QAD Enterprise Applications
Enterprise Edition

User Guide
QAD Costing

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Costing Impact by Module
Cost Reporting

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Costing
Change Summary

The following table summarizes significant differences between this document and previous versions.

Date/Version	Description	Reference
September 2017/2017 EE	Rebranded for 2017 EE	--
March 2016/2016 EE	Updated the formulas in Routing Cost Calculations section	page 22
March 2015/2015 EE	Removed Periodic Costing chapter from this user guide. (Periodic Costing is now a separate user guide.)	--
March 2014/2014EE	Changes made to Periodic Costing chapter only, which is a separate user guide for 2015 EE.	--
September 2013/2013.1 EE	Changes made to Periodic Costing chapter only, which is a separate user guide for 2015 EE	--
September 2012/2012.1 EE	Rebranded for QAD 2012.1 EE	--
March 2012/2012 EE	Added section on PC Unit Cost Adjustment Upload (30.5.5.4)	--
March 2012/2012 EE	Added section on PC Total Cost Adjustment Upload (30.5.5.5)	--
September 2011/2011.1 EE	Rebranded for QAD 2011.1 EE	--

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.

Note Costing-related training material is available in the QAD Document Library:

- *QAD Product Costing Introduction Training Guide*
- *QAD Product Costing Training Guide*
- *QAD Cost Management Training Guide*
- *QAD Advanced Repetitive Costing Training Guide*
- *QAD Average Costing Training Guide*
- *QAD Co-By-Product Costing Training Guide*
- *QAD Periodic Costing Training Guide*

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*

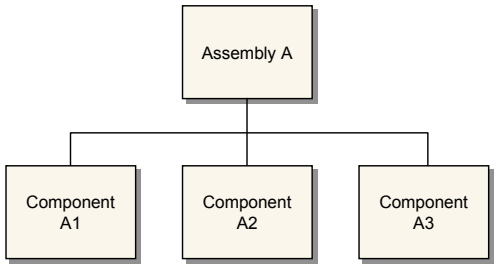
If you are using the Cost Management module, you can use the average costing method to calculate site-specific GL costs as well as current costs. Otherwise, the average costing method is used only for current costs. See Chapter 5, "Cost Management," on page 31.

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) or first in first out (FIFO) 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 on QAD Periodic Costing, see *QAD Periodic Costing 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

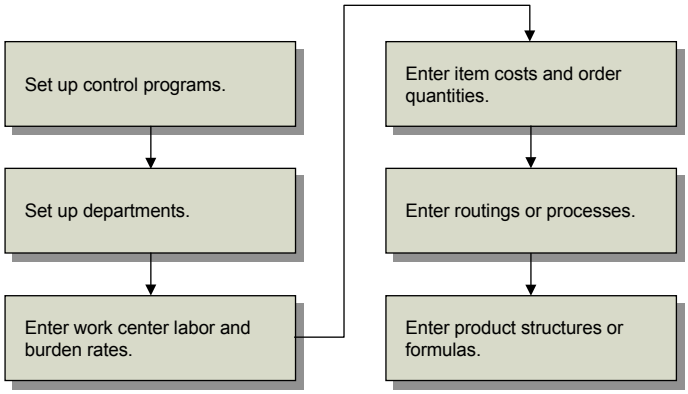
Setting Up Product Costing

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

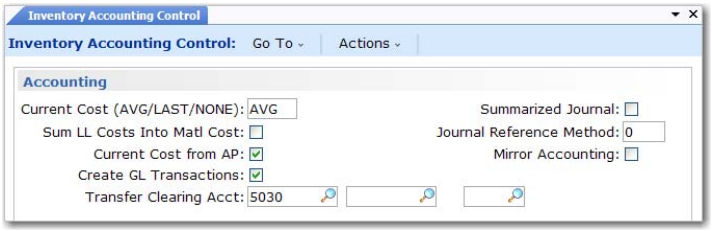


Defining Inventory Accounting Control Settings

Use Inventory Accounting Control (36.9.2) to specify how current costs are maintained. For more information on setting up inventory control, see *QAD Master Data User Guide*.

