QAD Enterprise Applications
Enterprise Edition

Training Guide

QAD Cost Management

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QAD Inc.
100 Innovation Place
Santa Barbara, California 93108
Phone (805) 566-6000
http://www.qad.com

Contents

QAD Cost Management Change Summary

The following table summarizes significant differences between this document and the last published version.

Date/Version	Description	Reference
January 2018/2017EE Rev1	Updated some screen shots and exercises	--
April 2017/v2017 EE	Rebranded for QAD 2017 EE	--
April 2016/v2016 EE	Rebranded for QAD 2016 EE, added link to Preface	--
April 2015/v2015 EE	Rebranded for QAD 2015 EE	--
March 2014/v2014 EE	Rebranded for QAD 2014 EE	--
September 2013/v2013.1 EE	Rebranded for QAD 2013.1 EE	--
March 2013/v2013 EE	Rebranded for QAD 2013 EE	--
September 2012/v2012.1 EE	Rebranded for QAD 2012.1 EE; Consistency edit	--
March 2012/v2012 EE	Rebranded for QAD 2012 EE	--
September 2011/v2011.1 EE	Rebranded for QAD 2011.1 EE	--

About this Course

Course Description

This QAD Cost Management training guide offers detailed instruction on using the features of the optional Cost Management module, including setting up and using multiple cost elements, multiple cost sets, simulation costs sets, and cost planning.

This guide can be taught individually or as a part of the Product Costing and Cost Management course set, which consists of an introductory class, a class covering general setup topics, and a set of classes on specialized costing topics. Most students will benefit from taking the first two classes and then selecting the additional courses that apply to their business implementation. The complete list of classes is:

- Introduction to Product Costing
- Product Costing
- Advanced Repetitive Costing
- Average Costing
- Co/By-Product Costing
- Cost Management, including Simulation and Planning
- Purchase Costing
- Work Order Costing

Course Objectives

Provides the detailed instruction necessary to manage multiple costs sets both for simulation and long range planning.

Course Benefits

Provides information about the significant additional features offered to the standard cost system by Cost Management functions that let you retain historic cost sets, develop simulation cost sets, develop cost plans. and compare one cost set with another.

Audience

Finance and operations personnel who track and trend historic, current, and future costs; and who develop and analyze comparative cost data.

Prerequisites

- *Training Guide: Introduction to Costing*
- *Training Guide: Product Costing*
- Familiarity with the .NET UI

Course Credit and Scheduling

This course is valid for 6 credit hours and is typically taught in one day.

Virtual Environment Information

The hands-on exercises in this book should be used with the latest Enterprise Edition learning environment in the 10USA > 10USACO workspace. When prompted to log in, specify *demo* for user ID and *qad* for password.

Additional Resources

If you encounter questions on QAD software that are not addressed in this book, several resources are available. The QAD corporate Web site provides product and company overviews. From the main site, you can access the QAD Learning or Support site and the QAD Document Library. Access to some portions of these sites depends on having a registered account.

http://www.qad.com/

QAD Learning Center

To view available training courses, locations, and materials, use the QAD Learning Center. Choose Education under the Services tab to access this resource. In the Learning Center, you can reserve a learning environment if you want to perform self-study and follow a training guide on your own.

QAD Document Library

To access release notes, user guides, training guides, and installation and conversion guides by product and release, visit the QAD Document Library. Choose Document Library under the Support tab. In the QAD Document Library, you can view HTML pages online, print specific pages, or download a PDF of an entire book.

For more information, see *QAD Costing User Guide*.

To find a resource, you can use the navigation tree on the left or use a powerful cross-document search, which finds all documents with your search terms and lets you refine the search by book type, product suite or module, and date published.

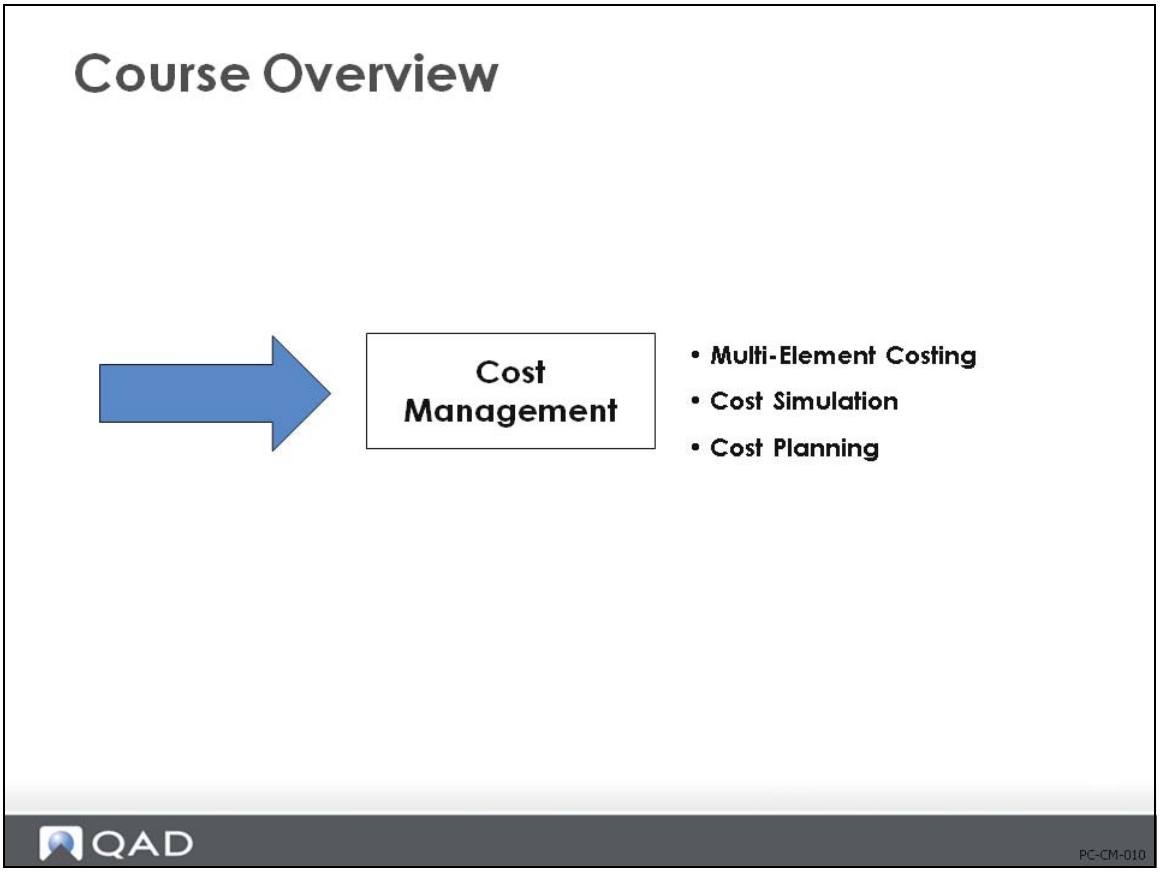
QAD Support

Support also offers an array of tools depending on your company's maintenance agreement with QAD. These include the Knowledgebase and QAD Forums, where you can post questions and search for topics of interest. To access these, choose Visit Online Support Center under the Support tab.

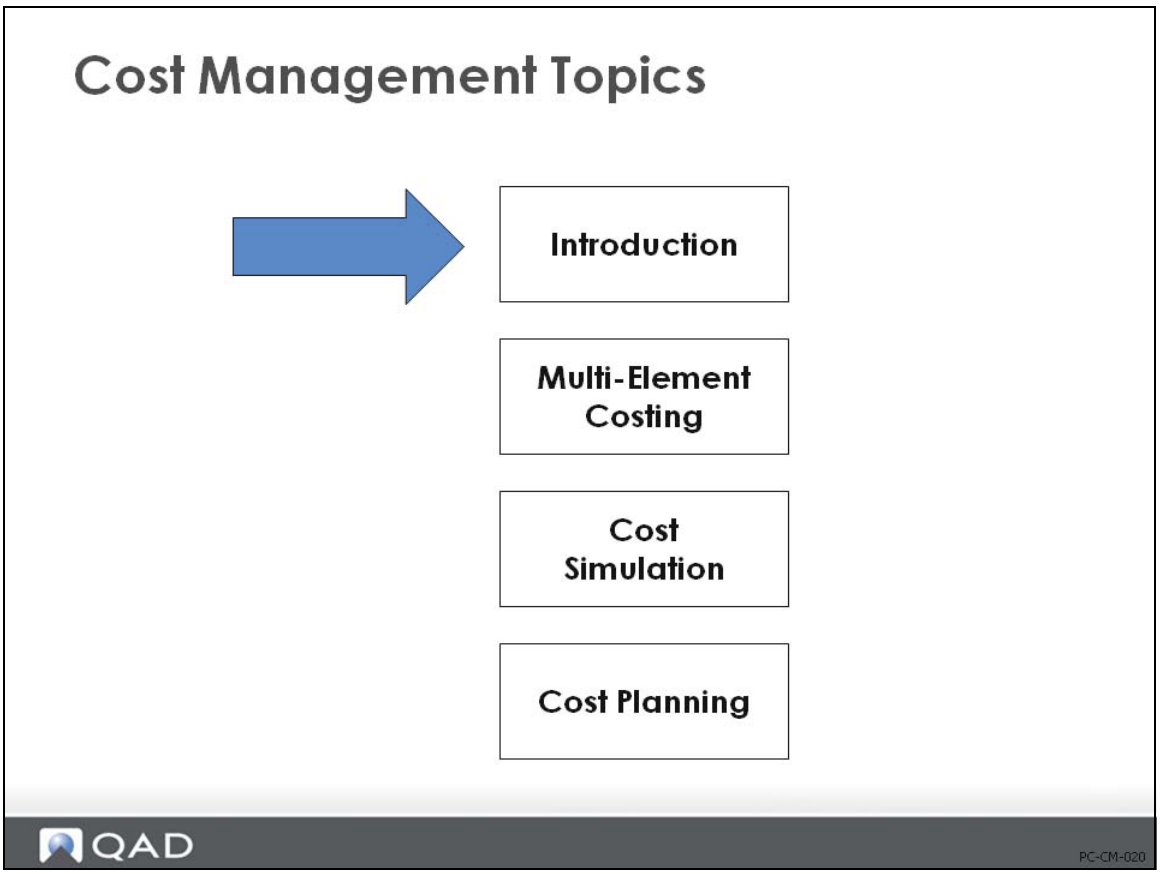
Chapter 1

Cost Management

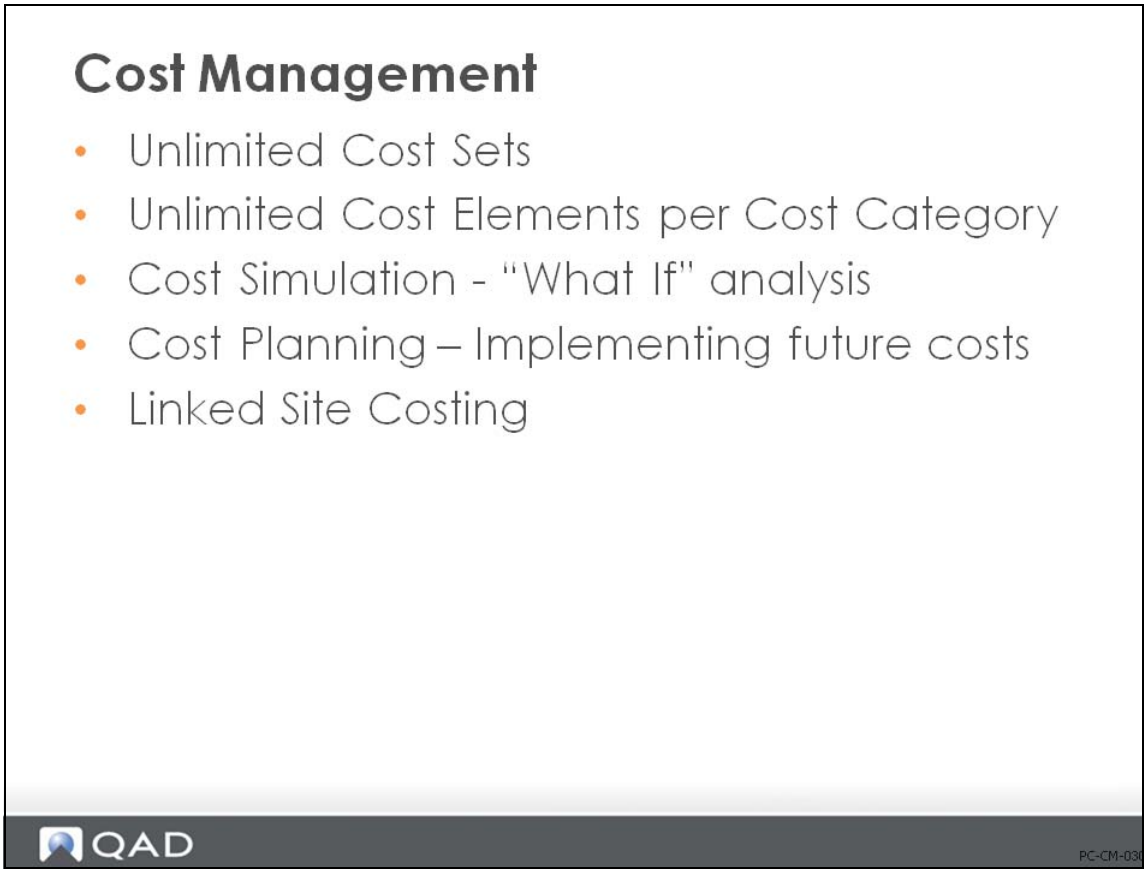
Course Overview



Cost Management Topics



Cost Management

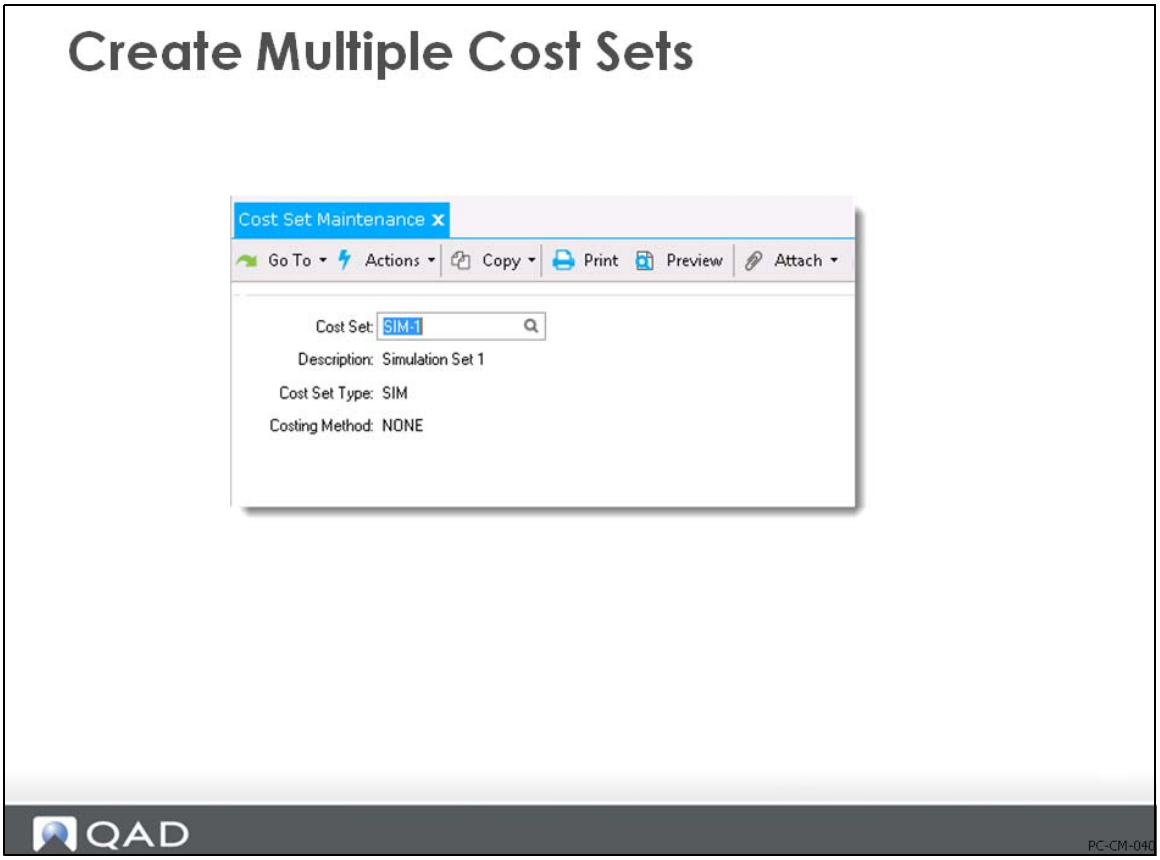


With the Cost Management module, you can create additional cost elements, which provide additional reporting detail; and multiple cost sets, which enable you to keep cost history and create future costs without impacting current cost updates. These are aids to live costing and are covered in this chapter.

Cost Management also provides the ability to simulate cost changes and to modify elements of cost for “what-if” scenarios, and to develop cost plans. These topics are also covered in this chapter.

Linked Site Costing allows you to create a cost set and then link it to multiple sites.

Create Multiple Cost Sets

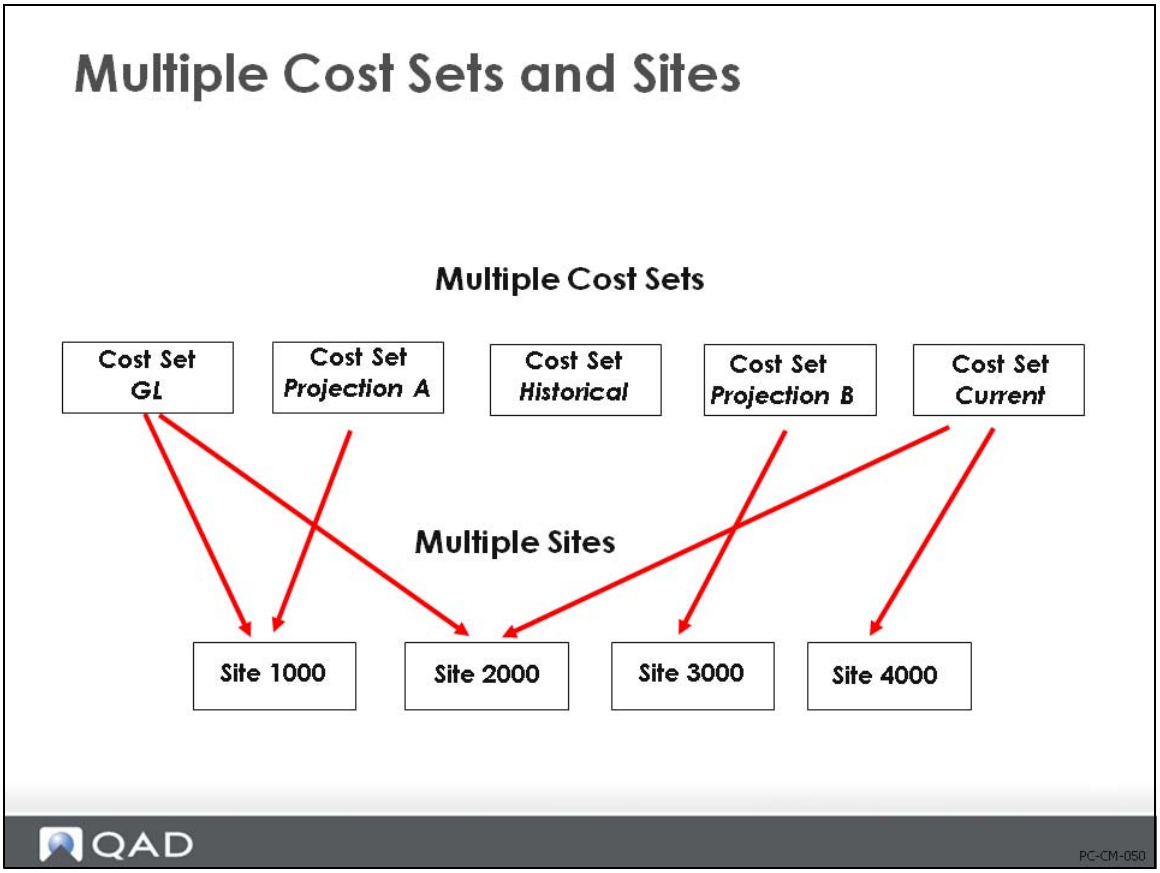


For any item, multiple sets of costs can be maintained, each identified by a cost set code, in Cost Set Maintenance (30.1). Data associated with this cost set code controls how these costs are updated and used.

Each cost set code is assigned a cost set type of GL, Current, or Simulated, and a costing method of Standard, Average, Last, or None. These two fields together determine how costs from this cost set are updated and used.

Note Only one GL and one current cost set per site are permitted. The default GL and current cost sets cannot be maintained although the costing method can be changed in Inventory Accounting Control (36.9.2)

Types of Cost Sets



Historical. Useful for tracking costs from prior periods. If standards are changed during a fiscal year, you can track original standards set at the beginning. Or you can use historical cost sets to track standards from year to year.

Simulated. Useful for planning future costs or performing "what-if" analyses, such as developing costs based on different estimates of volume.

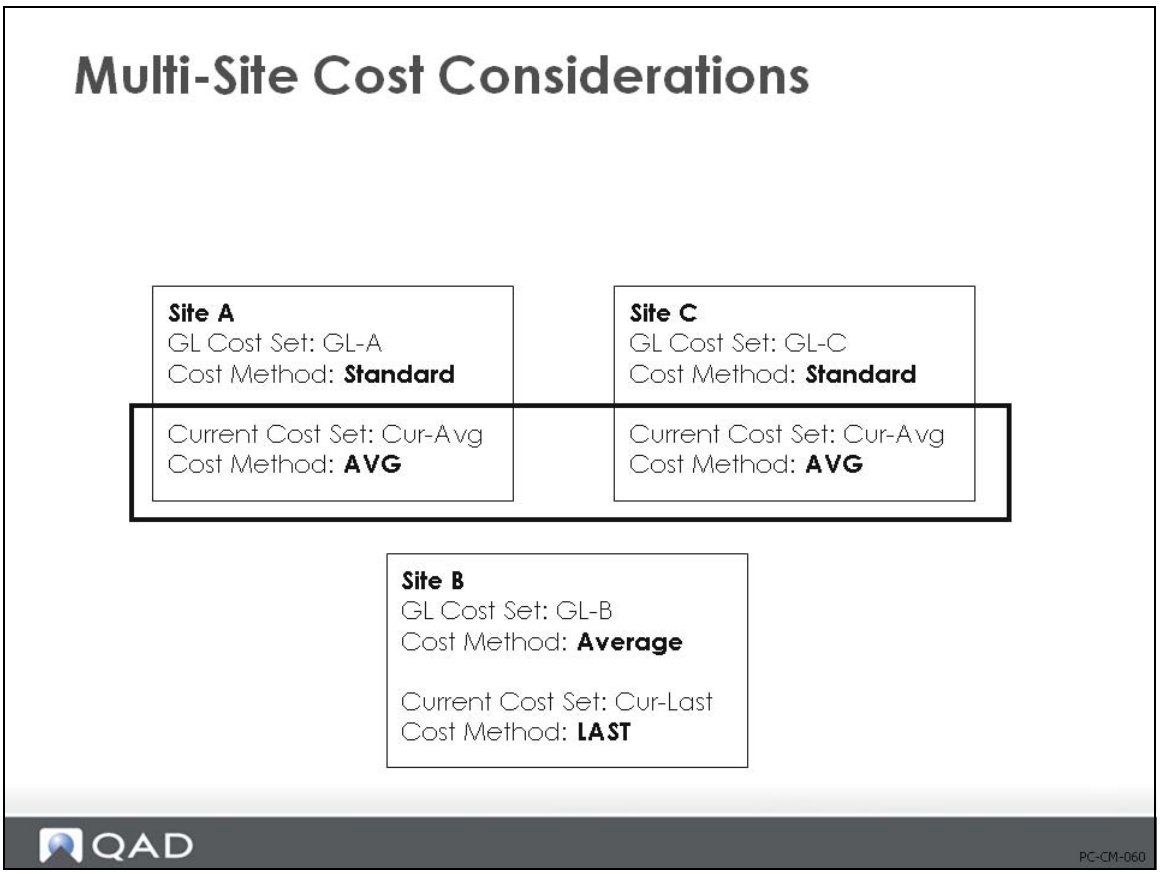
Site Specific. Different cost sets can be assigned to each site. Note that in a single-database environment, you can have only one current cost method, as this is set through the Inventory Accounting Control (36.9.2).

GL Cost Set. Defines costing method that will be used for inventory valuation.

Current Cost Set. Defines the current cost of an item, either last, average, or none.

Once you have defined the cost sets, you can assign them to each site using Cost Set to Site Assignment (30.9).

Multi-Site Cost Considerations



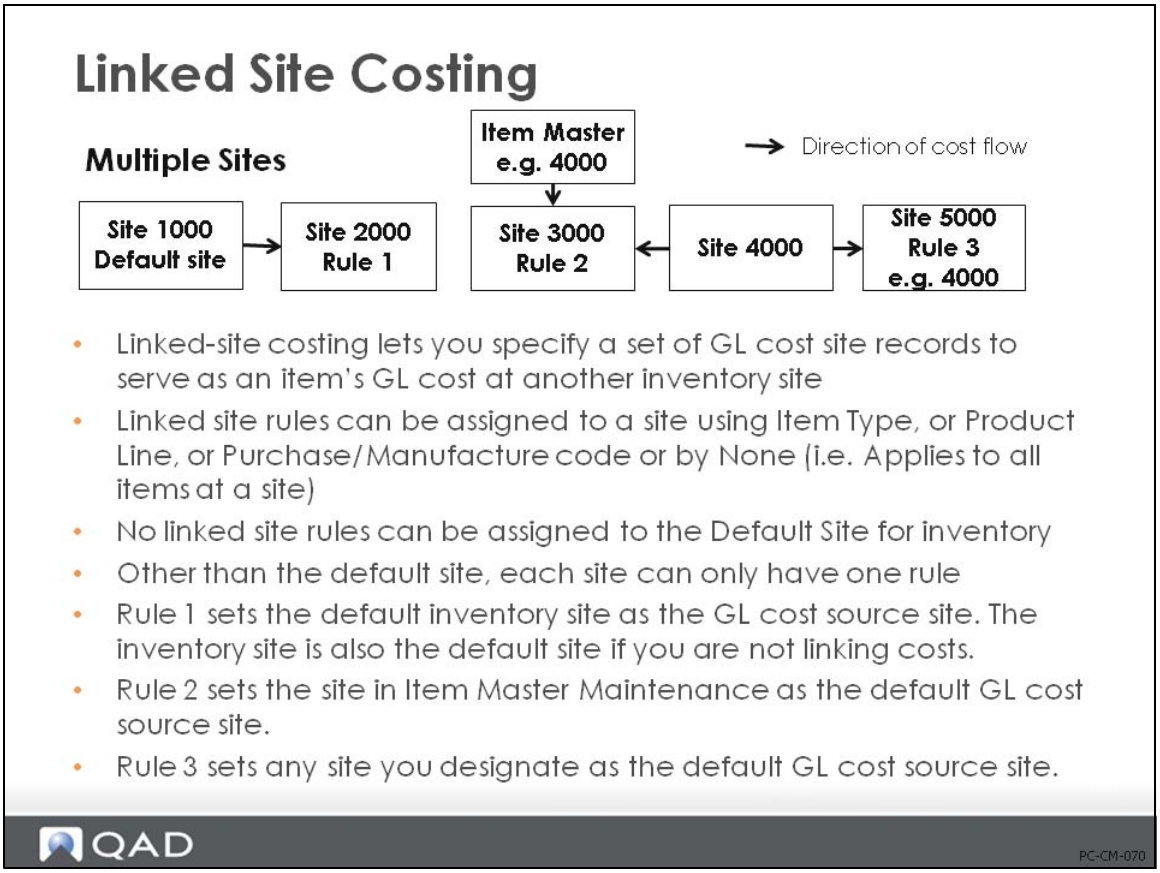
Within QAD Enterprise Applications, each site must be assigned a GL and a Current cost set. We saw earlier that these default to the cost sets Standard and Current. All sites are initially assigned these cost sets, but this can be easily changed. The Cost Set To Site Assignment 30.9, is used to assign a different GL and/or Current cost set to a particular site. When GL costs are changed, inventory is automatically revalued to the new cost.

- Any cost set of type GL can be assigned to a site as its GL cost set. This cost set can use a costing method of Standard or Average.
- Any cost set of type CURR can be assigned to a site as its Current cost set. This cost set can use costing method Average, Last, or None.

In the example shown on the previous page, each of the three sites (A, B, and C) are set up differently. In particular, notice the following.

1. It is possible for more than one site to use the same cost set; they don't have to be different. For example, sites A and C share the same Current cost set.
2. Each site can use a different Current costing method. For example, sites A and C use Average costing and site B uses Last.
3. Each site can use a different GL cost set and costing method. If you have multiple sites making the same products, it is unlikely that they will have the same cost structure. To support this, each site can choose its own cost method. For example, sites A and C use Standard costing, while site B uses Average.

Linked Site Costing



Linked-site costing lets you specify one set of GL cost site records to serve as an item's GL cost set at another inventory site. The system sets the default value for GL Cost Source Site according to three site-linking rules, that can be assigned by item type, product line, purchase/manufacture code, or none.

- Linking rule 1 sets the default inventory site as the GL cost source site. The inventory site is also the default site if you are not linking costs.
- Linking rule 2 sets the site in Item Master Maintenance as the default GL cost source site.
- Linking rule 3 sets any site you designate as the default GL cost source site.

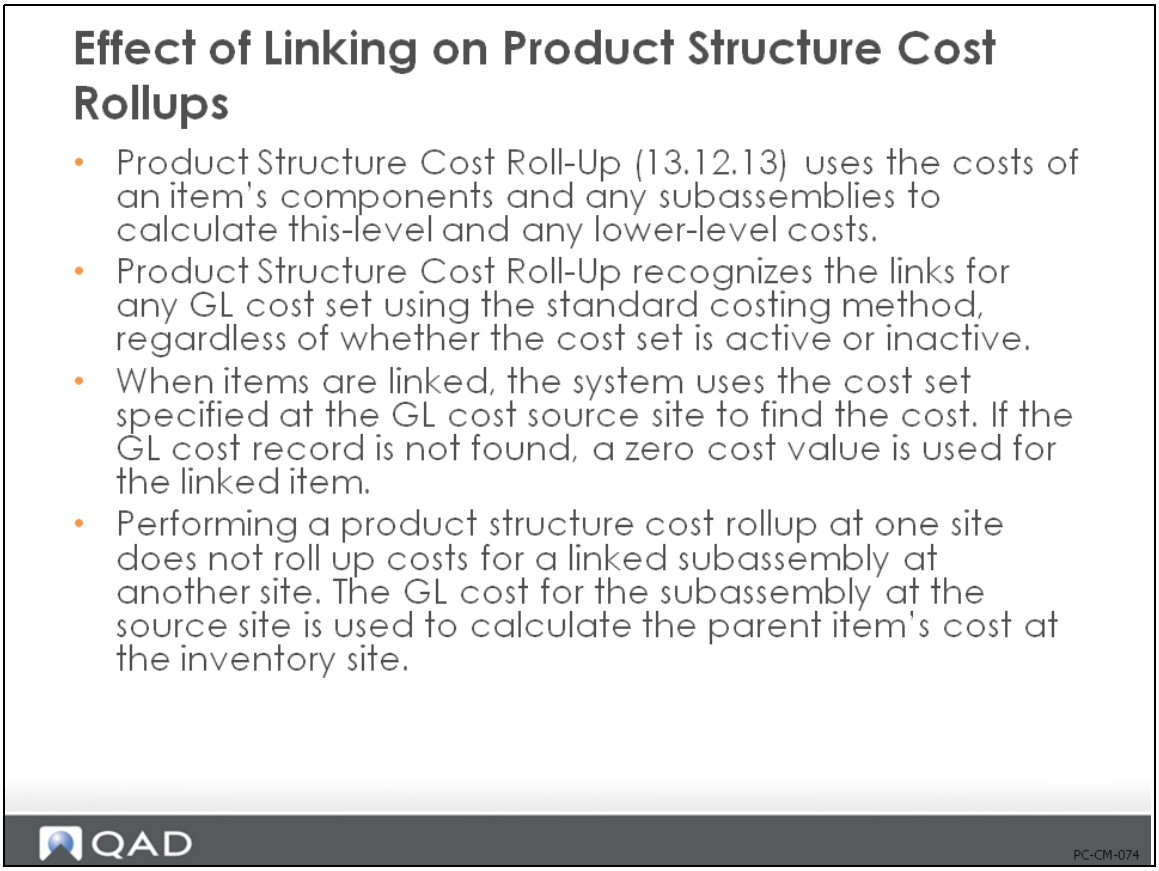
This costing method significantly reduces redundant data in a database, simplifies costing procedures, and decreases the chance for unexpected cost discrepancies across sites. In addition, you need only one shared GL cost set record for each inventory record instead of duplicate records for each site. Linked-site costing is useful for companies that manufacture the same product in different ways at multiple sites, or that purchase the same product from different sources.

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

Use these browses to view the site information:

- Item Cost Set Browse (30.6) shows by item what cost sets are assigned.
- Site by Cost Set Browse (30.10) shows by cost set which sites are assigned.
- Cost Set by Site Browse (30.11) shows by site which cost sets are assigned.
- Linked Site Item Browse (30.18.3) shows items assigned by site and the GL Source 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.

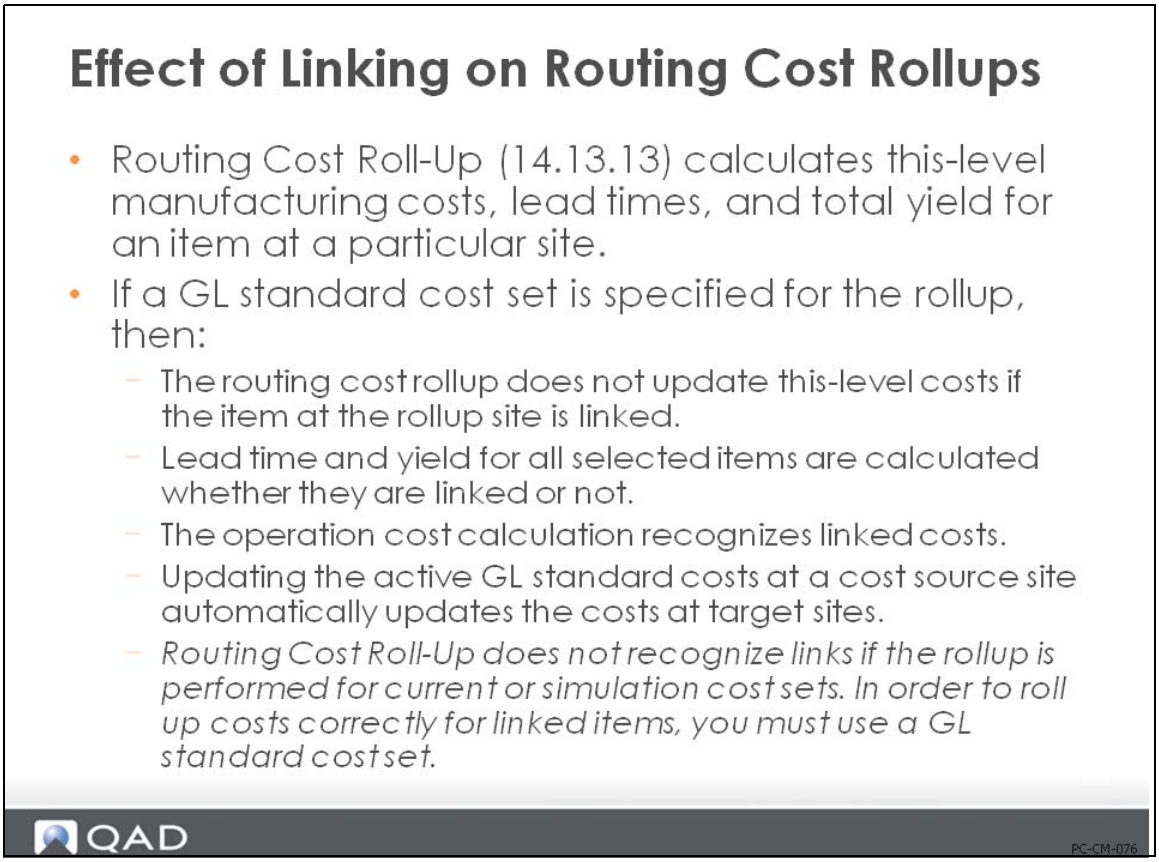
When cost linking is used, the target site is linked to the source site for active GL costs only. Product Structure Cost Roll-Up recognizes the links for any GL cost set using the standard costing method, regardless of whether the cost set is active or inactive. Since you cannot take advantage of cost 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.

Effect of Linking on Routing Cost Rollups



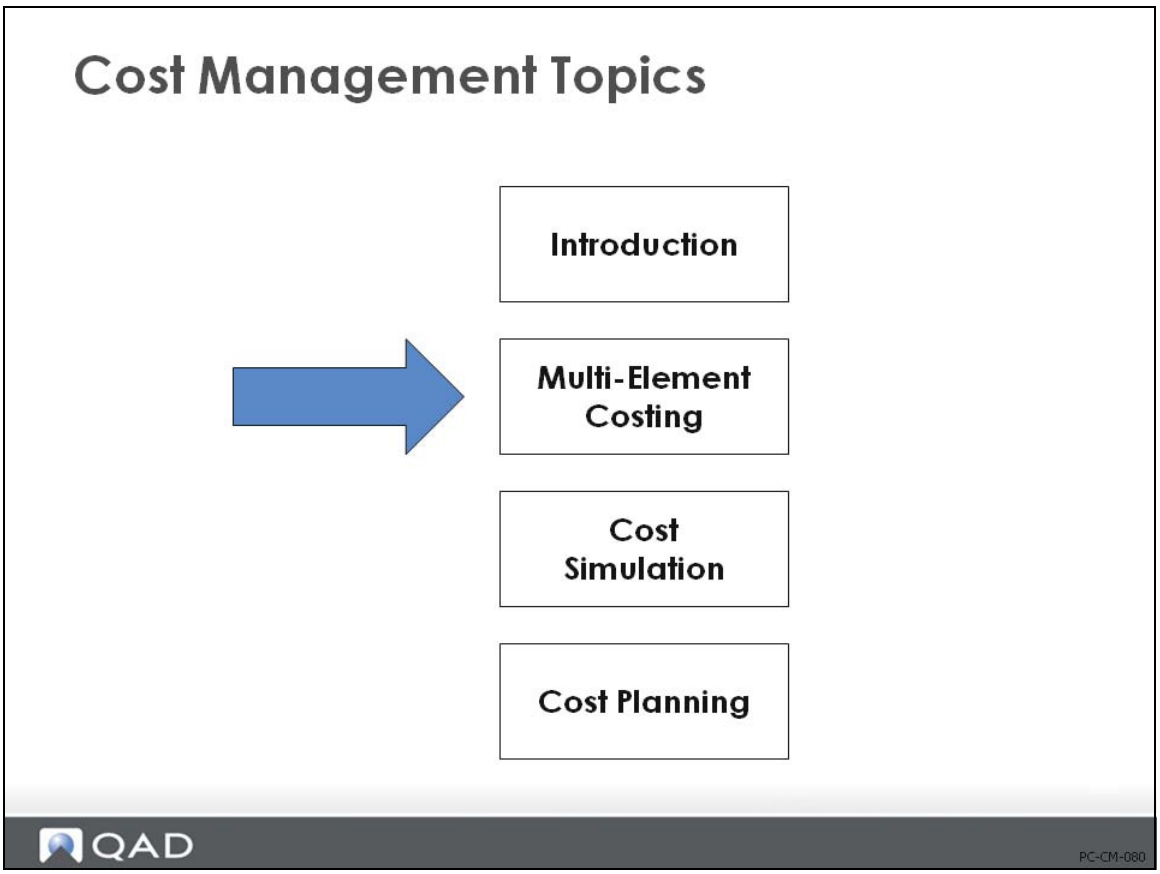
Routing Cost Roll-Up (14.13.13) calculates this-level manufacturing costs, lead times, and total yield for an item at a particular site.

