued	-870		-11940

End Balance	QTY OH	Unit Cost	Value
	380	12.47	4740
Beginning Balance	200	12	2400
May 1	180	13	2340
May 14	0	13.7	0
May 31	0	14.2	0

LIFO QAD Solution

Table 9.13 LIFO QAD Solution

Beginning Balance	Qty QOH	Unit Cost	Value
	200	12	2400

Receipts	Qty Received	Unit Cost	Value
May 1	400	13	5200
May 14	300	13.7	4110
May 31	350	14.2	4970
Total Received	1050	13.6	14280
Goods for Sale	1250	13.34	16680

Issues	Qty Issued	Unit Cost	Value
May 22	-870		-11832
Total Issued	-870		-12832

End Balance	QTY OH	Unit Cost	Value

	380	12.76	4848
Beginning Balance	200	12	2400
Period Bucket	180	13.6	2448

Calculation Cost Categories

Material

Any material receipt transaction—that is, a purchase order receipt, PO shipper receipt, work order/cumulative order receipt—might cause the material cost to change. Also, for distribution order receipts, any transfer by site, whether DRP or not, causes a material cost change, but should have the same cost as the issue value on the issue site.

Unplanned receipts, cycle counts, physical counts, and receipt transfers between locations are all transactions that do not cause cost change; the current unit cost is applied to the goods received and material costs related to logistics accounting.

Material cost calculations formula - Average:

*Sum of (Receipt Quantity * Receipt Cost) / total receipt quantity*

After manufacturing, finished products and components are received into stock.

Subcontract

Instead of only materials, suppliers sometimes also provide services for completing manufacturing operations. Companies subcontract operations when there is insufficient manufacturing capacity or when operations require specialized equipment.

Subcontract items are received into WIP, not into inventory. The receipt updates the quantity completed at the designated work order operation.

The work order receipt takes the subcontract from WIP, and this causes the material cost to change. Subcontract cost calculations are similar to those for materials; they use the same three methods: WAVG, FIFO, and LIFO.

Burden

In periodic costing, you can calculate burden costs using either the work center burden rates or the total burden cost of the period. The system only calculates burden rates when you set Work Center Rate Calculation to Yes in Periodic Costing Control File (30.5.24).

Total consumed hours = Total actual setup hours + Total actual run hours

Total burden cost = Total labor burden + Total machine burden

Burden rate = Total burden cost / Total consumed hours

*Unit burden cost = Burden rate * the item consumed hours / this period total quantity of the item*

Setup Labor

The following depicts the setup labor cost calculation. Setup time includes changing or refitting a work center or piece of equipment to produce a new item, while setup costs include scrap, calibration, downtime, and lost sales associated with preparing a resource for the next item.

Total consumed setup hours = total actual setup hours

Setup rate = total setup cost / total consumed setup hours

*Unit setup labor cost = setup rate * the item consumed set up hours / this period total quantity of the item*

Run Labor

The following depicts run labor cost calculations:

Total consumed run hours = total actual run hours

Run rate = total run cost / total consumed run hours

*The unit run labor cost = run rate * the item consumed run hours / this period total quantity of the item*

Unit Labor Cost Calculation

The following depicts unit labor cost calculations:

Unit labor cost = the unit set up labor cost + the unit run labor cost

Material and Labor Cost Calculation

The cost of raw material or components issued to work orders or repetitive orders is the lower level cost of the product and is calculated as WAVG, FIFO, or LIFO.

The weighted moving average calculation considers this period and the previous period. These are the calculations for material, labor, and burden costs.

Several elements can be attached to material costs to capture such things as freight, insurance, and other logistics costs. This is not available in existing direct average costing functionality. In standard QAD EE costing, several elements can be attached to any of the cost categories; in period costing, only material costs can have multiple elements.

The material cost calculation is as follows:

*(this period material cost * this period receipt quantity + last period material cost * last period item quantity balance + this period material cost adjustment) / (this period receipt quantity + last period item quantity balance)*

Labor cost calculation applies to semi-finished component:

*(this period labor cost * this period receipt quantity + last period labor cost * last period item quantity balance + this period labor cost adjustment) / (this period receipt quantity + last period item quantity balance)*

Burden cost calculation applies to semi-finished component:

*(this period burden cost * this period receipt quantity + last period burden cost * last period item quantity balance + this period burden cost adjustment) / (this period receipt quantity + last period item quantity balance)*

GL Transactions for Periodic Costs

The following topics summarize system events when creating GL transactions for periodic costs.

The system creates GL transactions, based on the periodic costs calculated for the current open calendar period.

When periodic cost is recalculated for an open GL period, the system deletes all periodic costing GL transactions created during the previous periodic cost calculation for the open period before it creates GL transactions based on the recalculated periodic cost. The system can create GL transactions for both base and statutory currency that are specified for the periodic cost calculation.The generated transactions create consolidated GL transactions that are grouped periodic costs transactions by domain. When SAF is in use, the transactions include SAF structure.

The Inventory accounts, sub-accounts, and cost centers used in the periodic cost GL transactions default from the product line, detailed product line accounting, and department definitions such as purchasing, sales, work order account, inventory, product line, or Domain/Account Control. If applicable, the following are included:

- System SAF
- Accounts specific to periodic cost definition
- Mirror accounting

When periodic cost GL transactions are based on the calculated periodic cost for the current period, receiving transactions (RCT-PO) are used for periodic cost calculation. The system creates the supplier invoice and actual PO cost in GL and generates PPV into GL.

The system generates an issuing GL transaction for WO components issued and returned inventory transactions. Before generating the issuing GL transactions, the system calculates five categories of costs of all issued components (raw material and semi-finished goods). The system also generates a receiving GL transaction for WO product (semi-finished and finished goods) receipt and return inventory transactions. The system calculates all previous ISS-WO, labor transactions from raw material or semi-finished goods for the same work order/cumulative to have the proper WIP balances and calculate the RCT-WO transactions.

The system generates an issuing GL transaction for SO shipments and return inventory transactions. If Sum Lower Level Cost into Material Cost is set to Yes in Periodic Costing Control File (30.5.24), the system sums lower level costs into COGS material cost.