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.

For more information on work orders, see *QAD Manufacturing User Guide*.

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.

For more information on departments, see *QAD Manufacturing User Guide*.

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.

For more information on work centers, see *QAD Manufacturing User Guide*.

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.

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. For more information on phantoms, see *QAD Manufacturing User Guide*.

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; enhanced .NET UI version at 13.12.28) 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. For more information on routings, see *QAD Manufacturing User Guide*.

For costing purposes, routings provide the following information:

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

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

Standard Operations

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

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

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

Routings and Processes

You can use three programs to create routings or processes.

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

Subcontract Cost in Routings

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

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

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

Defining Product Structures or Formulas

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

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

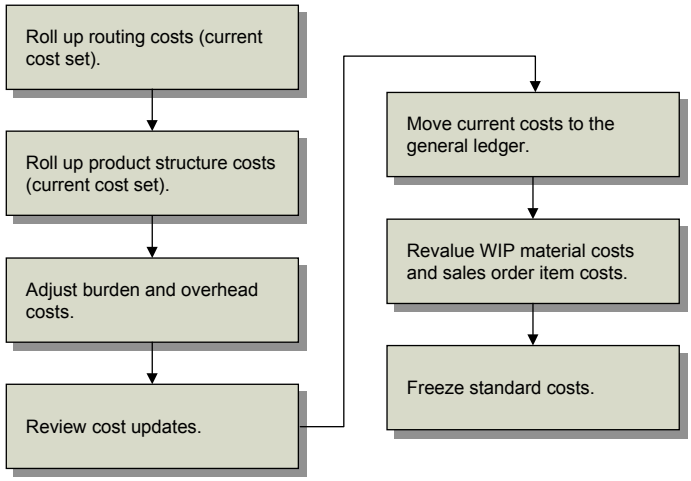
Product Costing Process

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; enhanced .NET UI version at 13.12.28) 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. Yield losses in prior operations are included in the cost calculation by reducing the expected quantity to process in an operation and is represented as YieldPriorOps%.

  *Labor cost = [(Setup Hrs * WC Setup Rate / Order Qty) + (Run Hrs per Unit * WC Labor Rate * YieldPriorOps%)] / 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 Cost = [(Setup Hrs / Order Quantity + Run Hrs * YieldPriorOps%) * WC Labor Burden Rate] / Item Yield%*

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

- Machine burden cost per operation

  It 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 + Run Hrs * YieldPriorOps%) * WC Machine Burden Rate / Item Yield%*

  Total Burden = Labor Burden Rate Cost + Labor Burden Percentage Cost + Machine Burden Cost

- 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:

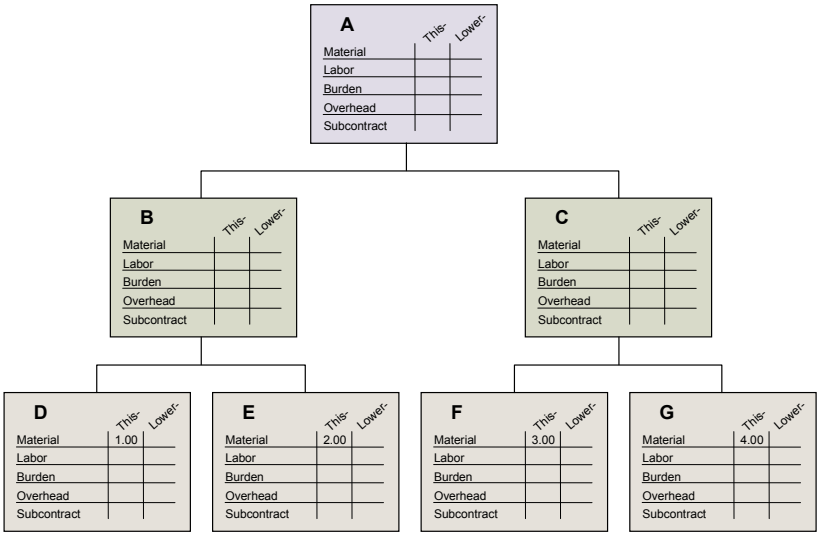
1. Roll up product structure costs to ensure that you calculate overhead from accurate lower-level costs. See “Rolling Up Product Structure Costs” on page 23.
2. Calculate this-level item overhead costs for the lower-level items by using Item Overhead Cost Update, or calculate this-level item burden 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:

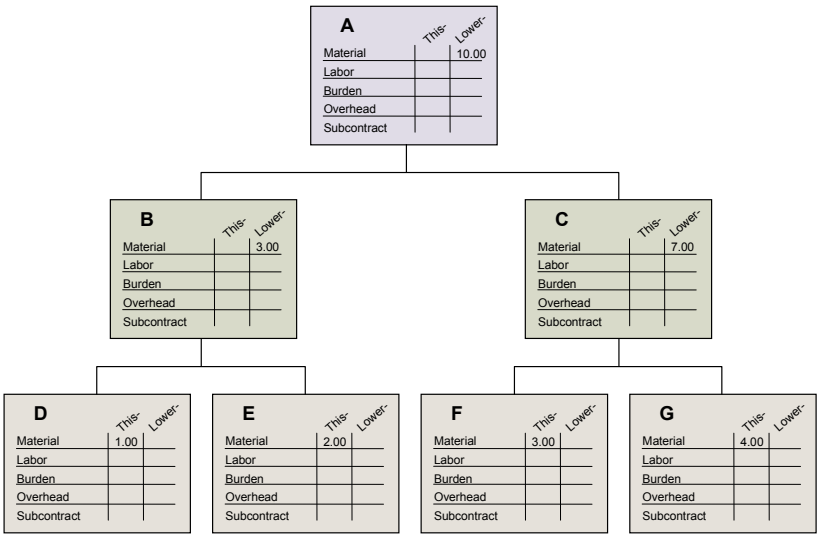
- Item D = 1.00
- Item E = 2.00
- Item F = 3.00
- Item G = 4.00

Fig. 4.2
Product Structure for A



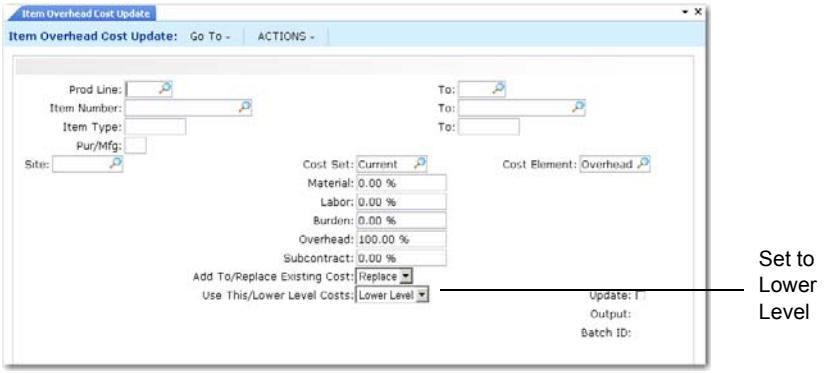
The first product structure cost rollup for item A calculates lower-level material costs of 3.00 for item B, 7.00 for item C, and 10.00 for item A.