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

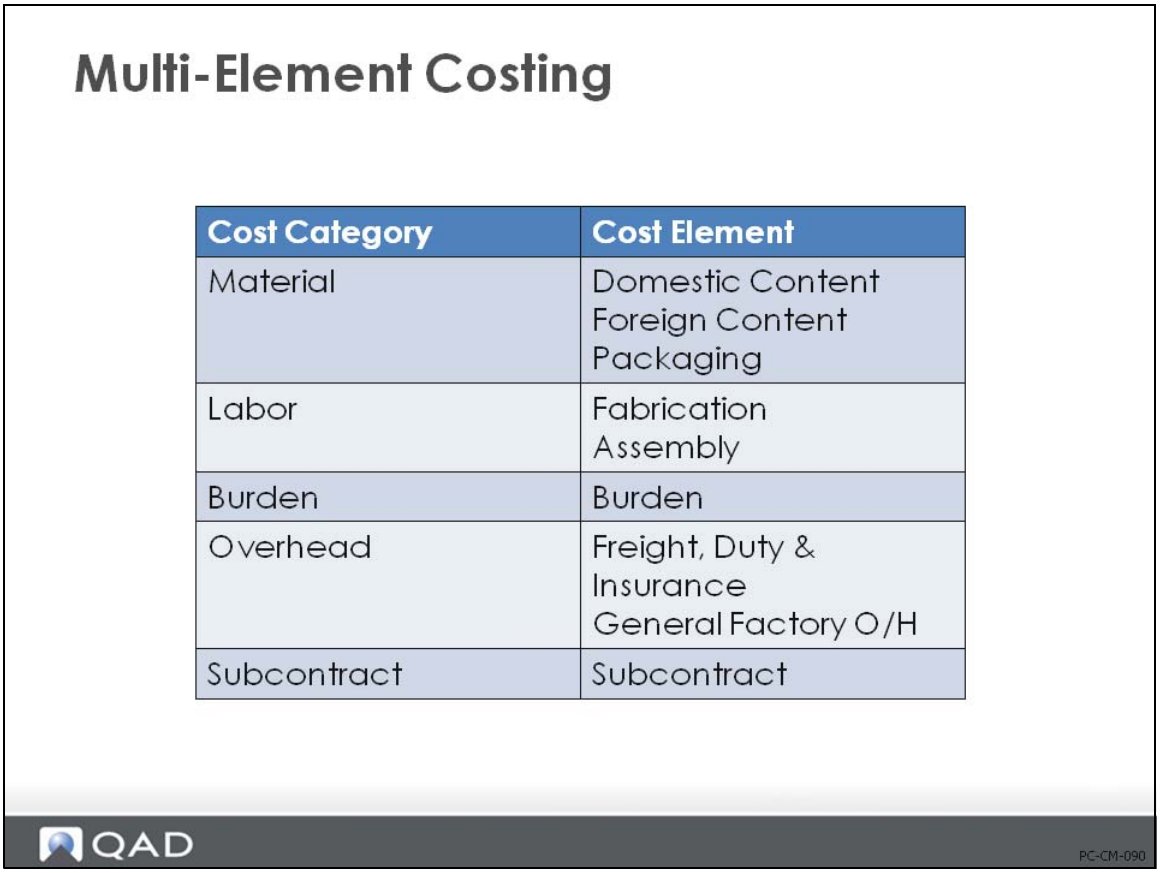
- The routing cost rollup does not update this-level costs if the item at the rollup site is linked.
- Lead time and yield for all selected items are calculated whether they are linked or not.
- The operation cost calculation recognizes linked costs.
- Updating the active GL standard costs at a cost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

Multi-Element Costing



Multi-Element Costing



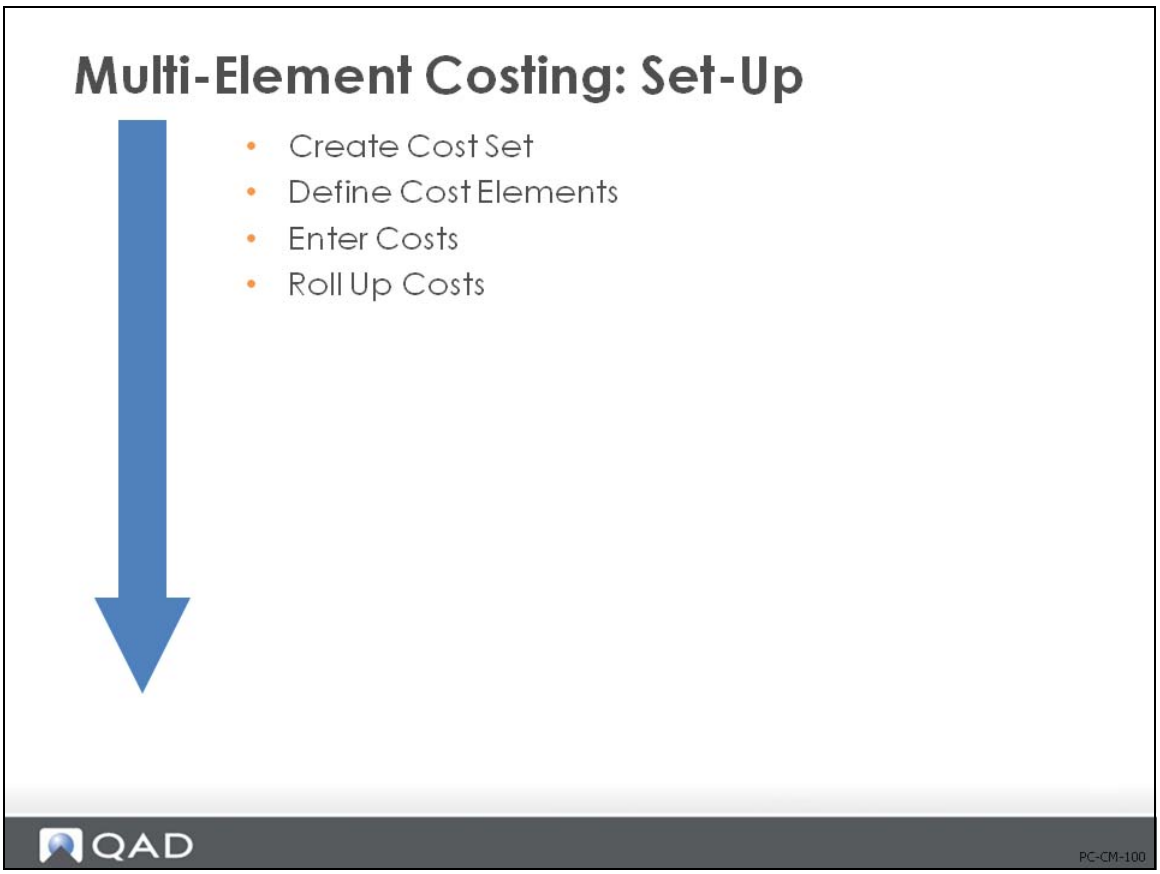
When we looked at costs earlier, we pointed out that the costs for an item are always broken out into five categories: material, labor, burden, overhead, and subcontract. So far, these are the only categories that we have looked at or entered costs for. However, each of these cost categories can be subdivided into an unlimited number of component cost elements.

Some companies need to identify different types of cost within the five standard categories of cost. For example, a company can identify the foreign versus domestic content of material cost. Another company might want freight to be an element of material cost. The needs vary widely, and multiple element costing allows you to break cost categories down further if you need to do so.

The use of cost elements is optional. You only need to introduce cost elements where you want to have additional reporting detail. If you do not add additional cost elements, you will always have at least five elements: material, labor, burden, overhead, and subcontract; one for each category.

Note Regardless of how many cost elements are set up, only the cost categories will post to COGS in the GL.

Multi-Element Costing: Setup

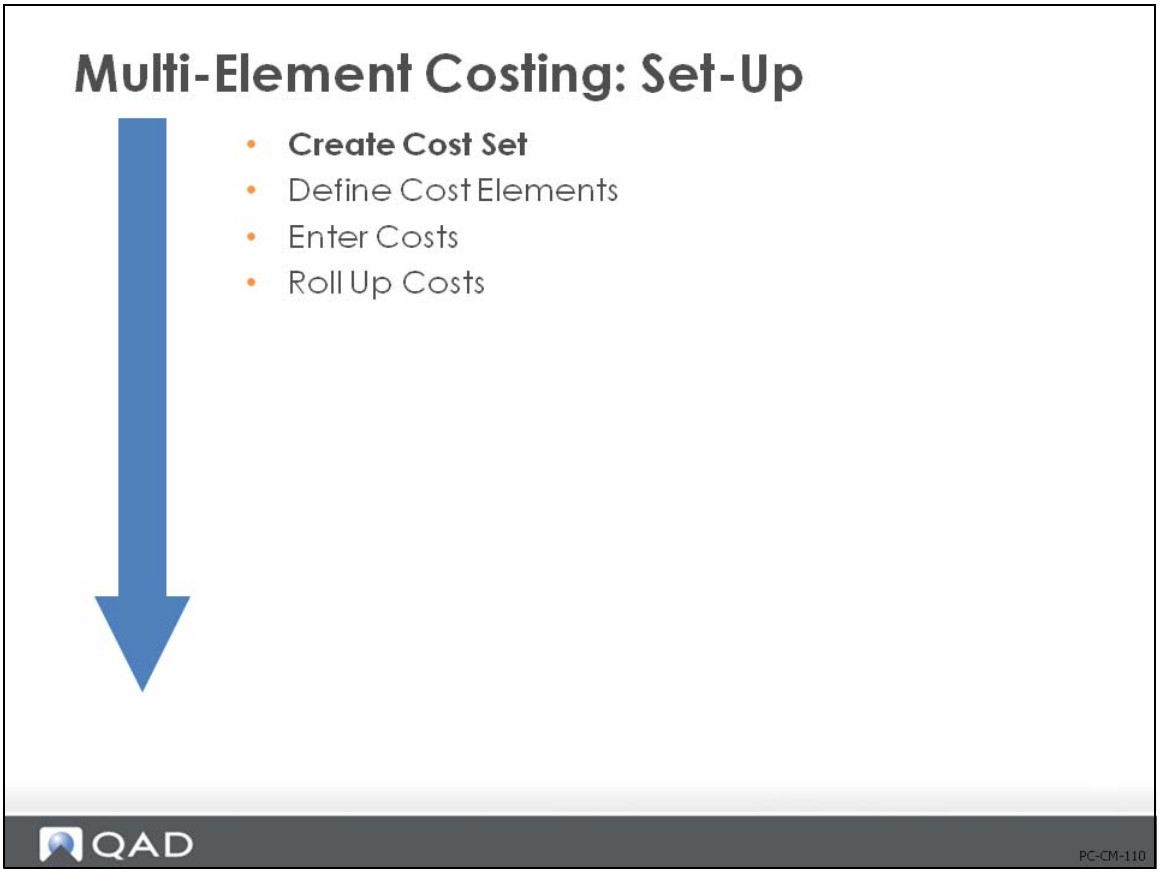


First, assuming that the cost set is a new one, follow these steps:

- Create a cost set in Cost Set Maintenance (30.1) and define a cost set code.
- Next, define the cost elements in Cost Element Maintenance (30.17.1).
- Enter costs in Item-Element Cost Maintenance (30.17.5) or use Item-Element Cost Calculation (30.17.10) and let the system calculate the costs.
- Roll up the costs in Routing Cost Roll-Up (14.13.13) and Product Structure Cost Roll-Up (13.12.13).

These steps are discussed on the following pages.

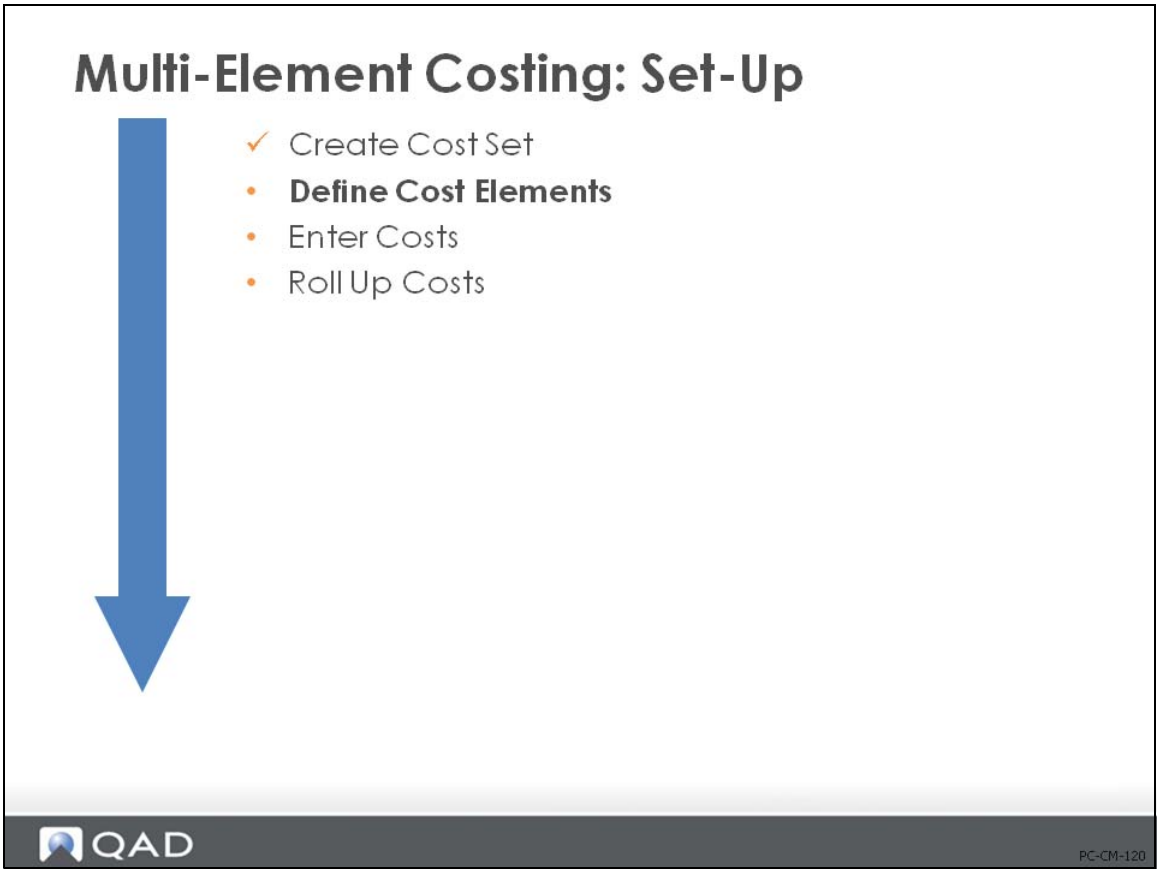
Create Cost Set



Use Cost Set Maintenance (30.1) to define a cost set

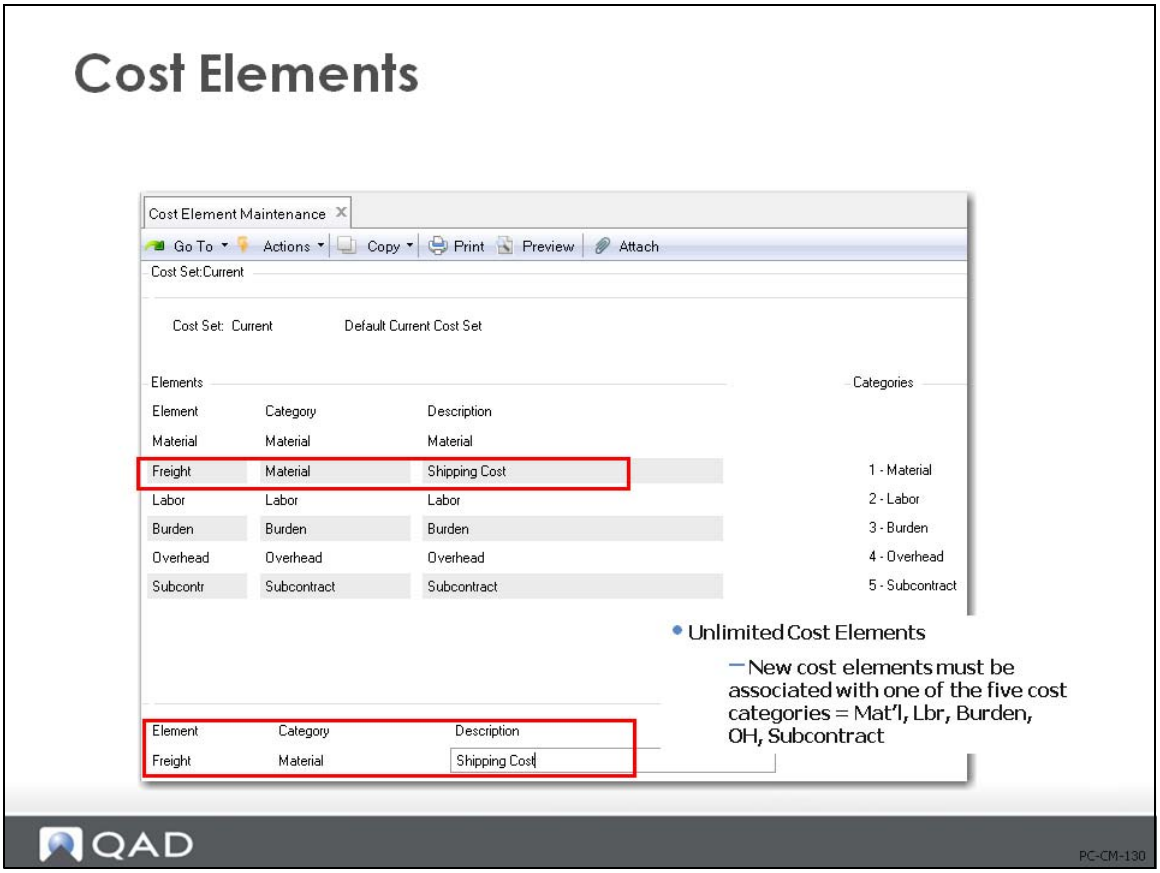
Ensure that cost sets to be used as the GL (Standard) or Current costs at a site are entered as type GL and CURR, respectively; otherwise they can only be used for simulation purposes

Define Cost Elements



Use Cost Element Maintenance (30.17.1) to define additional cost elements for GL and Current type cost sets

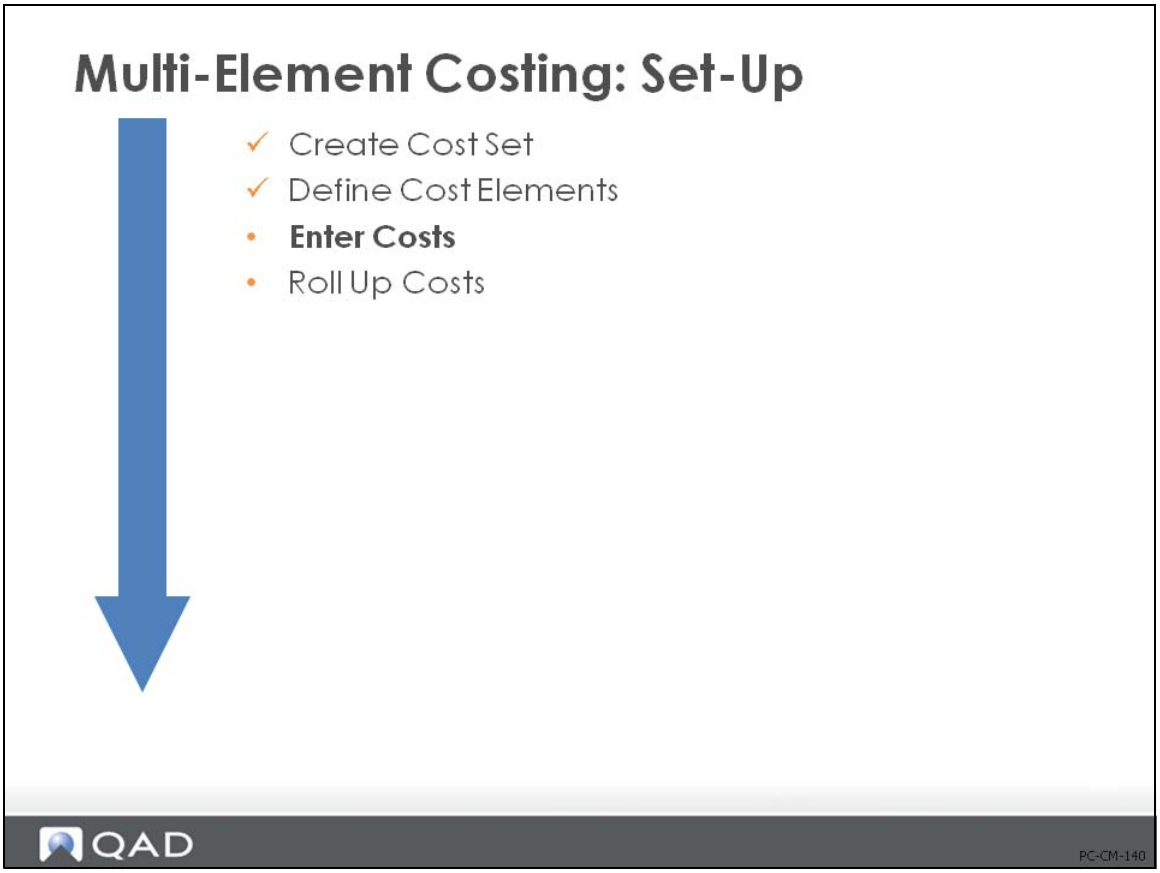
Cost Elements



You can set up additional cost elements for your current and GL cost sets, and for your simulation cost sets. this is done in Cost Element Maintenance (30.17.1).

- You will always have five cost elements to start with: material, labor, burden, overhead, and subcontract. You can add others but you cannot delete these. Each of the cost elements you add must be associated with one of the five cost categories.
- You can set up each current and GL cost set with its own cost elements, or each one can be set up the same. In the latter case, enter the cost elements for one cost set and then use Cost Element Copy (30.17.4) to copy them to other cost sets.
- To add a new cost element, while in the Elements frame, select Insert from the Actions drop down menu. Add the new element details in the bottom frame. Note that elements are displayed in element sequence within each cost category.

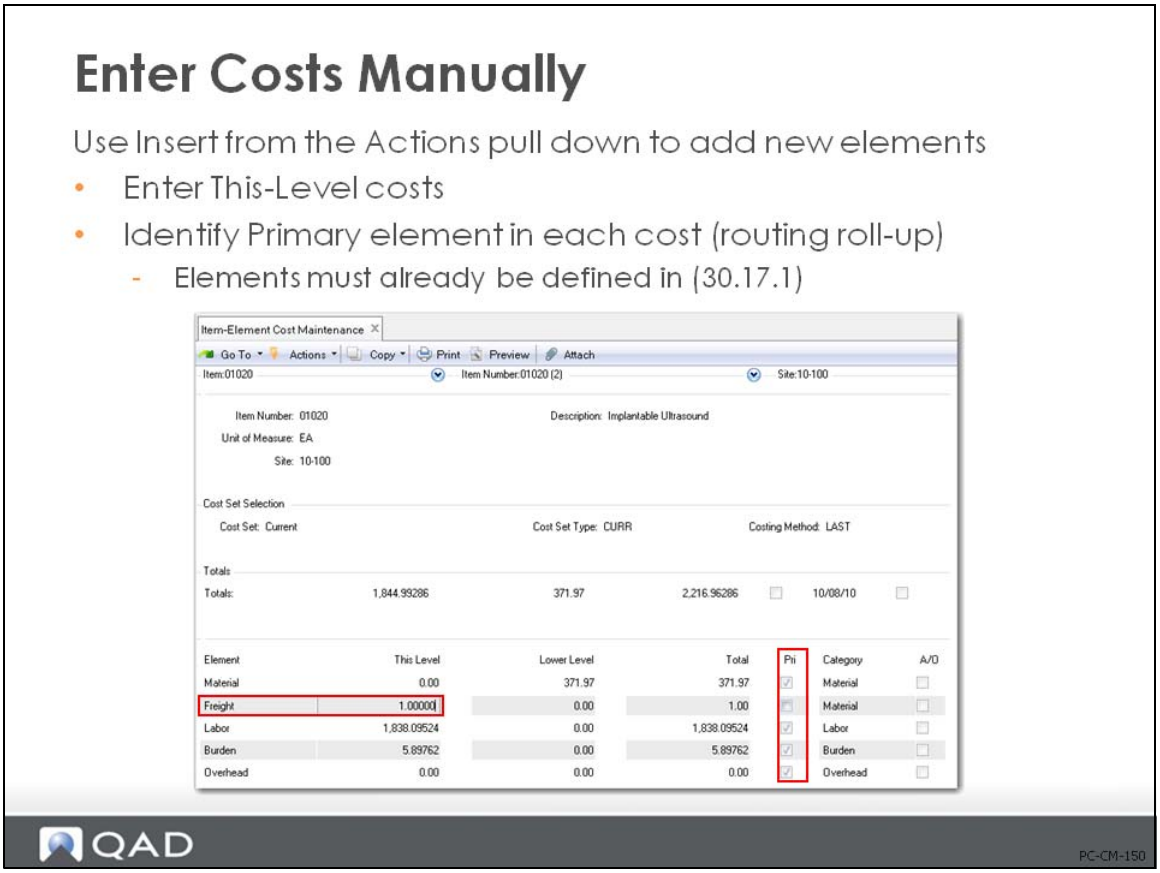
Enter Costs



Use Item-Element Cost Maintenance (30.17.5) to enter costs manually, or use Item-Element Cost Calculation (30.17.10) to have the system calculate these costs based on other cost elements in the cost set.

Note There is no automatic update of multi-element costs to reflect actual transactions in the same way that Current cost set values can be updated.

Enter Costs Manually



Use Insert from the Actions pull-down menu to add new elements.

- Enter This-Level costs
- Identify Primary element in each cost (routing roll-up). Elements must already be defined in Cost Element Maintenance (30.17.1)

Once you have set up your cost sets and cost elements, you can enter your costs. Item-Element Cost Maintenance (30.17.5) can be used to enter costs for any site's current or GL cost set. When you initially enter costs, only the five standard cost elements display. You can update costs for listed elements or add costs for any other element that has been associated with this cost set.

Navigation

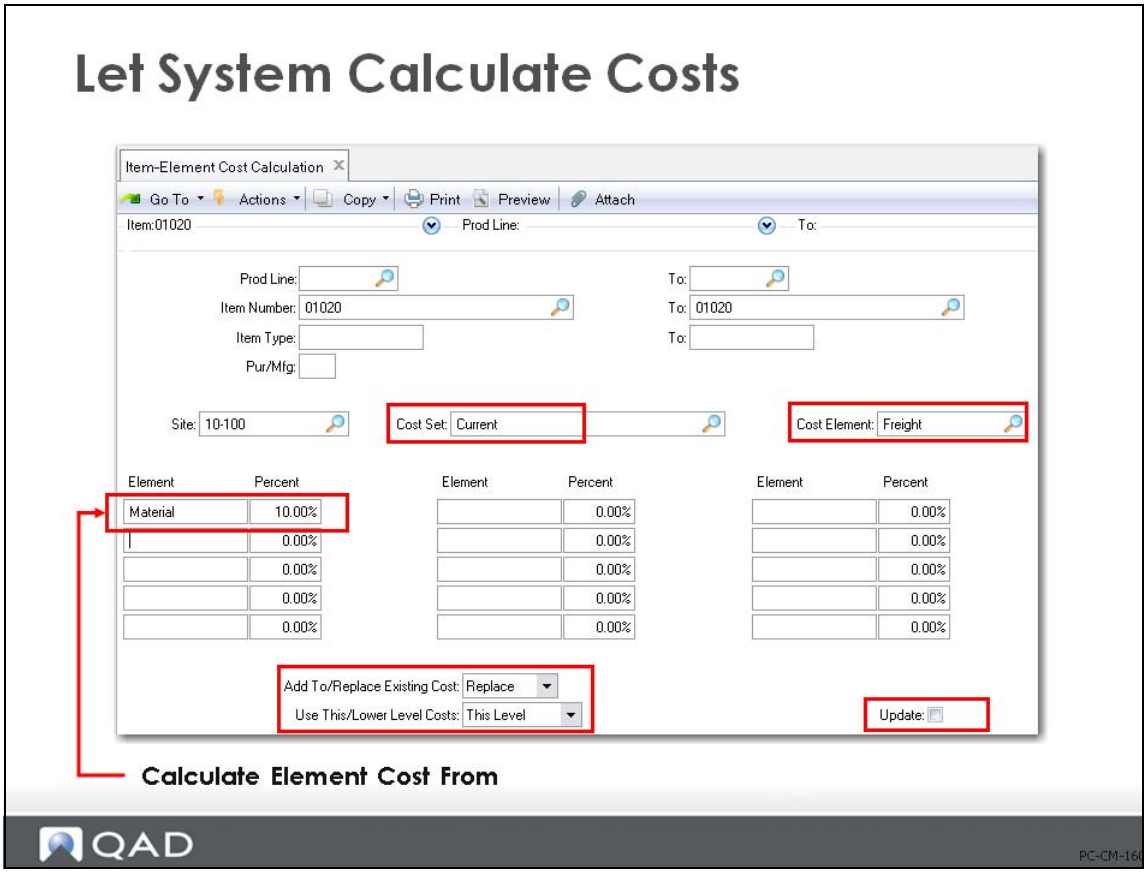
- Press Enter or the Next button to advance to the cost element frame. Click the element name to open the cost field to update the cost element record.
- Select Insert from the Actions pull down menu to enter a cost for a cost element other than those displayed. A blank field appears for you to type Element and Cost. The new element will be added above the highlighted, existing element.
- Use Look-Up to get a list of valid elements for this cost set. Costs can be entered only for elements that have been associated with this cost set.
- When a record is selected the Delete Button appears to flag an element for deletion. You can only delete elements that have zero cost and are not flagged as primary. The delete is not processed until you press Enter of click Next.

- Press Next when you are finished. This stores the cost changes and deletes any elements flagged for deletion.

Primary Element (Pri field)

Each category always has one, and only one, primary element. The primary element accrues all costs applied to the category that do not match any other element in that category, as well as the costs applied to it specifically. This only affects the routing roll-up, as you will see in the following sections.

Let System Calculate Costs



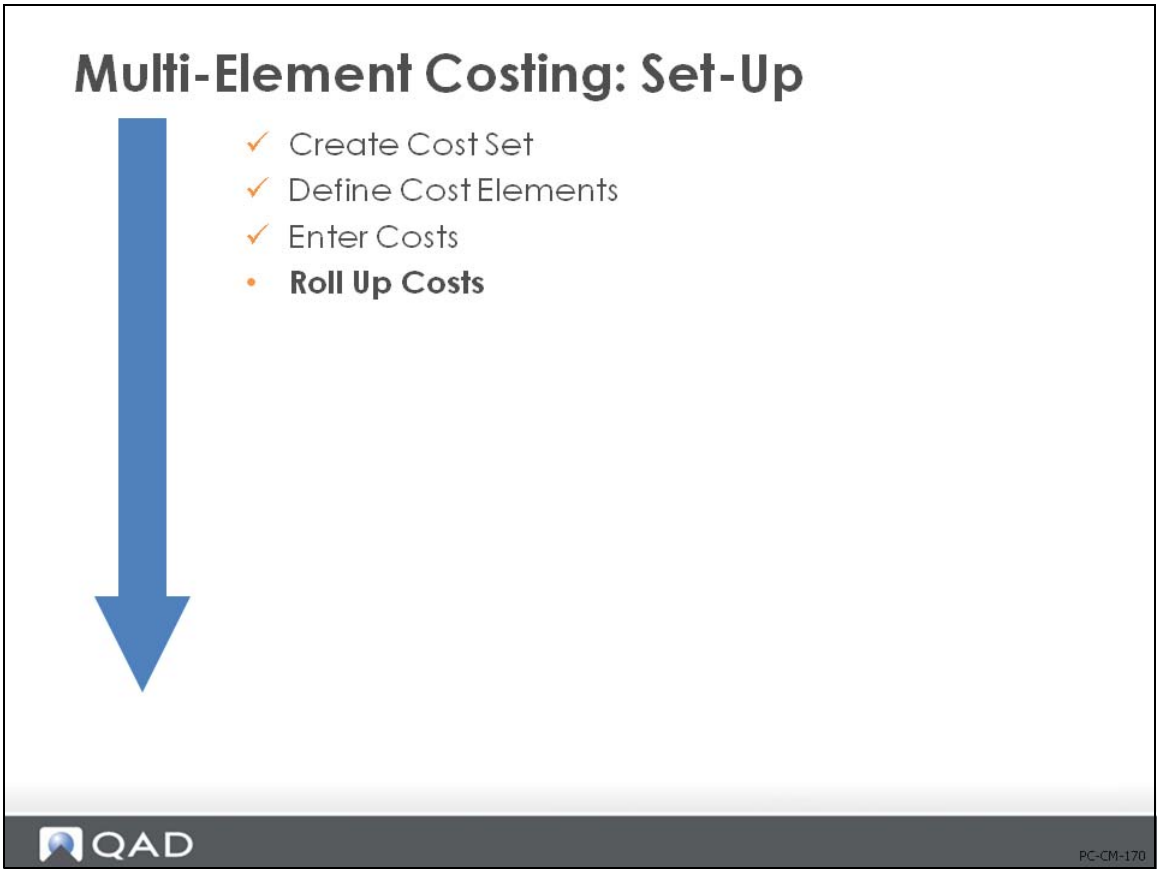
Costs can be entered manually for each individual cost element, as you have seen, or they can be calculated by the system. Item-Element Cost Calculation (30.17.10) allows you to calculate the value for a particular cost element as a percentage of one or more cost elements. For example, you can set Freight to 10% of 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

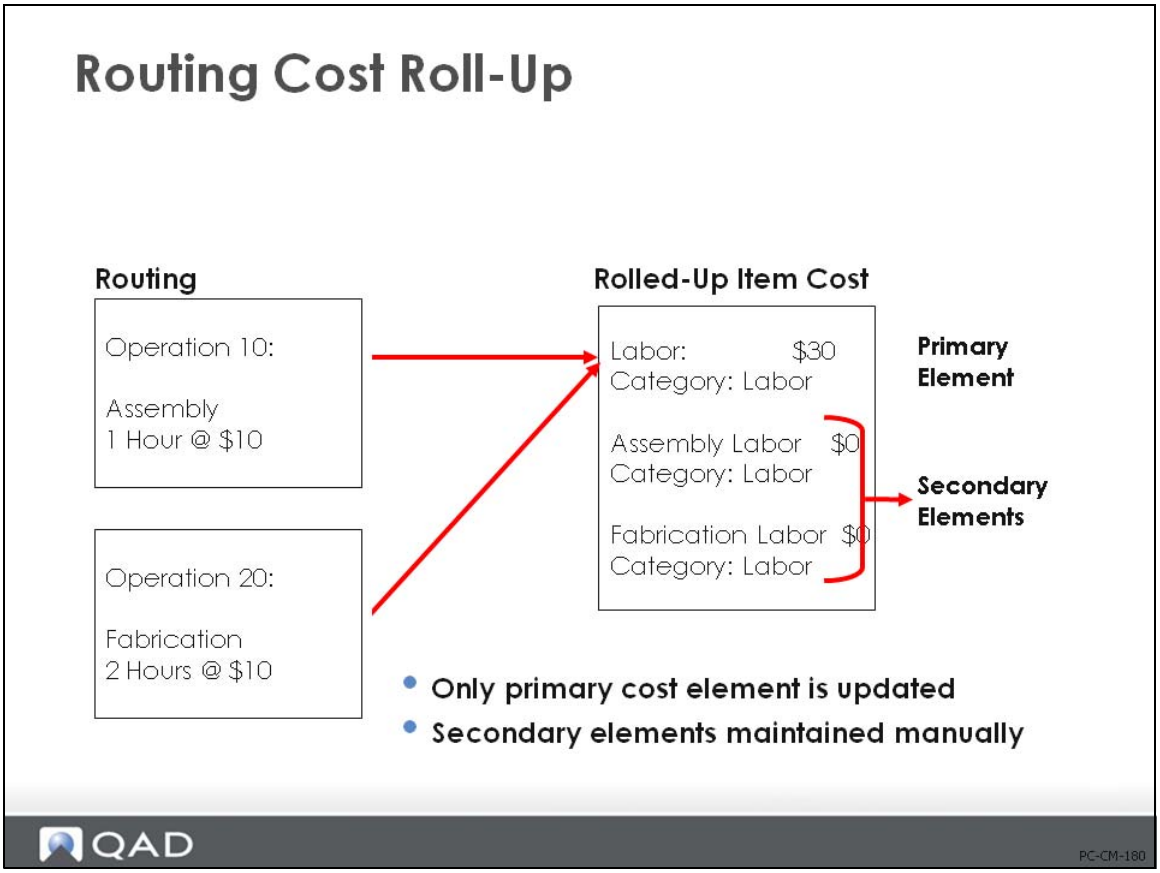
You can review the cost impact before finalizing it by leaving the Update box unchecked. When you are ready to update the costs check the box.

Roll Up Costs



We have looked at this-level costs that we enter or calculate. Next, we will look at how multiple cost elements are handled in the Routing Cost Roll-Up (14.13.13) and Product Structure Cost Roll-Up (13.12.13) functions.

