Comprehensive & easyto use workbook

Implementing Oracle JDE Manufacturing Applications - Tips & Tricks

MATT RAVIKUMAR

Dedication:

All the JDE solution experts and analysts
who guided me in multiple implementations.

The book cover shows a bike!
JDE users will recognize/remember the bike data in all demo junior data models

Disclaimer:
The content on the book came from years of industry & software experience.
Users are strongly advised to test the concepts in non-production system with written Business scenarios, validate and then implement in a live system since software goes through constant changes & upgrades.

Screen-shots of JDE applications come from different implementations.
No customer-specific data is exposed for security and confidentiality.

Contents

Preface

This book is about implementing Oracle's JD Edward's (popularly known as JDE) Manufacturing ERP software applications. This is not a typical user guide but provides insight into key applications and configurations. The book includes case studies and FAQs. The intended audience is the end-user in the JDE community who need more guidance and functional support. The book will help entry-level consultants and/or consultants moving from non-manufacturing applications into manufacturing suite.

As an author, I have spent close to 20 years in JDE products area. I was a employee in the consulting division of JD Edwards prior to Oracle's acquisition. I worked as Business Analyst for many companies in industrial segments and pharma industry. During last five years, I have worked in multiple manufacturing implementations as independent consultant. All my case studies are published in Linked-in, at the end of each major implementations.

JDE has it's dominance in ERP industry especially in manufacturing sector companies. No week goes by where I found something new or learn a different interpretation to something I already know. That's the power of the JDE software. It's so flexible and configurable that changing business process can be adopted so easily in the software applications

The book is not about replacing regular Oracle's user guide or knowledge available in Oracle support site. This does not replace training needs nor work as a training document. The goal is to make use of the best in the software, guiding the users in configuring the software during CRP times. As in any software implementations, any configuration changes need to be completely understood first. That is achieved only by testing the configuration in a non-production environment. As always, build your own scenarios and script for your formal testing process.

These days, a brand-new JDE manufacturing implementation can be achieved in three months with the support of strong leadership and active user participation in training/testing. This book helps to handle that process with key touch-points and critical factors in various applications. The case studies will give perspectives to factors not necessarily relating to software configurations. Most of the configurations and setups are from EnterpriseOne 9.1 release onward.

The tips and tricks are in two different sections. They cover a wide range of areas but mostly in manufacturing implementations.

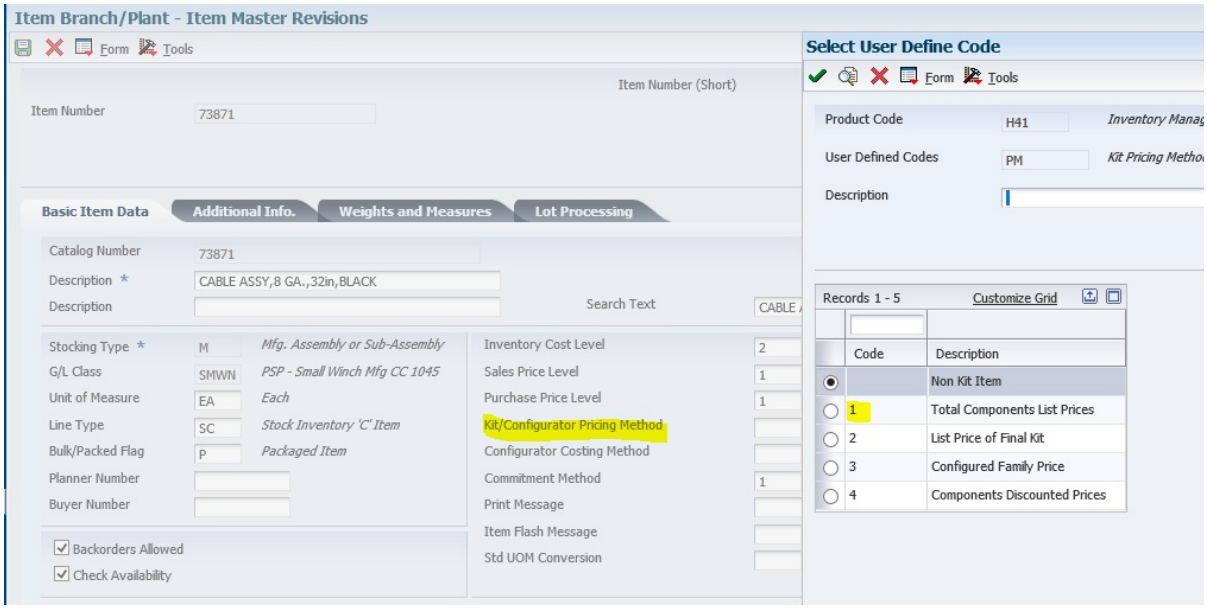
This is a hand-on manual to make your implementation right and successful. Your feedback and comments are welcome!