The system generates an inventory GL transaction for inventory transactions, including:

- Transfer between sites and locations
- Receipt and issuing unplanned
- Cycle count
- Physical inventory

The system generates an inventory or shop floor GL transaction for the following transactions:

- WO accounting close
- Cumulative order close
- Scrap transaction

The system creates a periodic cost adjustment GL transaction for the unit cost adjustment, total cost adjustment, or WIP cost adjustment that are separate from the CST-ADJ transactions created for standard cost. The unit cost adjustment transaction impacts inventory account and the revaluation account.

Period and Month End Close

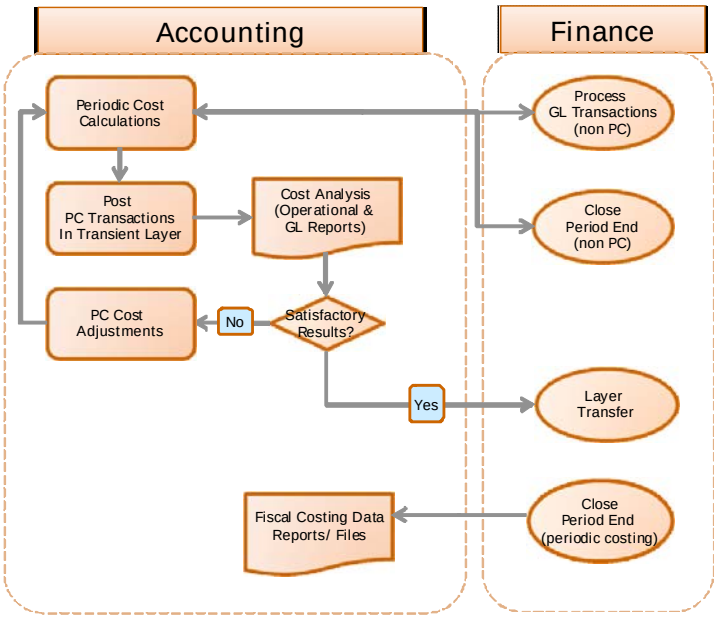
The system posts GL transactions for an adjustment to standard cost in the official daybook for standard inventory transactions. When you select the option to create an adjustment to standard cost, the system posts periodic cost-calculated transactions initially to the transient daybook and layer and subsequently transfers the costs to the management daybook and layer during the month-end close process as a basis for the adjustment to standard costs.

Before moving transient daybook entries to the official or management daybook for the current period when posting periodic costs or adjustment to standard cost to GL for the current open period, the system ensures that IC and WO transactions are closed in the current GL calendar period. Also, the current open calendar period should be closed to additional periodic cost recalculations and GL transaction creations once the system posts final periodic cost GL transactions. This should be done for all entities (in the domain) in the range of the calculation.

The system generates a receiving GL transaction for purchase order receipt and return inventory transactions.

Note When posting GL transactions, the system always refreshes the calculation for the current open period before it creates GL transactions for a periodic cost recalculation.

Fig. 9.16
Periodic Costing Period Close



During month-end closing when the system moves final posts from the transient to the official layer, the system does not generate RCT-PO GL transactions again because they are already posted to GL. This means that it is not necessary to reverse PPV and AP variances because they are posted as inventory accounts.

The month end close does not cause the system to resend these figures by period cost because they are already in accounting. When creating an adjustment to standard GL based on the periodic cost calculation for the current period, the supplier invoice and actual PO cost are already created in GL so the receipt transaction is just the one for period costing.

Reversing Calculations

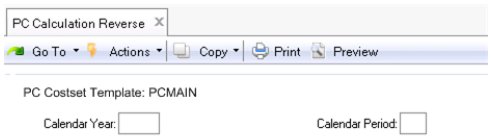
Once you run periodic costing calculations, you can reverse them using PC Calculation Reverse (30.5.23). You can reverse calculations regardless of the costing method you used (WAVG, LIFO, or FIFO) and regardless of whether you used complete or adjustment mode.

The following figure depicts a reopened month end close and reversed periodic costing calculations.

Fig. 9.17
Reopen Month-End Close and PC Calculation Reversal

To reverse calculations, enter the calendar year and calendar period for the cost set.

Fig. 9.18
PC Calculation Reverse (30.5.23)



Corrections

To correct mistakes or make last-minute cost adjustments, you can redo the last period cost calculations. Since you can update unit cost per item per site, the system considers these transactions an inventory adjustment.

1 Reopen the previous period.

The system checks whether the open period is the previous period.

2 Choose one of the following:

- Reverse an adjustment that you made, using one of the adjustment programs from the Periodic Costing Menu to adjust element or other costs.
- Reverse a complete GL transaction.

3 Run Periodic Cost Calculation (30.5.7.1) on the reopened period, undoing the costs calculated for the reopened period.

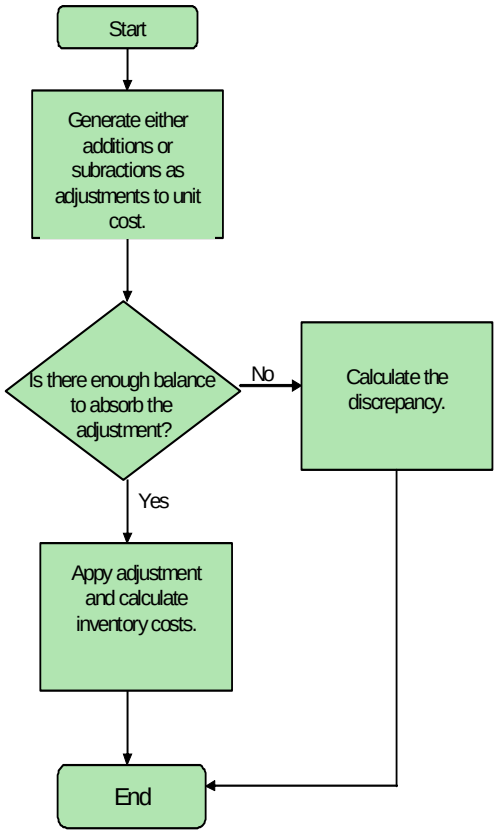
Cost Adjustments

Use any of the following programs in the PC Cost Adjustments Menu (30.5.5) to make periodic costing adjustments:

- PC Unit Cost Adjustment (30.5.5.1)
- PC Total Cost Adjustment (30.5.5.2)
- WO Component Cost Adjustment (30.5.5.13)
- WO Operation Adjustment (30.5.5.14)

The following figure depicts the adjustment flow.