Routing Cost Roll-Up



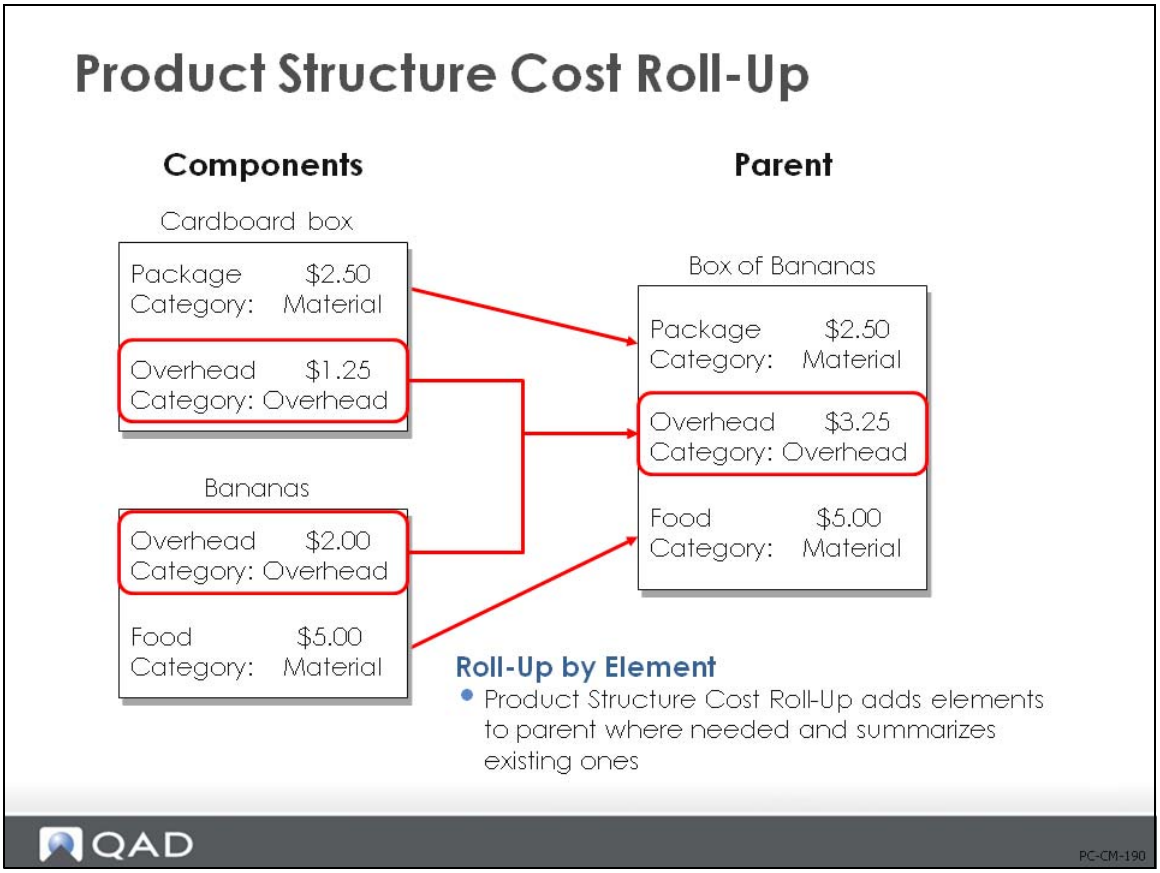
The Routing Cost Roll-Up (14.13.13) works a bit differently than the Product Structure Cost Roll-Up. While labor, burden, and subcontract cost elements can be created and maintained manually through cost maintenance functions, Routing Cost Roll-Up (14.13.13) calculates labor, burden, and subcontract costs and places those costs in the primary cost elements for each category. Any non-primary labor, burden, or subcontract cost elements are not affected.

Example The example in the figure above shows a routing with two operation steps: assembly and fabrication. The Routing Cost Roll-Up (14.13.13) uses this operation information to calculate the total labor cost for the item. This cost is stored under the primary cost element for the cost category Labor. In the example, this is the cost element Labor.

The other two non-primary cost elements—Assembly Labor and Fabrication Labor —are not affected by the cost roll-up. If the total cost of labor needed to be split into assembly and fabrication, it would have to be done manually.

The same process is used to calculate burden and subcontract costs. The Routing Cost Roll-Up (14.13.13) calculates the total cost from all operations and stores it in the primary cost element for each of these categories.

Product Structure Roll-Up



We indicated that the material and overhead costs for all components are accumulated and recorded as lower-level costs for the parent. But, when material costs are split into several cost elements, each of these must be rolled up separately.

Example A box of bananas, the parent item, consists of a box and a bunch of bananas. The cost of each of these components is split into cost elements:

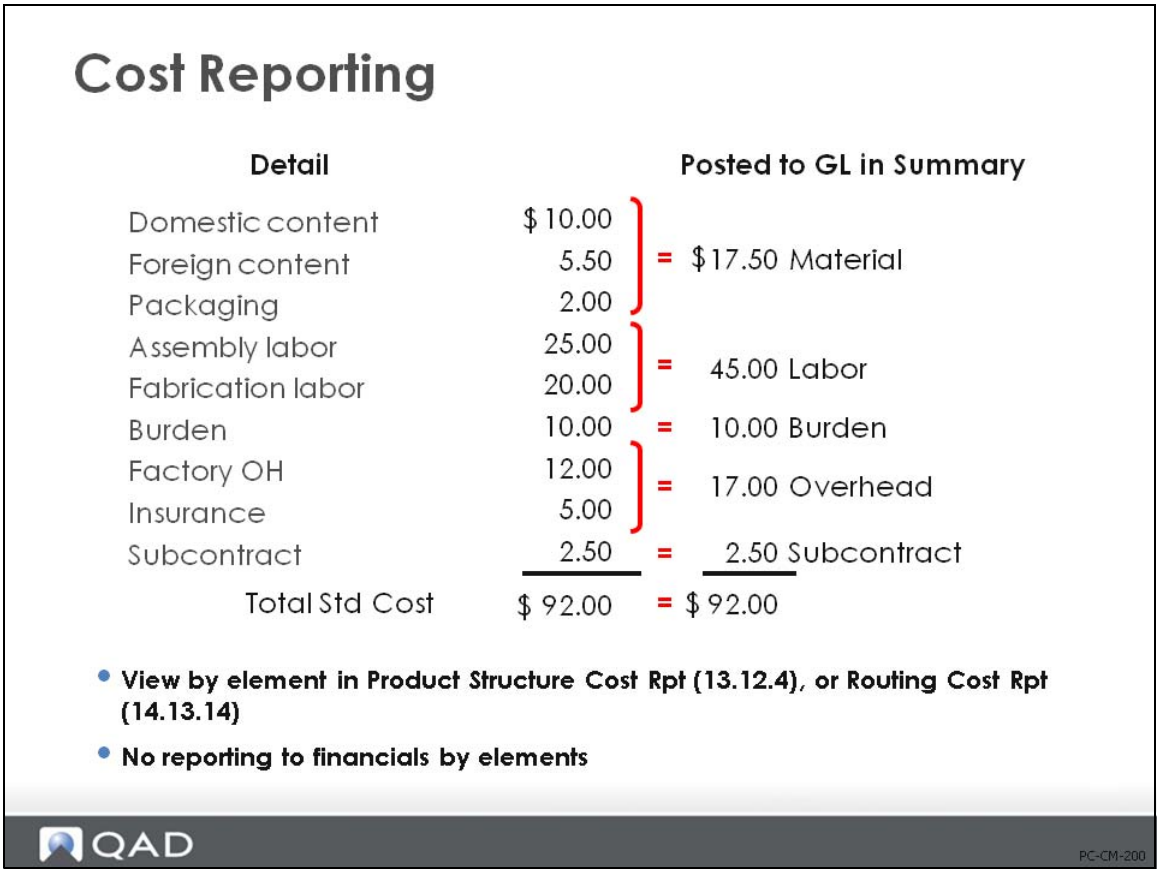
- Bananas cost $7, two elements: $5 Food and $2 Overhead
- Cardboard boxes cost $3.75, two elements: $2.50 Packaging and $1.25 Overhead

When we roll up the cost of a box of bananas (assuming a quantity of one and no scrap), the lower-level cost is $10.75, split into three elements:

- Food, $5
- Package, $2.50
- Overhead, $3.25

Components need not have the same set of cost elements as the parent. The roll-up records one element at the parent level for each cost element found in any of its components. If the component's cost elements were not already on the list of elements for the parent item, the system adds them and records their cost. The cost of common cost elements is summarized and recorded on the parent.

Cost Reporting



When you look at costs in detail by element, you will see them broken down much like the costs displayed in the figure above. Some reports give you the option of presenting cost information in detail by element or in summary by category. Summarized reports show only the totals for each of the five cost categories.

Example The example in the figure above shows the difference between the information provided by a detailed report and a summarized report.

- A detailed report shows each of the cost elements in sequence by cost category and element. It would print each of the cost elements and their individual amounts.
- A summarized report shows only the totals by category. These categories are always material, labor, burden, overhead, and subcontract.

Note Costs are only subdivided by cost element on cost reports, such as the Product Structure Cost Report (13.12.4) or Routing Cost Report (14.13.14). Costs are not separately identifiable by cost elements through work order processing, cost of goods sold posting, or configured sales order costing. All GL posting functions continue to work with, and only with, the total for each cost category.

Cost Report

Cost Report

Product Structure Cost Report

10/11/10 11:4

QAD

10USA

Pag

Site: 10-100 Cost Set: Current

Level	Component Item	Quantity Per	Q	UM	T	Element	Cat	Cost	Cost LL	Cost Total	Extended Cost
Parent	01020					Material	Mat	0.00	374.75619	374.75619	374.75619
	Implantable Ultrasound					Freight	Mat	37.197	0.00	37.197	37.197
	10/11/10					Labor	Lab	1,838.09524	22.19412	1,860.28936	1,860.28936
						Burden	Bur	5.89762	0.32834	6.22596	6.22596
						Overhead	Ove	0.00	0.00	0.00	0.00
						Subcontr	Sub	0.00	0.00	0.00	0.00
						Total:		1,881.18986	397.27864	2,278.4685	2,278.4685

- View by element in Product Structure Cost Rpt (13.12.4)

Product Structure Cost Report

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Site: 10-100 Cost Set: Current

Level	Component Item	Quantity Per	Q	UM	T	Material	Labor	Burden	Overhead	Subcontract	Cost Total
Parent	01020										
	Implantable Ultrasound	This Level				37.197	1838.095238	5.89761905	0.00	0.00	1881.189857
	10/11/10	Lower Level				374.7561897	22.19411765	0.32833725	0.00	0.00	397.2786446
		Unit Total				411.9531897	1860.289356	6.2259563	0.00	0.00	2278.468502

- View by category in Product Structure Cost Rpt (13.12.4)

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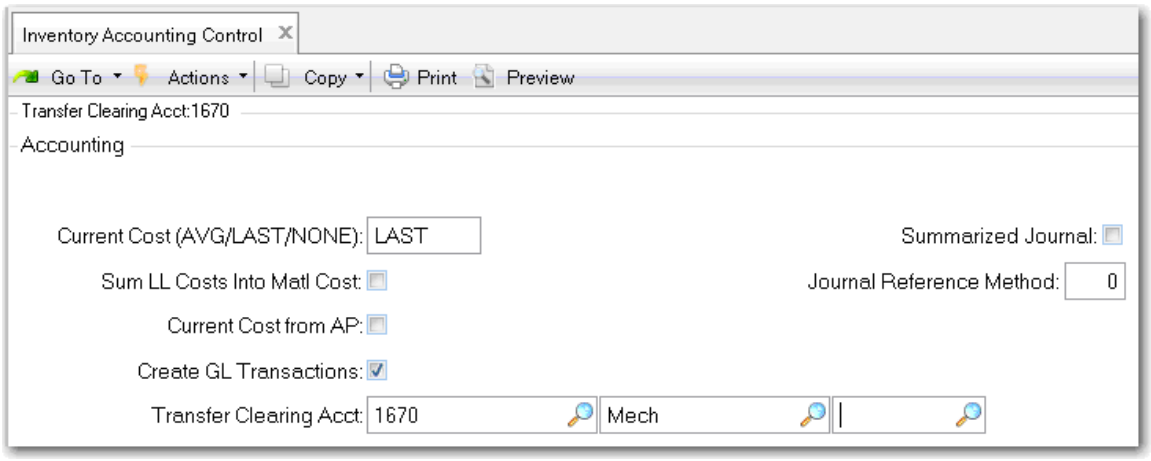
PC-CM-210

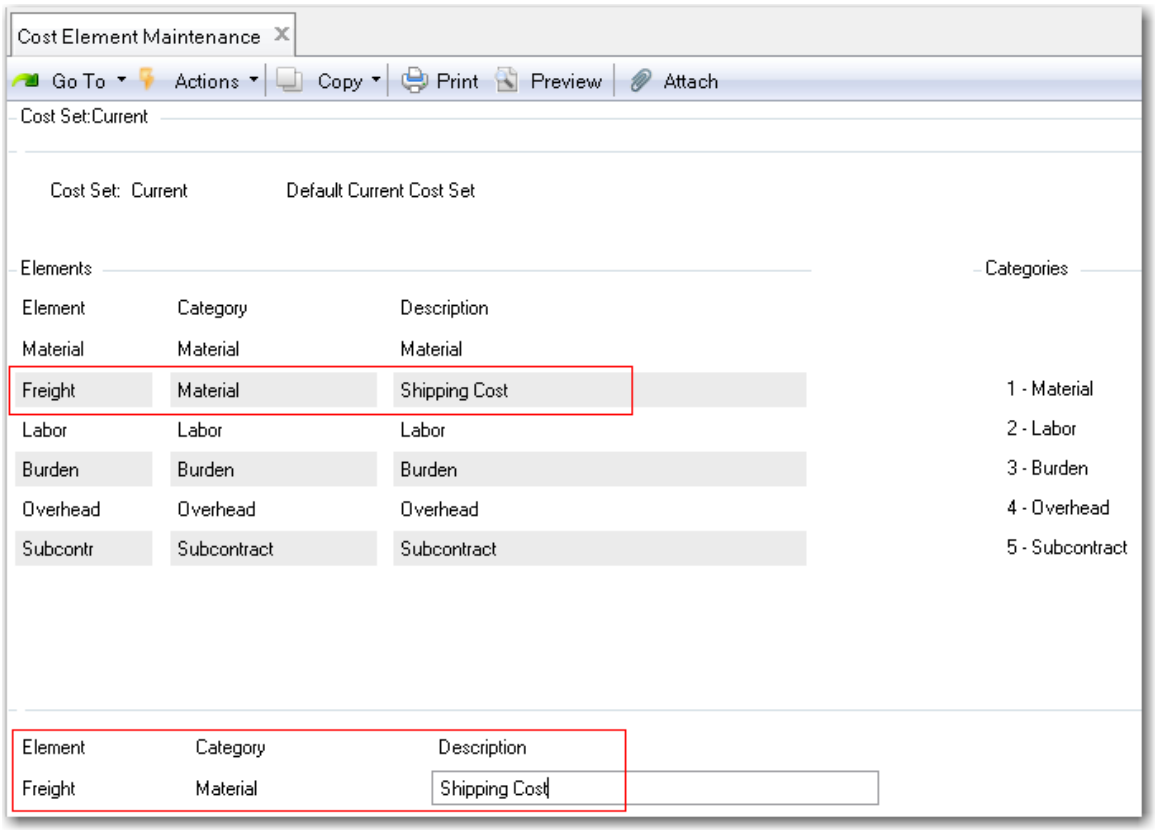
Exercise 1: Multi-Element Costing

In this exercise you will create a new cost element, add some costs and do a cost rollup to see how multi-element costs are managed.

1 Use Inventory Accounting Control (36.9.2). Set the Current Cost field to LAST.

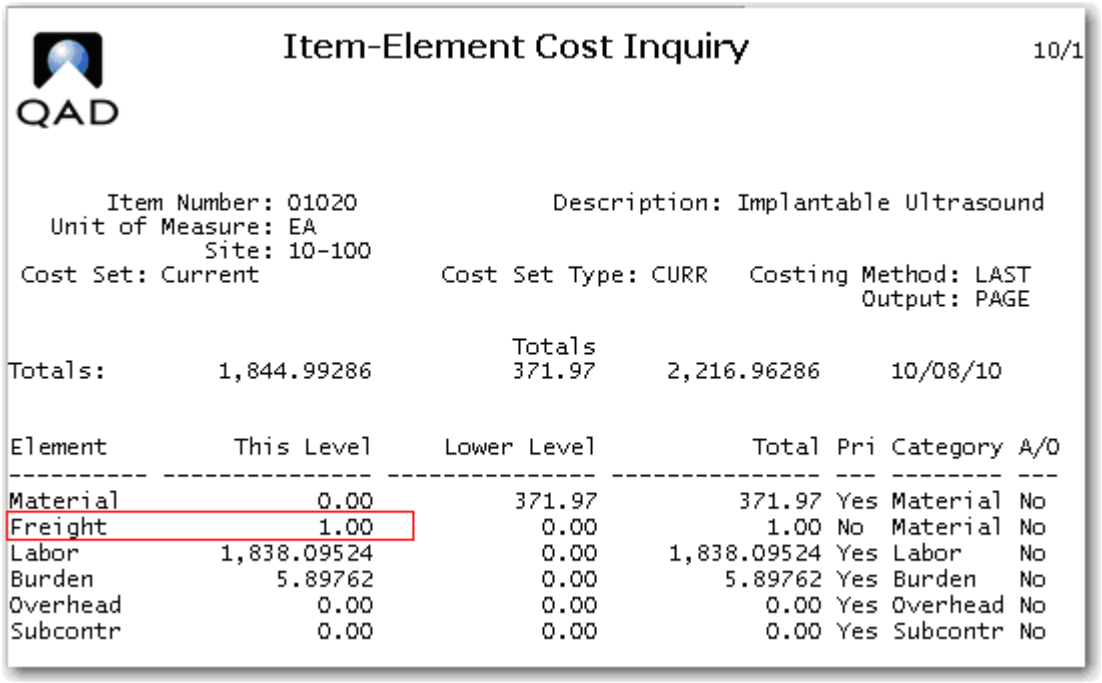


2 Use Cost Element Maintenance (30.17.1) to create a new cost element Freight. Add this to the current cost set and the category Material. Use Insert from the Actions pull down menu. Enter the data shown in the highlighted lower frame.



3 Use Item-Element Cost Maintenance (30.17.5) to add a cost of 1.00 to the freight element of the 01020 Implantable Ultrasound, at site 10-100. Use Insert from the Actions pull down menu. In the open field that appears enter Freight, then key Enter or click Next to advance to the cost field and enter 1.00, click Next, or key Enter to complete and save the update.

4 Use Item-Element Cost Inquiry (30.17.6) to review your work. Do not worry about the other costs, but ensure your added 1.00 of freight is shown.



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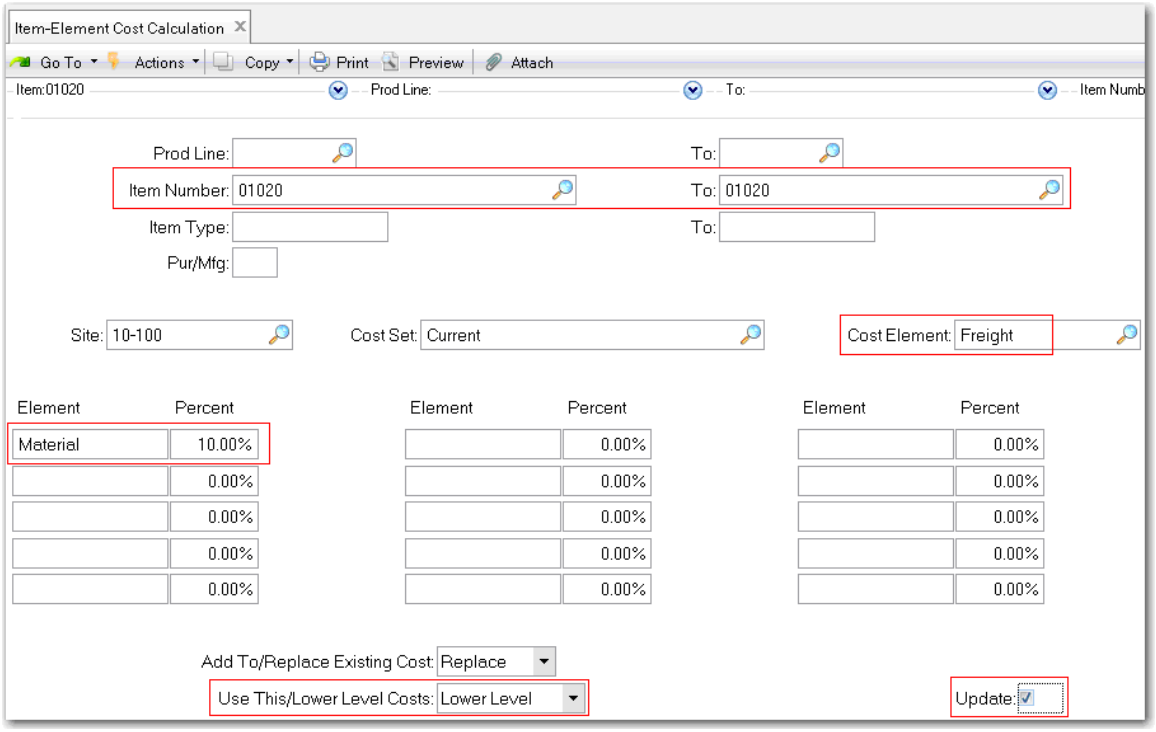
Item-Element Cost Inquiry 10/1

Item Number: 01020 Description: Implantable Ultrasound
Unit of Measure: EA
Site: 10-100
Cost Set: Current Cost Set Type: CURR Costing Method: LAST
Output: PAGE

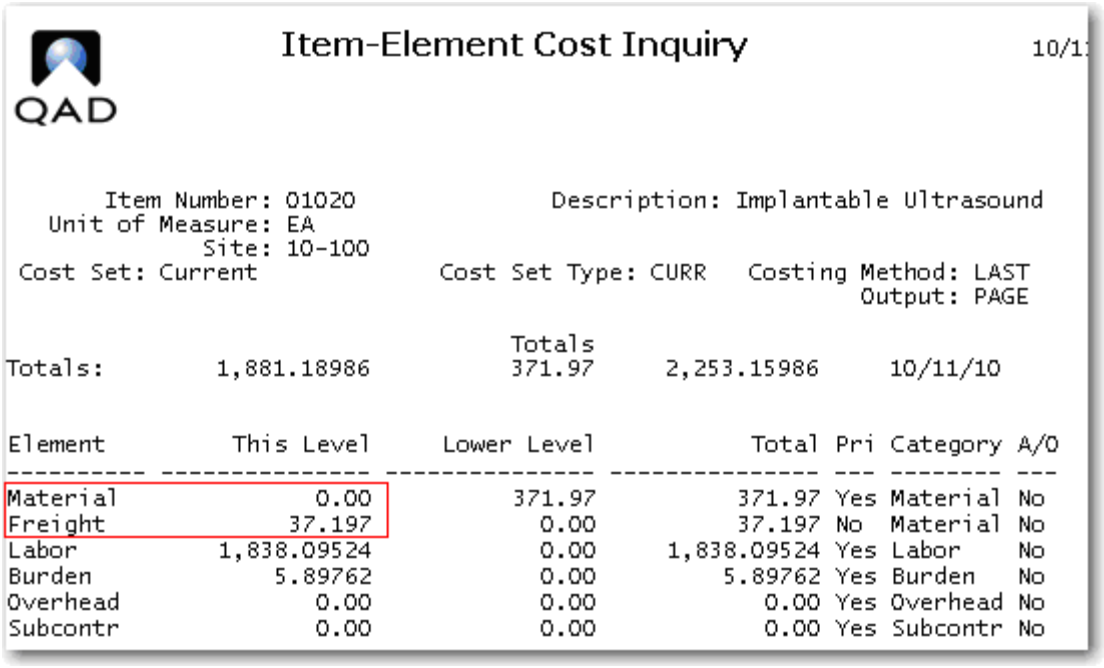
		Totals		
Totals:	1,844.99286	371.97	2,216.96286	10/08/10

Element	This Level	Lower Level	Total	Pri	Category	A/O
Material	0.00	371.97	371.97	Yes	Material	No
Freight	1.00	0.00	1.00	No	Material	No
Labor	1,838.09524	0.00	1,838.09524	Yes	Labor	No
Burden	5.89762	0.00	5.89762	Yes	Burden	No
Overhead	0.00	0.00	0.00	Yes	Overhead	No
Subcontr	0.00	0.00	0.00	Yes	Subcontr	No

5 You could use the system to calculate the value of your added cost element. Use Item-Element Cost Calculation (30.17.10) to calculate a value for freight. Calculate freight to be 10% of lower level, current material cost at site 10-100. Check update.



6 Use Item-Element Cost Inquiry (30.17.6) to review your work.



Item-Element Cost Inquiry 10/1

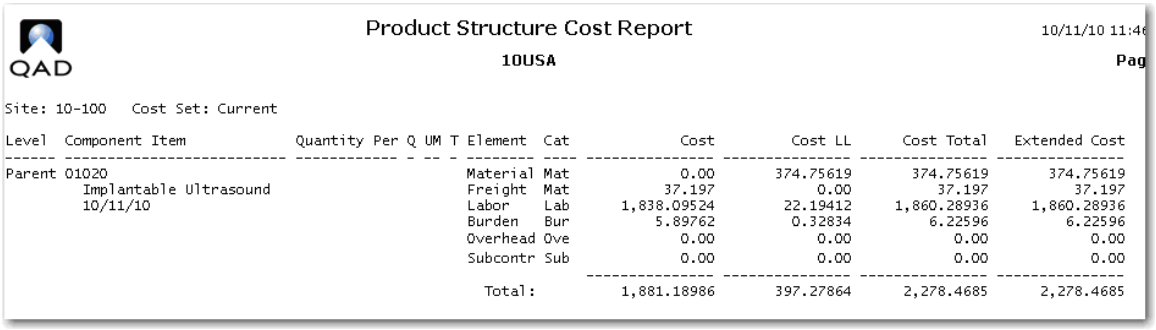
Item Number: 01020 Description: Implantable Ultrasound
Unit of Measure: EA
Site: 10-100
Cost Set: Current Cost Set Type: CURR Costing Method: LAST
Output: PAGE

		Totals		
Totals:	1,881.18986	371.97	2,253.15986	10/11/10

Element	This Level	Lower Level	Total	Pri	Category	A/O
Material	0.00	371.97	371.97	Yes	Material	No
Freight	37.197	0.00	37.197	No	Material	No
Labor	1,838.09524	0.00	1,838.09524	Yes	Labor	No
Burden	5.89762	0.00	5.89762	Yes	Burden	No
Overhead	0.00	0.00	0.00	Yes	Overhead	No
Subcontr	0.00	0.00	0.00	Yes	Subcontr	No

Your freight cost should now be 10% of the lower level material cost as shown here.

7 Use Product Structure Cost Roll-Up (13.12.13) to roll up the 01020 at site 10-100 for the current cost set. Review the result with Product Structure Cost Report (13.12.4). In the report request form for By Category/Element, select element to see the view shown here. The trailer record for the report shows which selections you made.



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Product Structure Cost Report

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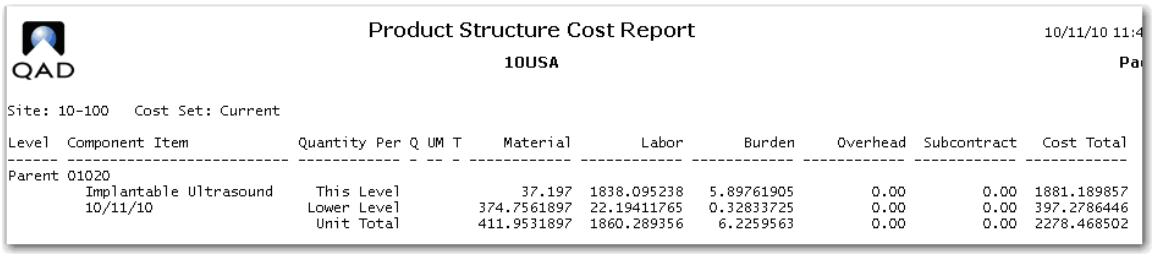
Site: 10-100 Cost Set: Current

Level	Component Item	Quantity Per	Q	UM	T	Element	Cat	Cost	Cost LL	Cost Total	Extended Cost
Parent	01020					Material	Mat	0.00	374.75619	374.75619	374.75619
	Implantable Ultrasound					Freight	Mat	37.197	0.00	37.197	37.197
	10/11/10					Labor	Lab	1,838.09524	22.19412	1,860.28936	1,860.28936
						Burden	Bur	5.89762	0.32834	6.22596	6.22596
						Overhead	Ove	0.00	0.00	0.00	0.00
						Subcontr	Sub	0.00	0.00	0.00	0.00
						Total:		1,881.18986	397.27864	2,278.4685	2,278.4685

Note the form defaults to category which displays the sum of the five categories.



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Product Structure Cost Report

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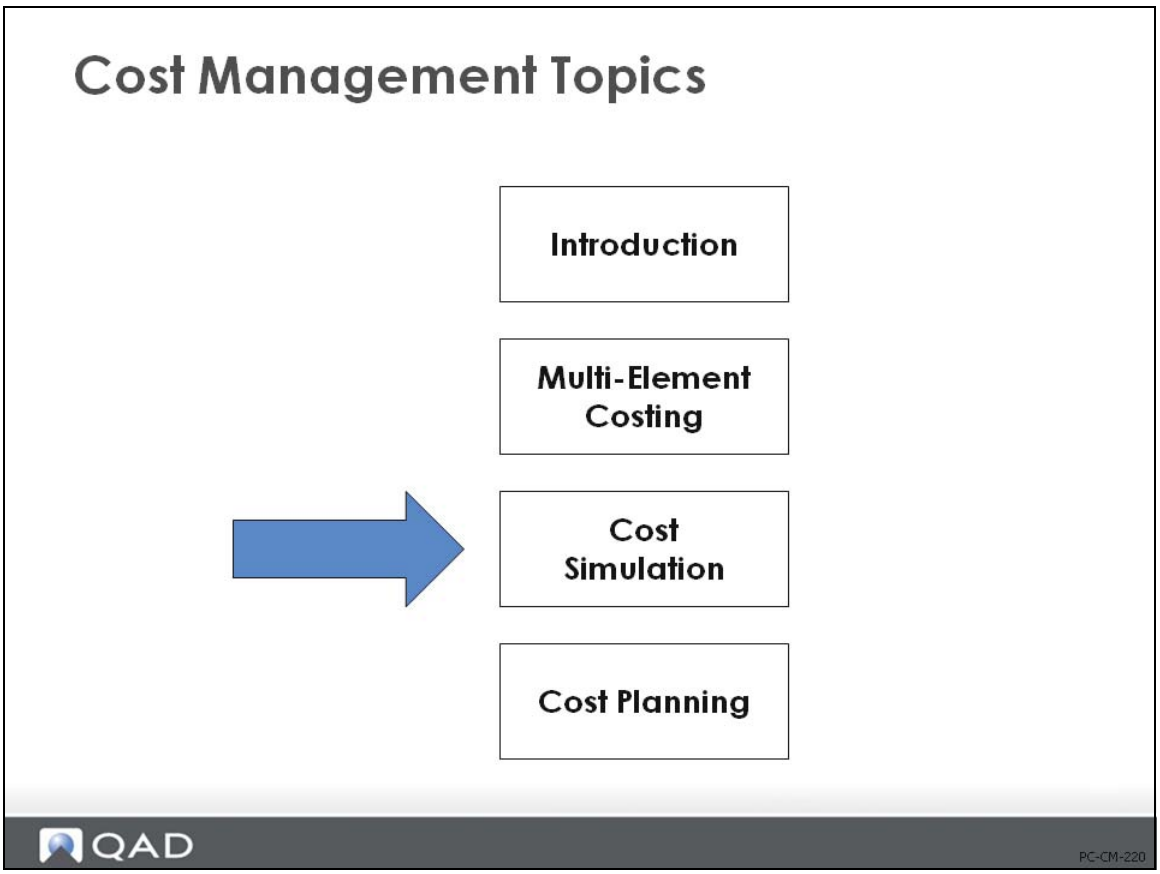
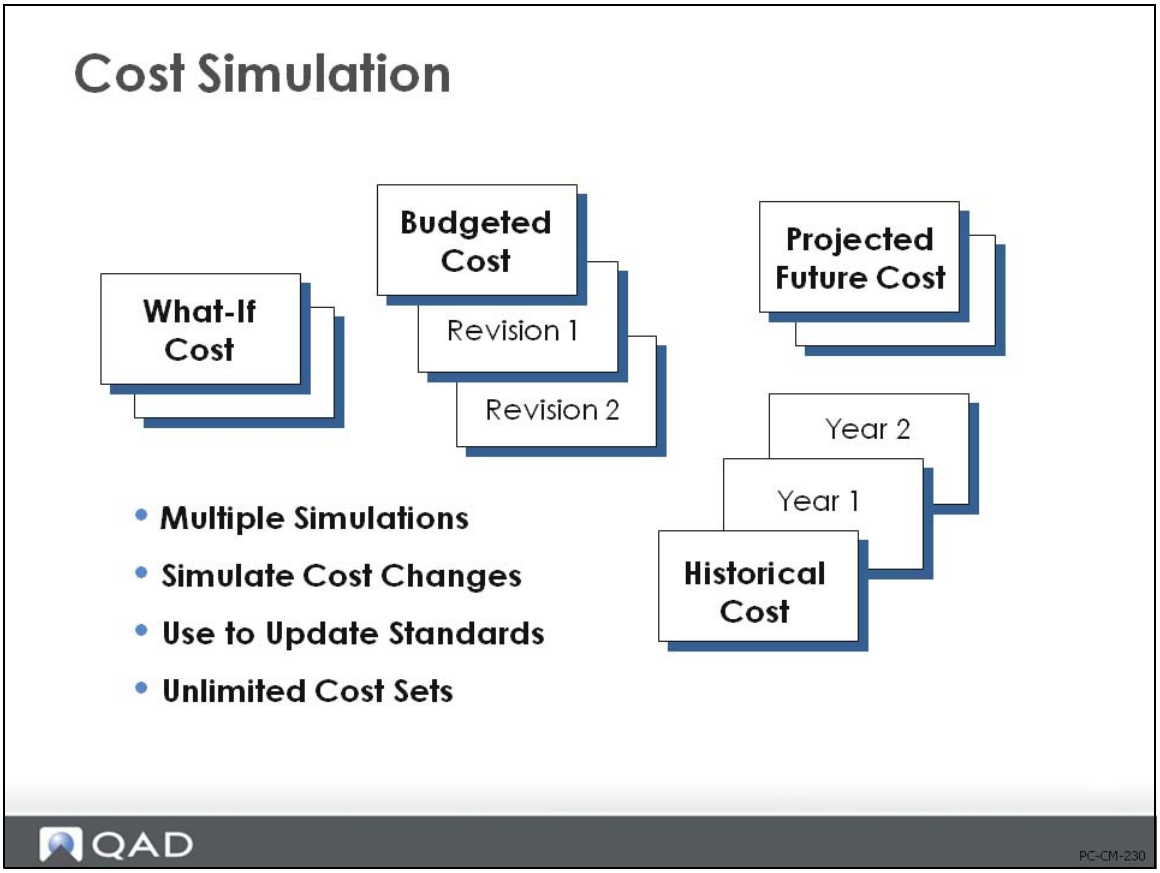
Site: 10-100 Cost Set: Current

Level	Component Item	Quantity Per	Q	UM	T	Material	Labor	Burden	Overhead	Subcontract	Cost Total
Parent	01020										
	Implantable Ultrasound	This Level				37.197	1838.095238	5.89761905	0.00	0.00	1881.189857
	10/11/10	Lower Level				374.7561897	22.19411765	0.32833725	0.00	0.00	397.2786446
		Unit Total				411.9531897	1860.289356	6.2259563	0.00	0.00	2278.468502

Cost Simulation



Introduction



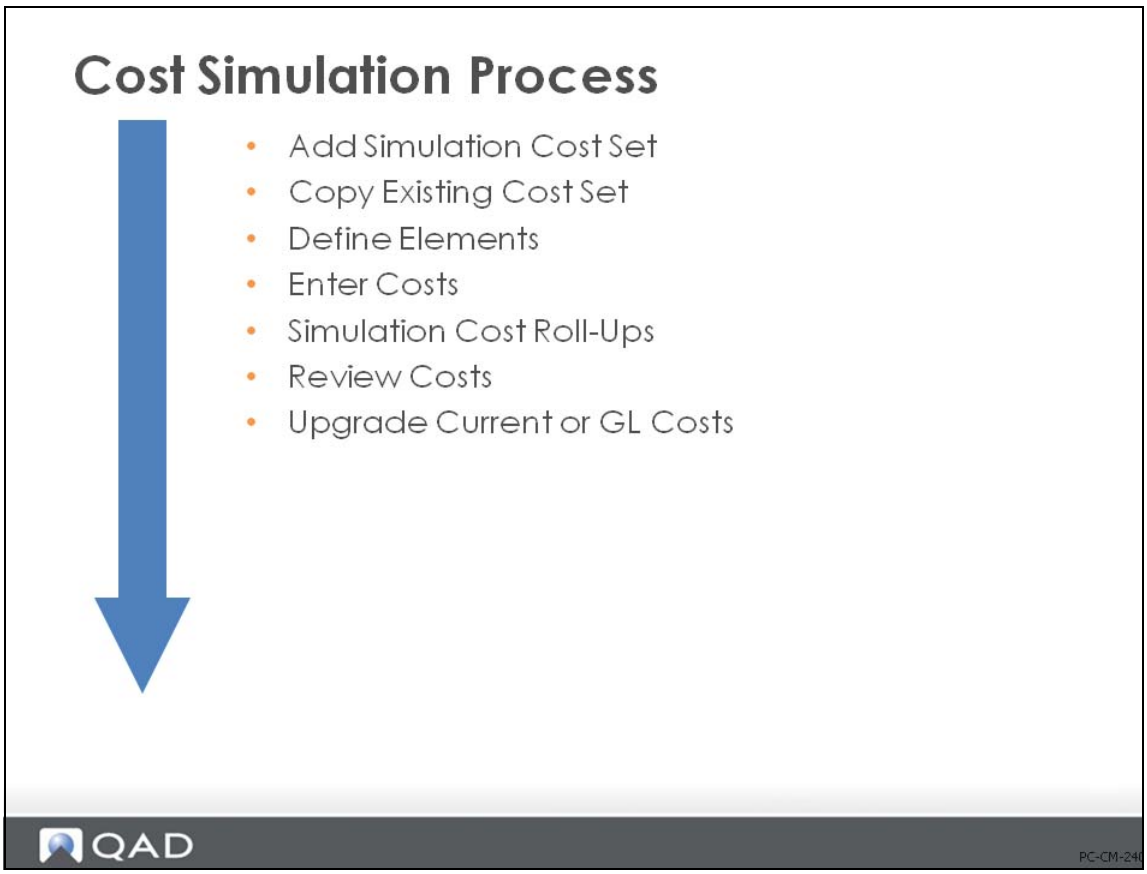
In addition to current and GL cost sets, it is also possible to set up an unlimited number of simulation cost sets. These are used to develop and/or store information for:

- "What If?" costs
- Budgeted costs
- Projected costs
- Historical costs

Cost simulation functions provide you with the ability to set up different cost scenarios and test the impact of cost changes. Unlike the other cost roll-up 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 look at these costs rather than the standards.

Note An important difference between the Simulation Cost menu (30.13) and the Cost Element menu (30.17) is that the Cost Element menu allows you to modify Current and GL cost sets while the Simulation Cost menu does not; it is used only for simulations. This allows you to set up menu security so that many users can have access to the simulation functionality, while granting only a few the ability to actually affect GL cost sets.

Cost Simulation Process



To develop a simulation, first set up the cost set code and beginning costs, usually by copying an existing set of costs. This creates cost elements and copies the costs you specify.

If you set up a new cost set manually, you will have to define the cost elements and enter the direct item costs, work center rates, and subcontract costs. Then these costs and rates can be adjusted either manually or through mass update functions.

Once the costs have been set up, roll-up functions calculate the simulated item costs. As in standard cost development, manufacturing costs are rolled up and then product structure costs. The roll-up process uses the BOM and routing specified for each item in Item-Site Planning Maintenance (1.4.17). Simulated costs can be used to update current or GL item costs, work center rates, and subcontract costs.