Matt
Mathur ravikumar
Matt@enterpriseprojects.com

SECTION - 1

Stocking type K for kits

If you are using kits (stocking type K), there is a specific field in item master (not in item branch) which controls on the pricing of the products. The values 1 or 2 also dictates how the price is calculated on the sales orders. This value is stored only item master- F4101 table.



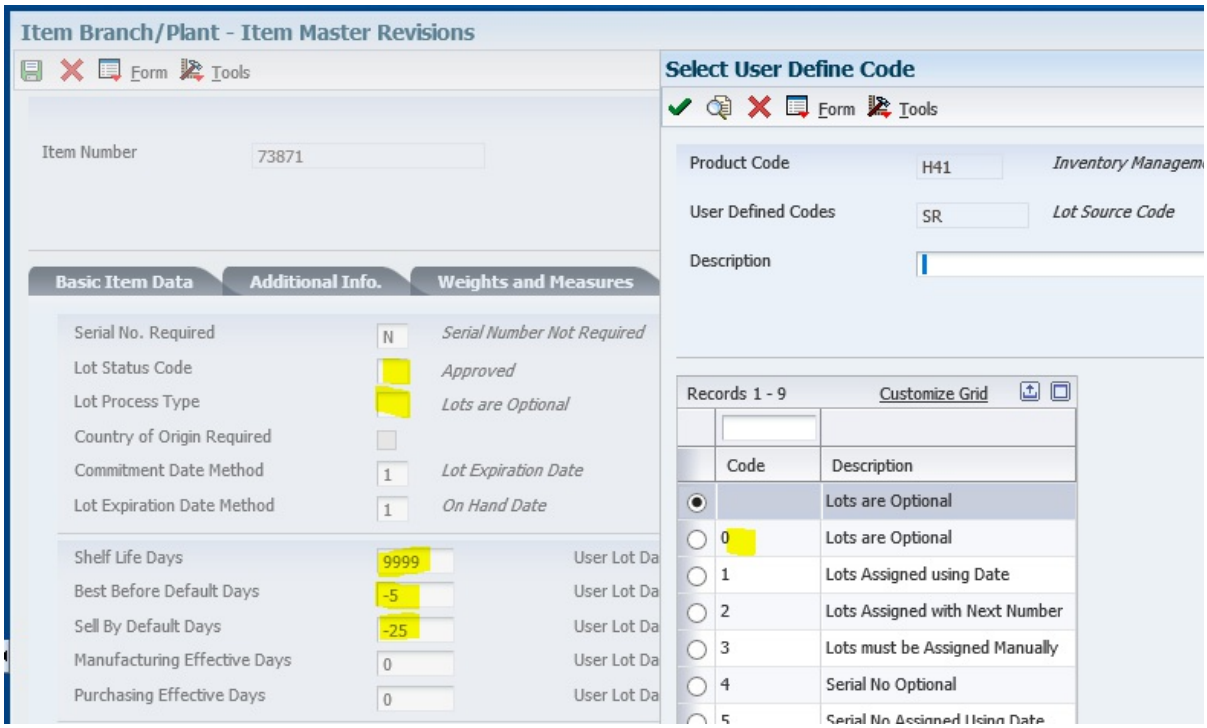
Another quick tips: Look at the inventory cost level. During conversion or any PDM to JDE interfaces, ensure the value of 2 is populated. It's very difficult to make changes after go-live if the inventory cost transactions got entered in item/branch/lot level. There is a batch program that can fix this error but it's risky and time-consuming.