Fig. 9.19
Adjustment Flow



PC Unit Cost Adjustment

Use PC Unit Cost Adjustment (30.4.3) to create a cost adjustment to periodic costs for a previous period based on the difference between the unit previous period cost and the periodic unit cost provided. You can make adjustments in unit cost while adding or subtracting values per cost element.

You perform a unit cost adjustment based on a previous ending balance. That is, the value of the beginning balance for the new GL period for which you want to perform a periodic costing has increased and can be applied to all issues.

Posting Layers

The system assigns each transaction to a journal on the transient layer. Transactions posted to the transient layer are not posted to GL until the system transfers them to a journal that is associated with either management or official layer.

1 Enter the item number, site, and effective date for the unit.

The system displays the Cost Set Selection frame.

Note You cannot enter an adjustment for an effective date in a period that is closed.

2 Select the cost set; then, enter the account, sub-account, and cost center.

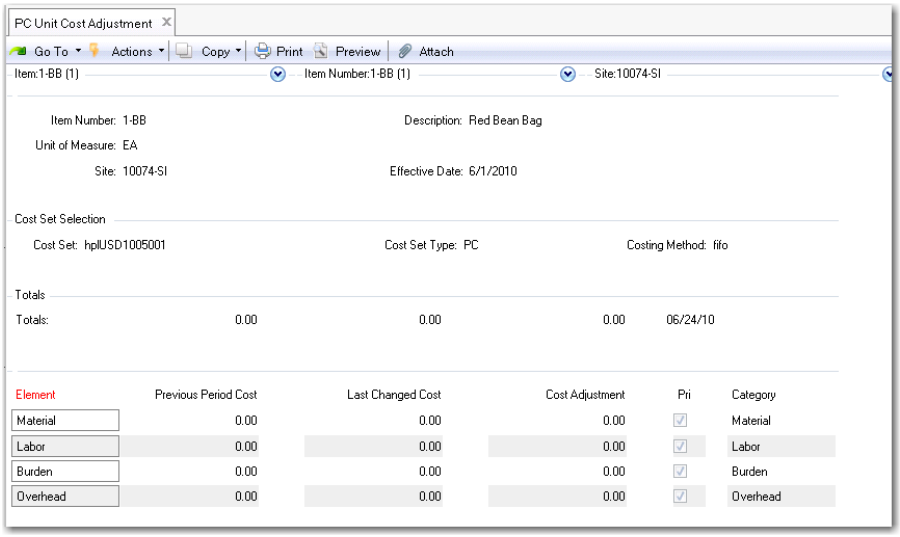
The system displays elements from the cost set.

3 Individually adjust costs in the Adjustment Amt field for material, labor, burden, overhead, subcontracting, and so on.

Note You can enter a negative amount for an element.

The system sums the total cost adjustment for the period and compares the adjustment against receipts on the element level.

Fig. 9.20
PC Unit Cost Adjustment (30.5.5.1)



Item Number/Site. Enter the item number and site for which you want to adjust cost elements.

Effective Date. Enter the effective date for the cost adjustment.

Account. Enter the account for the adjustment.

Sub-Account. Enter the sub-account for the adjustment.

Cost Center. Enter the cost center for the adjustment.

Adjustment. Accept or enter a new amount in decimal currency for the element.

PC Total Cost Adjustment

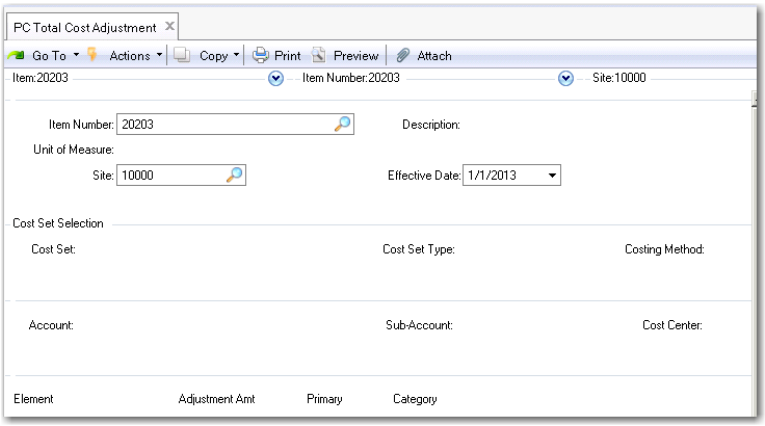
Use PC Total Cost Adjustment (30.5.5.2) to create a total cost adjustment to periodic cost. A total cost adjustment is typically performed when an error is found and you need to increase or decrease the inventory. For example, some cost is missing (for example, logistics costs) or is exceeding the expected cost (for example, recoverable taxes are in the inventory) and for this reason, you decide some adjustments should be made.

You can specify the period/year for the total cost adjustment.

When statutory currency is enabled for the domain, the system calculates for the total cost adjustment transaction created based on the effective date provided.

The system creates a periodic cost adjustment GL transaction for the total cost adjustment. This periodic cost adjustment transaction is separate from the CST-ADJ transactions created for the standard cost. An adjustment account for this total cost adjustment transaction should be specified. The total cost adjustment transaction impacts the specified inventory account and the adjustment account you specify.

Fig. 9.21
PC Total Cost Adjustment (30.5.5.2)



WO Component Cost Adjustment

Use WO Component Cost Adjustment (30.5.5.13) to specify a WIP cost adjustment that lets you modify a component's costs for its related categories for a work order or cumulative order.

The work order or cumulative order should be a valid system order, and the components should be valid in the work or cumulative order as well as operations. The work order/cumulative order should be open for the period/year the adjustment is being reported.

The system creates a periodic cost adjustment GL transaction for the WIP cost adjustment. When statutory currency is enabled for the domain, the system calculates the WIP cost adjustment transaction based on the effective date provided. The periodic cost adjustment transaction is

separate from the CST-ADJ transactions created for standard cost. An adjustment account for this WIP cost adjustment transaction should be specified. The process cost adjustment transaction impacts the specified WIP account and the adjustment account.

1 Specify the period/year for this adjustment.

2 Enter the work order number, ID, and operation.

3 Specify the item number and effective date.

The system displays the Cost Set Selection frame.