Comparison of Regular Costing and Cost Simulation

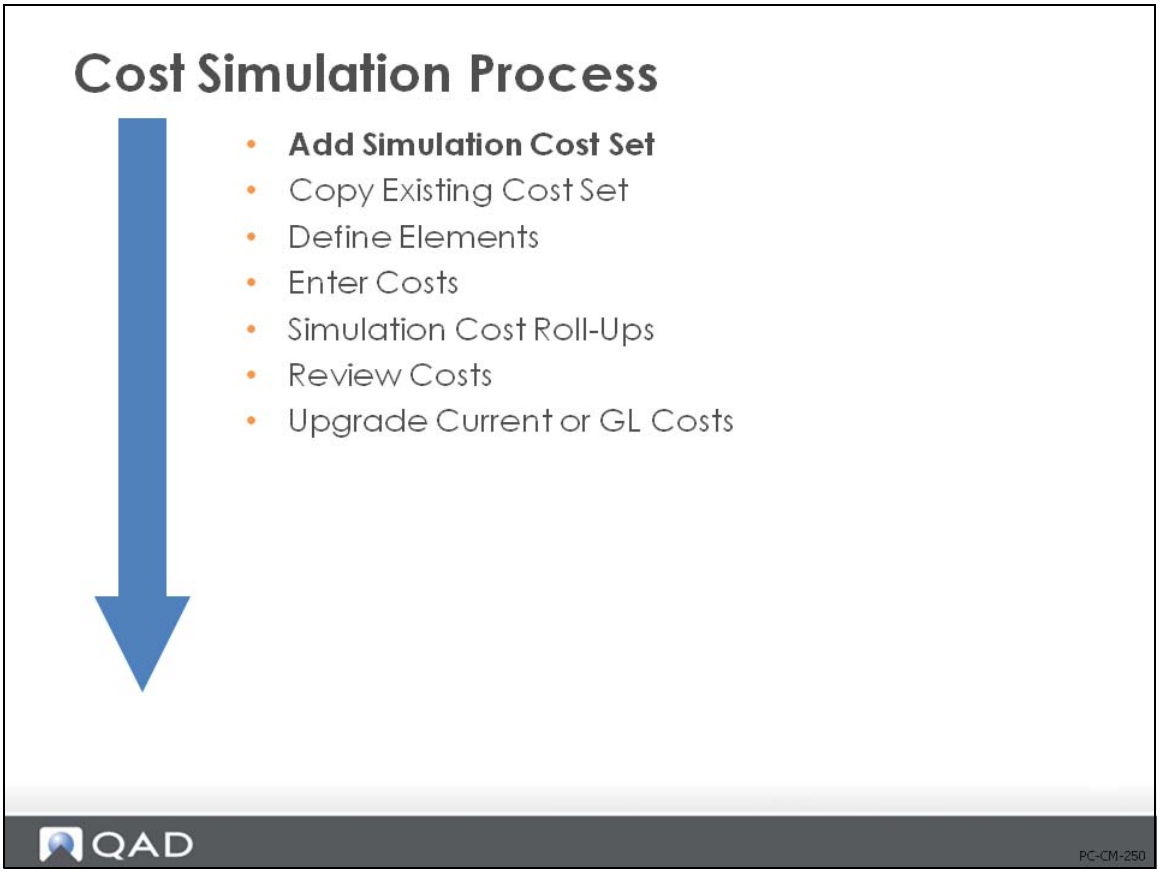
Regular costing and cost simulation differ in terminology and how costs are entered.

- In regular costing, enter purchased material and overhead rates in Item-Site Cost Maintenance (1.4.18). You can enter this-level costs for any cost element. In cost simulation, these are referred to as item-element costs and are entered using Simulation Item-Element Cost Maintenance (30.13.5).

- In regular costing, enter subcontract operation cost into the routing using Routing Maintenance (14.13.1). In cost simulation, enter subcontract cost in Simulation Subcontract Cost Maintenance (30.13.10). Unlike Routing Maintenance, here you can subdivide subcontract costs into different cost elements.
- In regular costing, enter work center labor and burden rates in Work Center Maintenance (14.5). In cost simulation, enter rates in Simulation Work Center Rate Maintenance (30.13.13). Rates can be subdivided into different cost elements.

Note Individual costs can be changed on a simulation, but there is no separate product structure and routing so you cannot simulate structure changes or routing changes. All cost simulation calculations use the standard BOM and routing identified in Item-Site Planning Data (1.4.17). If you have the same item/site combination in Item Planning Maintenance (1.4.7) and Item-Site Planning Data (1.4.17), the standard routing and BOM from Item Planning Maintenance (1.4.7) will be used to roll up costs.

Add Simulation Cost Set



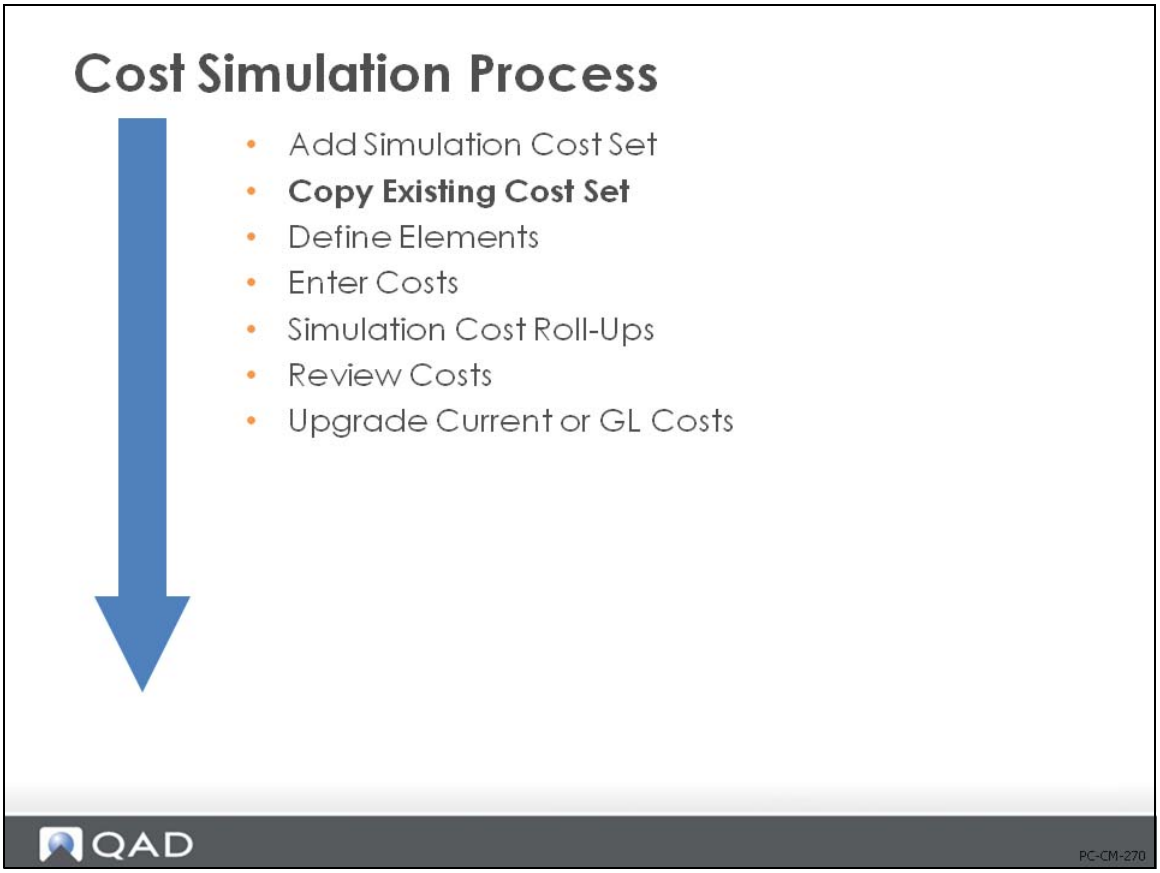
Enter a new cost set in Cost Set Maintenance (30.1) of type SIM; cost simulation functions work only with cost sets of this type.

Create New Cost Set

A cost set is required by QAD Enterprise Applications to process any cost data. Use Cost Set Maintenance (30.1) to create the cost set.

- Cost sets of type SIM must have a costing method of None.
- Cost sets of type SIM cannot be assigned to a site or updated by transactions, or used to value transactions. It is used to allow changes for the purpose of cost analysis only or to establish costs for future periods.

Copy Existing Cost Set



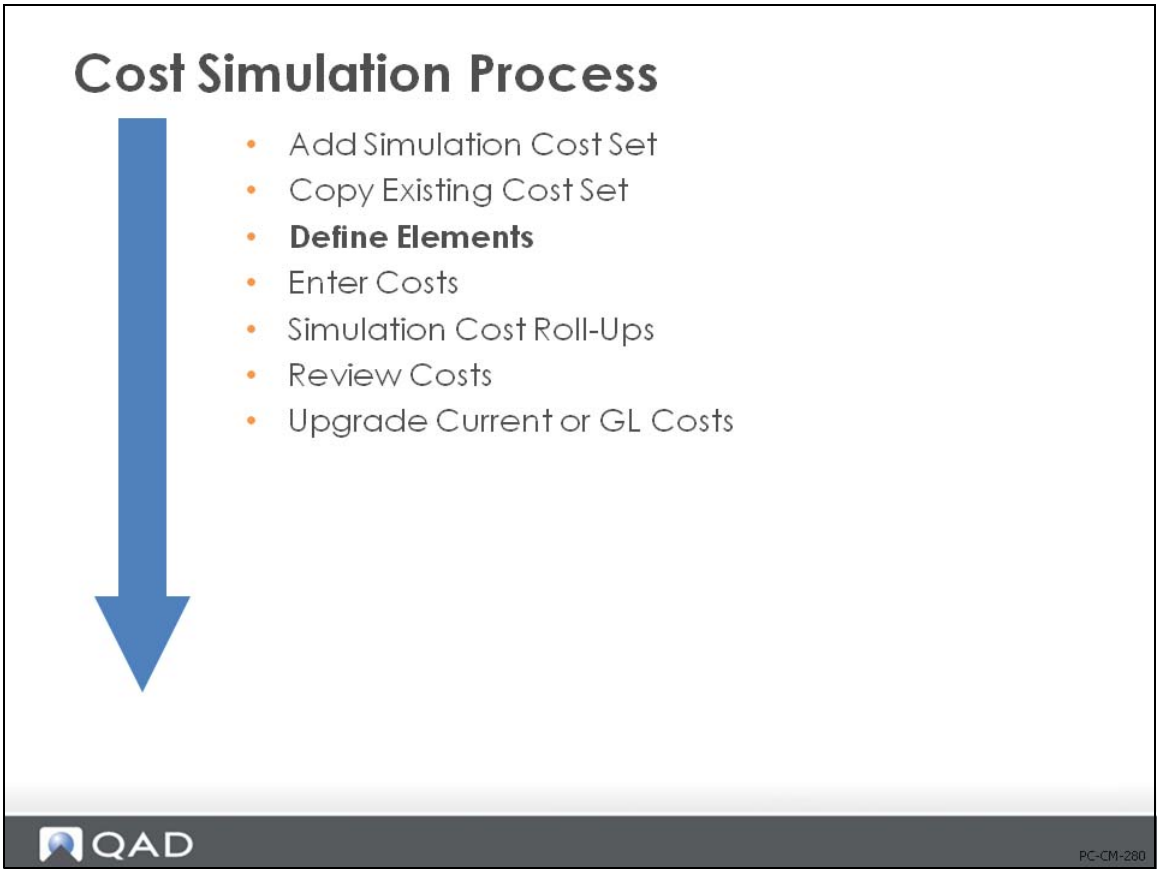
Use Cost Set Copy to Cost Set (30.3)

Generally, it is easier to start the simulation by copying data from one cost set and site to the simulation. This can be done using various selection criteria in Cost Set Copy to Cost Set (30.3).

- Enter ? in the Percent Change Allowed From/To fields to disable the check for percentage difference between the two cost sets
- Cost Set Copy to Cost Set will initialize those items and cost elements copied to this set for manipulation. Additional elements can be added, but this forms the basis of the simulation process.

Typically, only purchased items and their costs are copied; manufactured costs will be calculated.

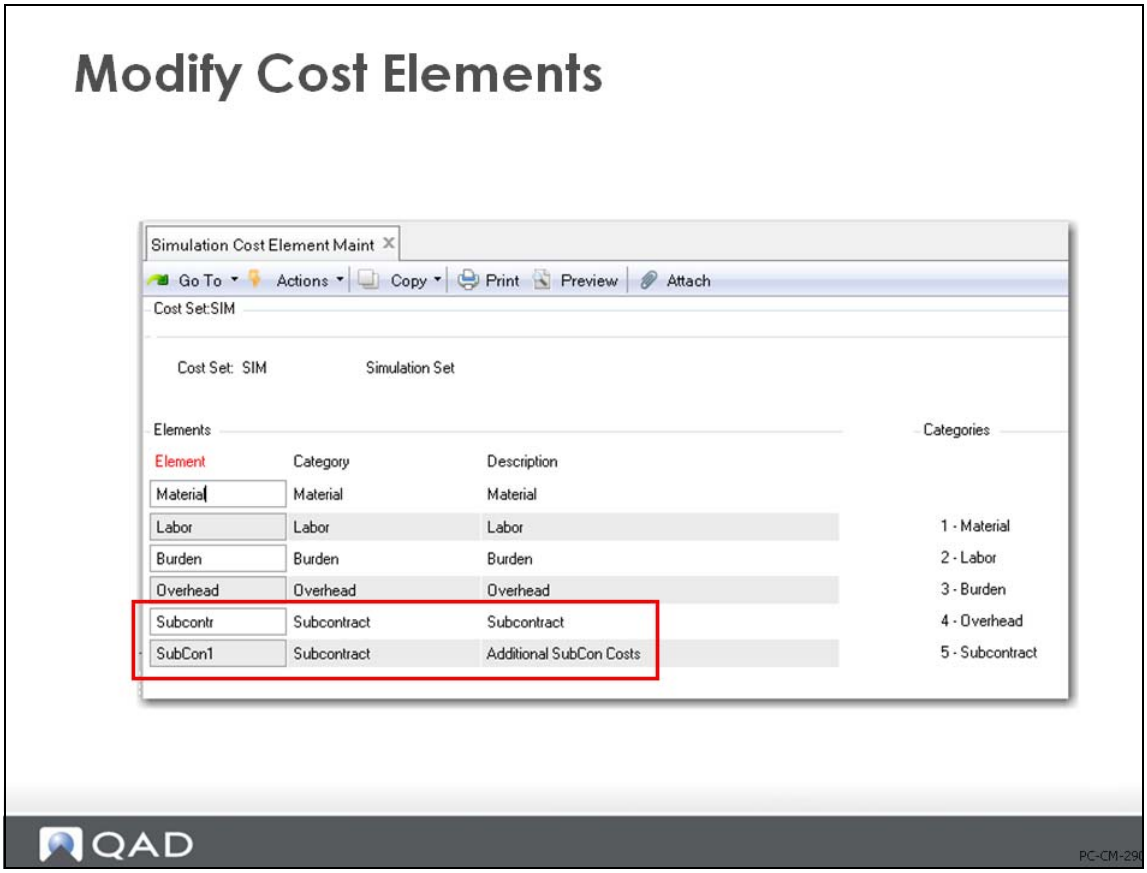
Define Elements



Use Simulation Cost Element Maintenance (30.13.1).

This works like Cost Element Maintenance (30.17.1). It starts with the five standard cost elements and allows you to add more.

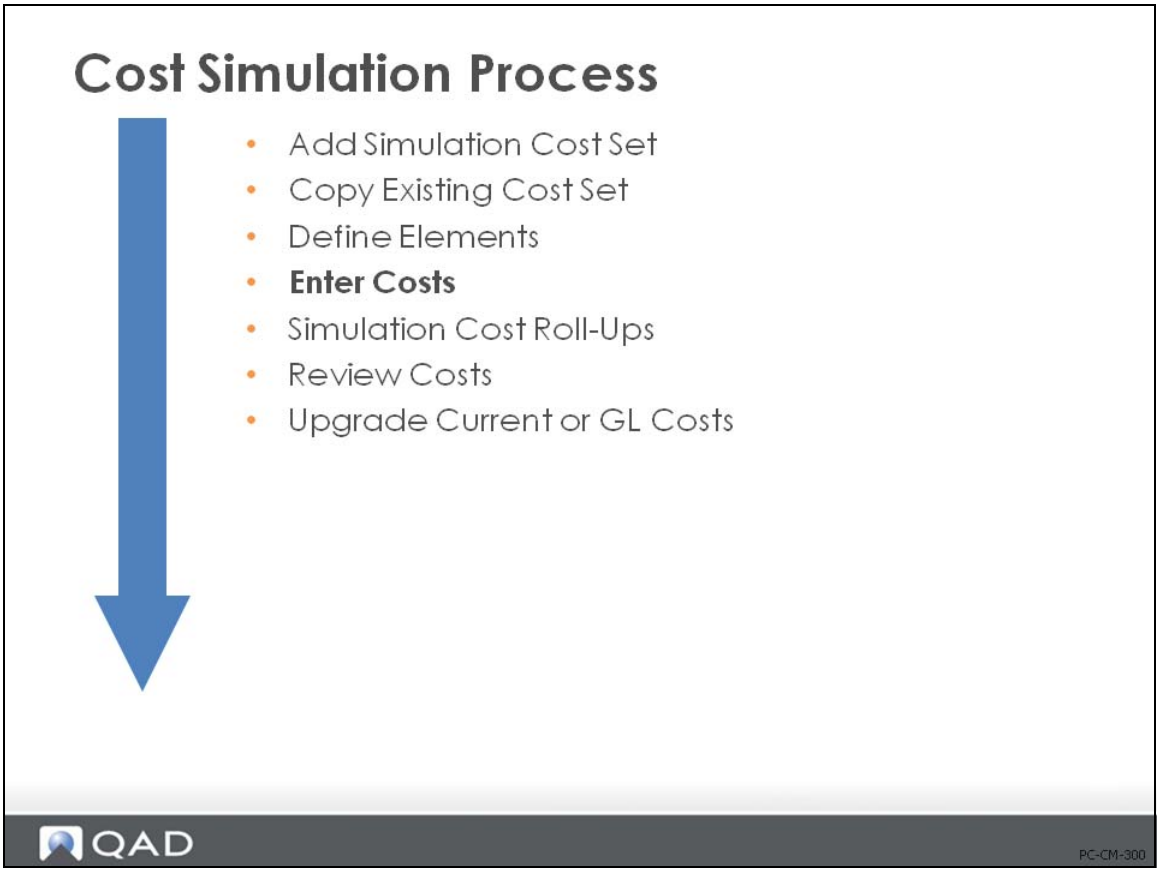
Modify Cost Elements



In the simulation process, you can split subcontract or overhead into more than one sub-element. For example, you can divide subcontract cost into two elements—material and labor cost—for which costs can be added and maintained separately. You can do this by using Simulation Cost Element Maintenance (30.13.1).

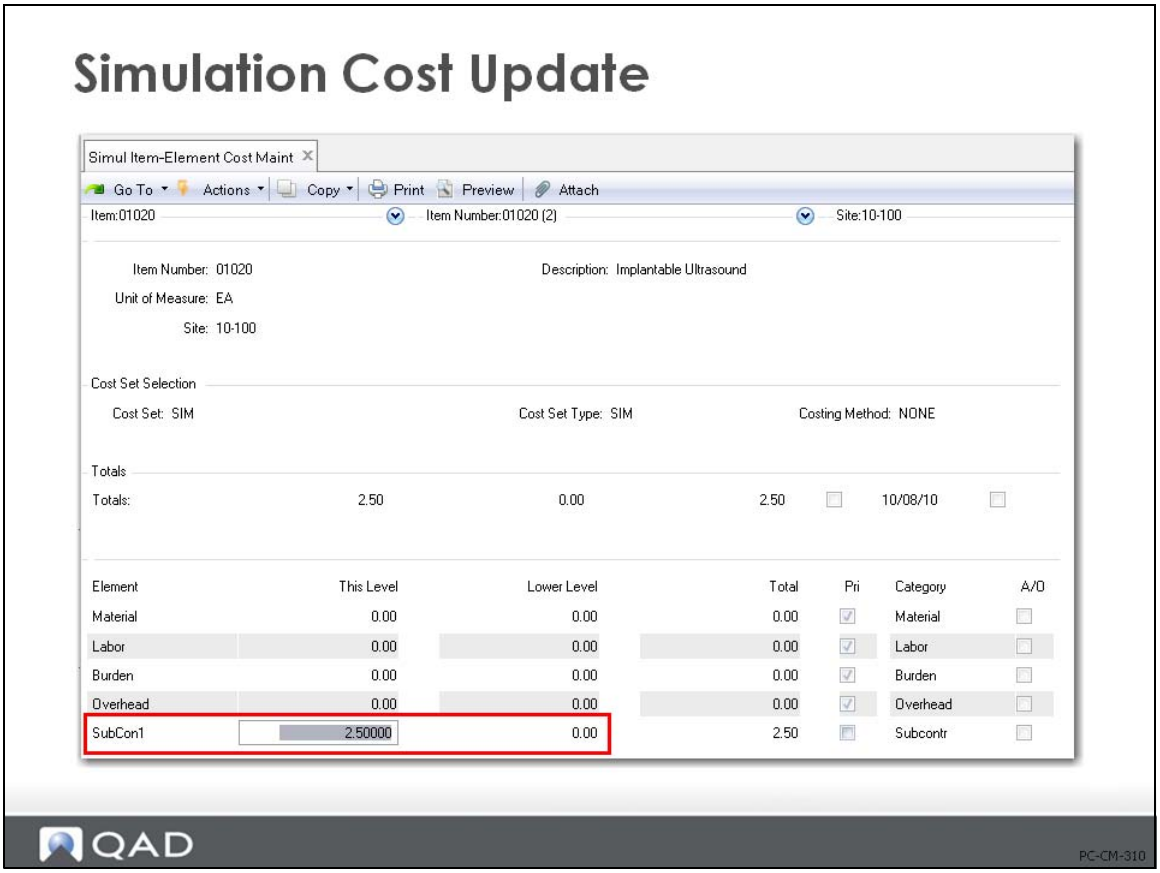
Note The cost of any sub-elements will be added to existing direct material cost, so you will first want to zero out any existing material cost using Simul Item-Element Cost Maintenance (30.15.5).

Enter Costs



- To enter costs manually, use Simul Item-Element Cost Maintenance (30.13.5), Simul Subcontract Cost Maintenance (30.13.10), Simul Work Center Rate Maintenance (30.13.13)
- To let the system calculate costs, use Simul Item-Element Cost Update (30.13.8), Simul Work Center Rate Update (30.13.16)
- To copy costs from another source, use Simul Item-Element Cost Copy (30.13.9), Cost Set Copy to Cost Set (30.3), Item/Routing to Simul Copy (30.13.23)

Enter Costs Manually

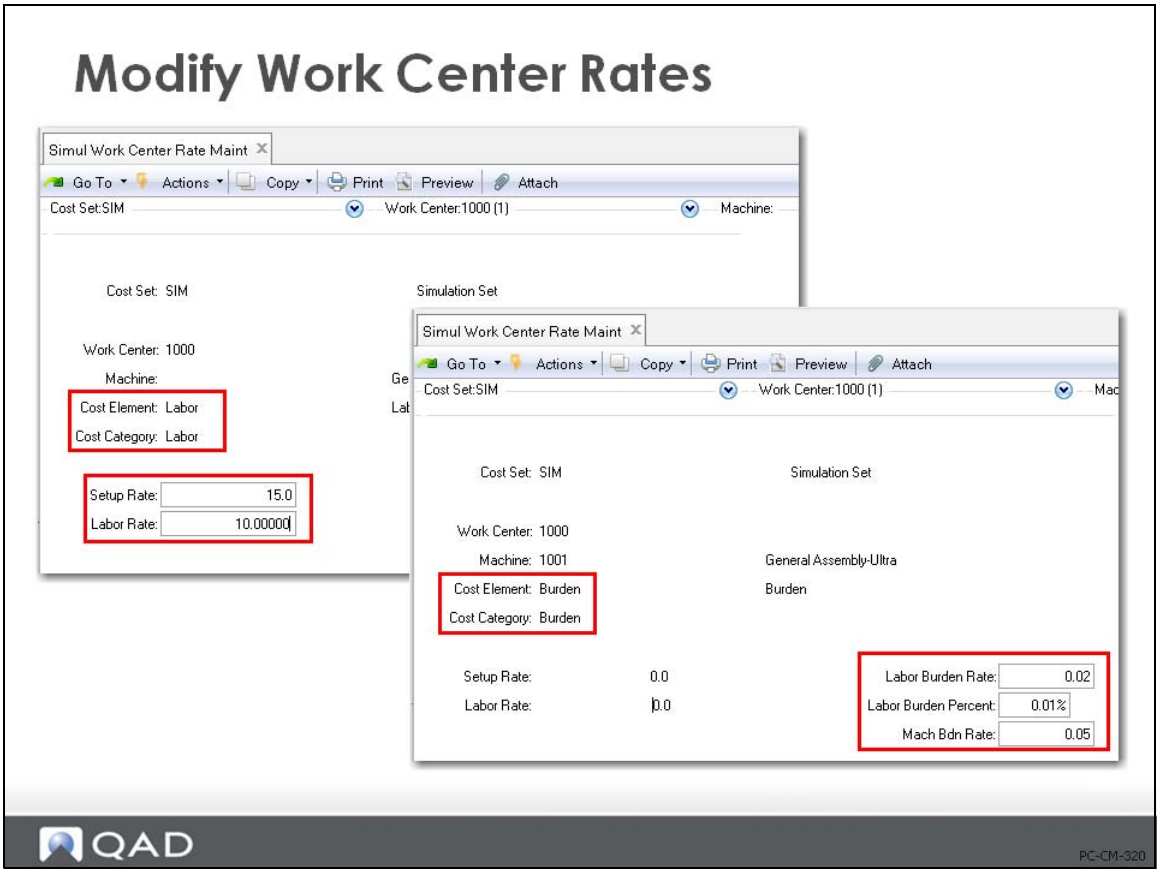


Once a simulation cost set has been initialized, usually you want to make changes. The cost of a certain commodity can have changed (for example, gold prices might have gone up 25%), a new union contract might have increased labor rates, or you might be planning a change in overhead rates. The whole idea of cost simulation is to give you a vehicle so that you can test the effects of such changes without affecting your current or GL costs.

With QAD Enterprise Applications's simulation functions, you can do the following.

- Enter the direct item costs in Simulation Item-Element Cost Maintenance (30.13.5). This looks the same as Item-Site Cost Maintenance (1.4.18), but it only lets you enter costs for SIM-type cost sets.
- Enter work center rates in Simulation Work Center Rate Maintenance (30.13.13)
- Enter subcontract costs in Simulation Subcontract Cost Maintenance (30.13.10)

Modify Work Center Rates



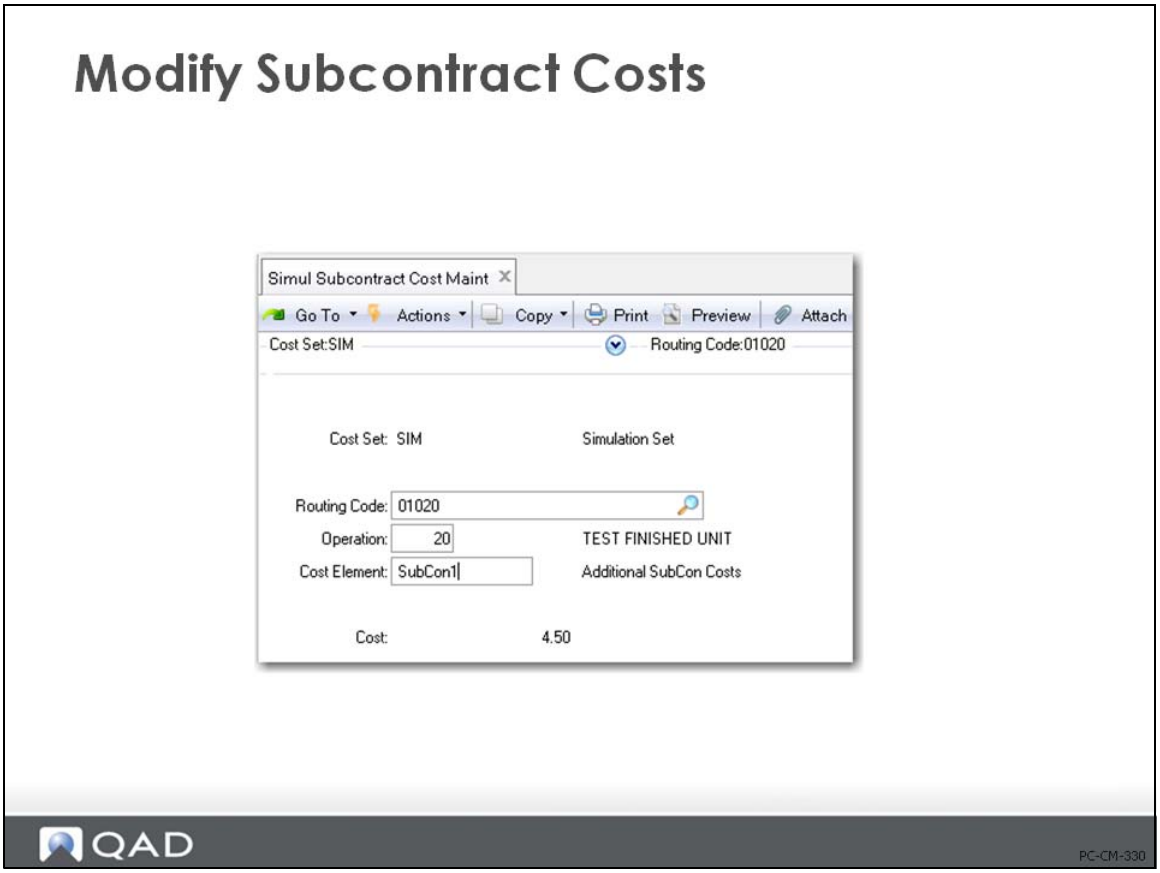
Because labor or burden often make up a significant portion of total cost, it can be useful to simulate changes in these costs.

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.

Next, use Simulation 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. Specify the cost elements of Labor and Burden to access the respective fields of the Simulation Work Center record. (As you will see in “Let the System Calculate Costs” on page 47 you can also let the system calculate and update the rates.)

- All work center costs are associated with cost elements labor and burden. If you want to split labor or burden into more than one cost element, do this manually by using Simulation Item-Element Cost Maintenance (30.13.5).
- For each work center and machine, enter hourly rates for setup and labor, as well as hourly rates for labor and/or machine burden

Modify Subcontract Costs

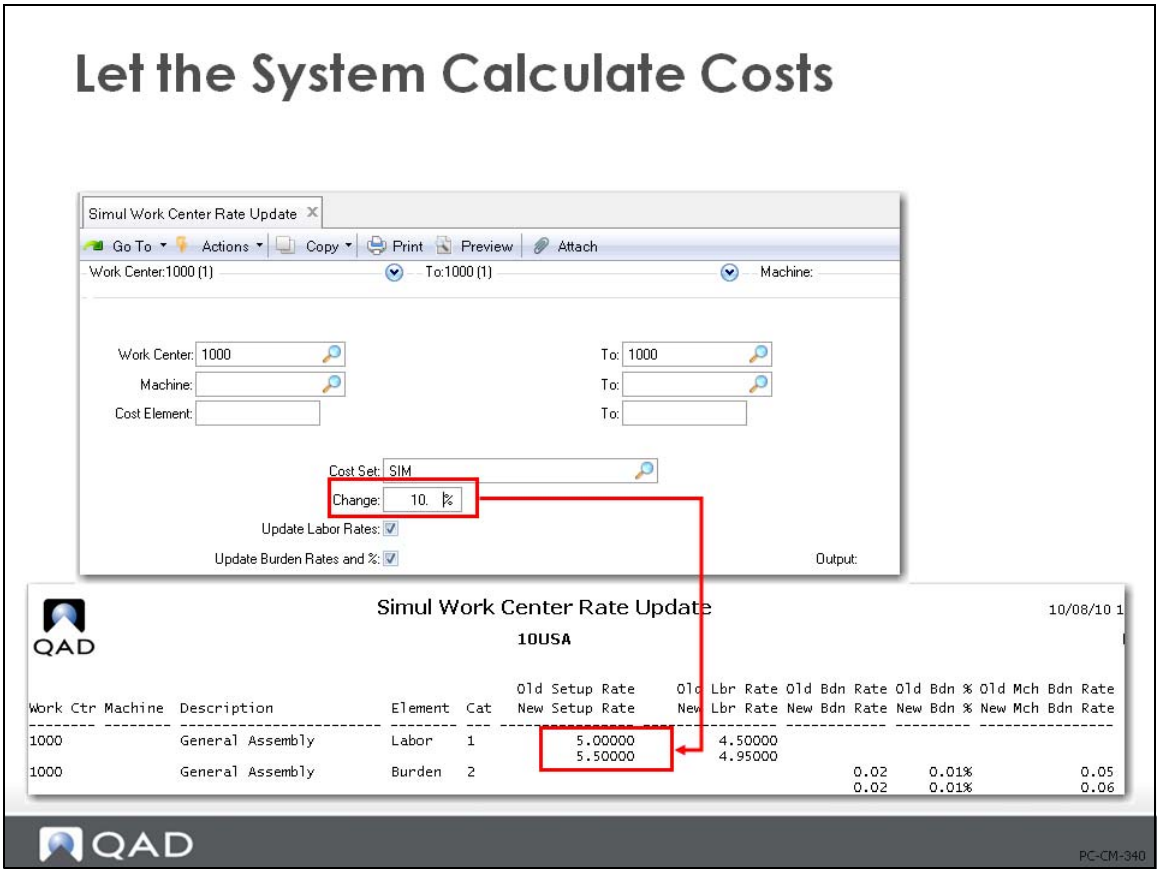


Companies that subcontract some of their production might want to compare simulated effects of changes in their subcontract costs to simulated costs of doing the work in-house instead. The Simulation Subcontract Cost Maintenance (30.13.10) lets you run such simulations.

All subcontract costs are associated with cost element Subcontr. To split Subcontract into more than one cost element—for example, fixed and variable costs—do this manually using Simulation Subcontract Cost Maintenance.

Here, you only specify the routing code, operation number, subcontract cost element, and amount. All of the other routing information (for example, setup and run times) comes from the standard routing.

Let the System Calculate Costs

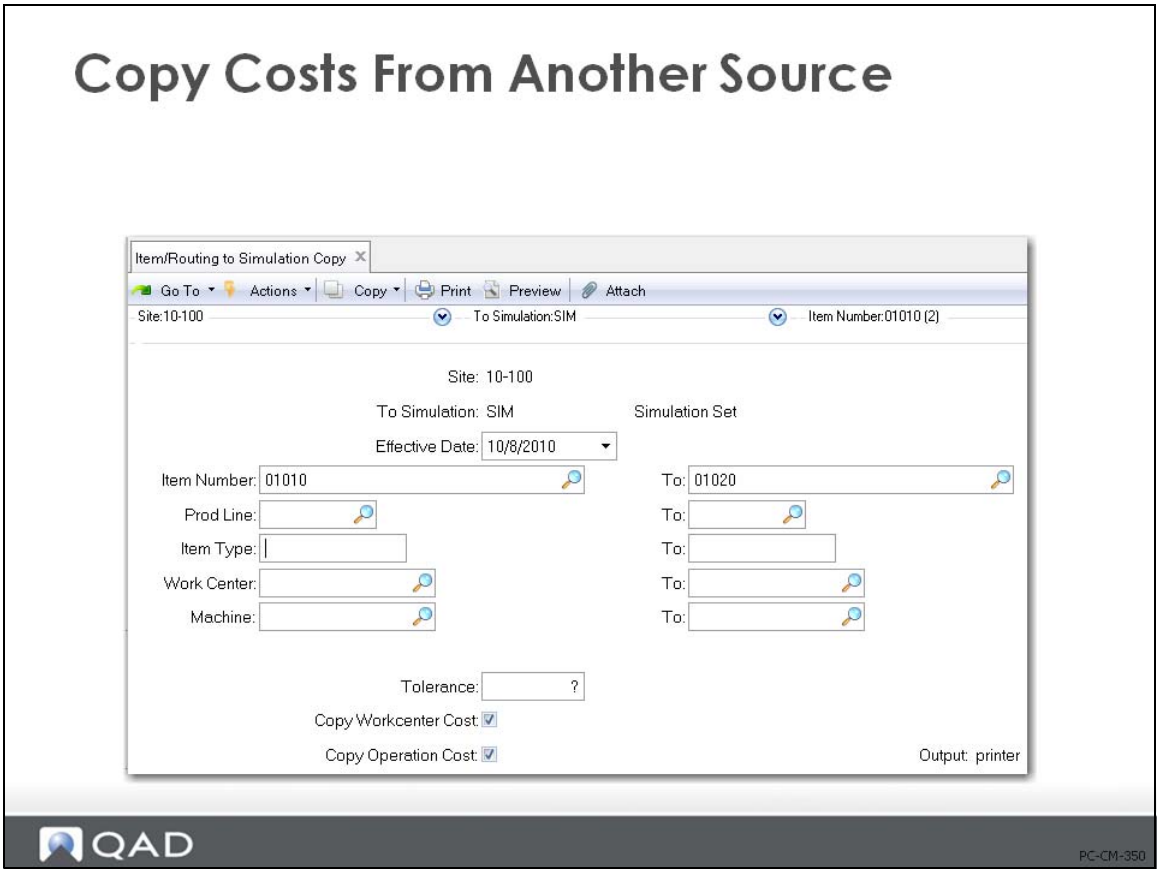


As we have seen, all costs can be changed manually, but additionally, update functions let you adjust costs up or down by a given percentage.

- Simulation Work Center Rate Update (30.13.16) updates work center labor and/or burden rates (shown in figure above). You can update all or some work centers and machines. Perhaps labor rates in one work center have gone down by 5% (enter a minus sign before the percentage change, -5%) or all costs have gone up by 10%. The cost update can quickly make the change.
- Simulation Item-Element Cost Update (30.13.8) lets you adjust the cost of one or more cost elements. This can be done for all items in a cost set, or you can select them by item number, product line, and item type. For example, you can increase Freight element costs for items of type FGI (finished goods), or decrease Duty by 100% on all intra-EC sourced items, increase Factory Overhead by 5% on all Fabricated items, or increase the purchased material cost of just one item.

Once changed, these are the rates used for simulation cost calculations.