Lot vs non-lot-controlled items

In a non-lot-controlled environment, it may be okay to use lot process type as 'blank'.

But in a lot controlled environment, if there are products/items that are not lot-controlled, JDE suggests to use 0-lots are optional instead of blanks. This will ensure lot tracking to work seamlessly across the product hierarchy.

It has been reported that using blank in lot-controlled products break the trace/track functionality and the continuity is lost in inventory or workorder transactions.



Employee Address-Book for time entry

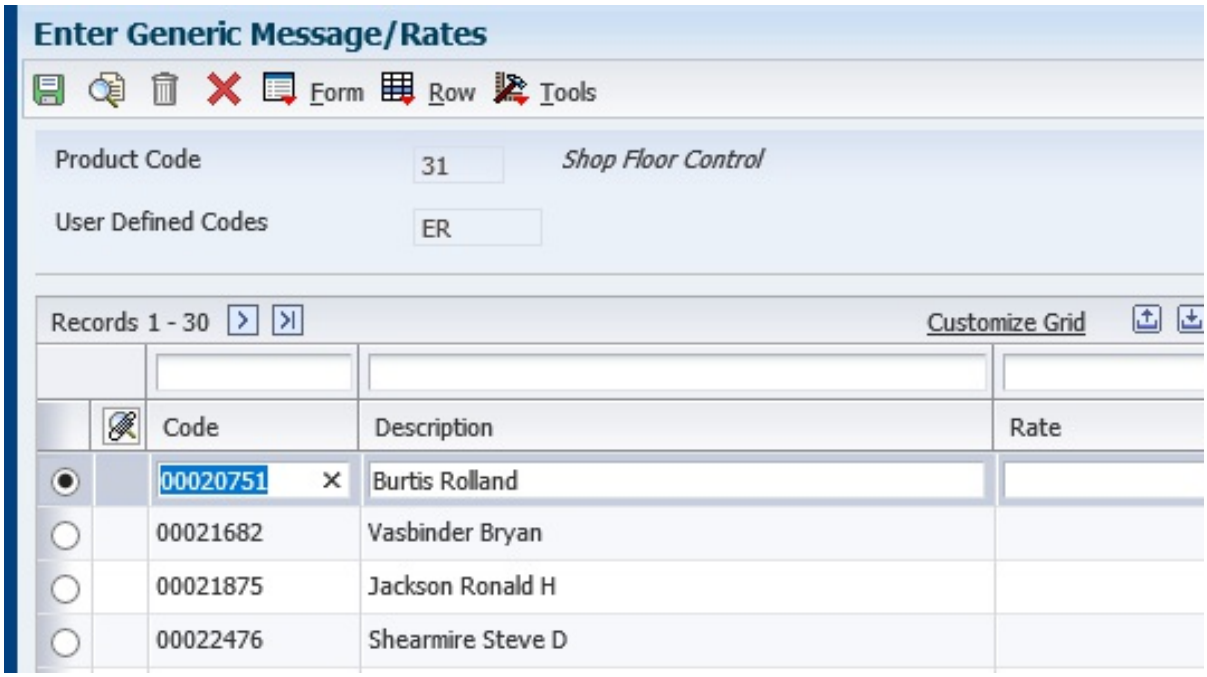
Employee address book numbers in super-backflush process and/or time entry.

You need to enter/maintain this 31/ER UDC after creating address book records.

System may insist preceding zeros, if the configuration length is 8 numeric.