4 Select the cost set, then enter the account, sub-account, and cost center.

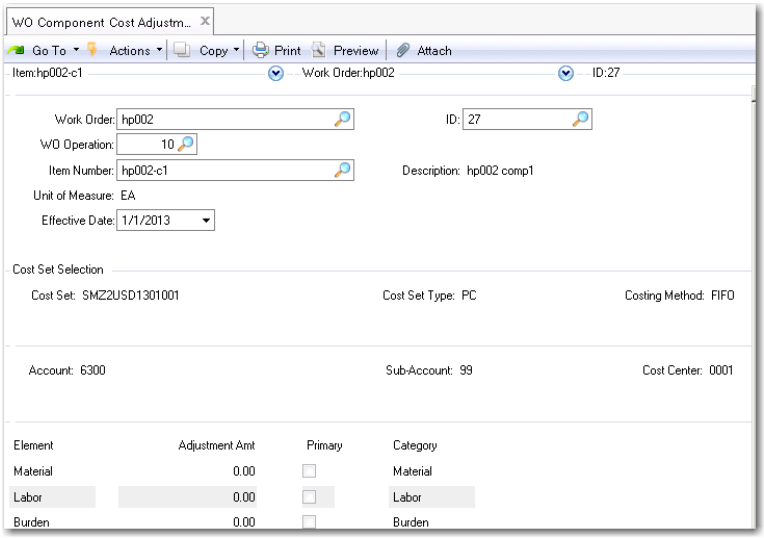
The system displays elements from the cost set.

5 Individually adjust costs in the Adjustment Amt field for material, labor, burden, and so on.

Note You can enter a negative amount for an element.

6 For each element, specify Yes to change the element to a primary element.

Fig. 9.22
WO Component Cost Adjustment (30.5.5.13)



Work Order. Enter the work order for the cost adjustment.

ID. Enter the work or cumulative order ID for the cost adjustment.

WO Operation. Enter the work order operation for the cost adjustment.

Item Number/Site. Enter the item number and site for the item for which you want to adjust cost elements. The item should be a valid component in the BOM of this work order/cumulative order.

Effective Date. Enter the effective date for the cost adjustment.

Account. Enter the account for the adjustment.

Sub-Account. Enter the sub-account for the adjustment.

Cost Center]. Enter the cost center for the adjustment.

Adjustment Amt. Accept or enter a new amount for the element.

WO Operation Adjustment

Use WO Operation Adjustment (30.5.5.14) to specify a WIP cost adjustment that lets you modify an operation's labor, burden, and subcontract costs for a work order or cumulative order for its related categories.

The work order or cumulative order should be a valid, system order, and the components should be valid in the work or cumulative order as well as operations. The work order/cumulative order should be open for the period/year the adjustment is being reported.

The system creates a periodic cost adjustment GL transaction for the WIP cost adjustment. When statutory currency is enabled for the domain, the system calculates the WIP cost adjustment transaction based on the effective date provided. The periodic cost adjustment transaction is separate from the CST-ADJ transactions created for standard cost. An adjustment account for this WIP cost adjustment transaction should be specified. The process cost adjustment transaction impacts specified WIP account and the adjustment account.

1. Specify the period/year for this adjustment.
2. Specify the item number, and effective date.

   The system displays the Cost Set Selection frame.
3. Select the cost set, then enter the account, sub-account, and cost center.

   The system displays elements from the cost set.
4. Individually adjust costs in the Adjustment Amt field for material, labor, burden, and so on.

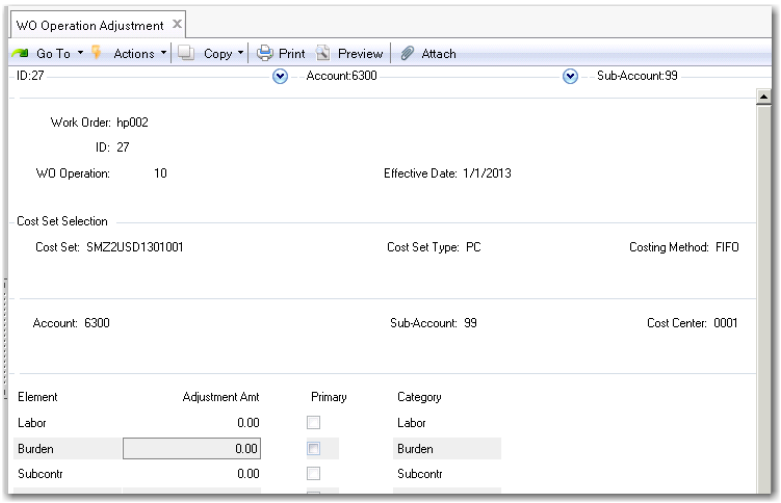
   You can enter a negative amount for an element; however, the total should be positive.

   For each element, specify Yes to change the element to a primary element.

   You cannot change a primary element to a non-primary element.

   The system sums the total cost adjustment for the period and compares the adjustment against receipts on the element level.

Fig. 9.23
WO Operation Adjustment (30.5.5.14)



Fields are the same as for “WO Component Cost Adjustment” on page 98, except that you should specify the work order operation for the cost adjustment and there is no material or overhead category available for adjustments.

GL Transactions for Adjustment to Standard Costs

The following topics summarize system events when creating GL transactions for adjustments to standard costs.

When you select the option to create an adjustment to standard cost, the system creates a cost adjustment transaction that is based on the comparison of the periodic cost results to the standard cost for the same calendar period. The total cost adjustment transaction impacts inventory account and the adjustment account specified. The system posts the GL transaction for adjustment to standard cost in the official daybook for standard inventory transactions.

With adjustment to standard cost, the system posts calculated periodic costing GL transactions initially to the periodic costing calculation daybook (transient layer) when you execute an intermediate recalculation, and subsequently transfers the transactions to the final daybook (management/official layer) during the month-end close process when posting the PC transactions as a basis for the adjustment to standard costs.

The system reverses all variances generated by standard cost. Periodic costing GL transactions in the transient layer, resulting from intermediate PC calculations can only be handled by the periodic costing functions, and security must be implemented to prevent the use of other menu functions that are not periodic costing related to change, move, or transfer to other layers.

Interoperability

The following table depicts issues and other information of importance when running calculations based on data from other QAD products.