Copy Costs from Another Source

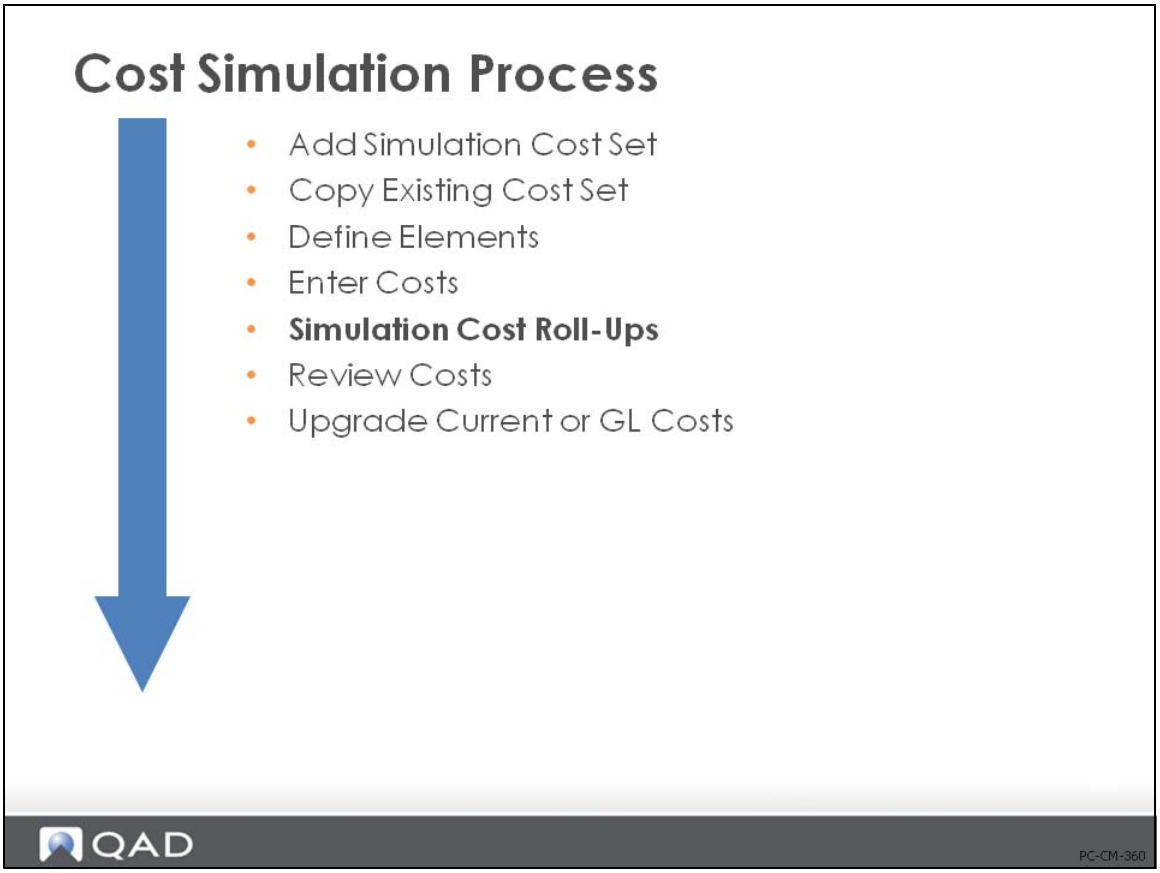


As you have already seen, you can use Cost Set Copy to Cost Set (30.3) to copy item costs from a GL or current cost set to a simulation (this function is likely to be password controlled).

You can also use the following copy functions.

- Simulation Copy to Simulation Copy (30.13.21) allows new simulations to be based on old ones. To establish a new simulation, create it in Cost Set Maintenance (30.1). Then copy the data from an existing simulation to the new one as a starting point. Item, work center, and operation (subcontract) costs can all be copied.
- Use Simulation Item-Element Cost Copy (30.13.9) to copy item costs from one simulation to another. This transaction provides more selection criteria for item costs.
- Use Item/Routing to Simulation Copy (30.13.23) to copy work center labor and burden rates, and subcontract costs to the simulation from the production data.

Simulation Cost Roll-Ups

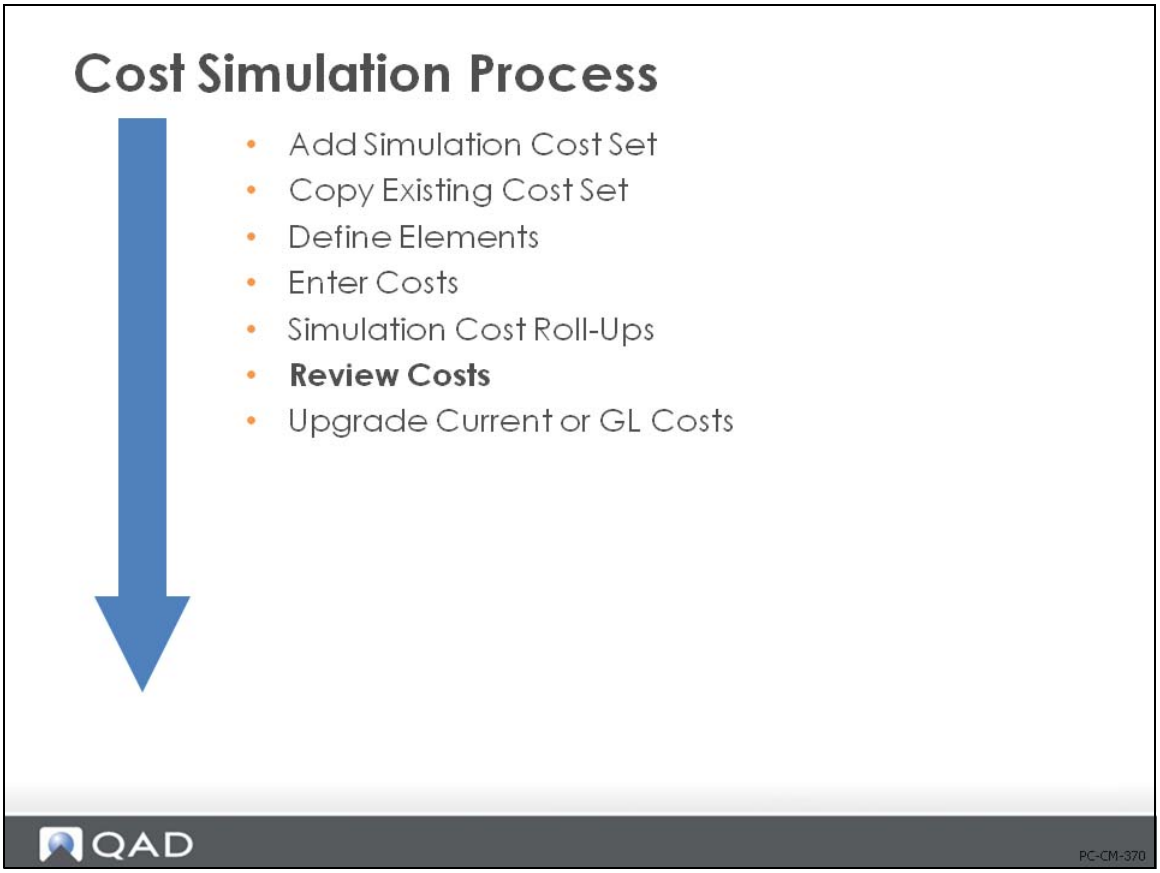


Use Simulation Cost Roll-Up (30.13.18) and Simulation Structure Cost Roll-Up (30.13.19).

Once all of the simulation costs have been established, roll-up functions are used to calculate total item cost: this-level plus lower-level costs. The calculations are exactly the same as in the regular Product Structure and Routing Cost Roll-Up functions. The only difference is that you cannot process current or GL cost sets in the simulation roll-up functions.

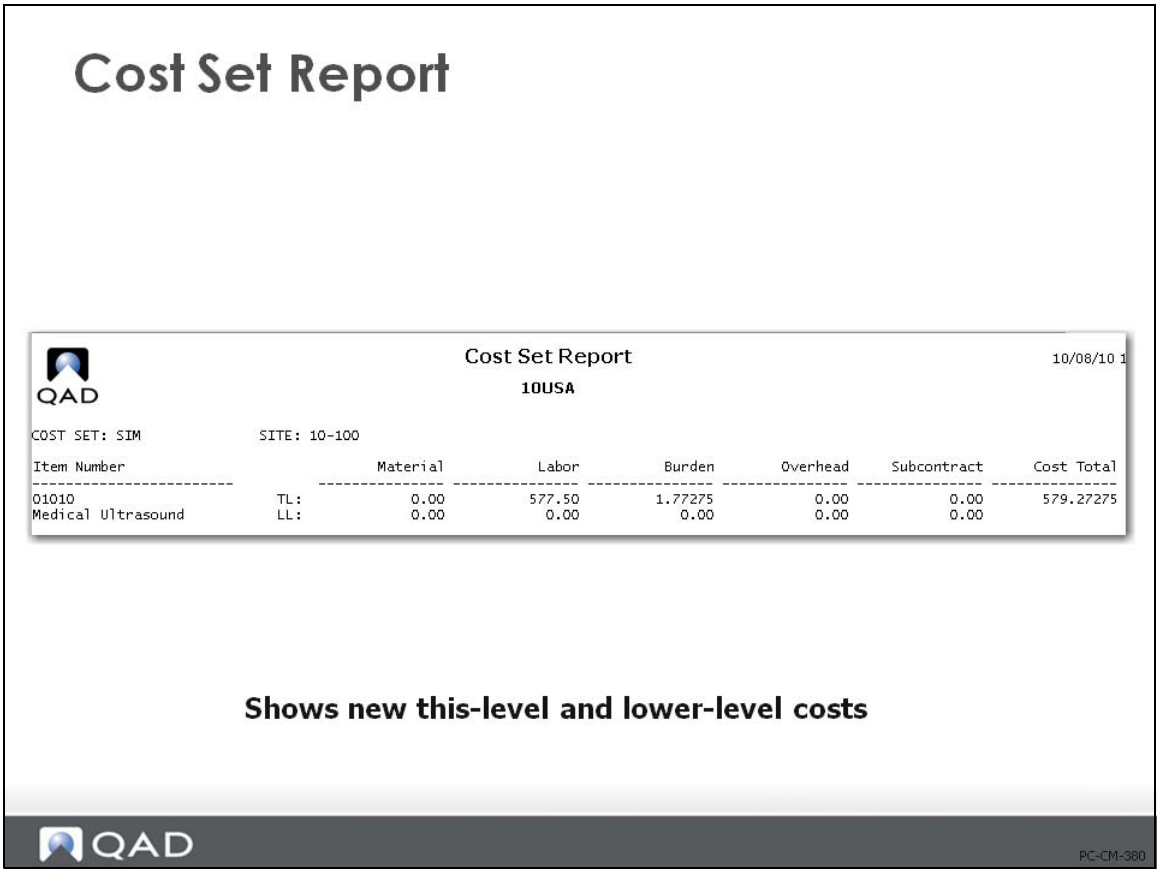
Similar to regular cost roll-up functions, you should calculate manufacturing costs prior to calculating component costs, which means that you should run the Simulation (Routing) Cost Roll-Up (30.13.18) prior to running the Simulation Structure Cost Roll-Up (30.13.19).

Review Costs



Use Cost Set Report (30.21) and Cost Set Comparative Report (30.22) to review costs.

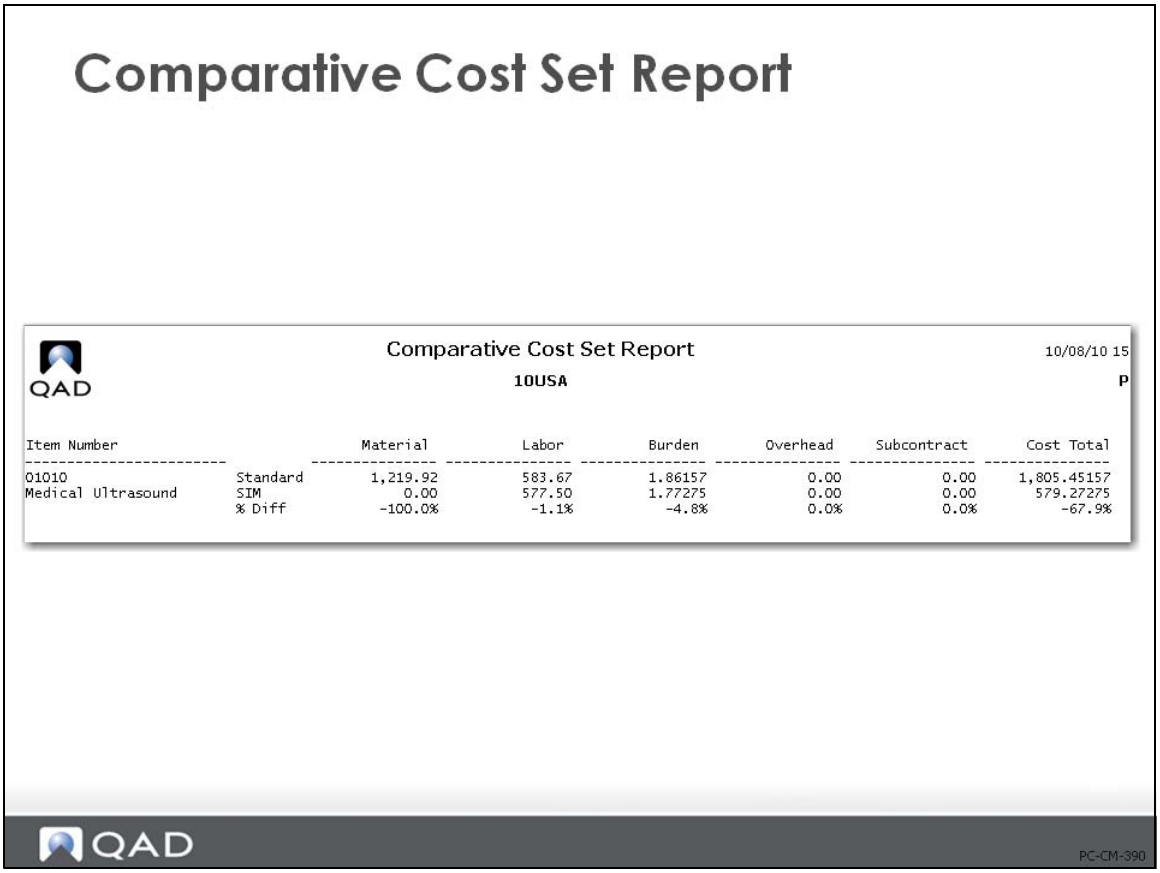
Cost Set Report



Simulated costs can be reviewed using any of the standard reports and inquiries. In particular, you can use the following reports.

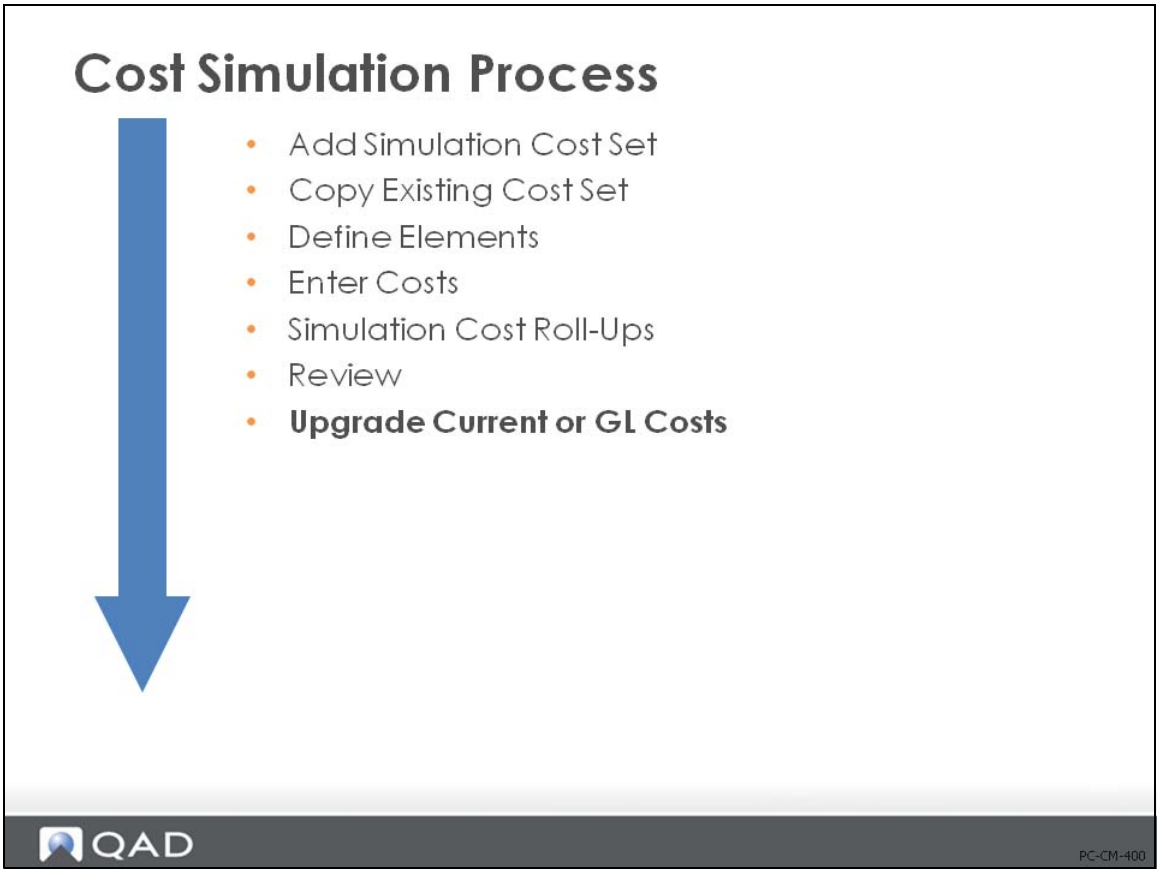
- Cost Set Report (30.21) (see figure above)
- Comparative Cost Set Report (30.22) (see next page)

Comparative Cost Set Report



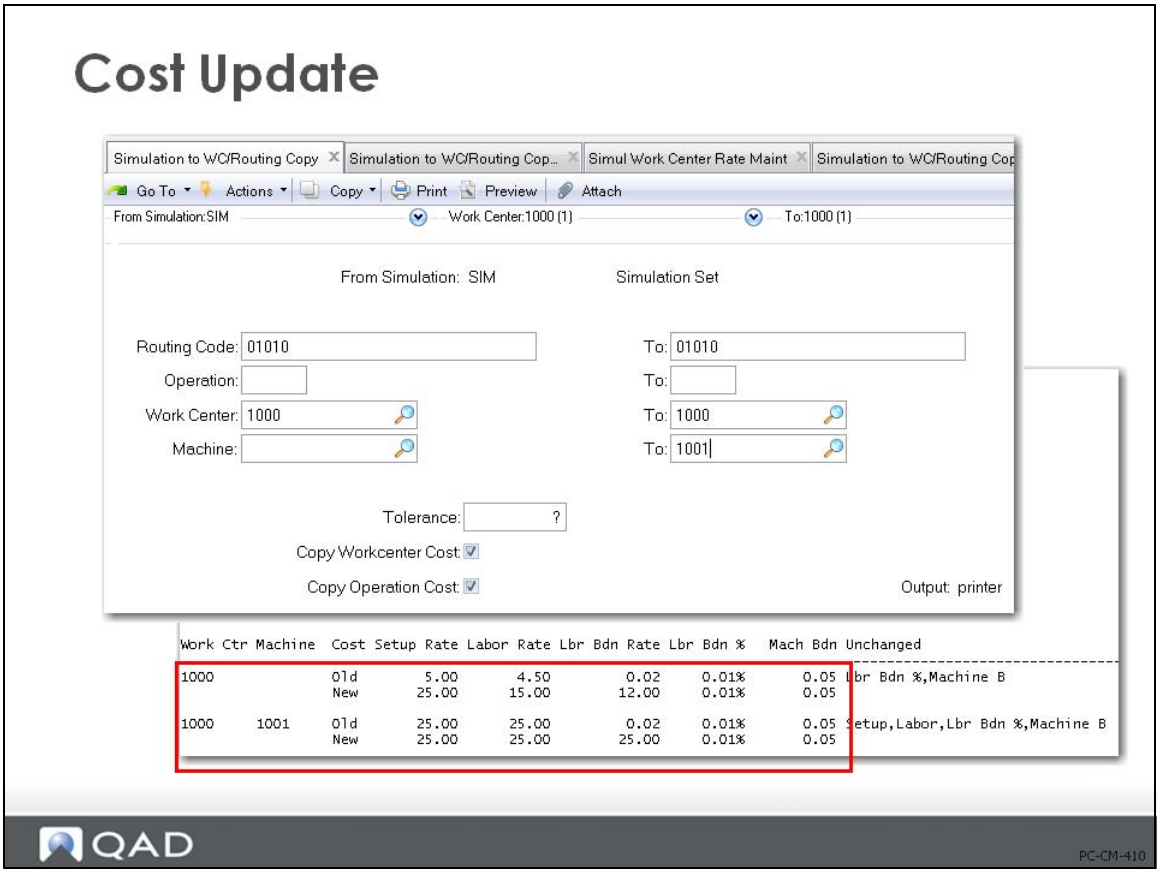
After you have made changes to item costs, rates, or routings in the SIM cost set, you can quickly compare that cost set to the GL and Current cost sets by using Comparative Cost Set Report (30.22).

Update Current or GL Costs



Use Simulation to WC/Routing Copy (30.13.22) and Cost Set Copy to Cost Set (30.3).

Copy Simulations to Items and Sites



You can use the simulated cost to update current or GL costs (simulated cost sets cannot be used directly as current or GL costs).

Copy Work Center and Subcontract Costs to Production Database

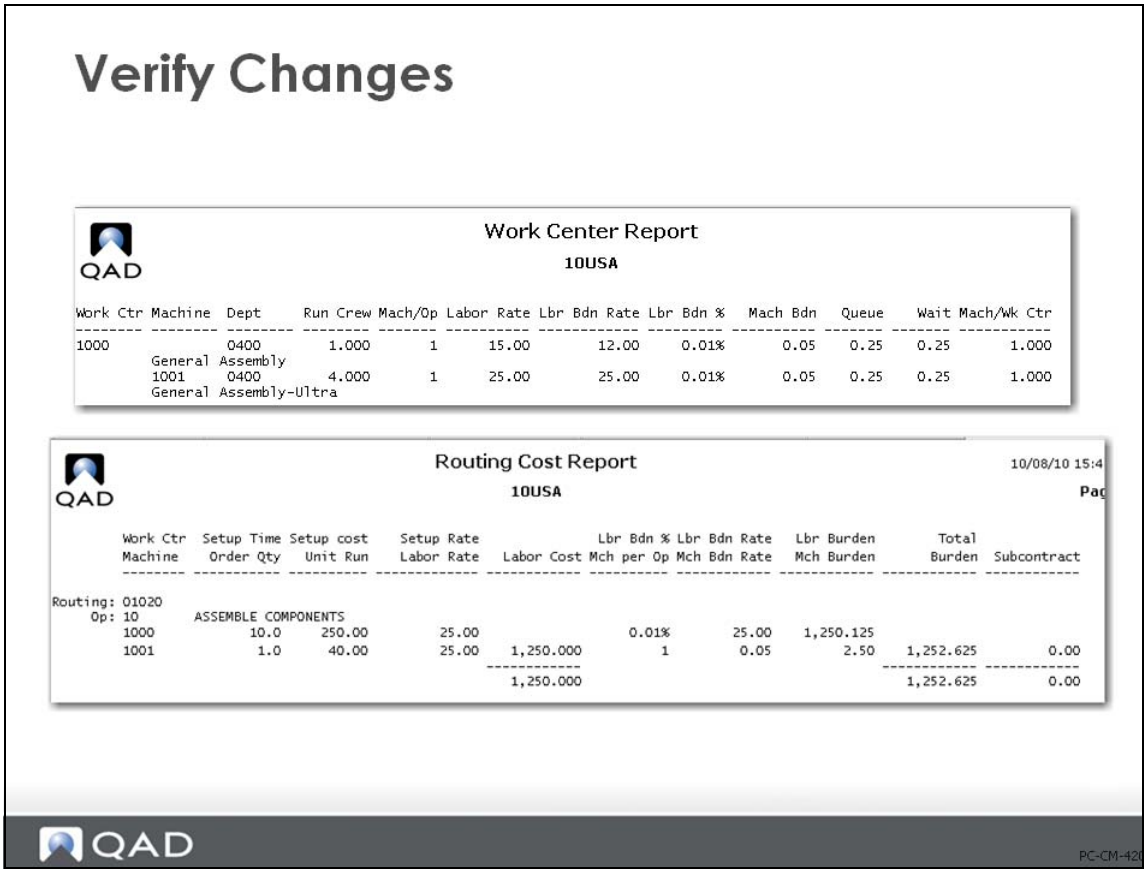
Use Simulation to WC/Routing Copy (30.13.22) to copy the work center and subcontract costs to the production database. The program copies the work center setup rate, labor rate, burden rate, machine burden rate, and labor burden percentage to user-specified work center records. It also copies subcontract costs to the specified routings. You can run the Work Center Report (14.7) and the Routing Cost Report (14.13.14) to verify that expected changes have been made.

Copy Simulation Costs to GL Cost Set

Use Cost Set Copy to Cost Set (30.3) to copy the simulation data into another GL cost set. This ensures that you maintain a copy of your previous standard costs. Then use Cost Set to Site Assignment (30.9) to replace the standard cost set at that site with the new GL cost set. This will update the inventory value if the GL cost set is updated. All changes will cause an update to Inventory with the offset to the Cost Revalue account of the item. Once the GL cost set is updated, run WIP Material Cost Revaluation (16.22) to update WIP and the work order bills for unissued material, Run Sales Order Revaluation if the Sales Gross Margin Report is used.

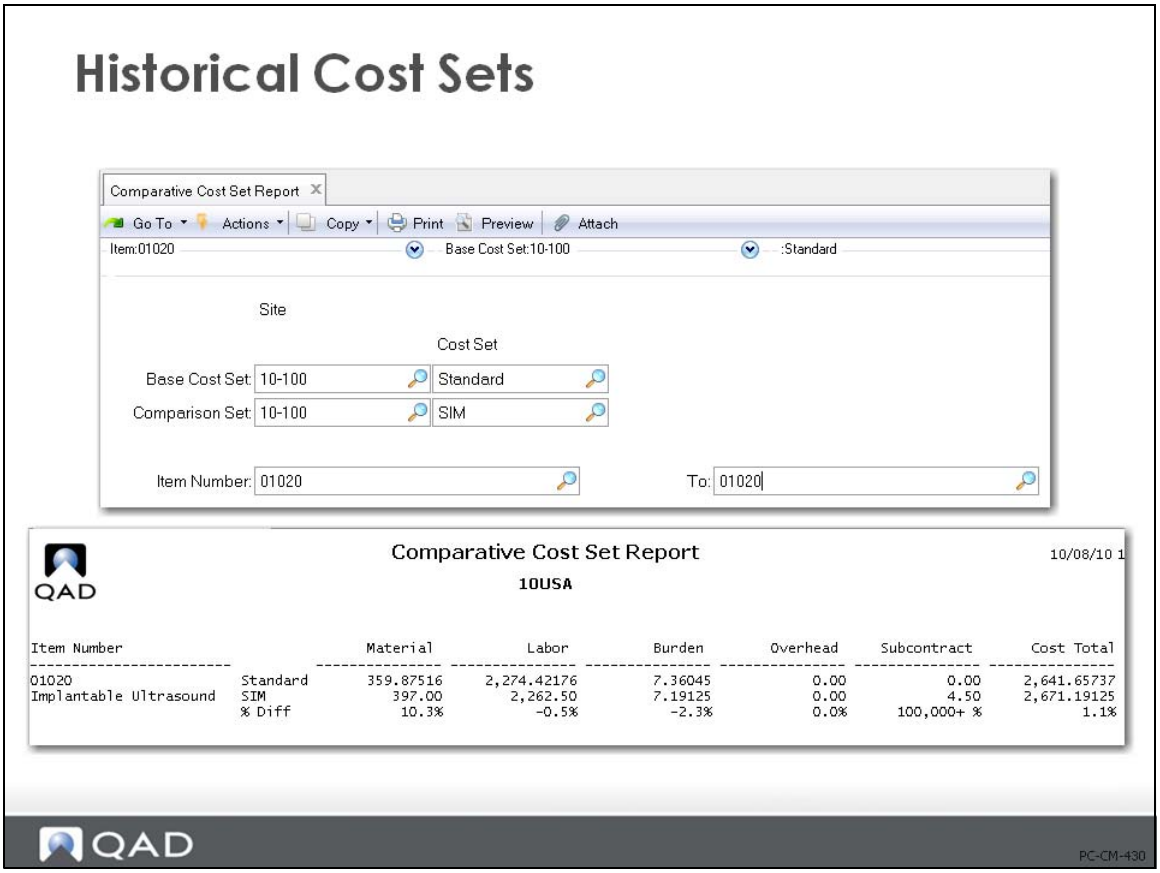
You can use either the Cost Set Report (30.21) or the Item Cost Report (1.5.6) to review the data. The Item Cost Report shows both the current and GL cost data for items.

Verify Changes



After moving simulation costs to the GL, use Work Center Cost Report (14.7) and Routing Cost Report (14.13.14) to verify that expected changes have occurred.

Historical Cost Sets



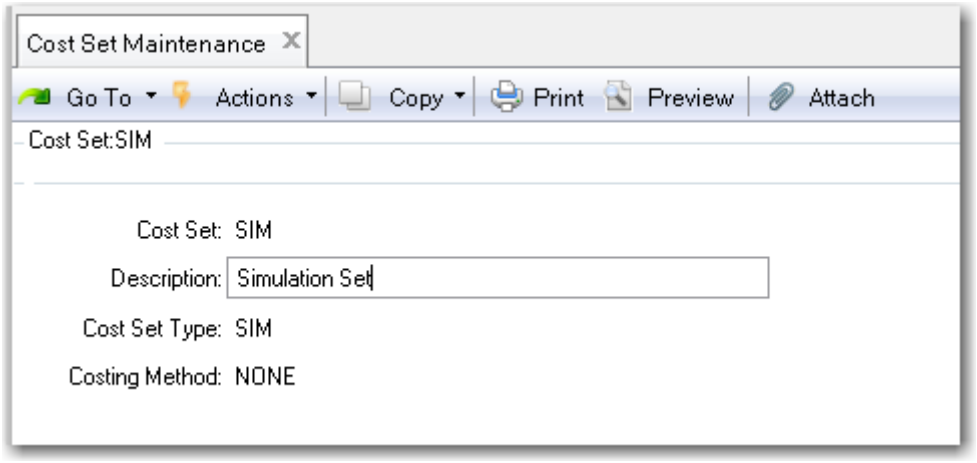
You can compare the active GL cost set with either simulated cost sets or previously active GL cost sets. For example, you can compare “Qtr 1/10” with “Qtr 2/10.” The system gives you the capability to retain an unlimited number of inactive cost sets and to make comparisons between them or between them and simulated cost sets.

For example, the figure above shows the screen for requesting a comparison between cost sets for the standard and a simulation cost set.

Exercise 2: Cost Simulation

In this exercise you will create a simulation cost set, add some data to it, manipulate the data, and copy it to a GL cost set as the new cost standard. This is a useful technique when developing costs for new items, or setting the next standard cost when there are significant changes in the cost structure.

1 Use Cost Set Maintenance (30.1) to create a new cost set, name it SIM, give it a type of SIM. The method will default to none, as shown here.



2 Use Cost Set Copy to Cost Set (30.3) to copy the costs from site 10-100 Current, to site 10-100 SIM. Clear the Pct Change Allowed field, leaving it with a question mark(?). Scroll down the report this creates to see the 50010, Acoustic Transducer. The transaction report should look like this.

QAD

Cost Set Copy to Cost Set 10/

10USA

Item Number Cost Total	UM	Material	Labor	Burden	Overhead	Subcontract
50010	EA current	61.51059	6.99412	0.10274	0.00	0.00
68.60744						
Acoustic Trandsuce	SIM	0.00	0.00	0.00	0.00	0.00
0.00						
	New Cost	61.51059	6.99412	0.10274	0.00	0.00
68.60744						
	% Change	100,000+ %	100,000+ %	100,000+ %	0.0%	0.0%
100,000+ %						
	Amt Chg	61.51059	6.99412	0.10274	0.00	0.00
68.60744						

Note There is no subcontract cost. Yet the route for the item shows operation 15 as a subcontract operation with a cost of 0.20 that has not been rolled up.

3 Use Simul Item-Element Cost Inquiry (30.13.6) to review the costs of the 50010 in the SIM cost set.

QAD

Simul Item-Element Cost Inquiry 10/11/10

Item Number: 50010 Description: Acoustic Trandsucer
Unit of Measure: EA
Site: 10-100
Cost Set: sim Cost Set Type: SIM Costing Method: NONE
Output: PAGE

		Totals		
Totals:	7.09685	80.02314	87.11999	10/11/10

Element	This Level	Lower Level	Total	Pri	Category	A/O
Material	0.00	64.59754	64.59754	Yes	Material	No
Labor	6.99412	15.20	22.19412	Yes	Labor	No
Burden	0.10274	0.2256	0.32834	Yes	Burden	No
Overhead	0.00	0.00	0.00	Yes	Overhead	No
Subcontr	0.00	0.00	0.00	Yes	Subcontr	No

4 Use (30.13.23) Item/Routing to Simulation Copy, to copy both the work center and the operation costs from site 10-100 to the SIM cost set. Put a ? in the tolerance field.

5 Use Simulation Subcontract Cost Report (30.13.12) to review subcontract costs for cost set SIM, item 50010.

Because you have copied the data from the routing and not from the standard cost data, you do see the 0.20 subcontract cost for operation 15.

QAD

Simul Subcontract Cost Report 10/11/10 1

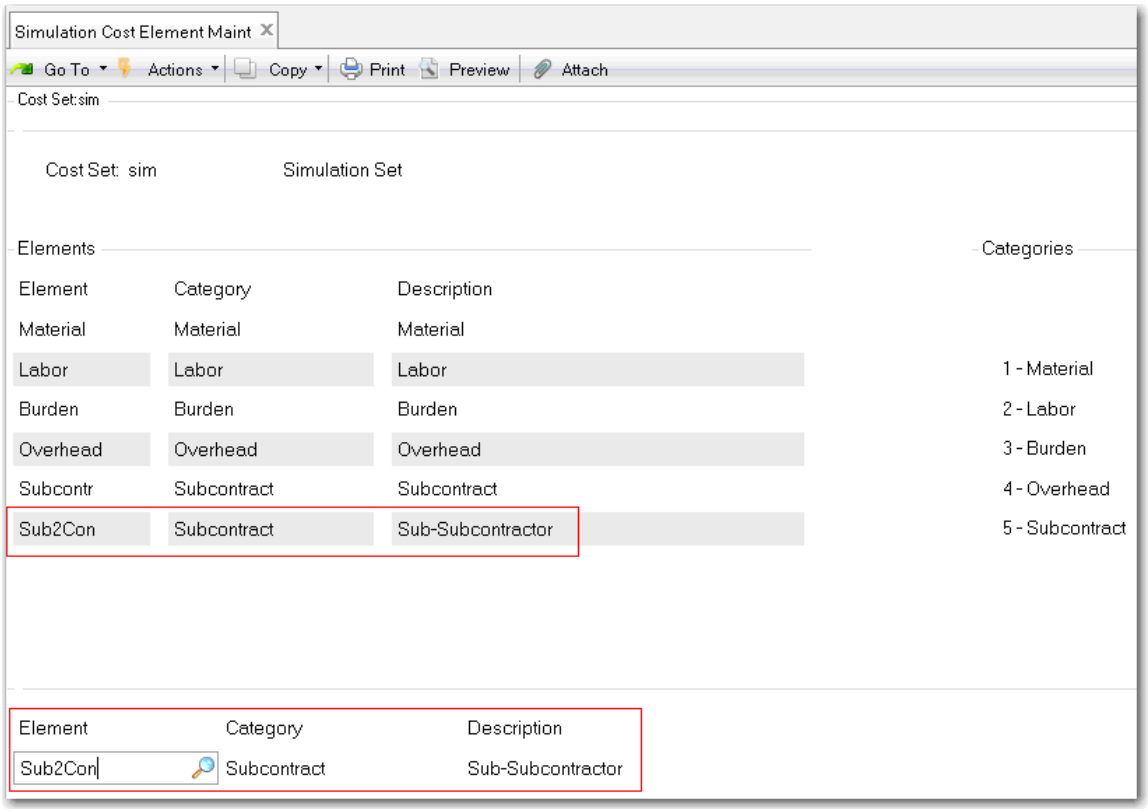
10USA

Cost Set	Routing Code	Operation	Element	Cost
SIM	50010	10	Subcontr	0.00
	50010	15	Subcontr	0.20
	50010	20	Subcontr	0.00

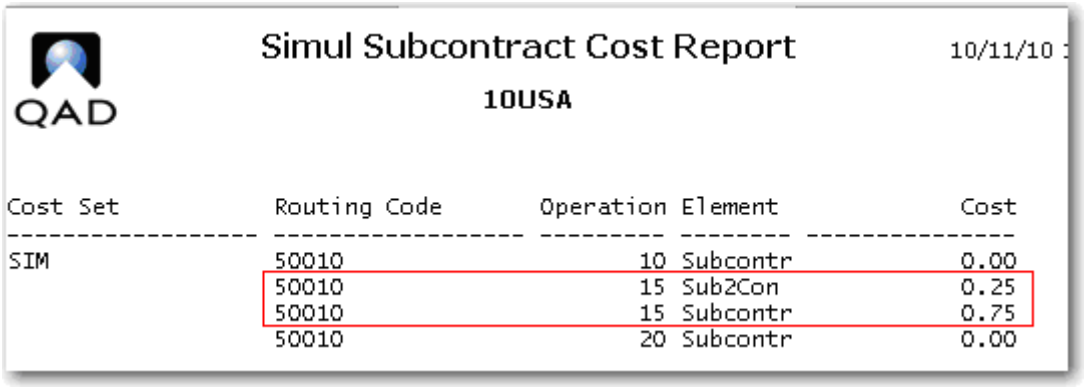
6 Your subcontractor has informed you that the cost of the operation is going up to 1.00 and that they are using a subcontractor to do some of the work. The sub-subcontractor is charging 0.25 for their part of the operation. You decide to track the two parts of the subcontract operation separately.

Use Simulation Cost Element Maintenance (30.13.1) to add a new cost element to record sub-subcontract costs. Perhaps label it Sub2Con. The process is the same as the earlier exercise on cost elements. When finished it should look like this.

Note you are adding this element only to the simulation cost set SIM.



7 Use Simul. Subcontract Cost Maint. (30.13.10) to add the new subcontract costs for the 50010 in cost set SIM. For operation 15, set the cost to 0.75. Click Next until back at the Routing Code field, tap to the Cost Element field and key in Sub2Con (or your name for this element) and make its cost 0.25. Review your work with Simul Subcontract Cost Report (30.13.12).



8 Review the work center rates for cost set SIM. You could use Simul Work Center Rate Browse (30.13.14) or Simul Work Center Rate Report (30.13.15). You are only concerned with WC 1000 and 1040.