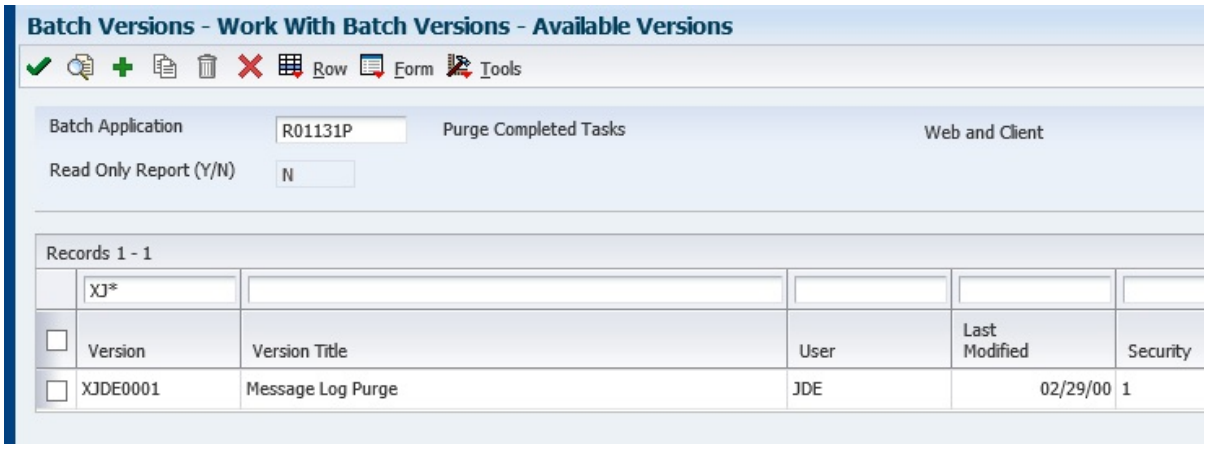
This configuration is maintained in the Form exit. You may need it to align with AB# on new implementations but do not change this configuration mid-stream in a live environment

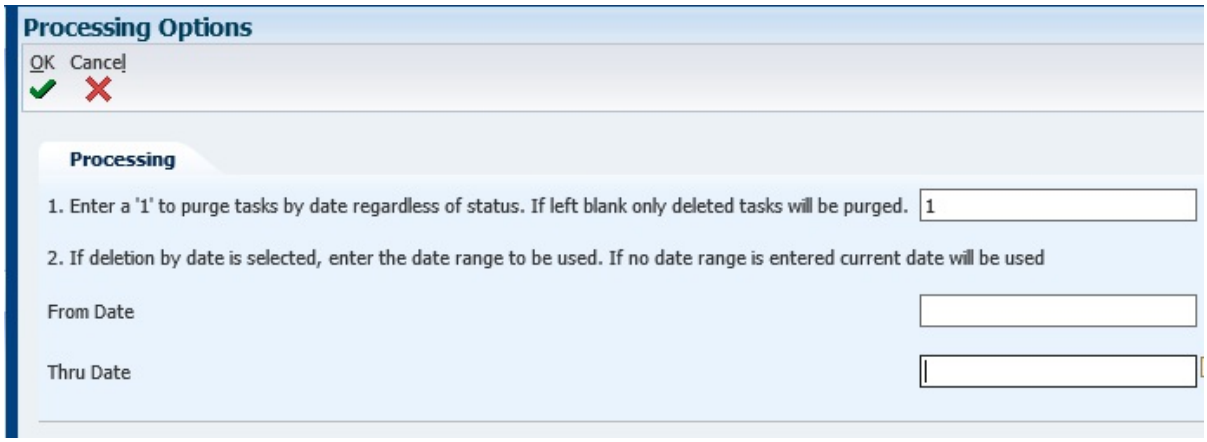
This rate is not linked to payroll. There are clients who like to keep different rates in this table and suppress the view on the individual time entry application. That helps help to compare the productivity of the experience personnel vs new-hires.



Purging Workcenter messages

As a power user or business analyst, you review message logs in Work Center. Many times, it gets over crowded with genuine or informational messages. And you have time or patience to clear them one by one. If you have access to BV, you can run the purge job for your address book number quickly.