Table 9.14
Interoperability

Product	Issue
Supplier Consignment Inventory	To recognize inventory, there is a corresponding supplier invoice match for inventory usage in the current period in which the usage occurs.
Logistics Accounting—Inbound	You can set up cost elements that are related to material or overhead to track various inbound logistics charges and associate with them with a logistics charge code for accrual at goods receipt and matching logistic supplier invoices. Periodic costing can use these cost elements to include in the periodic calculation.
Co-/By-Products	The system calculates co-products at work order close by taking the actual cost of components used in the base process.
Configured Products	The system considers cost of goods sold (COGS) by item. That is, if the same item has many different configurations per sales order, there is only one unit cost for the item that is the average of all BOMs the system uses on sales orders for the current period.
QAD Warehousing	QAD Warehousing can generate a high volume of transactions when moving inventory from location to location within the warehouse. This high volume, however, does not impact the calculation of item cost, but it can impact the performance of batch processing of costing recalculations.

Product	Issue
QAD Service/Support Management (SSM)	SSM transactions generated are normal inventory transactions. They will be treated accordingly by periodic costing calculations. The system recognizes COGS, and SSM tax is captured.
JIT/S	A backflush that is posted using Receipts-Backward Exploded (3.12) can impact labor and burden absorption, as run time may not be not reported. To avoid this, the appropriate setup for JIT/S is to use the Advanced Repetitive (18.22) module for backflush instead of Receipts-Backward Exploded.

Reporting Periodic Cost Data

To analyze the inventory results once the system calculates periodic costing as well as unit average costing per item, you have information available through periodic costing reporting menus:

- PC Inventory Reports Menu
- PC Operations Reports Menu
- PC Accounting Reports Menu
- PC Regional Reports Menu

PC Inventory Reports

Inventory Valuation Browse (30.5.13.1)

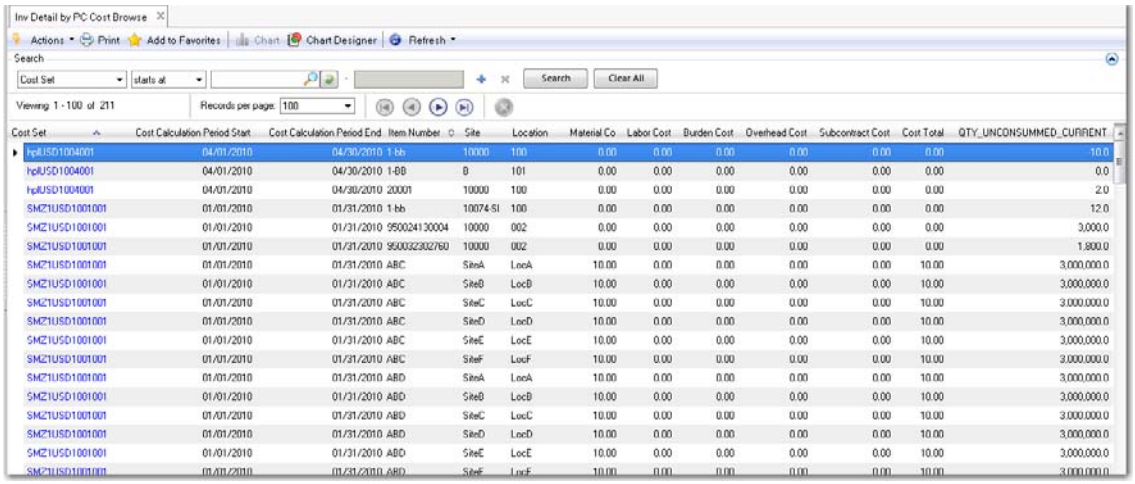
This report lets you select periodic cost period/year. If you use .NET UI, you can specify additional search criteria; for example, item number.

The report displays the current and standard cost set, quantity on hand, and quantity cost by item and site.

Inventory Details by PC Cost Browse (30.5.13.2)

This report displays PC unit cost and total cost per transaction. It displays the cost set; cost calculation period start/end; item number, site, and location; material, labor, burden, overhead, and subcontract costs; cost total; current quantities unconsumed; quantity on hand; and total cost.

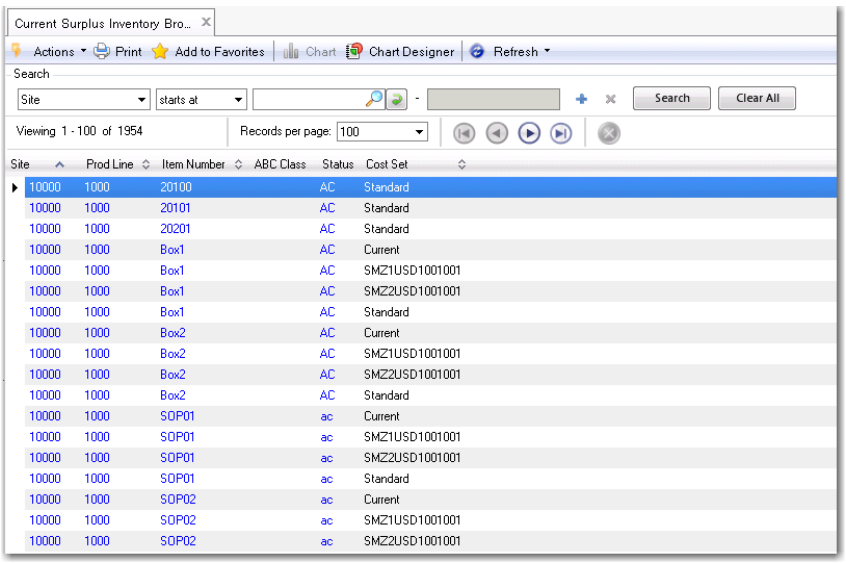
Fig. 9.24
Inventory Detail by PC Cost Browse (30.5.13.2)



Current Surplus Inventory Browse (30.5.13.11)

This report lets you display the cost set by site, production line, item number, ABC class, and status.