QAD

Simul Work Center Rate Report

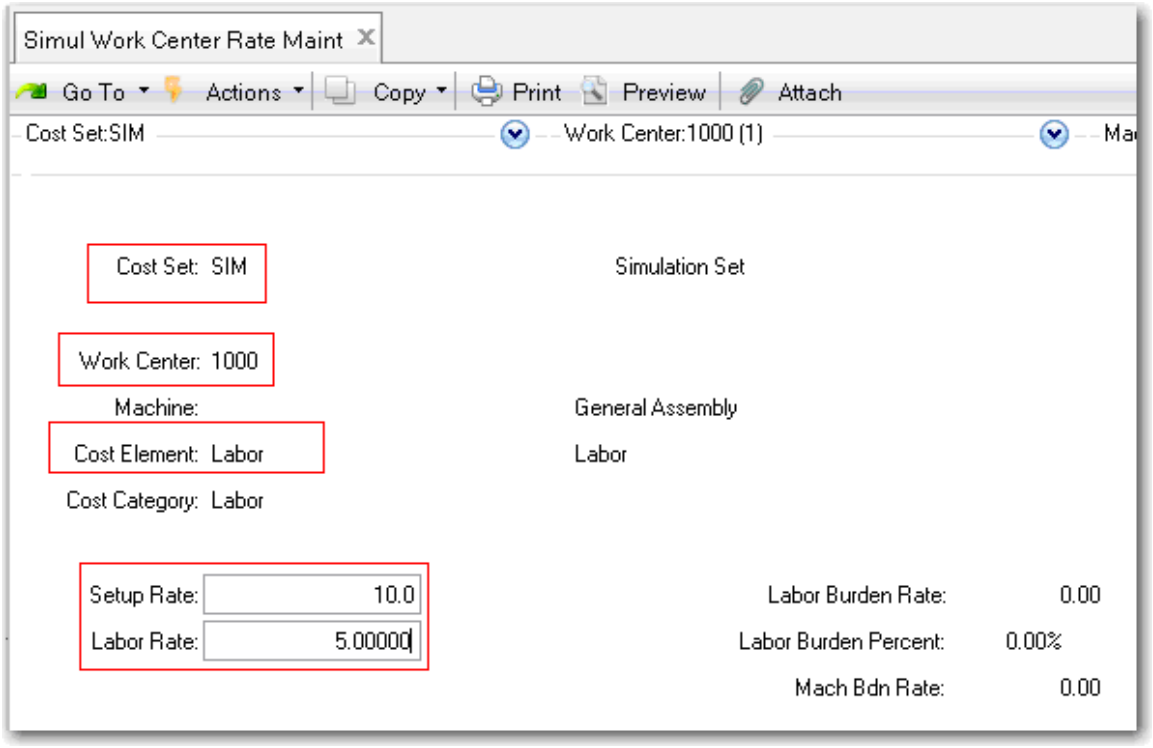
10USA

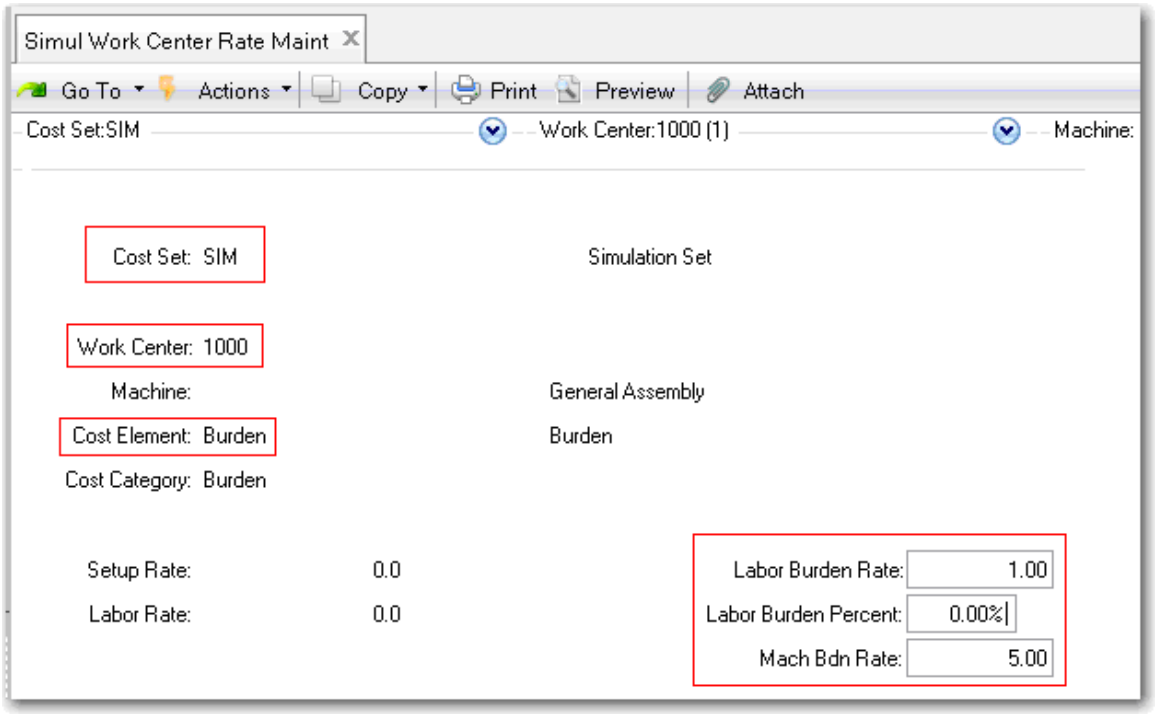
Cost Set	Work Center	Machine	Element	Setup Rate	Labor Rate	Lbr Bdn Rate	Lbr Bdn %	Mach Bdn	Category
SIM	1000		Labor	5.00000	4.50000				1 - Labor
	1000		Burden			0.02	0.01%	0.05	2 - Burden
	1000	1001	Labor	25.00000	25.00000				1 - Labor
	1000	1001	Burden			0.02	0.01%	0.05	2 - Burden
	1001		Labor	10.00000	10.00000				1 - Labor
	1001		Burden			0.00	100.00%	0.00	2 - Burden
	1010		Labor	5.00000	4.50000				1 - Labor
	1010		Burden			0.02	0.01%	0.05	2 - Burden
	1020		Labor	5.00000	4.50000				1 - Labor
	1020		Burden			0.02	0.01%	0.05	2 - Burden
	1030		Labor	5.00000	4.50000				1 - Labor
	1030		Burden			0.02	0.01%	0.05	2 - Burden
	1040		Labor	5.00000	4.50000				1 - Labor
	1040		Burden			0.02	0.01%	0.05	2 - Burden

9 Work center rates are increasing for both work center 1000 and 1040. Use (30.13.13) Simul Work Center Rate Maint. to update the Setup Rate to 10.00, and the Labor Rate to 5.00. Enter the screen again for the Element Burden and make the Labor Burden Rate 1.00 and the Machine Burden Rate 5.00. Make Labor Burden Percent 0.00.

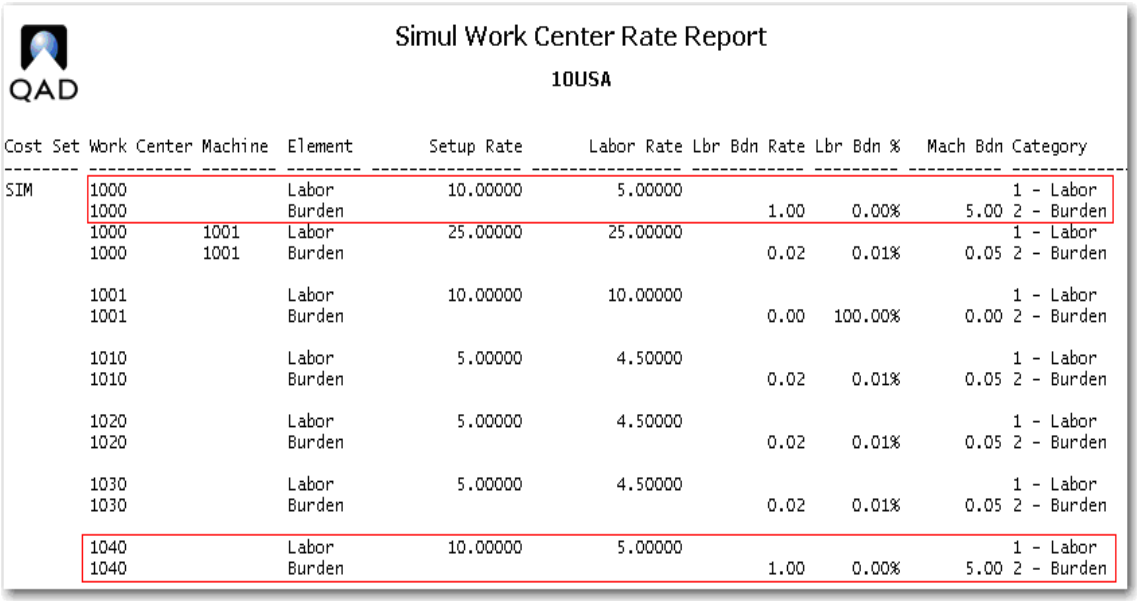
The rates are the same for both work centers. The screens below show what your setup should look like for both labor and burden at both work centers.

For the work center rate you could also use Simul Work Center Rate Update (30.13.16).





10 Review the work center rates for cost set SIM. You could use Simul Work Center Rate Report (30.13.15) for work centers 1000 - 1040. You are only concerned with WC 1000 and 1040. The rates have now been updated in the simulation cost set.



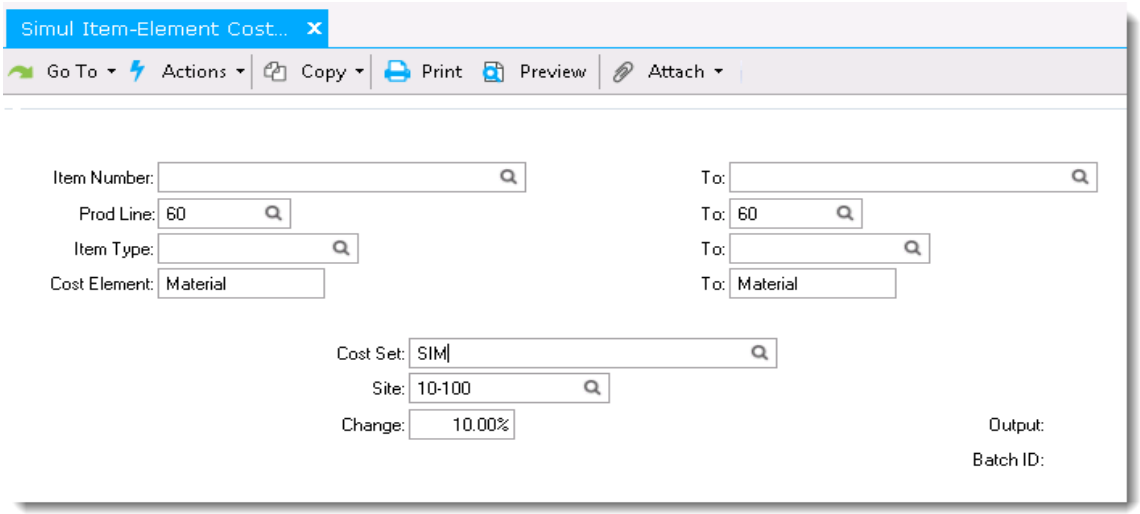
QAD

Simul Work Center Rate Report

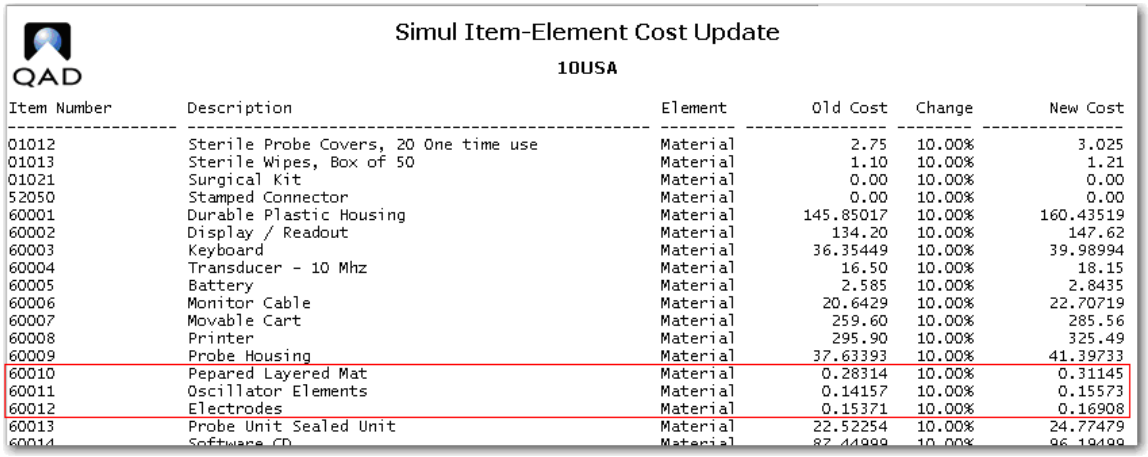
10USA

Cost Set	Work Center	Machine	Element	Setup Rate	Labor Rate	Lbr Bdn Rate	Lbr Bdn %	Mach Bdn	Category
SIM	1000		Labor	10.00000	5.00000				1 - Labor
	1000		Burden			1.00	0.00%	5.00	2 - Burden
	1000	1001	Labor	25.00000	25.00000				1 - Labor
	1000	1001	Burden			0.02	0.01%	0.05	2 - Burden
	1001		Labor	10.00000	10.00000				1 - Labor
	1001		Burden			0.00	100.00%	0.00	2 - Burden
	1010		Labor	5.00000	4.50000				1 - Labor
	1010		Burden			0.02	0.01%	0.05	2 - Burden
	1020		Labor	5.00000	4.50000				1 - Labor
	1020		Burden			0.02	0.01%	0.05	2 - Burden
	1030		Labor	5.00000	4.50000				1 - Labor
	1030		Burden			0.02	0.01%	0.05	2 - Burden
	1040		Labor	10.00000	5.00000				1 - Labor
	1040		Burden			1.00	0.00%	5.00	2 - Burden

11 Purchase material costs for product line 60, which includes most of the components of the 50010, are going up 10%. Use Simul Item-Element Cost Update (30.13.8) to increase the material cost of all items in product line 60, at site 10-100 cost set SIM.



Note the report this function generates, it shows by item number the old and the new costs.



Simul Item-Element Cost Update

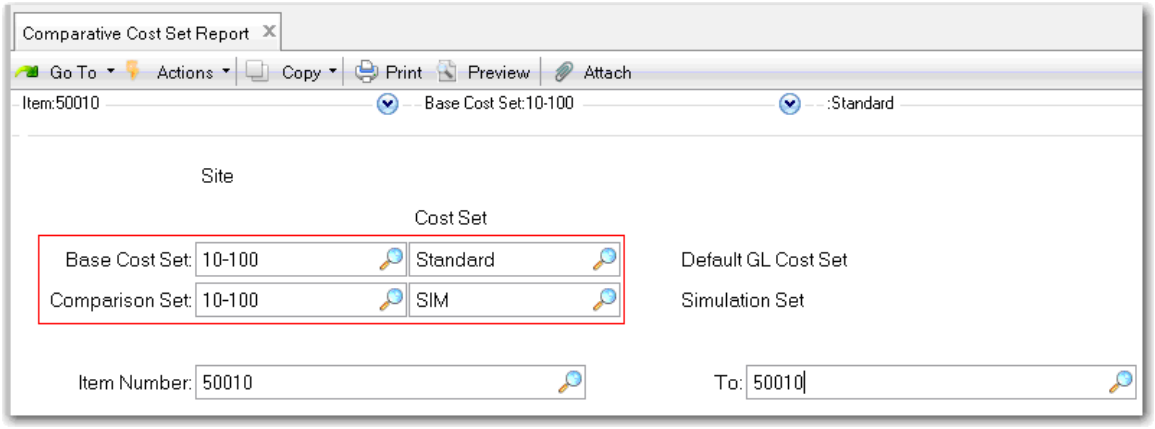
10USA

Item Number	Description	Element	Old Cost	Change	New Cost
01012	Sterile Probe Covers, 20 One time use	Material	2.75	10.00%	3.025
01013	Sterile Wipes, Box of 50	Material	1.10	10.00%	1.21
01021	Surgical Kit	Material	0.00	10.00%	0.00
52050	Stamped Connector	Material	0.00	10.00%	0.00
60001	Durable Plastic Housing	Material	145.85017	10.00%	160.43519
60002	Display / Readout	Material	134.20	10.00%	147.62
60003	Keyboard	Material	36.35449	10.00%	39.98994
60004	Transducer - 10 Mhz	Material	16.50	10.00%	18.15
60005	Battery	Material	2.585	10.00%	2.8435
60006	Monitor Cable	Material	20.6429	10.00%	22.70719
60007	Movable Cart	Material	259.60	10.00%	285.56
60008	Printer	Material	295.90	10.00%	325.49
60009	Probe Housing	Material	37.63393	10.00%	41.39733
60010	Pepared Layered Mat	Material	0.28314	10.00%	0.31145
60011	Oscillator Elements	Material	0.14157	10.00%	0.15573
60012	Electrodes	Material	0.15371	10.00%	0.16908
60013	Probe Unit Sealed Unit	Material	22.52254	10.00%	24.77479
60014	Software CD	Material	87.44999	10.00%	96.19499

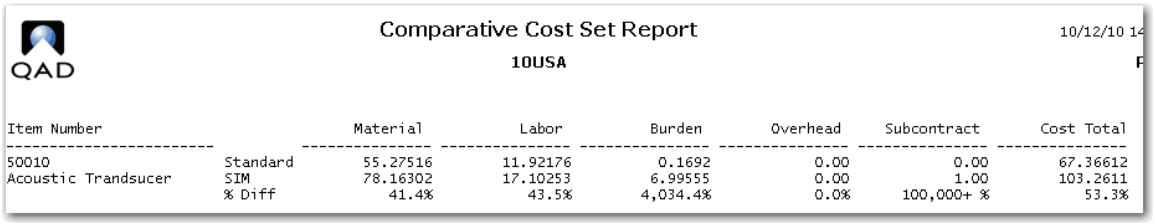
12 Use Simulation Cost Roll Up (30.13.18) for site 10-100 cost set SIM and item 50010. You should see the new labor, burden and subcontract costs.

13 Use Simulation Structure Cost Roll Up (30.13.19) for site 10-100 cost set SIM and item 50010. You should now see the new material costs.

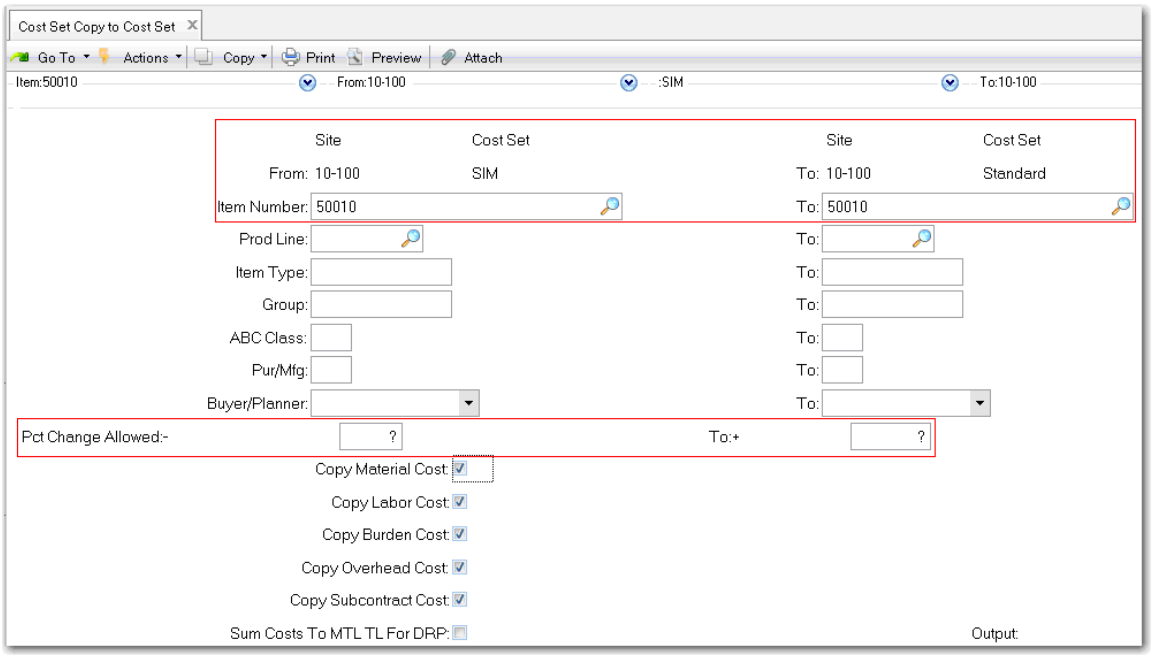
14 Use Comparative Cost Set Report. (30.22) to compare the simulation cost of the 50010 with the GL cost.



Your report should look something like this.



15 Use Cost Set Copy to Cost Set (30.3) to copy the simulated cost for the 50010 back to the GL standard cost for site 10-100.



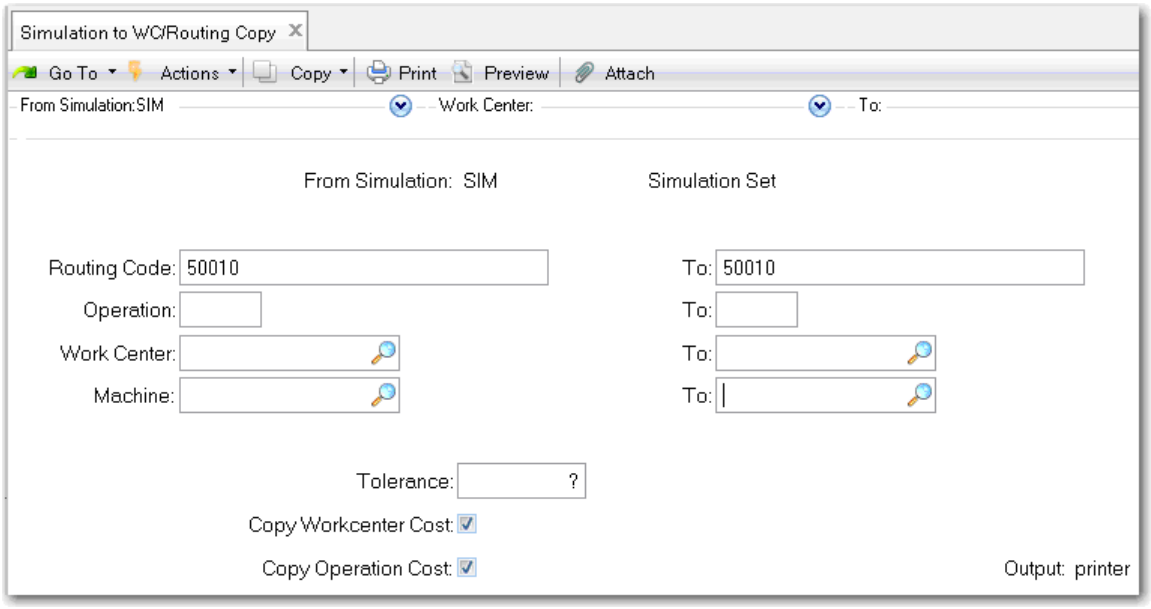
QAD

Cost Set Copy to Cost Set 10/

10USA

Item Number Cost Total	UM	Material	Labor	Burden	Overhead	Subcontract
50010 103.2611	EA SIM	78.16302	17.10253	6.99555	0.00	1.00
Acoustic Trandsuce 67.36612	Standard	55.27516	11.92176	0.1692	0.00	0.00
103.2611	New Cost	78.16302	17.10253	6.99555	0.00	1.00
53.3%	% Change	41.4%	43.5%	4,034.4%	0.0%	100,000+ %
35.89497	GL Amt Chg	22.88787	5.18076	6.82635	0.00	1.00

16 Use Simulation to WC/Routing Copy (30.13.22) to update the routing subcontract rates and the work center rates.



The report of the update function shows the old and new rates. Here you only see work center 1000, work center 1040 has also been updated to the same values.

QAD

Simulation to WC/Routing Copy

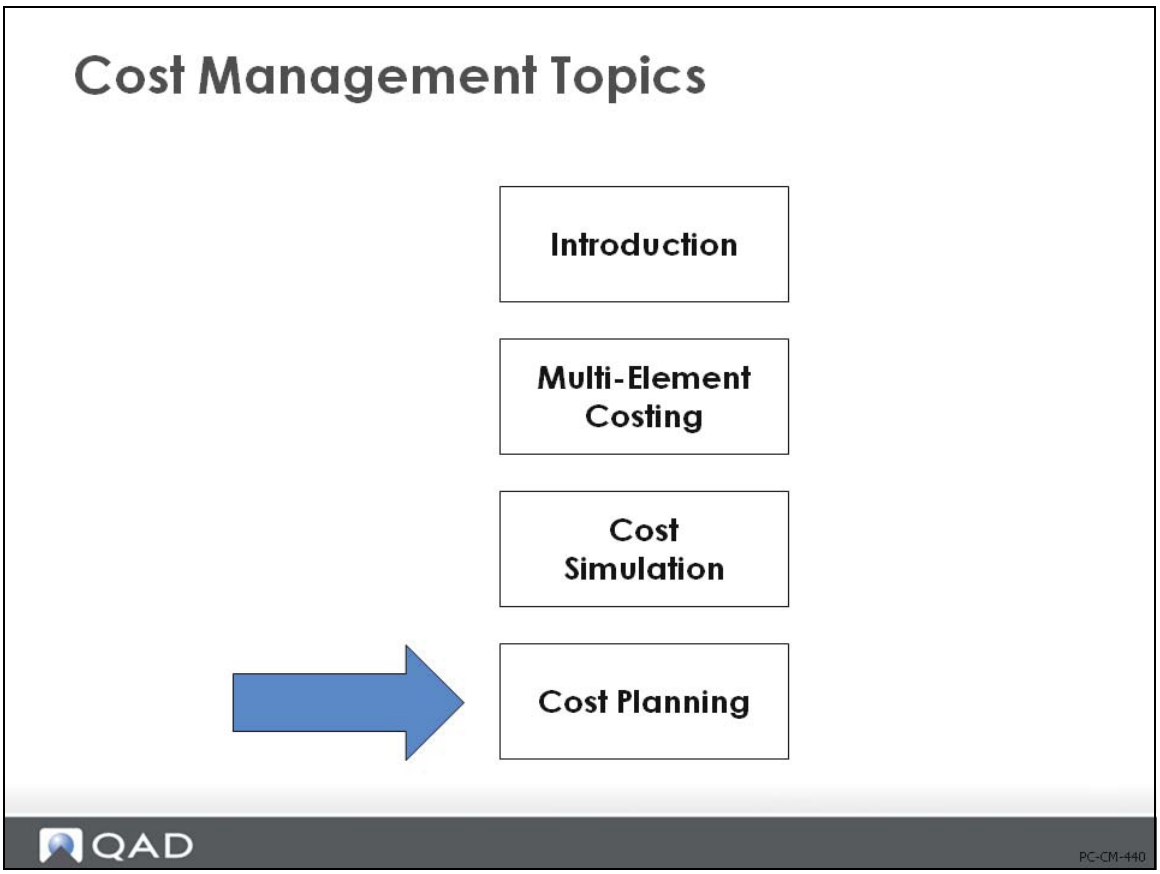
10USA

Cost Set	Element	Description	Category
SIM	Material	Material	Material
	Labor	Labor	Labor
	Burden	Burden	Burden
	Overhead	Overhead	Overhead
	Subcontr	Subcontract	Subcontract
	Sub2Con	Sub-Subcontract	Subcontract

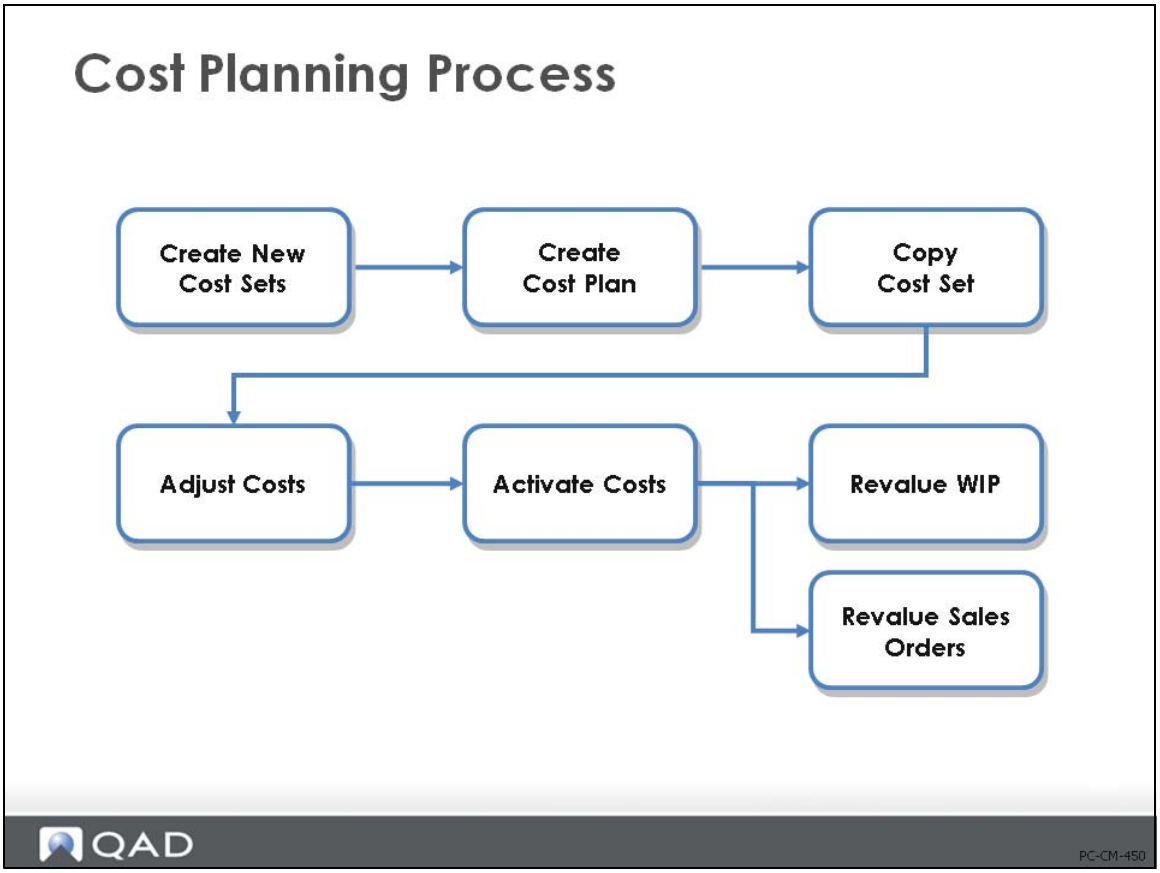
Tolerance: ?

Work Ctr	Machine	Cost	Setup Rate	Labor Rate	Lbr Bdn Rate	Lbr Bdn %	Mach Bdn	Unchanged
1000		Old	5.00	4.50	0.02	0.01%	0.05	
		New	10.00	5.00	1.00	0.00%	5.00	

Cost Planning



Introduction



Cost planning functions are used to phase in new costs. When you know ahead of time that costs are going to change, you can enter those costs now, but not activate them until the actual changeover date. This is useful in several situations.

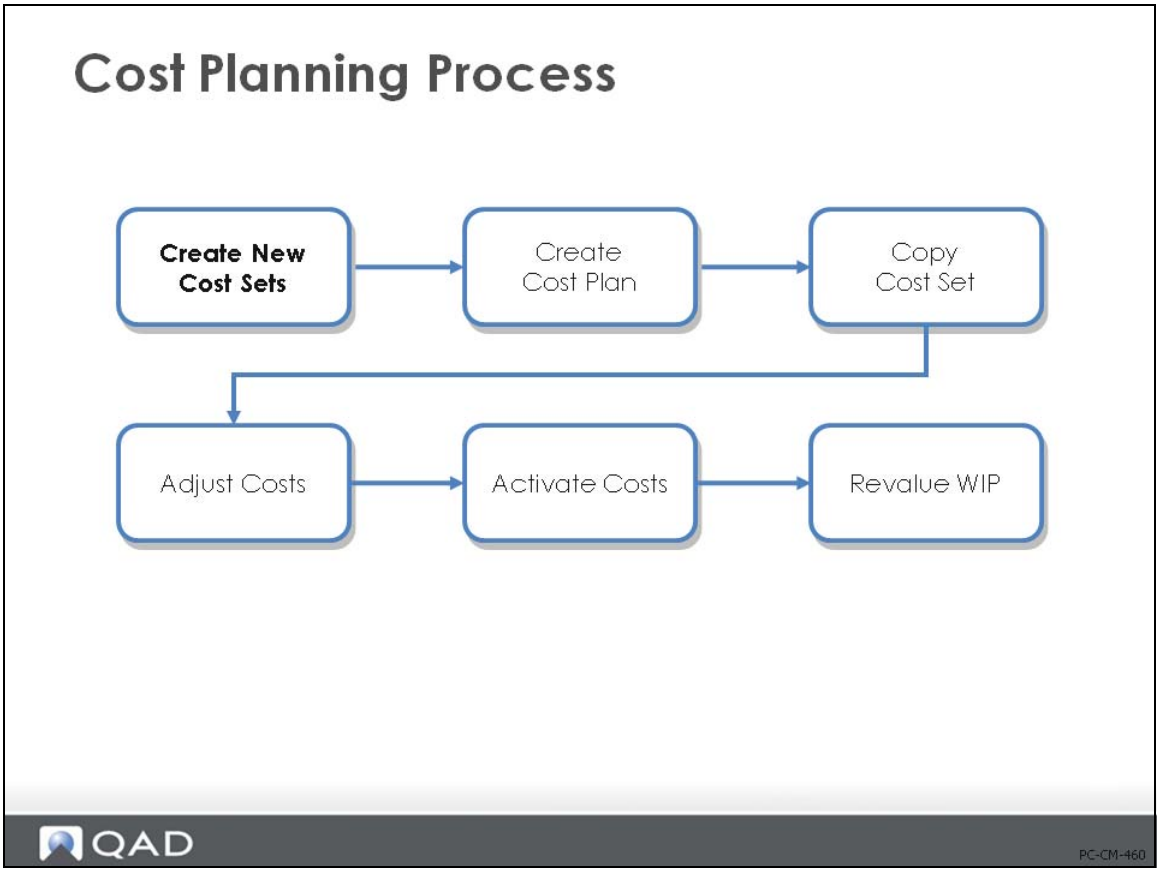
- During budgeting, where you can predict future costs, but you are not ready to phase them in yet
- For commodity-based products, where raw material costs change seasonally or on some regular basis
- In hyperinflationary economies, where costs increase by a certain percentage each period

In order to use cost planning, simply set up a new GL cost set and use it to store the projected costs. Then use Cost Plan by Site Maintenance (30.15.1) to identify the date on which you expect these GL costs to take effect at this site.

- These costs are available for use on MPS Summary Reports (22.19) and MRP Summary Report (23.14). Both give you the option to use cost plans when calculating the anticipated cost of planned production. This is useful for your planners, particularly if costs are expected to change significantly. They can refer to the cost projections and reschedule production accordingly.

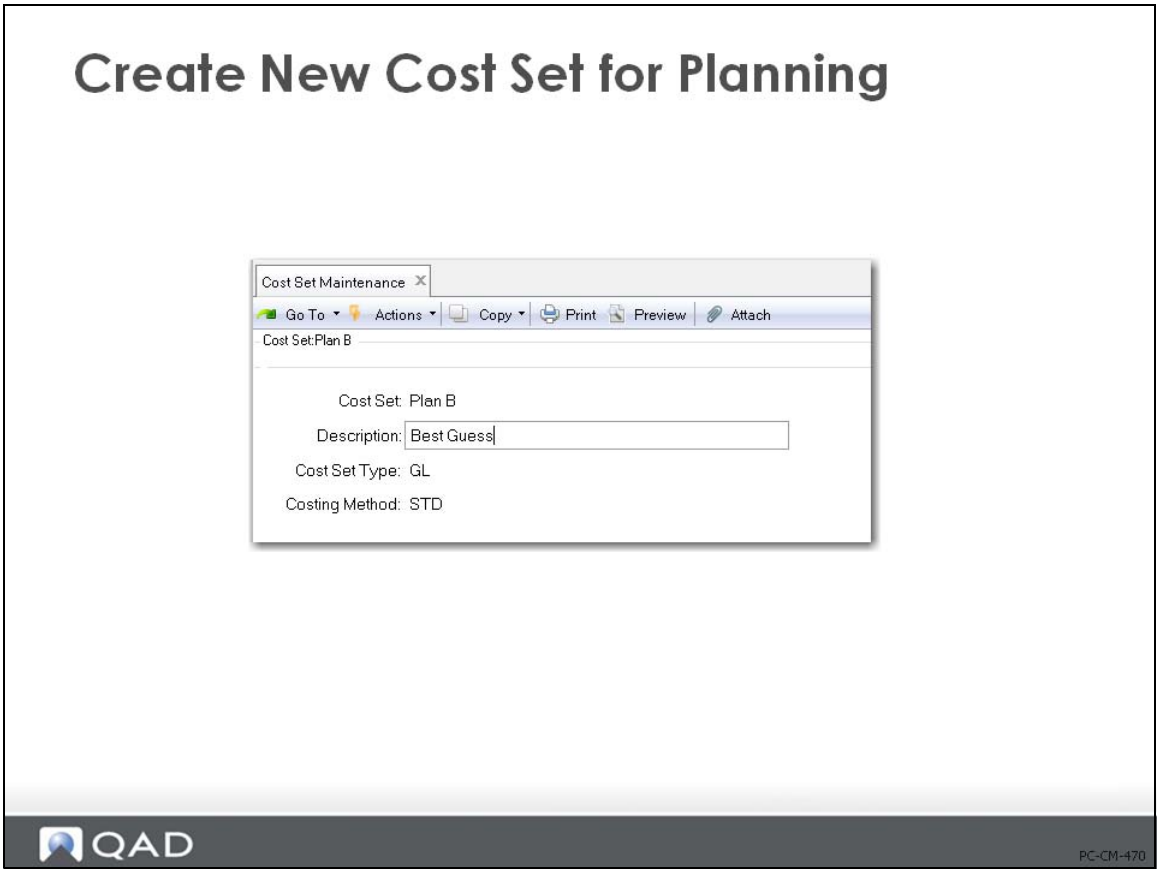
Note Entering a cost plan does not change the GL cost automatically on that date. You must run the Cost Plan by Site Update (30.15.3) any time after the start date for costs to change. To activate the costs earlier, use Cost Set to Site Assignment (30.9).

Create New Costs Sets



Use Cost Set Maintenance (30.1) to create a new cost set.