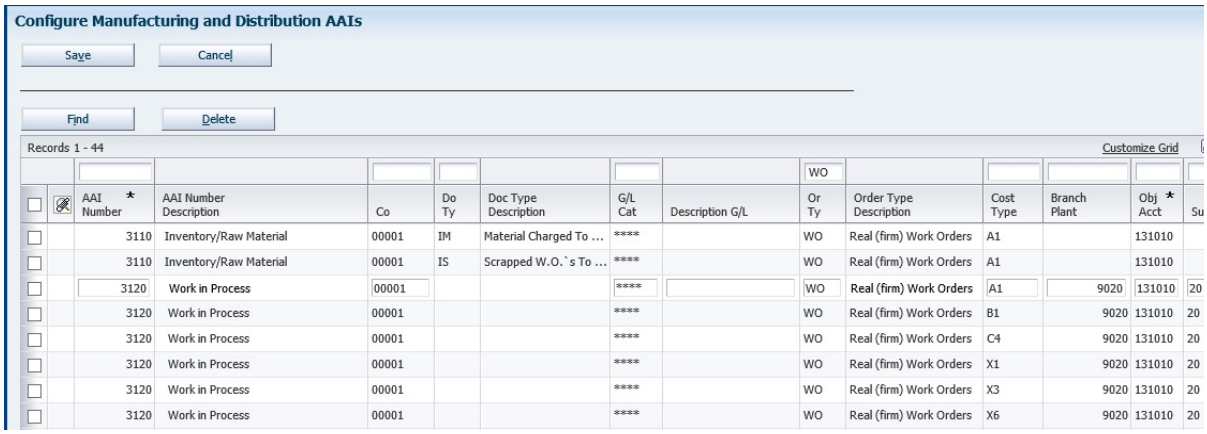
Mass update of DMAAIs

One of the hidden treasure in the E1 system!

DMAAI update or maintenance is very time consuming and you cannot see the total picture from P4095 application.

This P01RS950 is very user-friendly but very risky too. You can edit the content quickly and save it. Press find to see your changes immediately. I would export all the data upfront and keep it as a starting point reference.

P01RS950



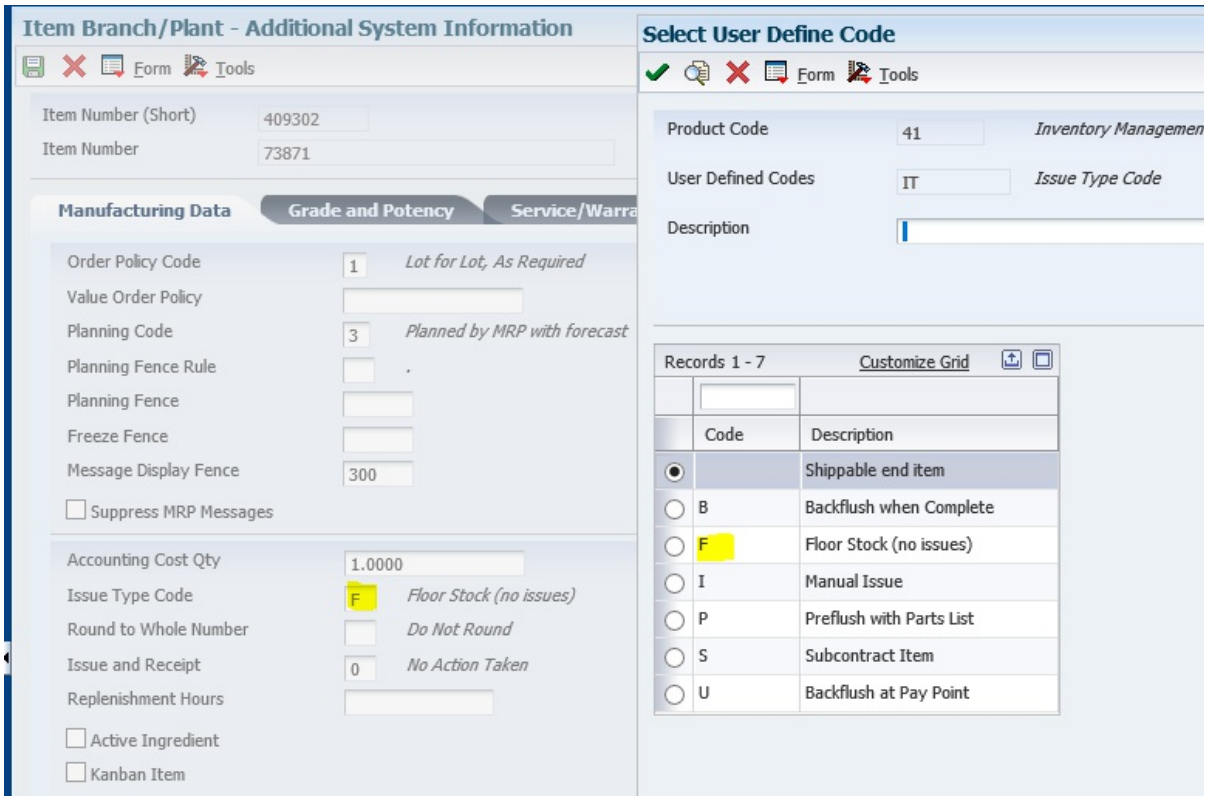
AAI Number *	AAI Number Description	Co	Do Ty	Doc Type Description	G/L Cat	Description G/L	Or Ty	Order Type Description	Cost Type	Branch Plant	Obj Acct *	Su
							WO					
3110	Inventory/Raw Material	00001	IM	Material Charged To ...	****		WO	Real (firm) Work Orders	A1		131010	
3110	Inventory/Raw Material	00001	IS	Scrapped W.O.`s To ...	****		WO	Real (firm) Work Orders	A1		131010	
3120	Work in Process	00001			****		WO	Real (firm) Work Orders	A1	9020	131010	20
3120	Work in Process	00001			****		WO	Real (firm) Work Orders	B1	9020	131010	20
3120	Work in Process	00001			****		WO	Real (firm) Work Orders	C4	9020	131010	20
3120	Work in Process	00001			****		WO	Real (firm) Work Orders	X1	9020	131010	20
3120	Work in Process	00001			****		WO	Real (firm) Work Orders	X3	9020	131010	20
3120	Work in Process	00001			****		WO	Real (firm) Work Orders	X6	9020	131010	20