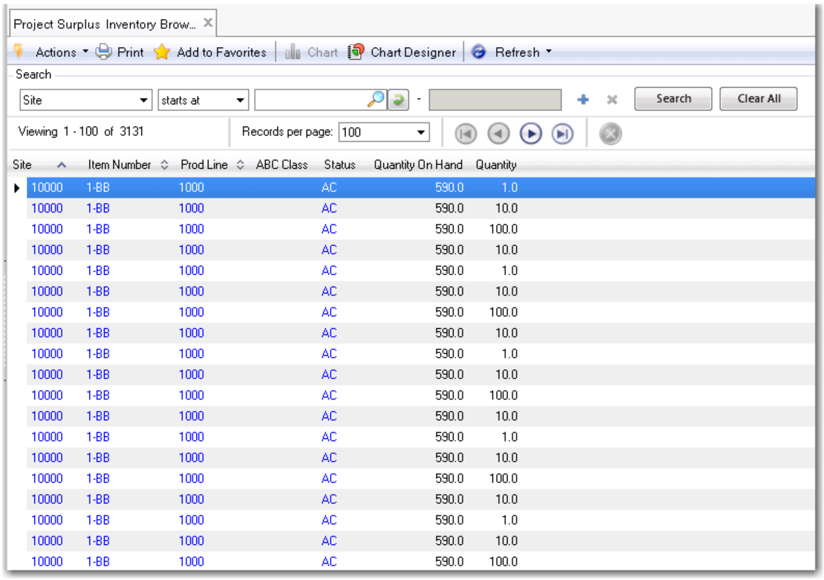
Fig. 9.25
Current Surplus Inventory Browse (30.5.13.11)



Project Surplus Inventory Browse (30.5.13.12)

This report displays similar data to Current Surplus Inventory Browse except that it displays the quantity on hand and total quantity for site, item number, product line, ABC class, and status.

Fig. 9.26
Project Surplus Inventory Browse (30.5.13.12)

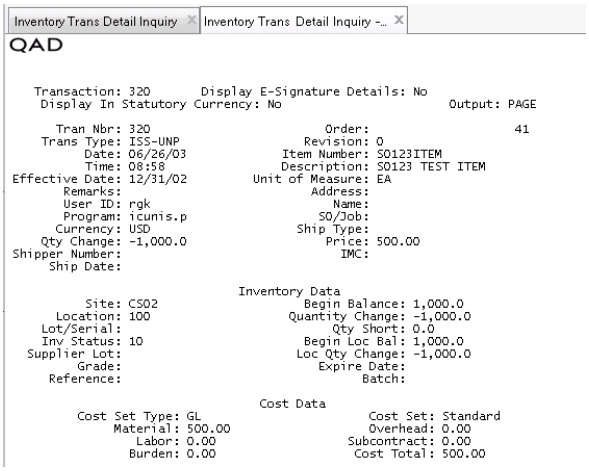


Inventory Trans Detail Inquiry (30.5.13.13)

Use this report to display data, optionally in the statutory currency, by entering the transaction number. You can specify that data display by several different criteria, including:

- Transaction number and type
- Date and time
- Effective date
- Order or revision number
- Item number and description
- Unit of measure
- User ID
- Address or company name
- Program
- Currency
- Quantity change
- Shipper number, ship type or ship date
- Sales/job
- Price

Fig. 9.27
Inventory Trans Detail Inquiry (30.5.13.13)



Inventory Trans By Item Report (30.5.13.14)

This report is similar to Inventory Trans by Item Report (3.21.14). It displays data by a range of item numbers, effective dates, dates, order, site, sales/job, or transaction type. You can optionally display in statutory currency.

Inventory Trans By Order Report (30.5.13.15)

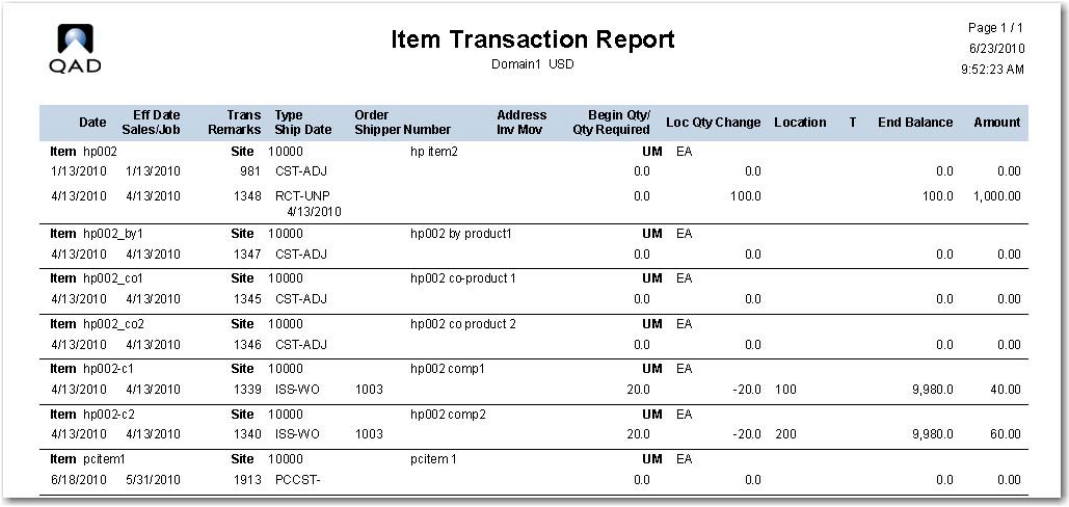
This report is similar to Inventory Trans by Order Report (3.21.13). It displays a similar search criteria by a range of order, transaction date, item, site, or sales/job. You can specify a transaction type or, optionally, display in statutory currency.

Item Transaction Report (30.5.13.17)

This .NET UI-only report includes an extensive filter that lets you choose data to display. The top menu bar also lets you specify report settings such as footer or header search criteria, the short date format and date separator, or decimal settings. You can also view the schedule or history from the top menu bar and output to Excel or PDF.

Once you set reporting criteria, you click the Run button in the top menu bar to run the report.