Fig. 4.3
Results of First Product Structure Cost Rollup



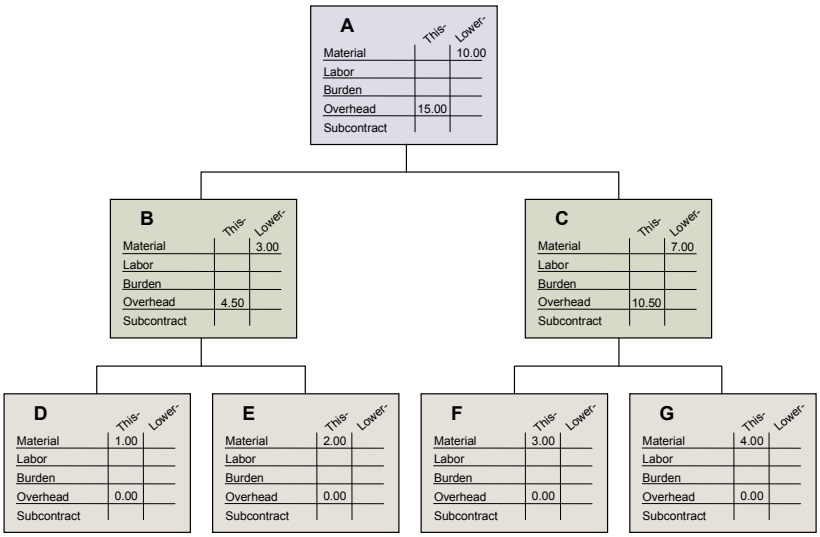
In Item Overhead Cost Update, the material percentage is set to 150% and the other percentages to zero. Use This/Lower Level Costs is set to Lower Level.

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.

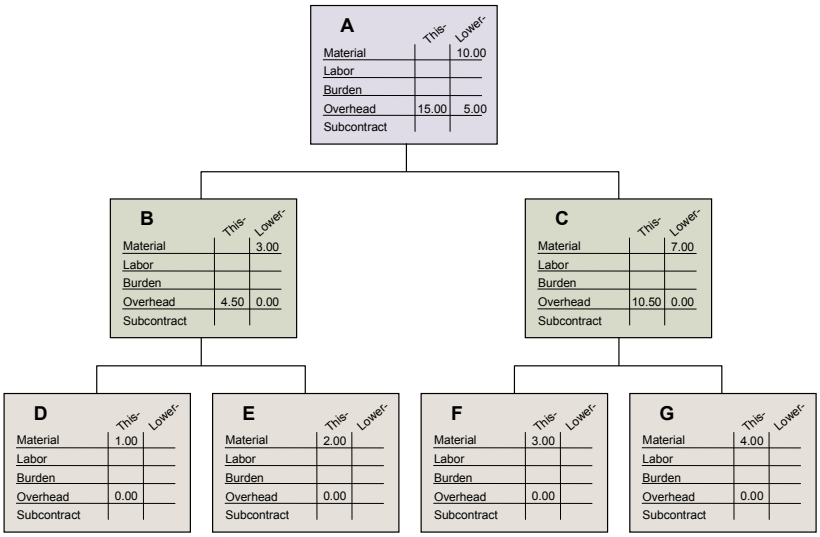
Fig. 4.5
Item Overhead Cost Calculation



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.

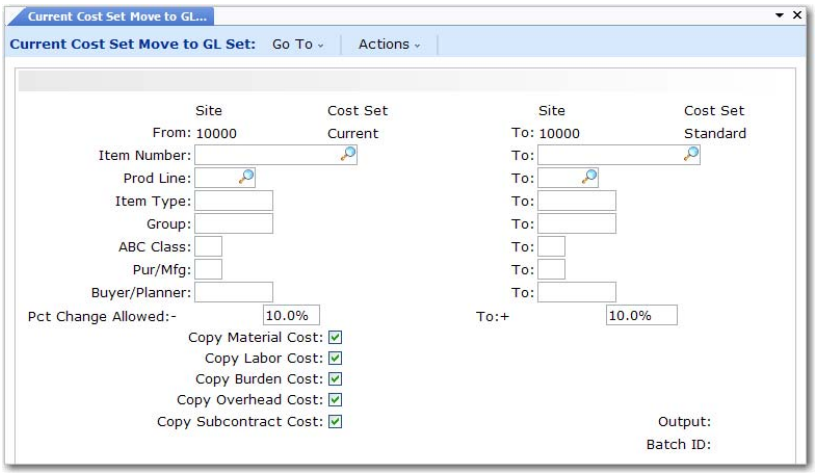
Update the current cost set during cost rollups first, verify the changes, and then copy the updated costs to the GL cost set.