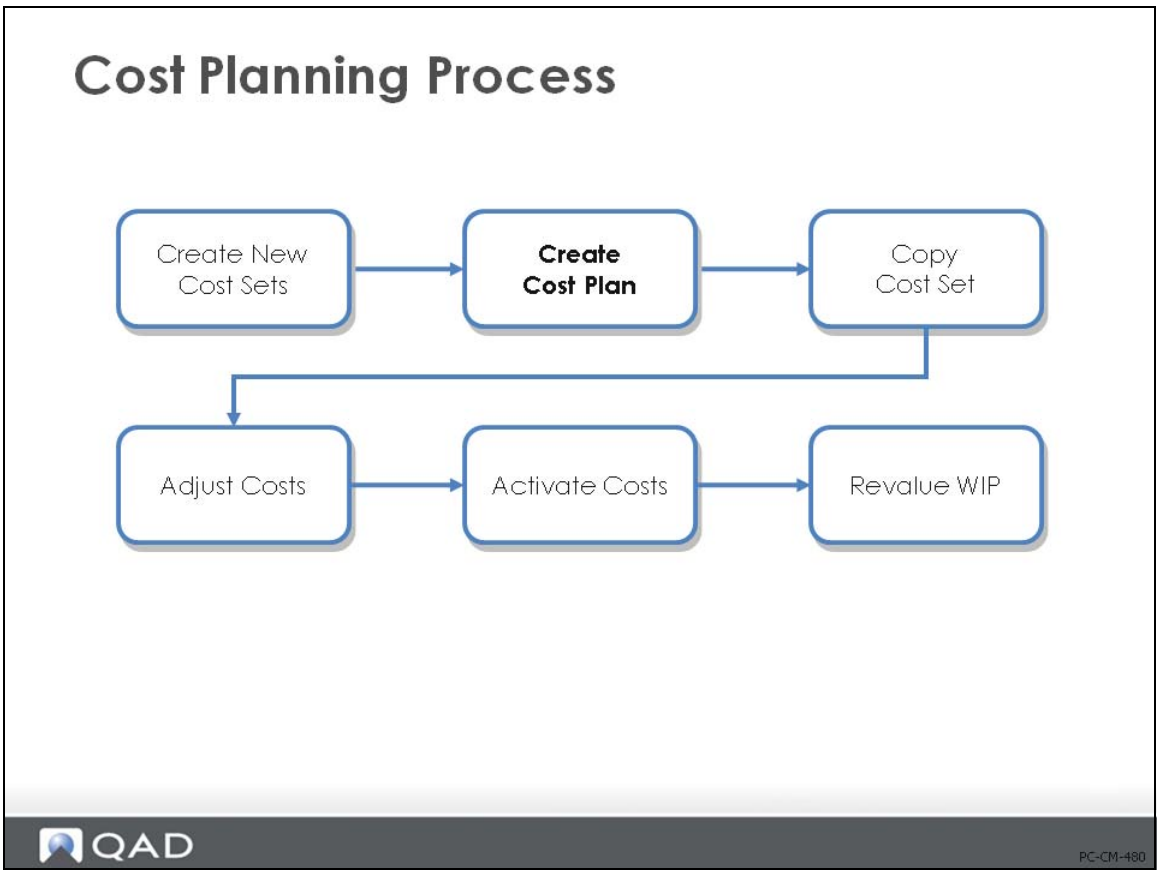
Create New Cost Sets



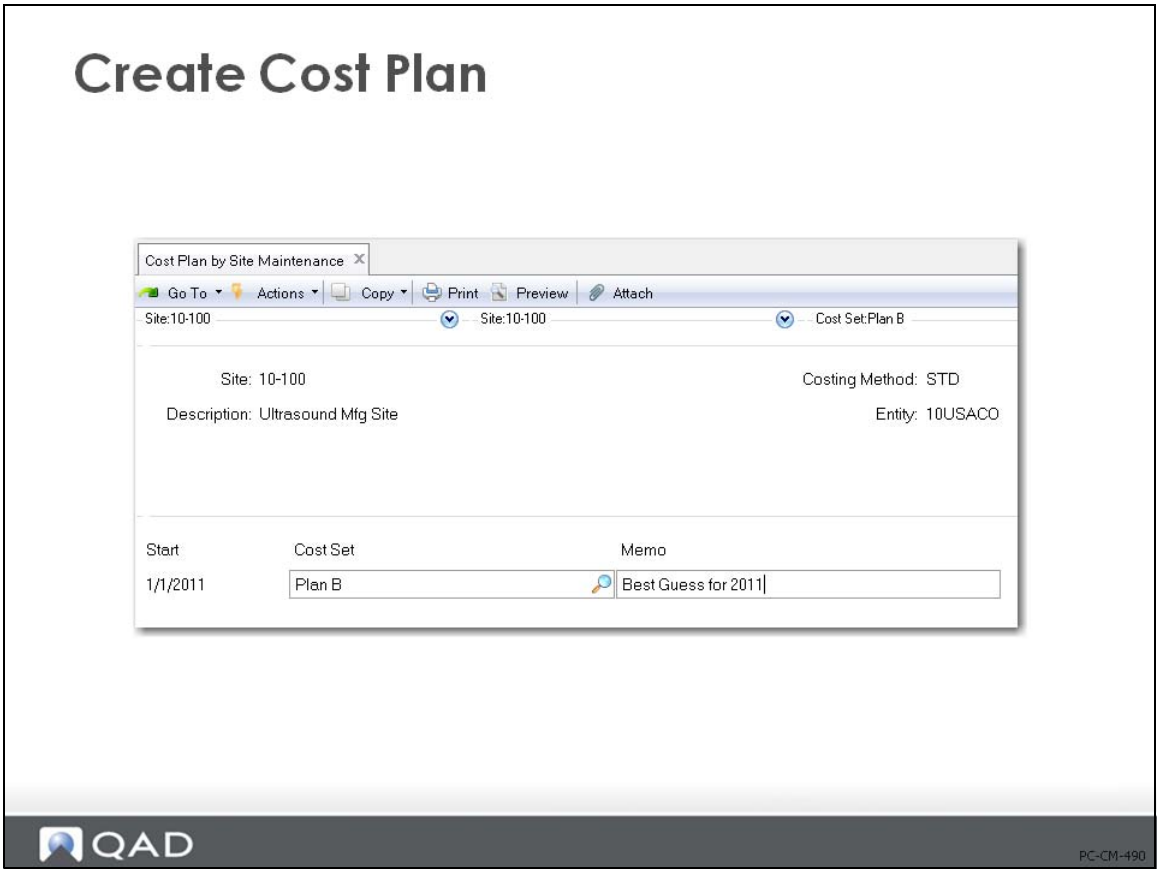
When you know how and when costs will change, record the new costs under a new Cost Set Code in Cost Set Maintenance (30.1) and attach it to a site with a starting effective date in Cost Plan by Site Maintenance (30.15.1).

Example Suppose you experience a 10% cost increase in the second quarter. You would create a cost set with costs that are 10% higher than normal and name it “Plan” or whatever seems appropriate. Similarly, you might want to create a cost set for the third quarter if costs for that quarter were expected to be less than normal.

Create Cost Plan



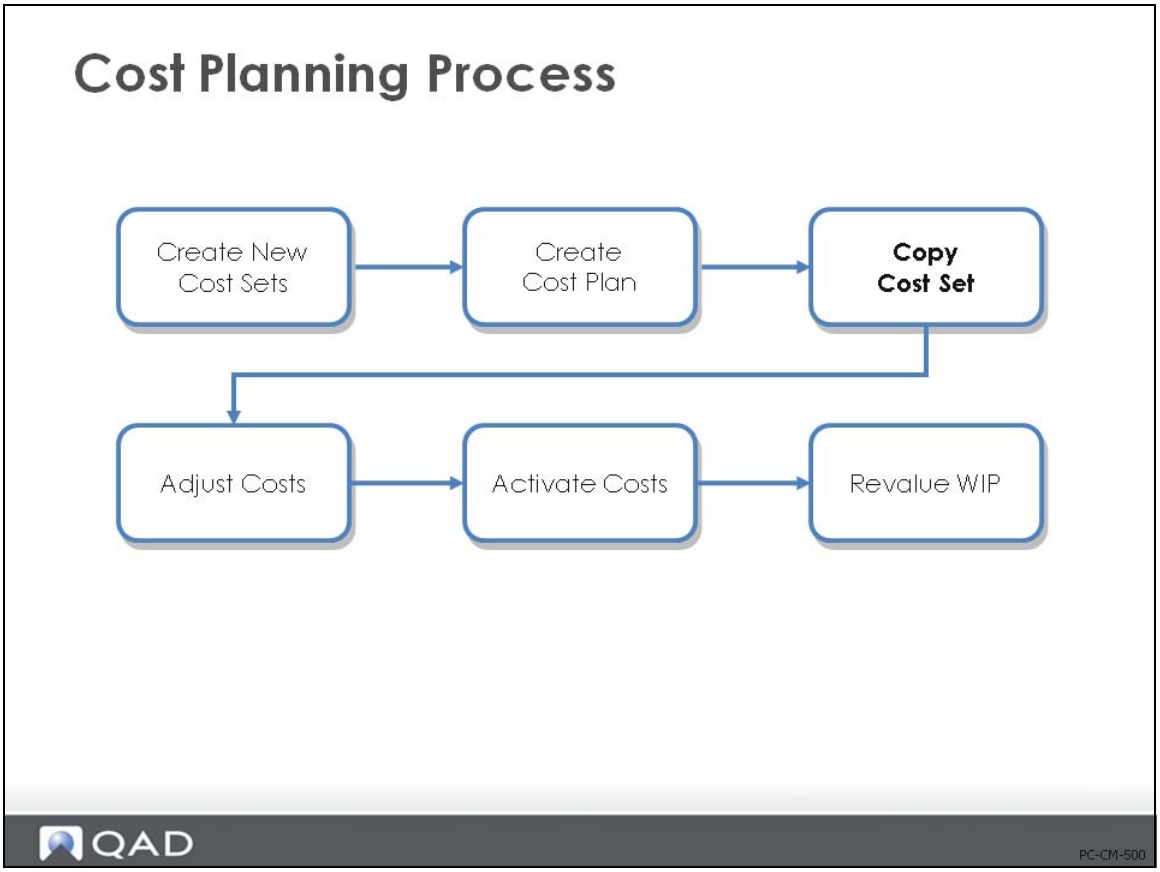
Create a Cost Plan



Use Cost Plan by Site Maintenance (30.15.1) to enter the site and start date specifying when the cost set will be active. The figure above shows a cost set created to plan for an anticipated labor rate increase beginning January 1, 2011.

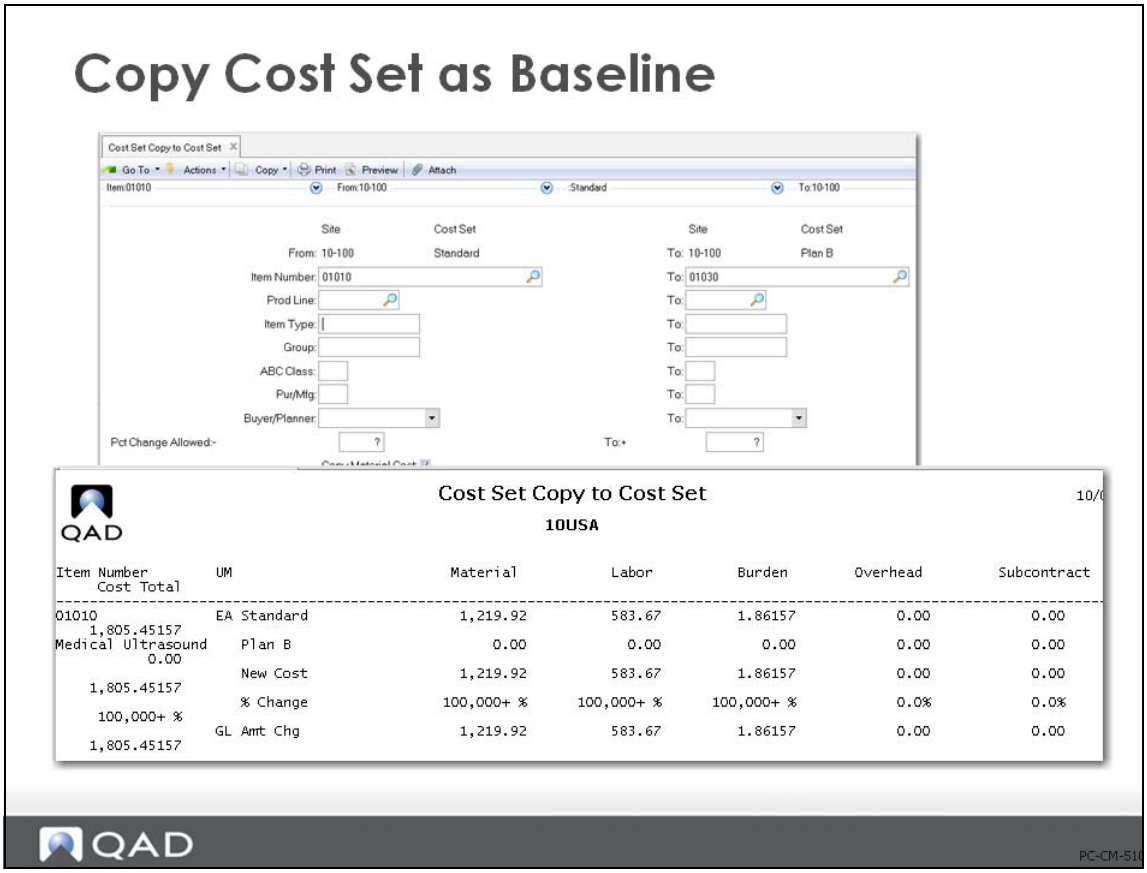
Recording these planned cost changes does not affect GL costs until you run Cost Plan by Site Update (30.15.3) on the exact date the change is to become effective. Until this date, these new costs are used by planners on costed MRP Summary Report (22.19) and Master Schedule Summary Report (23.14).

Copy Cost Set



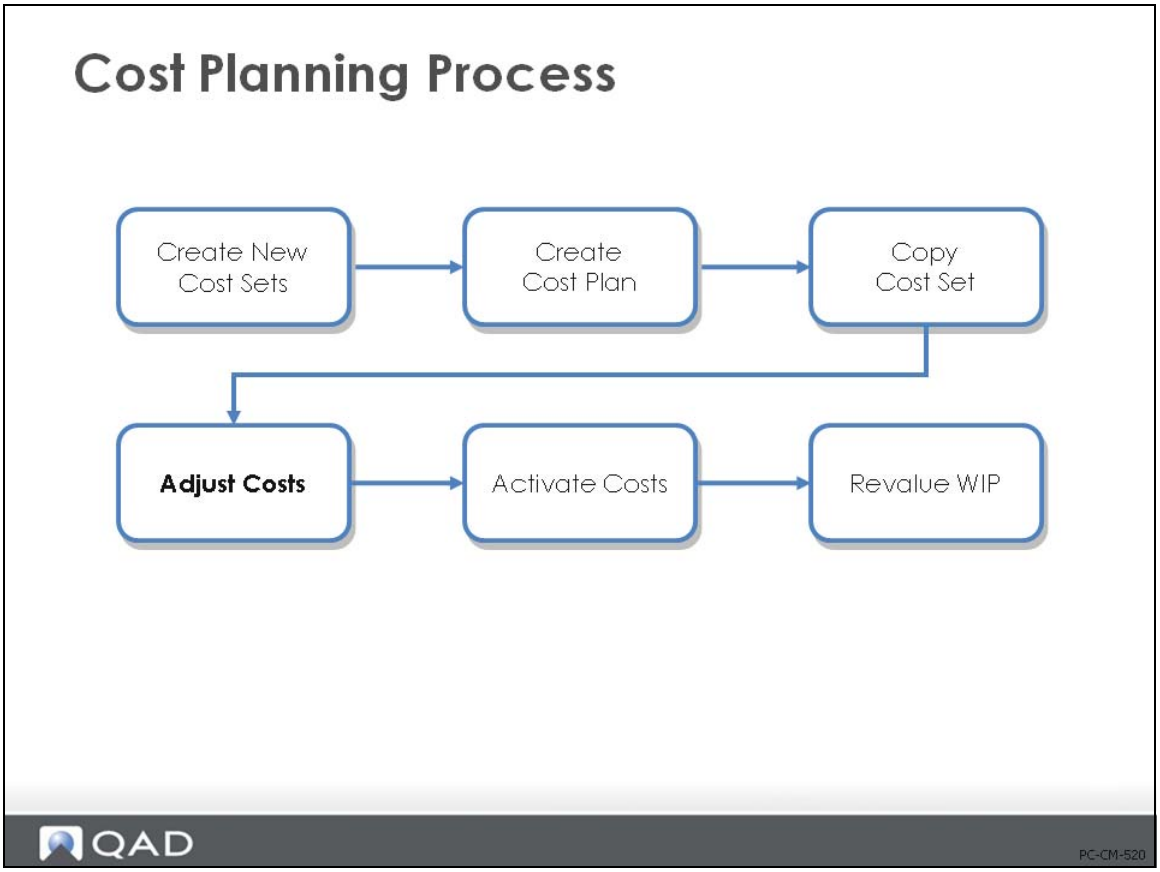
Use Cost Set Copy to Cost Set (30.3) to base new cost set on existing cost set.

Copy Cost Set as Baseline



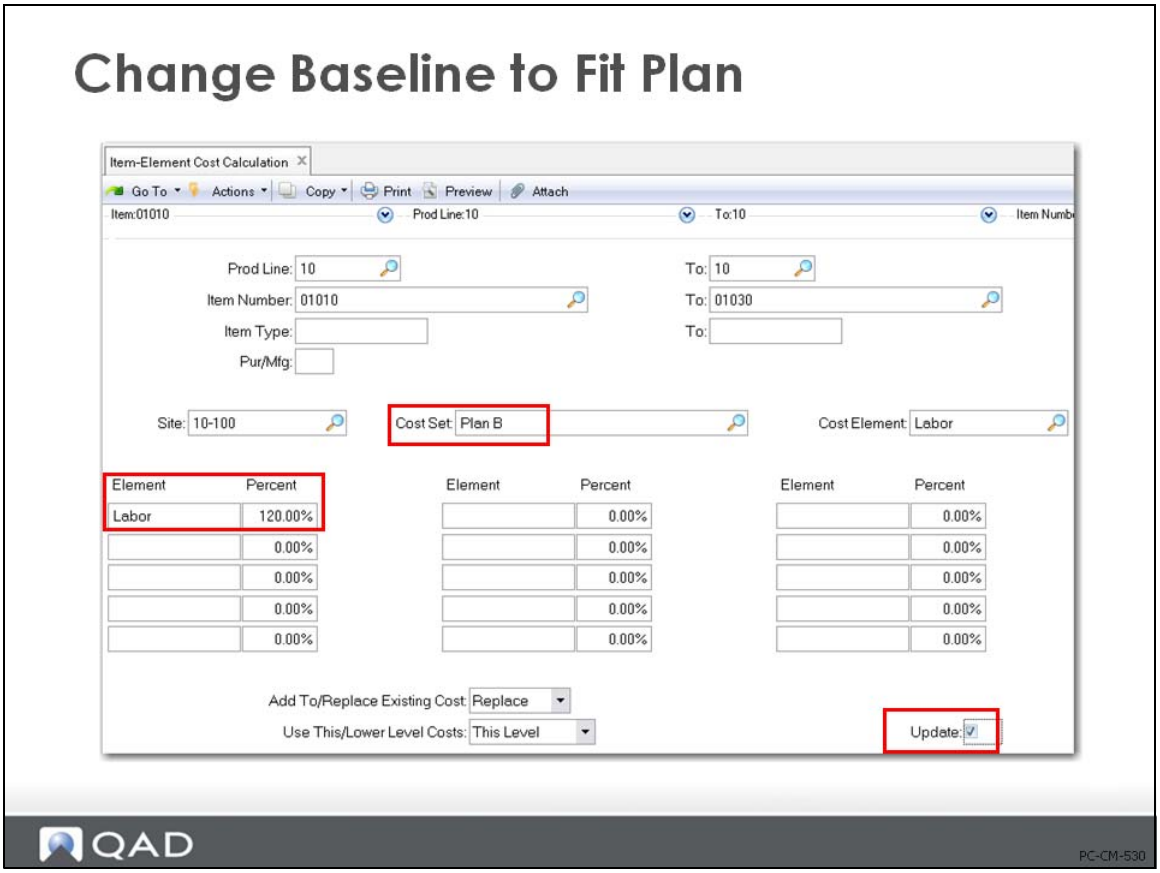
The costs for a planning cost set are usually added by copying an existing cost set as a baseline and then adjusting the costs. Use Cost Set Copy to Cost Set (30.3). Or you could copy a cost set into a simulated cost set, modify it, and then copy the accepted simulation as your baseline.

Adjust Costs



Use Item-Element Cost Maintenance (30.17.5) to enter new costs manually, or use Item-Element Cost Calculation (30.17.10) to let the system calculate new costs based on percentages.

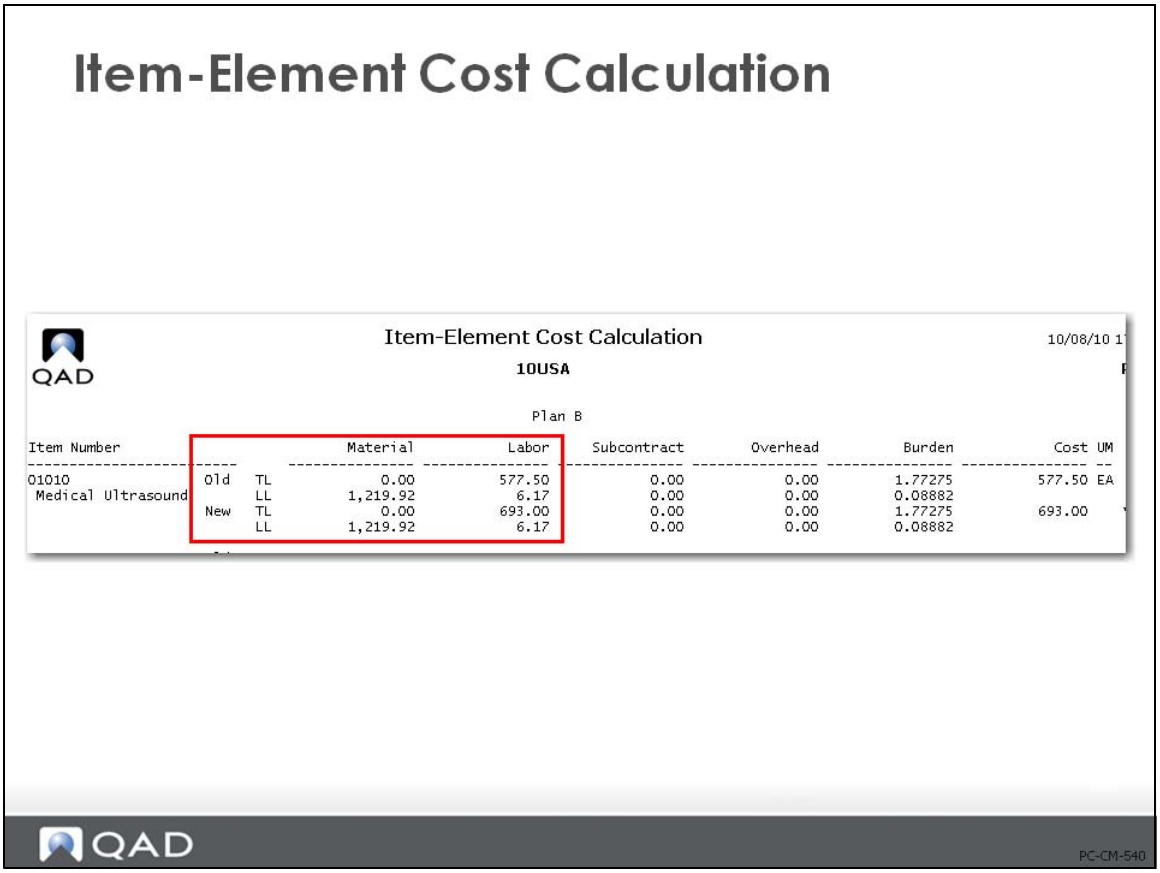
Change Baseline to Fit Plan



In Item-Element Cost Calculation (30.17.10), you can change element costs by percentage and let the system calculate the new cost, or, in Item-Element Cost Maintenance (30.17.5), you can enter the new cost directly.

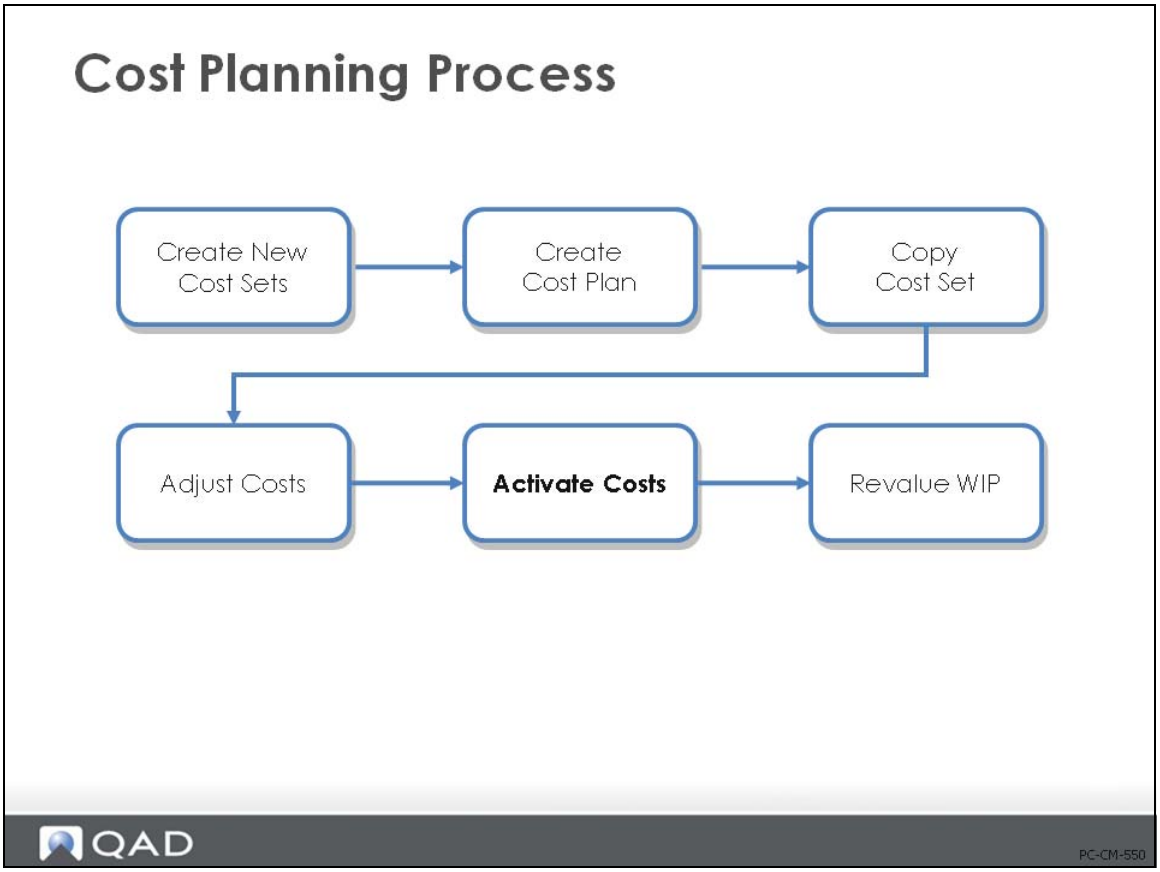
- The example in the figure above indicates a 20% increase in labor rates.
- To see the effects in the MRP and MPS summary reports, you must select Update.

Item-Element Cost Calculation



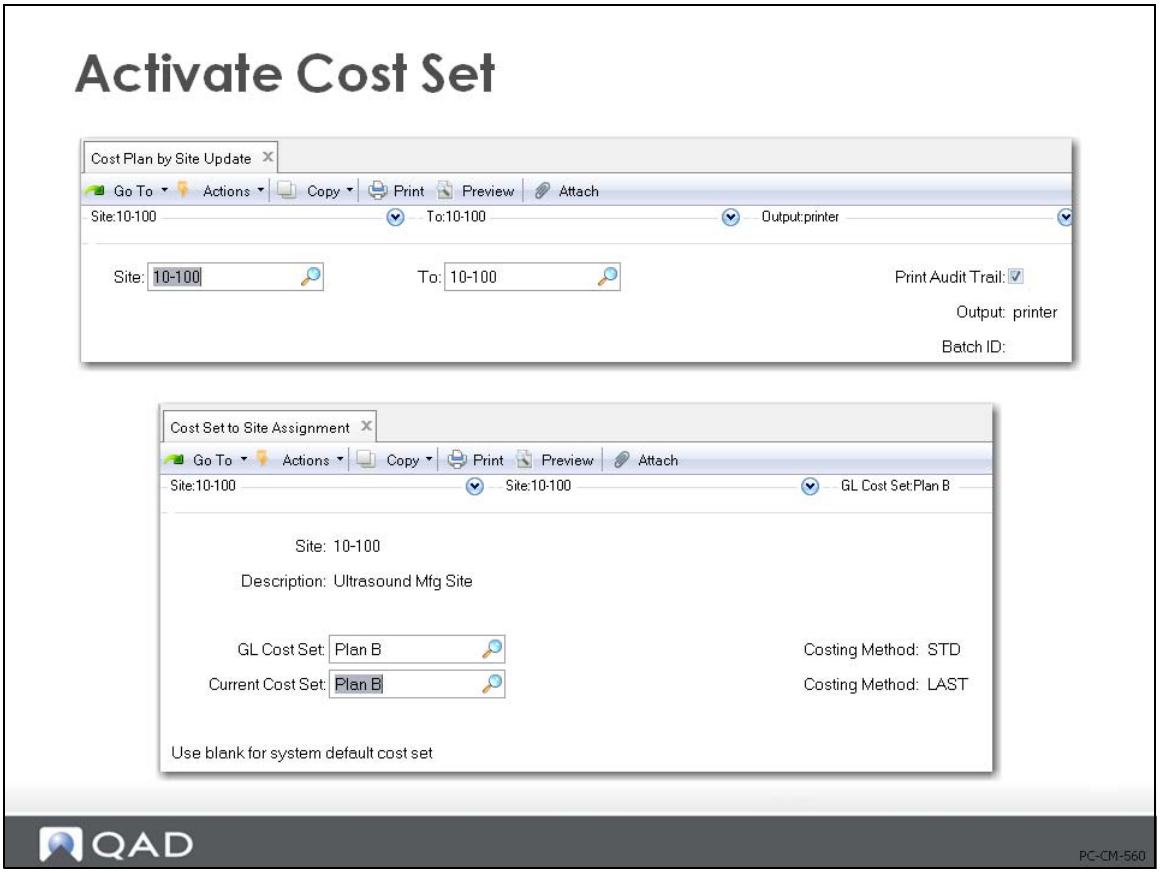
The figure above shows the effect on item 01010 of a 20% increase in labor rates. Both old and new rates are included, along with this-level and lower-level costs.

Activate Costs



Use Cost Plan by Site Update (30.15.3) or Cost Set to Site Assignment (30.9) on the exact date the cost plan is to take effect to activate the cost set

Activate Cost Set

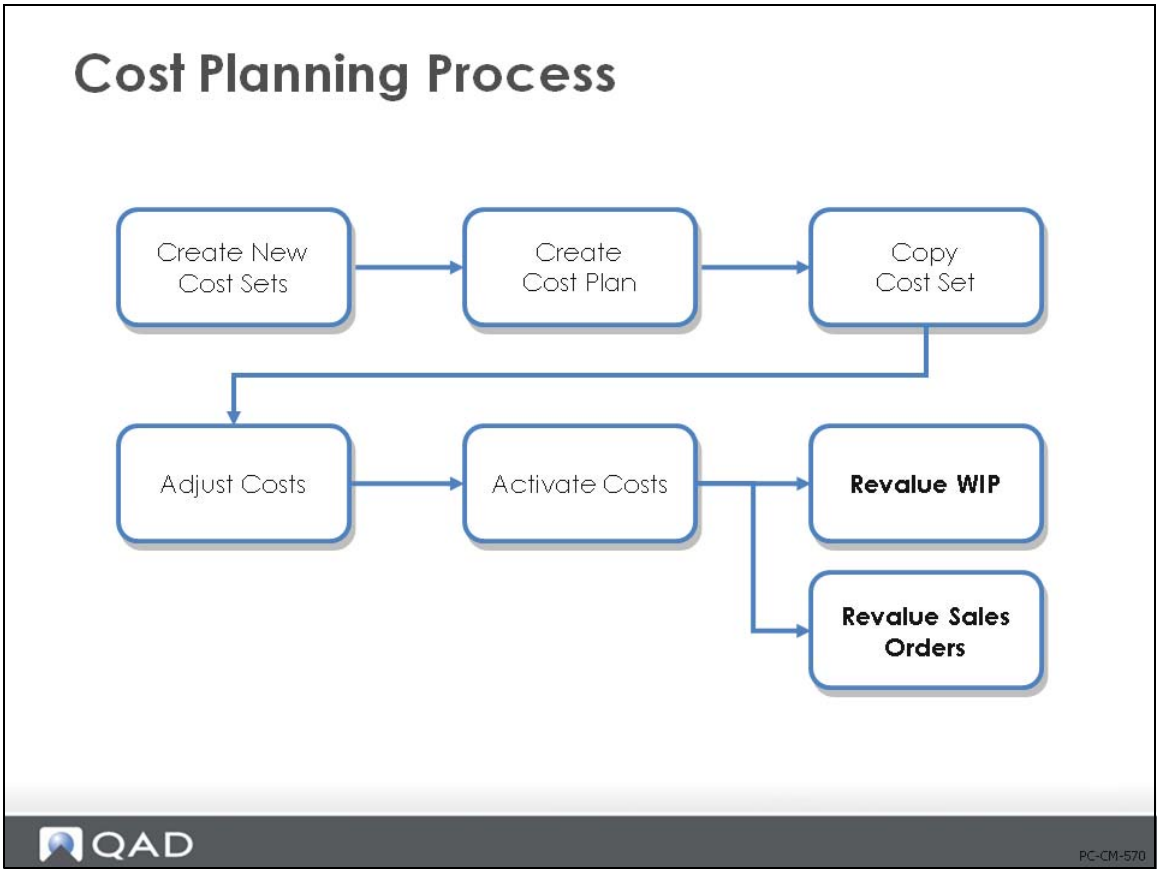


To activate the cost set according to the cost plan, run the Cost Plan by Site Update (30.15.3) or Cost Set to Site Assignment (30.9) any time after the start date.

In addition to activating the new cost set, the program also changes the inventory to reflect the new costs and posts the cost revaluation amount to the general ledger. The Inventory account is debited and the Cost Revalue account is credited with the difference multiplied by the quantity on-hand.

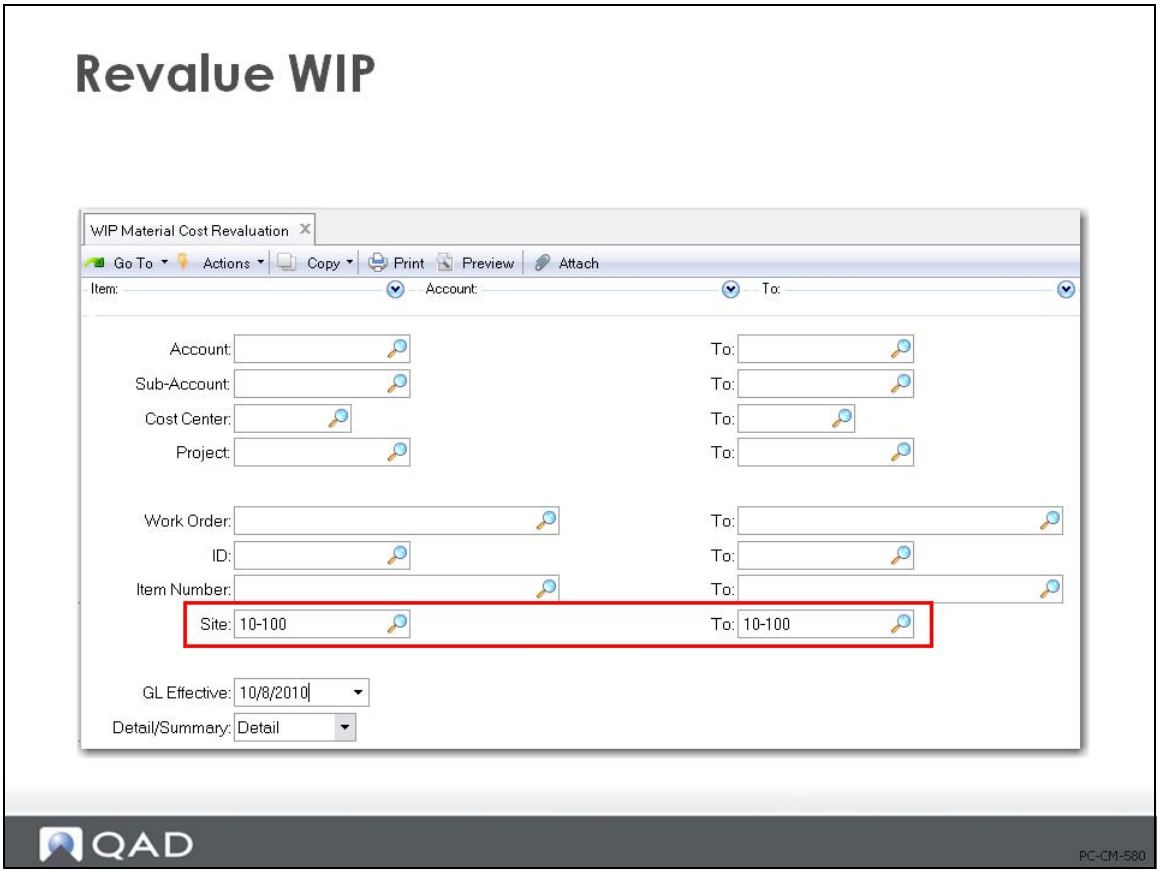
It is recommended that you print the report. If GL costs are changed by mistake, you must manually re-enter the old cost in Item-Site Cost Maintenance.