Floor stock in manufacturing operations

Issue type= Floor stock (F)

One of the often missed feature in E1. Companies keep literature items, guides, tools, etc. in the bill of materials for the costing purposes and, they want to be shown in the workorder partslist. But these are commodity type items and no issued physically in the manufacturing process. Most of the time, these are expensed items. Instead of making fake issues and/or adjusting negative inventory periodically, the best practice is to make them floor stock.

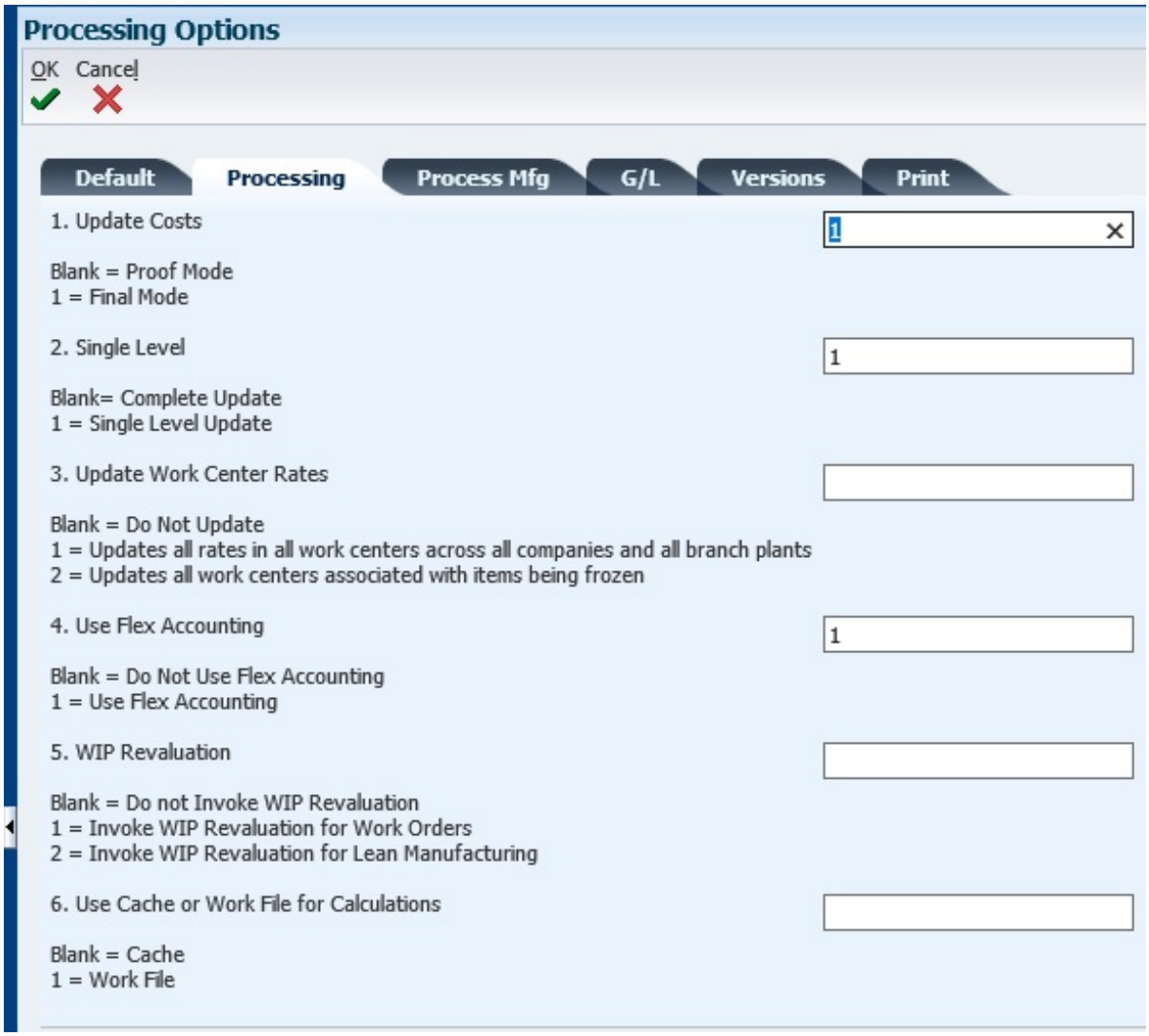
WO super backflush will not prompt for material issues so there are no unwanted cardex entries. No need to correct the negative inventory for such items