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

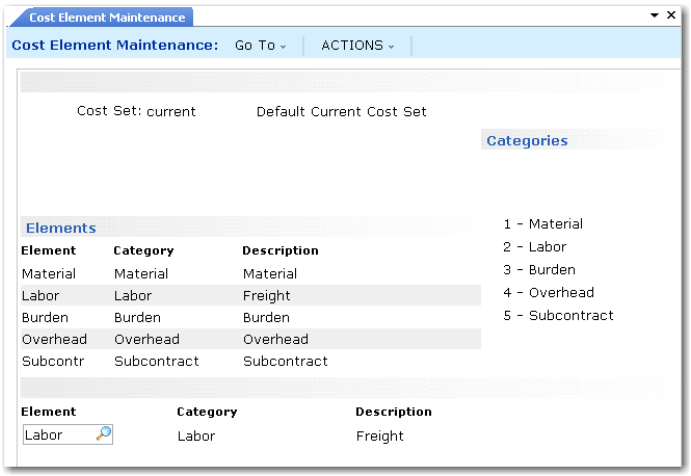
Costs for an item are always separated into five categories—material, labor, burden, overhead, and subcontract. An unlimited number of cost elements can be created as subsets of these categories. Item costs can then be assigned to these cost elements. See “Cost Set Categories” on page 7.

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; also available as enhanced .NET UI report, menu 1.5.30). 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.

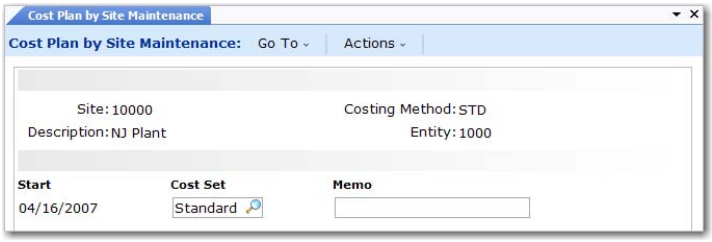
Suppose you experience a 10% cost increase in the first quarter. You can create a cost set with costs that are 10% higher than normal and name it 1st Qtr or whatever seems appropriate. Similarly, you might want to create a cost set for the third quarter (3rd Qtr) if costs for that quarter are expected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

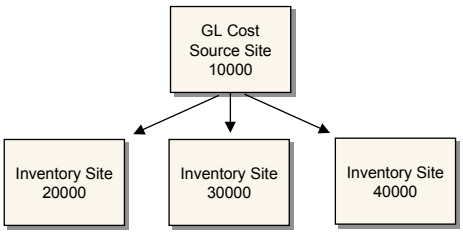
4 Revalue work-in-process (WIP).

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.

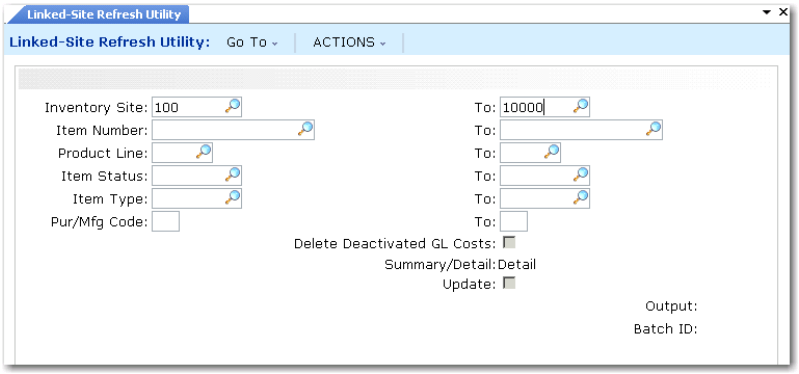
Linking Rule. Enter the linking rule to assign to this site. See “Site-Linking Rules” on page 38.