Cost Planning Process



Use WIP Material Cost Revaluation (16.22) to revalue WIP based on newly activated cost set

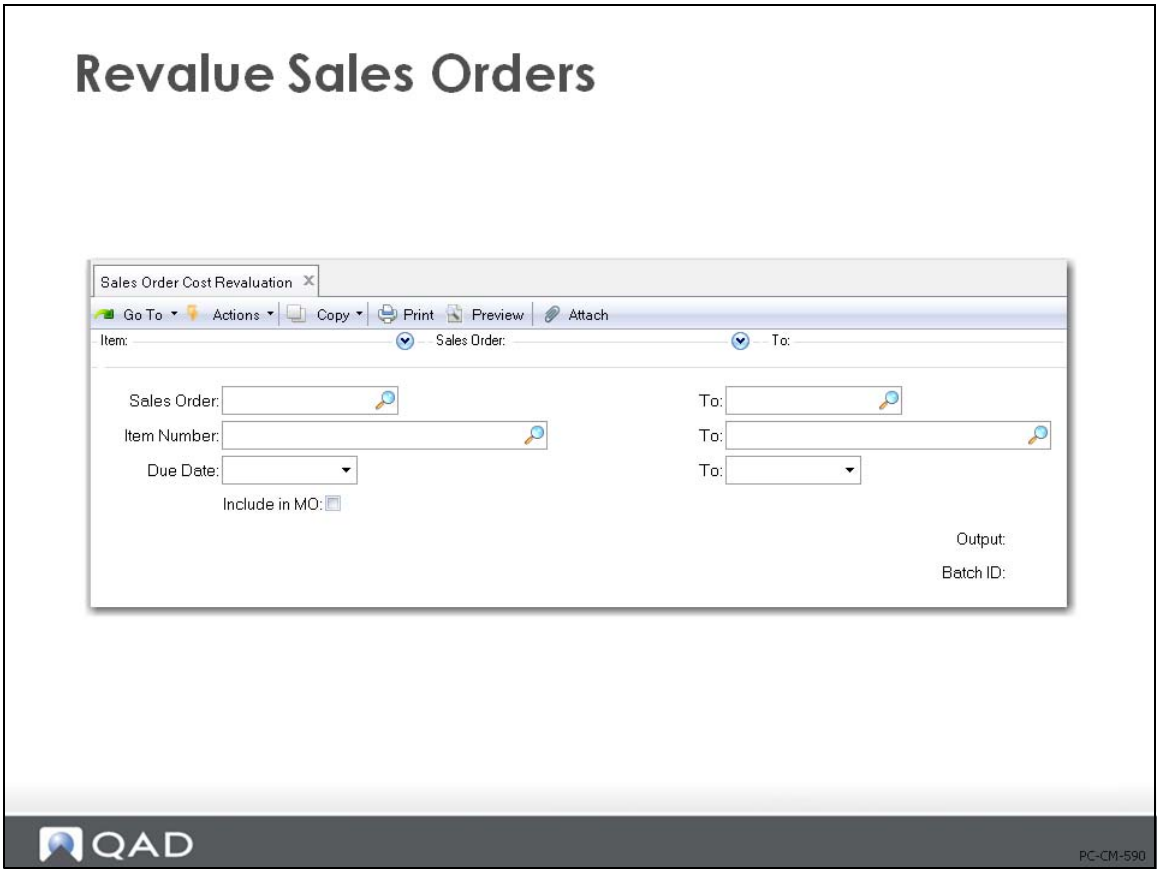
Revalue WIP



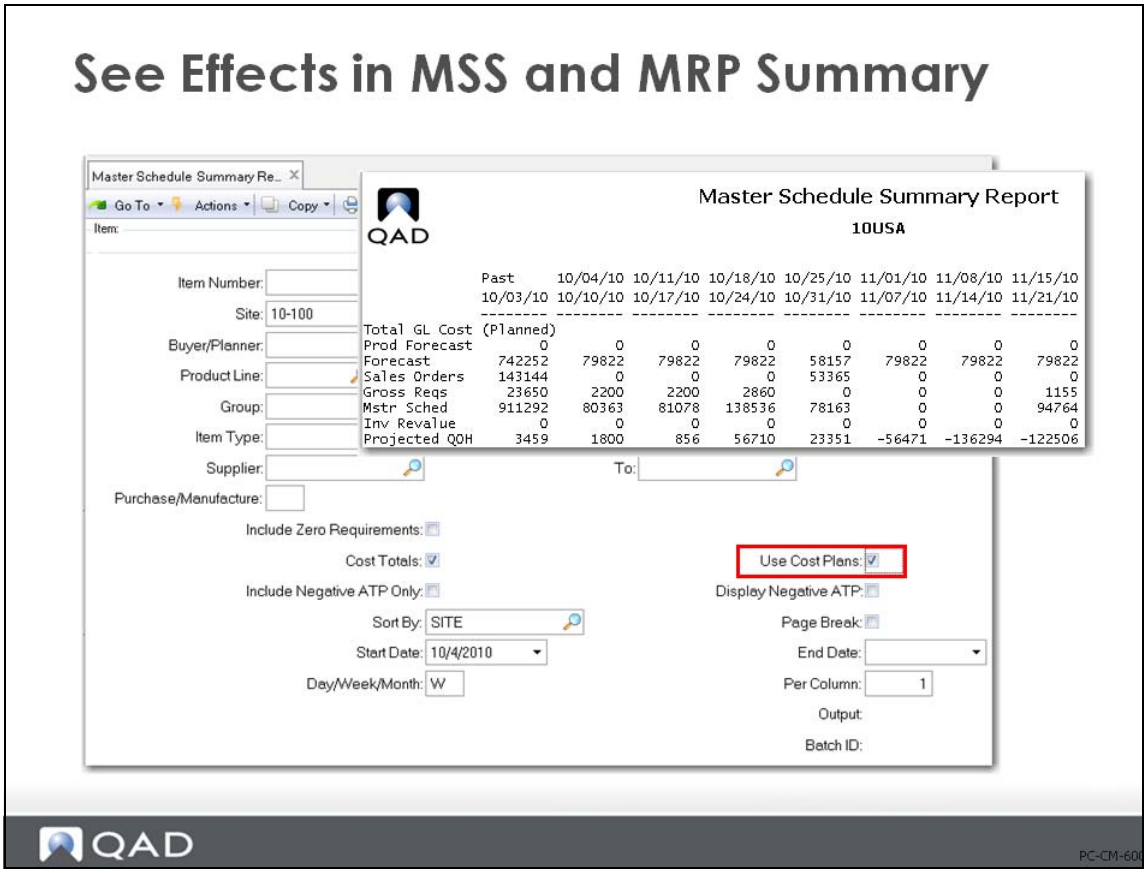
Assuming that WIP exists, you will need to revalue it using the newly activated cost set. You can do this by using WIP Material Cost Revaluation (16.22).

The Sales Order Revaluation (7.1.12) should also be run if the Sales Gross Margin Report is used.

Revalue Sales Orders



See Effects in MSS and MRP Summary



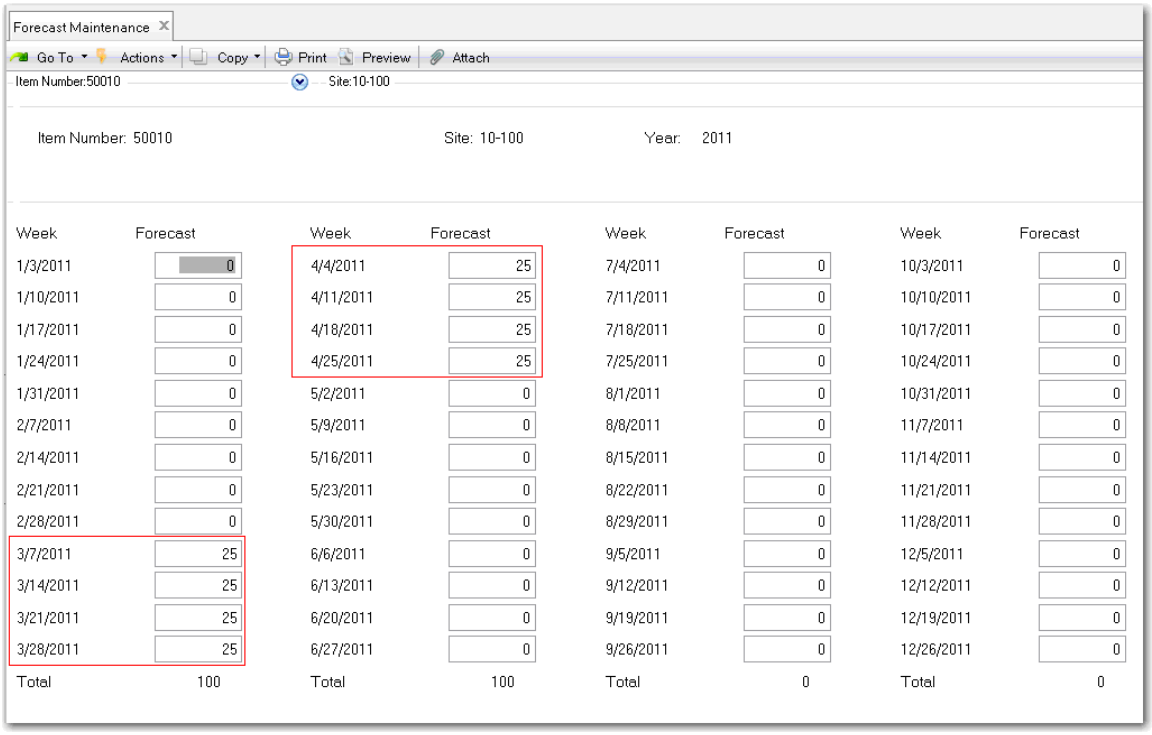
You can see the effects of planned changes by using the Master Schedule Summary Report (23.19) and the MRP Summary Report (22.14).

When requesting the report check the box Use Cost Plans. The figure above shows the Total GL Cost (Planned) for all lines of the Master Schedule Summary Report. The cost data is at the end of the report.

Exercise 3: Cost Planning

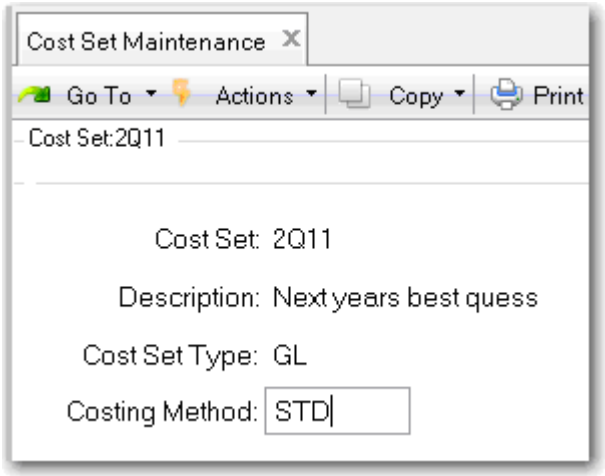
In this exercise you will create a cost set to develop future costs for an item, then set up the cost set to become effective on a specific date in the future. You will also use the cost plan to project production costs when the new costs become effective.

1 Use Forecast Maintenance (22.1) to create a forecast for item 50010 for March and April of next year. Forecast 25 per week for eight weeks. Your screen should look like this. This will create demand for MRP to use with the cost plan to show production costs and how they will change.

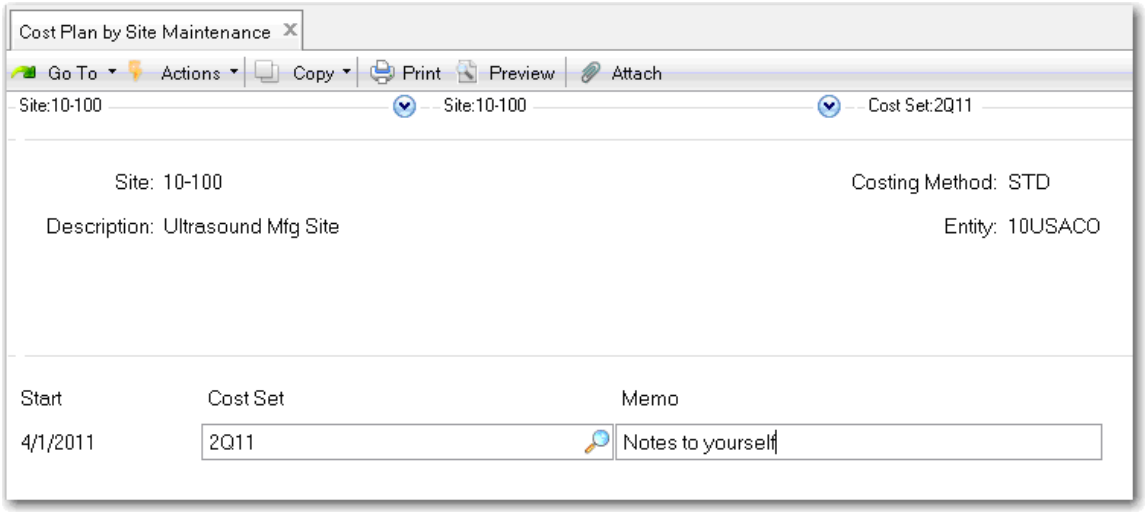


Week	Forecast	Week	Forecast	Week	Forecast	Week	Forecast
1/3/2011	0	4/4/2011	25	7/4/2011	0	10/3/2011	0
1/10/2011	0	4/11/2011	25	7/11/2011	0	10/10/2011	0
1/17/2011	0	4/18/2011	25	7/18/2011	0	10/17/2011	0
1/24/2011	0	4/25/2011	25	7/25/2011	0	10/24/2011	0
1/31/2011	0	5/2/2011	0	8/1/2011	0	10/31/2011	0
2/7/2011	0	5/9/2011	0	8/8/2011	0	11/7/2011	0
2/14/2011	0	5/16/2011	0	8/15/2011	0	11/14/2011	0
2/21/2011	0	5/23/2011	0	8/22/2011	0	11/21/2011	0
2/28/2011	0	5/30/2011	0	8/29/2011	0	11/28/2011	0
3/7/2011	25	6/6/2011	0	9/5/2011	0	12/5/2011	0
3/14/2011	25	6/13/2011	0	9/12/2011	0	12/12/2011	0
3/21/2011	25	6/20/2011	0	9/19/2011	0	12/19/2011	0
3/28/2011	25	6/27/2011	0	9/26/2011	0	12/26/2011	0
Total	100	Total	100	Total	0	Total	0

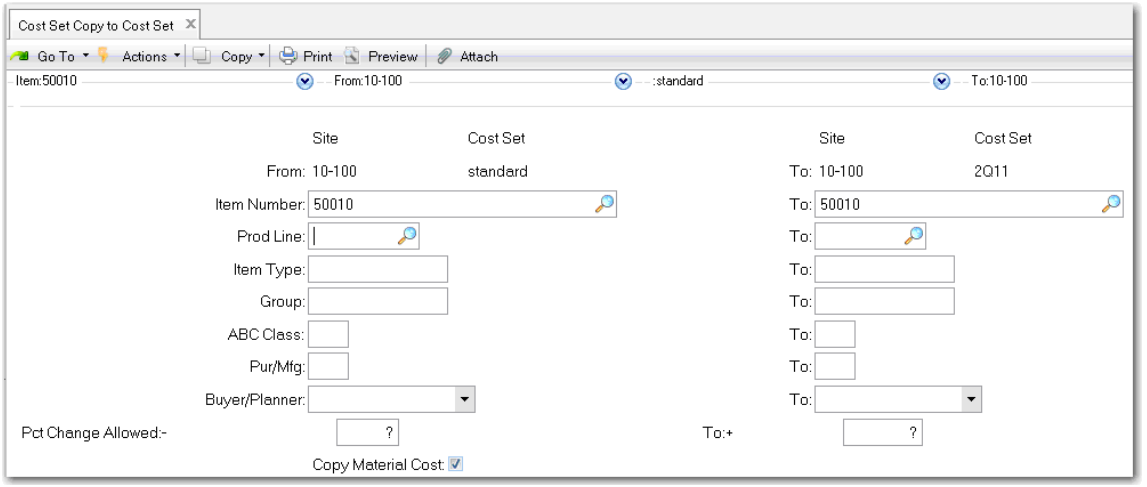
2 Create a new cost set, you might label it 2QYR, where YR is the last two digits of next year. Use Cost Set Maintenance (30.1) make the cost set type GL and the method standard.

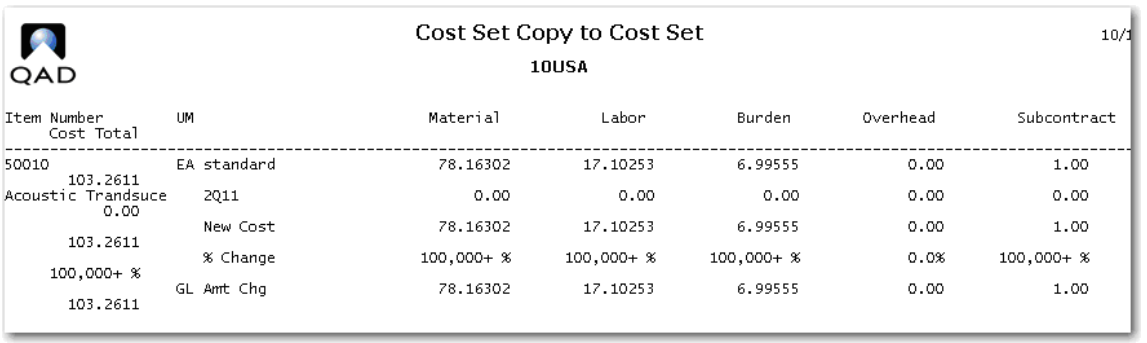


3 Create a cost plan for the second quarter of next year. Use Cost Plan by Site Maintenance (30.15.1). Make the start date 1 April of Next year.



4 Copy a cost set for baseline costs. Use Cost Set Copy to Cost Set (30.3). Copy the costs for the 50010 Acoustic Transducer, from site 10-100, cost set Standard to site 10-100 cost set 2Q11. Put ?'s in the Percent Change Allowed fields.





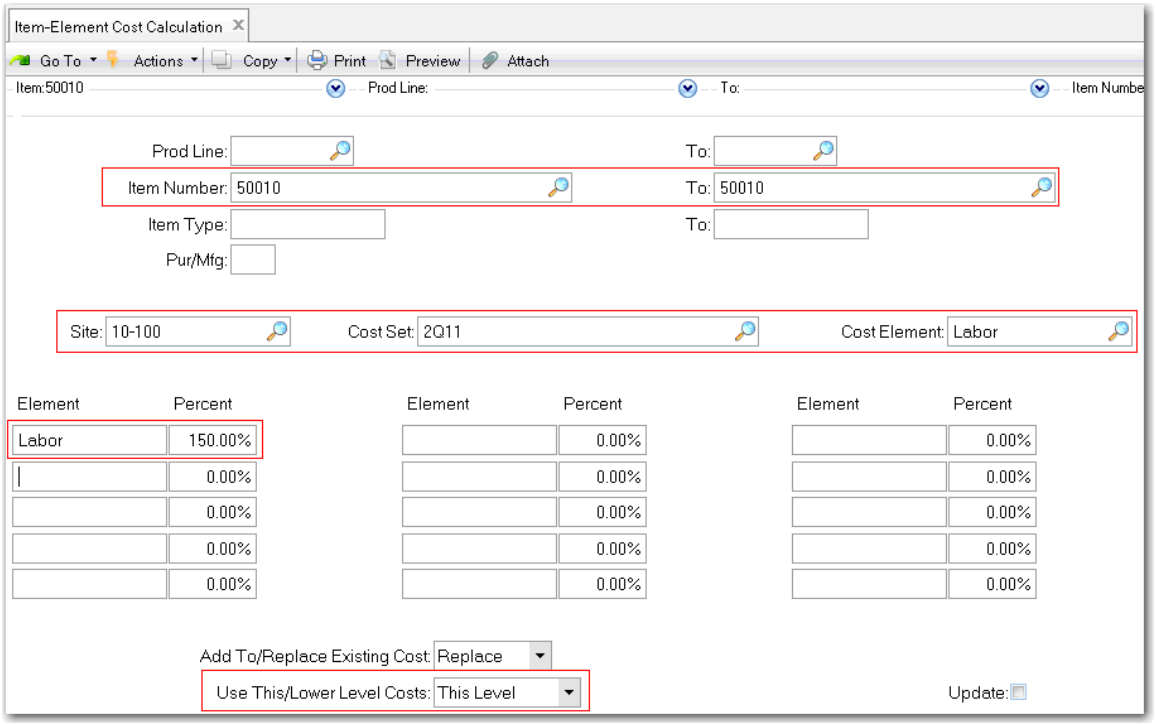
QAD

Cost Set Copy to Cost Set

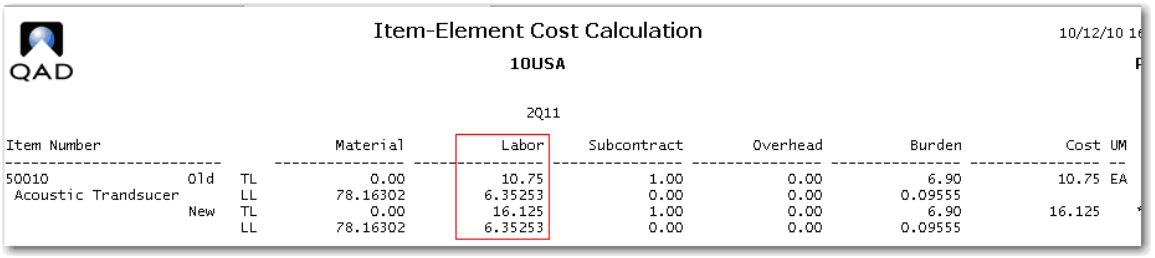
10USA

Item Number / Cost Total	UM	Material	Labor	Burden	Overhead	Subcontract
50010	EA standard	78.16302	17.10253	6.99555	0.00	1.00
103.2611						
Acoustic Transduce	2Q11	0.00	0.00	0.00	0.00	0.00
0.00						
	New Cost	78.16302	17.10253	6.99555	0.00	1.00
103.2611						
	% Change	100,000+ %	100,000+ %	100,000+ %	0.0%	100,000+ %
100,000+ %						
	GL Amt Chg	78.16302	17.10253	6.99555	0.00	1.00
103.2611						

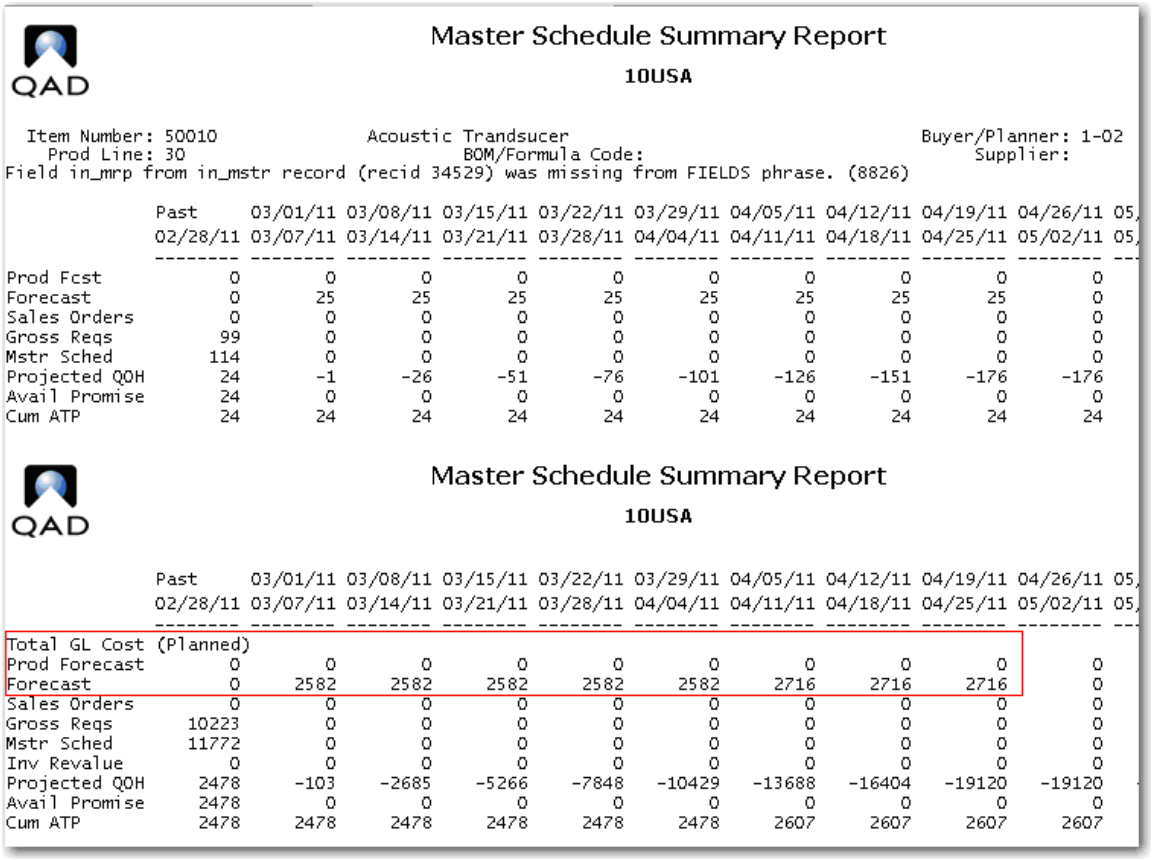
5 Adjust costs to reflect your best guess as to what they will be next year. Use Item-Element Cost Calculation (30.17.10). Run the calculation for site 10-100, cost set 2Q11, item 01020, cost element Labor, to be calculated as 150% of labor. Use This Level costs and leave Update unchecked. This will allow you to review the cost changes before updating them.



Your costs should look like this. If all is correct, re-run the calculation with the Update box checked. Note the This Level Labor is now 16.125 up from 10.75.



6 Use Master Schedule Summary Report (22.19) to see the results of your cost plan. Use item 50010 at site 10-100. Check Use Cost Plans, set the Start Date to 1 March of next year and the End Date to 30 April.



Master Schedule Summary Report

10USA

Item Number: 50010 Acoustic Trandsucer Buyer/Planner: 1-02
Prod Line: 30 BOM/Formula Code: Supplier:
Field in_mrp from in_mstr record (recid 34529) was missing from FIELDS phrase. (8826)

	Past 02/28/11	03/01/11 03/07/11	03/08/11 03/14/11	03/15/11 03/21/11	03/22/11 03/28/11	03/29/11 04/04/11	04/05/11 04/11/11	04/12/11 04/18/11	04/19/11 04/25/11	04/26/11 05/02/11	05/
Prod Fcst	0	0	0	0	0	0	0	0	0	0	
Forecast	0	25	25	25	25	25	25	25	25	0	
Sales Orders	0	0	0	0	0	0	0	0	0	0	
Gross Reqs	99	0	0	0	0	0	0	0	0	0	
Mstr Sched	114	0	0	0	0	0	0	0	0	0	
Projected QOH	24	-1	-26	-51	-76	-101	-126	-151	-176	-176	
Avail Promise	24	0	0	0	0	0	0	0	0	0	
Cum ATP	24	24	24	24	24	24	24	24	24	24	

Master Schedule Summary Report

10USA

	Past 02/28/11	03/01/11 03/07/11	03/08/11 03/14/11	03/15/11 03/21/11	03/22/11 03/28/11	03/29/11 04/04/11	04/05/11 04/11/11	04/12/11 04/18/11	04/19/11 04/25/11	04/26/11 05/02/11	05/
Total GL Cost (Planned)											
Prod Forecast	0	0	0	0	0	0	0	0	0	0	
Forecast	0	2582	2582	2582	2582	2582	2716	2716	2716	0	
Sales Orders	0	0	0	0	0	0	0	0	0	0	
Gross Reqs	10223	0	0	0	0	0	0	0	0	0	
Mstr Sched	11772	0	0	0	0	0	0	0	0	0	
Inv Revalue	0	0	0	0	0	0	0	0	0	0	
Projected QOH	2478	-103	-2685	-5266	-7848	-10429	-13688	-16404	-19120	-19120	
Avail Promise	2478	0	0	0	0	0	0	0	0	0	
Cum ATP	2478	2478	2478	2478	2478	2478	2607	2607	2607	2607	

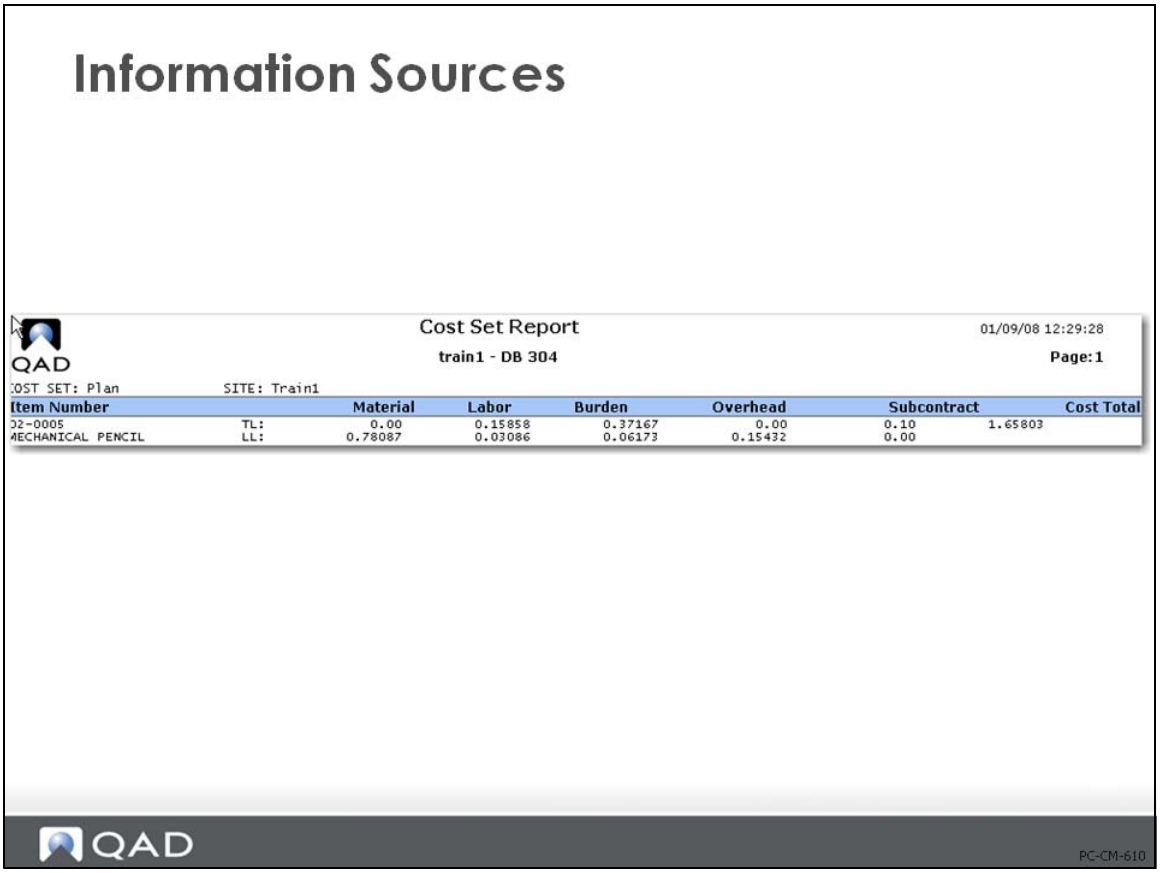
In the top frame you see your forecast. Note because you have not run MRP the forecast has not been exploded into planned orders. In the lower frame you see the planned GL cost based on the forecast.

Note that the first order due in April was released in March so it has the March cost. All the orders to be released in April have the new cost from the cost plan.

Use Cost Plan by Site Update (30.15.3) or Cost Set to Site Assignment (30.9) on the exact date the cost plan is to take effect to activate the cost set

Once a new GL cost is set you will also want to Revalue WIP (16.22) and Revalue Sales Order Costs (7.1.12).

Information Sources



Information sources that are particularly relevant to the Cost Management module are outlined below.

Simul Cost Element Report (30.13.3) and Cost Element Report (30.17.3)

Shows cost elements for cost sets selected according to user-specified parameters.

Simul Item-Element Cost Report (30.13.7) and Item-Element Cost Report (30.17.7)

Shows direct item costs by part number for cost sets selected according to user-specified parameters.

Simul Subcontract Cost Report (30.13.12) and Simul Subcontract Cost Inquiry (30.13.11)

Shows subcontract costs by routing code and operation for cost sets selected according to user-specified parameters.

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 cost sets selected according to user-specified parameters.

Cost Set Report (30.21)

Lists this-level and lower-level costs by category and total item cost for item numbers in cost sets at sites selected according to user-specified parameters.

Comparative Cost Set Report (30.22)

Lists costs by cost element category and total cost for each part number in a cost set selected according to user-specified parameters.

Appendix A

Variances and Components Reference

Purchase-Related Variances

Variance	Calculation Method
Purchase Price Calculated at: PO Receipts (5.13.1) Reports: Transaction Receipts Report (5.9.14) Transactions Detail Inquiry (3.21.1)	[PO Unit Cost – (GL Unit Cost – OH)] * PO Qty Received
AP Rate Calculated at: Supplier Invoice Create (28.1.1.1) Reports: Matching Variance Report (28.2.7) Transactions Detail Inquiry (3.21.1)	(Invoice Unit Cost – PO Unit Cost) * Invoice Qty
AP Usage Calculated at: Supplier Invoice Create (28.1.1.1) Reports: Matching Variance Report (28.2.7) Transactions Detail Inquiry (3.21.1)	(Invoice Qty – PO Receipt Qty) * PO Unit Cost

Manufacturing-Related Variances

Variance	Calculation Method
Material Rate Calculated at: WO Component Issue (16.10) WO Receipt Backflush (16.12) Repetitive Backflush (18.22.13) Reports: Work Order Cost Report (16.3.4) Transactions Detail Inquiry (3.21.1)	(WO BOM Unit Cost at Issue – GL Unit Cost) * Actual Qty Issued
Material Usage Calculated at: WO Accounting Close (16.21) Cumulative Order Close (18.22.10) Post Accumulated Usage Variances (18.22.9) Reports: Work Order Cost Report (16.3.4) Transactions Detail Inquiry (3.21.1) Rep Operations Accounting Report (18.22.4.9)	{Actual Qty Issued – [qty per * (qty completed + qty rejected)]} * GL Unit Cost
Labor Rate Calculated at: SFC Feedback (16.20.1), (16.20.2), (16.20.3) Can be deferred until: WO Receipt (16.11), (16.12) Repetitive Backflush (18.22.13) Reports: Work Order Cost Report (16.3.4) Operations Accounting Report (16.20.13.10) Rep Operations Accounting Report (18.22.4.9)	Per Operation: [(Actual Setup Rate – Std Setup Rate) * Actual Setup Hrs] + [(Actual Run Rate – Std Run Rate) * Actual Run Hrs] Setup and run rates are equal to the payroll rate (defined in 14.13.21) or the work center rate if payroll is not set up. No variances if no labor reporting
Labor Usage Calculated at: SFC Feedback (16.20.1), (16.20.2), (16.20.3) Can be deferred until: WO Receipt (16.11), (16.12) Post Accumulated Usage Variances (18.22.9) Cumulative Accounting Close (18.22.10) Reports: WO Cost Report (16.3.4) Operations Accounting Report (16.20.13.10) Rep Operations Accounting Report (18.22.4.9)	Per Operation: [(Actual Setup Hrs – Std Setup Hrs) * Std Setup Rate] + [(Actual Run Hrs – Std Run Hrs) * Std Run Rate] Std Run Hrs = Std Run Hrs * (Qty Completed + Qty Rejected)

Variance	Calculation Method
Burden Rate Calculated at: SFC Feedback (16.20.1), (16.20.2), (16.20.3) WO Receipt (16.11), (16.12) Repetitive Backflush (18.22.13) Reports: WO Cost Report (16.3.4) Operations Accounting Report (16.20.13.10) Rep Operations Accounting Report (18.22.4.9)	Per Operation: [(Actual Setup Bdn – Std Setup Bdn) * Actual Setup Hrs] + [(Actual Run Bdn – Std Run Bdn) * Actual Run Hrs] Actual Setup Bdn = (Actual Setup Rate * Lbr Bdn%) + Lbr Bdn Rate + (Mach Bdn Rate * Mach/Op) Std Setup Bdn = (Std Setup Rate * Lbr Bdn%) + Lbr Bdn Rate + (Mach Bdn Rate * Mach/Op) Actual Run Bdn = (Actual Run Rate * Lbr Bdn%) + Lbr Bdn Rate + Mach Bdn Rate Std Run Bdn = (Std Run Rate * Lbr Bdn%) + Lbr Bdn Rate + Mach Bdn Rate
Burden Usage Calculated at: SFC Feedback (16.20.1), (16.20.2), (16.20.3) Can be deferred until: WO Receipt (16.11), (16.12) Post Accumulated Usage Variance (18.22.9) Cumulative Order Close (18.22.10) Reports: WO Cost Report (16.3.4) Operations Accounting Report (16.20.13.10) Rep Operations Accounting Report (18.22.4.9)	Per Operation: [(Act Setup Hrs – Std Setup Hrs) * Std Setup Bdn] + [(Act Run Hrs – Std Run Hrs) * Std Run Bdn] Std Setup Bdn = (Std Setup Rate * Lbr Bdn%) + Lbr Bdn Rate + (Mach Bdn Rate * Mach/Op) Std Run Bdn = (Std Run Rate * Lbr Bdn%) + Lbr Bdn Rate + Mach Bdn Rate
Subcontract Rate Calculated at: PO Receipt (5.13.1)	(Subcontract PO Unit Cost – Subcontract Unit Cost from Routing) * Qty Received
Subcontract Usage Calculated at: WO Accounting Close (16.21) Post Accumulated Usage Variance (18.22.9) Cumulative Order Close (18.22.10)	[Qty Received – (Op Qty Completed + Op Qty Rejected)] * Subcontract Unit Cost from Routing
Method Calculated at: WO Accounting Close (16.21) Cumulative Accounting Close (18.22.10)	Balance of WO/ID value remaining
Mix (Co/By-Products) Calculated at: WO Accounting Close (16.21)	[Order Qty – (Receipt Qty + Scrap Qty)] * GL Unit Cost

Variances by Transaction Flow

Variances by Transaction Flow
PO Receipts
Purchase Price Variance
*[PO Unit Cost – (GL Unit Cost – OH)] * PO Qty Received*
Subcontract Rate Variance
*(Subcontract PO Unit Cost – Subcontract Unit Cost from Routing) * Qty Received*
Receiver Matching
Accounts Payable Rate Variance
*(Invoice Unit Cost – PO Unit Cost) * Invoice Quantity*
Accounts Payable Usage Variance
*(Invoice Qty – PO Receipt Qty) * PO Unit Cost*
Work Order Component Issue
Material Rate Variance
*(WO BOM Unit Cost at Issue – GL Unit Cost) * Actual Qty Issued*
Labor Feedback
Labor Rate Variance
*[(Actual Setup Rate – Std Setup Rate) * Actual Setup Hrs] + [(Actual Run Rate – Std Run Rate) * Actual Run Hrs]*
Labor Usage Variance
*[(Actual Setup Hrs – Std Setup Hrs) * Std Setup Rate] + [(Actual Run Hrs – *Std Run Hrs) * Std Run Rate]*
**Std Run Hrs = Std Run Hrs * (Qty Completed + Qty Rejected)*
Burden Rate Variance
*[(Actual Setup Bdn – Std Setup Bdn) * Actual Setup Hrs] + [(Actual Run Bdn – Std Run Bdn) * Actual Run Hrs]*
Burden Usage Variance
*[(Act Setup Hrs – Std Setup Hrs) * Setup Bdn] + [(Act Run Hrs – Std Run Hrs) * Run Bdn]*
Work Order Accounting Close
Subcontract Usage Variance
*[Qty Received – (Op Qty Completed + Op Qty Rejected)] * Subcontract Unit Cost from Routing*
Material Usage Variance
*{Actual Qty Issued – [qty per * (qty completed + qty rejected)]} * GL Unit Cost*
Method Variance

Components of Item Cost

Components of Item Cost	
Material	
Dependent On	*Defined In*
Material/Purchase Price	Item Master Maintenance (1.4.1), (1.4.9), (1.4.18)
Quantity Per	Product Structure Maintenance (13.5), (15.5)
Scrap %	Product Structure Maintenance (13.5), (15.5)
Phantom	Item Master Maintenance (1.4.1), (1.4.7), (1.4.17)
Pur/Mfg	Item Master Maintenance (1.4.1), (1.4.7), (1.4.17)
Structure Type	Product Structure Maintenance (13.5)
Yield %	Routing Maintenance (14.13.1)
Labor	
Dependent On	*Defined In*
Work Center Labor Rates	Work Center Maintenance (14.5)
Work Center Setup Rates	Work Center Maintenance (14.5)
Run Time per Unit	Routing Maintenance (14.13.1), (14.13.2)
Setup Time per Lot	Routing Maintenance (14.13.1), (14.13.2)
Order Quantity	Item Master Maintenance (1.4.1)
Subcontract Cost	Routing Maintenance (14.13.1)
Burden	
Dependent On	*Defined In*
Work Center Labor Burden Rates	Work Center Maintenance (14.5)
Work Center Labor Burden Percent	Work Center Maintenance (14.5)
Work Center Machine Burden Rate	Work Center Maintenance (14.5)
Machines/Operation	Work Center Maintenance (14.5)
All of the items under Labor (above)	

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.

QAD Learning Center (learning.qad.com)*
Visit QAD's one-stop destination for all courses and training materials.

*Log-in required