Freezing Work Center rates before Cost rollups

JDE suggests freezing workcenter rates before cost rollups. Many times, cost accountants forget to do that after making changes to simulated rates for the work centers. The catch-all at the R30835 processing option to update work center rates will do the same job for you behind the scenes.

R30835 Processing Options

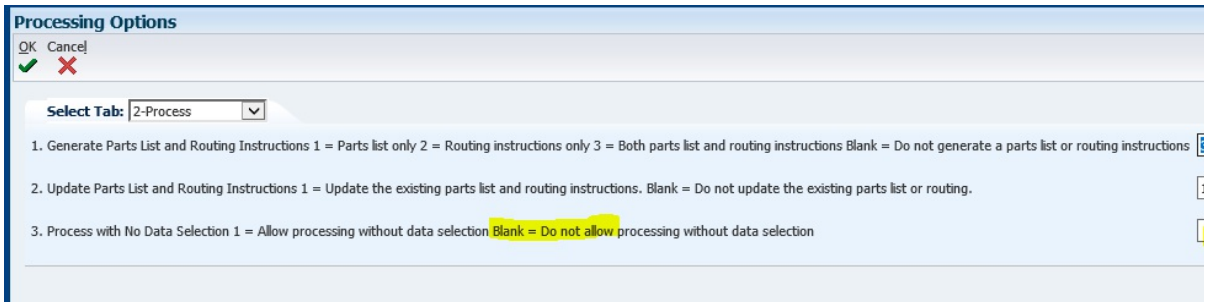


Stop re-opening workorders by user(s)

If you are a consultant, you would have seen multiple times when planner or shop-floor user ran R31410 (Attach parts list/routing) wide open removing all data selection and/or making incorrect data selection values. Even with DS security, one user entered doc#>1 in her batch job to open up all the work-orders in the system on a Friday evening.