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.

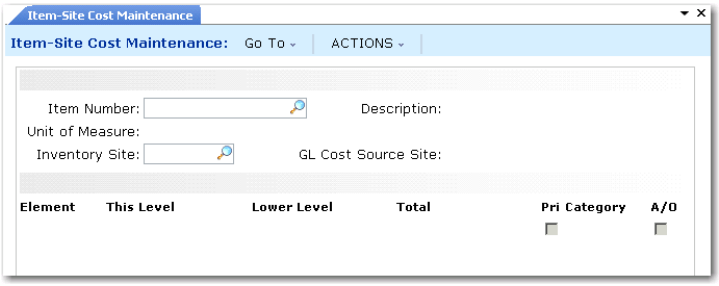
As part of the update process, you can also delete GL costs at inventory sites deactivated by linked-site costing by setting Delete Deactivated GL Costs to Yes. Deleted records are reported in detail only.

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.

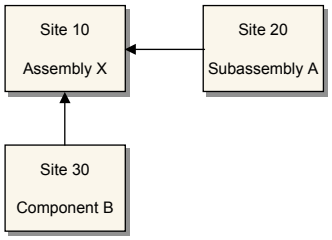
Important Product Structure Cost Roll-Up does not recognize links when the rollup is performed for current or simulation cost sets. In order to roll up costs correctly for linked items, you must use a GL standard cost set.

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) (Also available as enhanced .NET UI report, menu 3.6.27)	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) (Also available as enhanced .NET UI report, menu 3.6.32)	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) (Also available as enhanced .NET UI reports, menu 3.6.37, 3.6.37, 3.6.38)	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).

Report	Description
Transactions by Item Report (3.21.14)	Shows transaction information for selected item numbers.
Transactions Accounting Report (3.21.16)	Shows the costed GL transactions created for each selected inventory transaction.
Frozen Inventory Valuation Report (3.16.16)	Shows costed inventory balances prior to conducting a physical inventory.
Tag Inventory Valuation Report (3.16.17)	Shows the value of counted inventory.
Inventory Variance Report (3.16.18)	Shows the variance between physical counts and the frozen inventory count.

Items

Table 8.4
Item Cost Reports

Report	Description
Item Cost Report (1.5.6) (Also available as enhanced .NET UI report, menu 1.5.30)	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) (Also available as enhanced .NET UI report, menu 3.12.28)	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.

Report	Description
Routing Cost Report (14.13.14)	Provides a detailed cost record for a routing. It shows cost detail for each operation in the routing, and total labor, burden and subcontract costs.
Work Order Cost Report (16.3.4)	Provides a detailed cost record for a work order while it is in process and after it has been closed. It shows cost detail for material by component and labor operation detail, labor burden, and subcontract costs.
Work Order WIP Cost Report (16.3.5)	Shows the accumulated amounts for material, labor, burden, and subcontract cost for a work order for each WIP account, sub-account, cost center, and project. A similar report, Repetitive WIP Cost Report (18.4.12), is available for repetitive WIP costs.
Work Order History Report (16.3.6)	Shows the current status of a work order in terms of schedule, material consumed, and labor expended.

Purchasing

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.

Report	Description
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.
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.

Product Information Resources

QAD offers a number of online resources to help you get more information about using QAD products.

QAD Forums (community.qad.com)
Ask questions and share information with other members of the user community, including QAD experts.

QAD Knowledgebase (knowledgebase.qad.com)*
Search for answers, tips, or solutions related to any QAD product or topic.

QAD Document Library (documentlibrary.qad.com)
Get browser-based access to user guides, release notes, training guides, and so on; use powerful search features to find the document you want, then read online, or download and print PDF.

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