Fig. 9.28
Item Transaction Report (30.5.13.17)



QAD

Item Transaction Report

Domain1 USD

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6/23/2010
9:52:23 AM

Date	Eff Date	Trans	Type	Order	Address	Begin Qty/	Loc Qty Change	Location	T	End Balance	Amount
	Sales/Job	Remarks	Ship Date	Shipper	Number	Inv Mov	Qty Required					
Item hp002		**Site** 10000			hp item2		**UM** EA				
1/13/2010	1/13/2010	981	CST-ADJ				0.0	0.0		0.0	0.00
4/13/2010	4/13/2010	1348	RCT-UNP 4/13/2010				0.0	100.0		100.0	1,000.00
Item hp002_by1		**Site** 10000			hp002 by product1		**UM** EA				
4/13/2010	4/13/2010	1347	CST-ADJ				0.0	0.0		0.0	0.00
Item hp002_co1		**Site** 10000			hp002 co-product 1		**UM** EA				
4/13/2010	4/13/2010	1345	CST-ADJ				0.0	0.0		0.0	0.00
Item hp002_co2		**Site** 10000			hp002 co product 2		**UM** EA				
4/13/2010	4/13/2010	1346	CST-ADJ				0.0	0.0		0.0	0.00
Item hp002-c1		**Site** 10000			hp002 comp1		**UM** EA				
4/13/2010	4/13/2010	1339	ISS-WO	1003			20.0	-20.0	100	9,980.0	40.00
Item hp002-c2		**Site** 10000			hp002 comp2		**UM** EA				
4/13/2010	4/13/2010	1340	ISS-WO	1003			20.0	-20.0	200	9,980.0	60.00
Item pcitem1		**Site** 10000			pcitem 1		**UM** EA				
6/18/2010	5/31/2010	1913	PCCST-				0.0	0.0		0.0	0.00

PC Operations Reports (30.5.15)

PC Work Order WIP Cost Report (30.5.15.1)

This report lets you specify a range of data to display for each cost set. You can specify the account, sub-account, cost center, project, work order, ID, item number, site, sales/job, or supplier.

PC WO WIP History Report (30.5.15.2)

Use this report to display work order WIP history for each cost set. You can specify a range of work orders, site, item number, batch, due dates, ID, sales/job, or supplier. Optionally, you can specify whether to display items, routing detail, and co/by-product orders. You can also optionally set page breaks on work orders that display.

WIP Adj Valuation Report (30.5.15.3)

Use this report to display WIP adjustment valuation data. You can specify a range of ID, item number, site, line, reason, work center, machine, department, shift, employee, or effective date. You can specify the cost set, then optionally specify whether cost elements display. You can sort by site, item, operation or line, which is the default, or by extended cost in descending order.

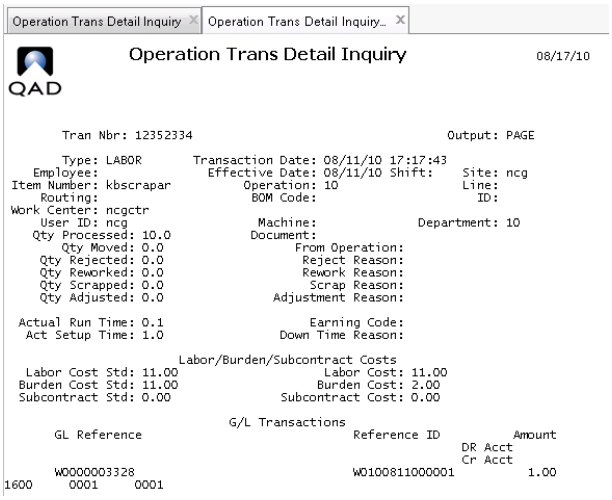
WIP Scrap Valuation Report (30.5.15.4)

This report displays data by setting a range of criteria similar to the WIP Adj Valuation Report; however, data displays for WIP scrap.

Operation Trans Detail Inquiry (30.5.15.5)

This report displays operation details by transaction number. You start by specifying the transaction number, then optionally specifying whether data displays for the statutory currency. The system displays the type of transaction; transaction and effective dates; employee; item; work order; ID; site; work center; department; line; machine; quantity scrapped, completed, rejected, and reworked; and additional cost data.

Fig. 9.29
Operation Trans Detail Inquiry (30.5.15.5)



Operation Trans Detail Inquiry | Operation Trans Detail Inquiry...

QAD

Operation Trans Detail Inquiry 08/17/10

Tran Nbr: 12352334 Output: PAGE

Type: LABOR Transaction Date: 08/11/10 17:17:43
Employee: Effective Date: 08/11/10 Shift: Site: ncg
Item Number: kbscrapar Operation: 10 Line:
Routing: BOM Code: ID:
Work Center: ncgctr
User ID: ncg Machine: Department: 10
Qty Processed: 10.0 Document:
Qty Moved: 0.0 From Operation:
Qty Rejected: 0.0 Reject Reason:
Qty Reworked: 0.0 Rework Reason:
Qty Scrapped: 0.0 Scrap Reason:
Qty Adjusted: 0.0 Adjustment Reason:

Actual Run Time: 0.1 Earning Code:
Act Setup Time: 1.0 Down Time Reason:

Labor/Burden/Subcontract Costs
Labor Cost Std: 11.00 Labor Cost: 11.00
Burden Cost Std: 11.00 Burden Cost: 2.00
Subcontract Std: 0.00 Subcontract Cost: 0.00

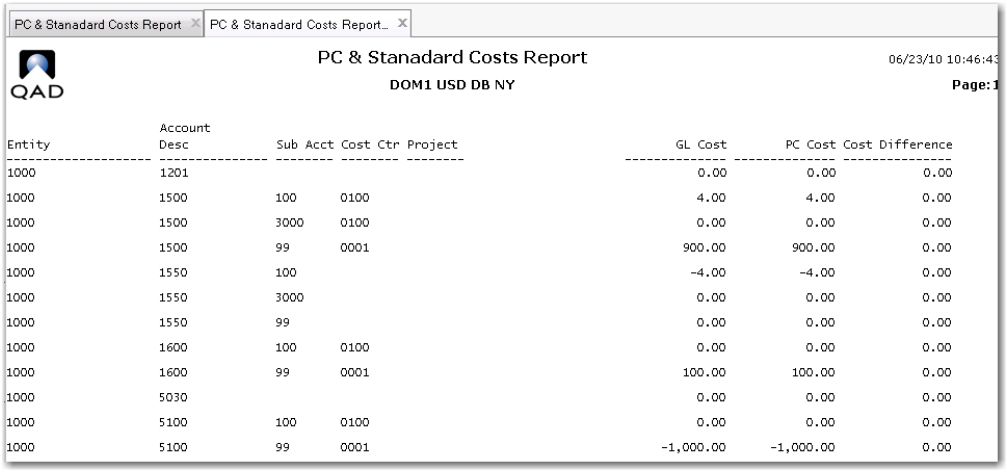
G/L Transactions

GL Reference	Reference ID	Amount	DR Acct	Cr Acct
WO000003328	WO100811000001	1.00	1600	0001 0001

PC Accounting Reports

Use the PC & Standard Costs Report (30.5.17.1) to display periodic costing and standard costs by date range and entity. The report displays the entity, account description, sub account, cost center, and project. You can optionally display in statutory currency and SAF codes.

Fig. 9.30
PC & Standard Costs Report (30.5.17.1)



PC & Stanadard Costs Report | PC & Stanadard Costs Report...

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PC & Stanadard Costs Report 06/23/10 10:46:43
DOM1 USD DB NY Page: 1

Entity	Account Desc	Sub Acct	Cost Ctr	Project	GL Cost	PC Cost	Cost Difference
1000	1201				0.00	0.00	0.00
1000	1500	100	0100		4.00	4.00	0.00
1000	1500	3000	0100		0.00	0.00	0.00
1000	1500	99	0001		900.00	900.00	0.00
1000	1550	100			-4.00	-4.00	0.00
1000	1550	3000			0.00	0.00	0.00
1000	1550	99			0.00	0.00	0.00
1000	1600	100	0100		0.00	0.00	0.00
1000	1600	99	0001		100.00	100.00	0.00
1000	5030				0.00	0.00	0.00
1000	5100	100	0100		0.00	0.00	0.00
1000	5100	99	0001		-1,000.00	-1,000.00	0.00

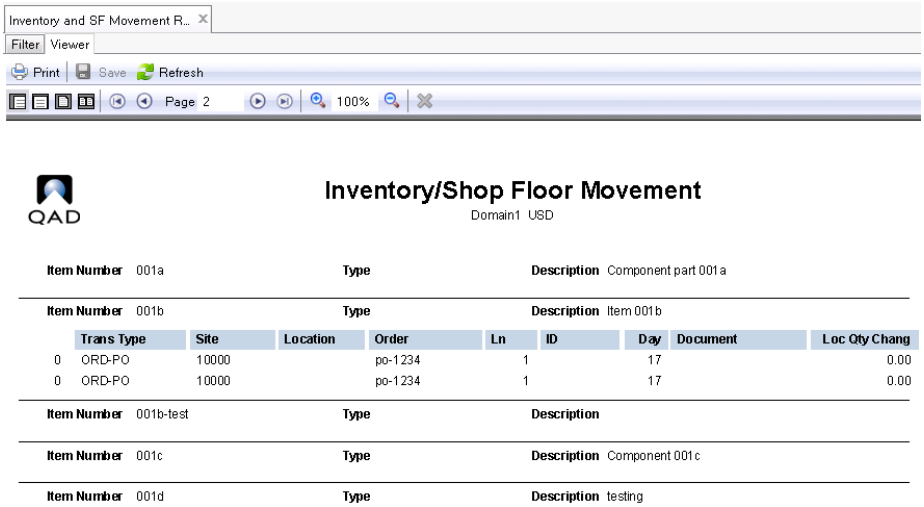
PC Regional Reports

Reports provided through the PC Regional Reports Menu (30.5.19) can satisfy legal reporting requirements specified for some countries:

- Inventory and SF Movement Report (30.5.19.1) reports movement of inventory and production.
- Inventory and WIP Balance Report (30.5.19.2) reports inventory by account.

Inventory and SF Movement Report displays all movements of both inventory and production transactions. Inventory and WIP balance per item and site display per period. Information regarding costing per transaction, document number, and type of transaction also display.

Fig. 9.31
Inventory and Shop Floor Movement Report (30.5.19.1)



Inventory and WIP Balance Report displays the inventory by account and contains information regarding company and items such as fiscal class, unit of measure, company address, company fiscal code and others. Not only the inventory balance but also WIP balance is displayed in this report.

Fig. 9.32
Inventory and WIP Balance Report (30.5.19.2)

QAD Reports

The following QAD reports can include periodic costing information:

Menu Number	Name	Periodic Costing Data
3.5.1.9	Obsolete Inventory Analysis	Lets you select periodic cost period/year. For WAVG, uses the unit cost of selected year/period. For FIFO/LIFO, uses the unit cost of selected year/period.
3.6.3	Item ABC Status Report/Update	Lets you select periodic cost when the calculation is based on cost. For WAVG, it uses the unit cost of selected year/period. For FIFO/LIFO it uses the Unit Cost of selected year/period.
3.6.8	Current Surplus Inventory Report	Lets you select periodic cost for periodic cost period/year. Option to report by currency defined for periodic cost. For WAVG, uses the unit cost of selected year/period. For FIFO/LIFO, uses the unit cost of selected year/period.
3.6.9	Projected surplus Inventory Report	Lets you select periodic cost period/year. Optionally, reports by currency defined for periodic cost. For WAVG, uses the unit cost of selected year/period. For FIFO/LIFO, uses the unit cost of selected year/period.
3.6.16	Frozen Inventory Valuation Report	Lets you select periodic cost period/year. For WAVG, uses the unit cost of selected year/period. For FIFO/LIFO, uses the unit cost of selected year/period.
3.6.17	Tag Inventory Valuation Report	Lets you select periodic cost period/year. For WAVG, uses the unit cost of selected year/period. For FIFO/LIFO, uses the unit cost of selected year/period.
3.6.18	Inventory Variance by Period Cost	Typically used once physical inventory is done and you want to understand physical inventory impact with periodic cost. Lets you select periodic cost period/year. For WAVG, uses the unit cost of selected year/period. For FIFO/LIFO, uses the unit cost of selected year/period.
3.21.16	GL Transactions Report	Runs regardless of the cost set and displays periodic cost adjustment transactions.
3.21.12	Daybook Trans Accounting Report	
7.15.5	Sales Order Gross Margin Report	Calculates gross margin based on period costs. Optionally, reports by currency defined for periodic cost.
13.12.4	Product Structure Cost Report	Reports periodic costing data.
18.22.4.15	WIP Adjust Valuation Report	Lets you select periodic cost period/year. Optionally, lets you report by currency defined for periodic cost.
18.22.4.14	Scrap Valuation Report	Lets you select periodic cost period/year. Optionally, lets you report by currency defined for periodic cost.

Menu Number	Name	Periodic Costing Data
16.20.13.10	Operations Accounting Report	Runs regardless of cost set and displays periodic cost adjustment transactions.
18.4.10	Rep Operations Accounting Report	Runs regardless of cost set and displays periodic cost adjustment transactions.

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