But there is a new processing option control to limit people from deleting the data selection rows. Ensure you have not granted processing option prompt for this UBE at the user level roles

R31410 Processing Options

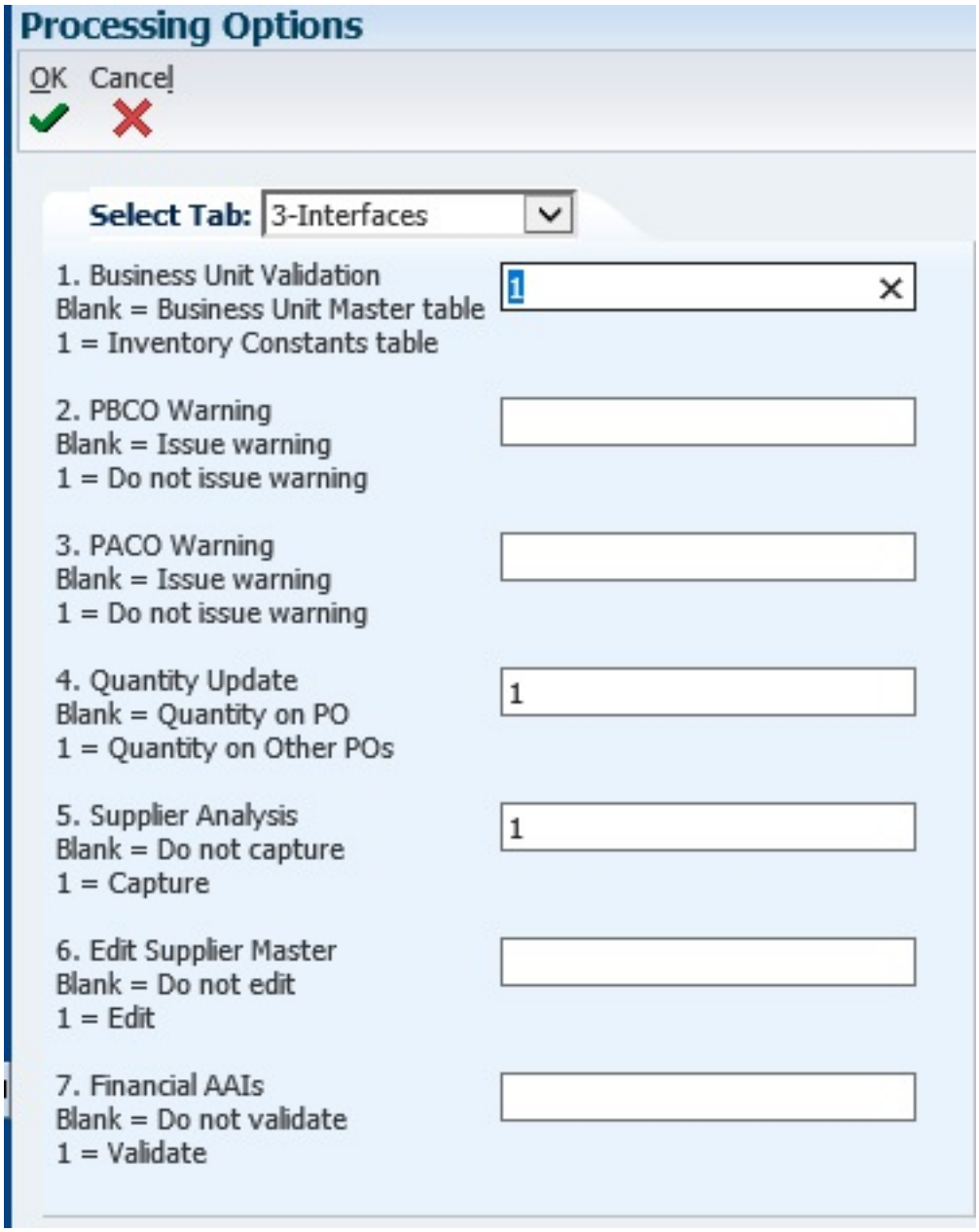


Using Blanket purchase orders

Generating blanket orders and releasing purchase orders from the blanket could be done as a stand-alone basis (OR) from the MRP message processing. The field 4. Quantity update on the P4310 processing option on the blanket order version is critical to make the entire process work seamlessly.

In many implementations, companies stop after regular purchase order transactions. The purchase orders for outside operations, volume discounts, releasing PO from blankets, PO Generation tool (not MRP) are often not implemented due to lack of time & resources.

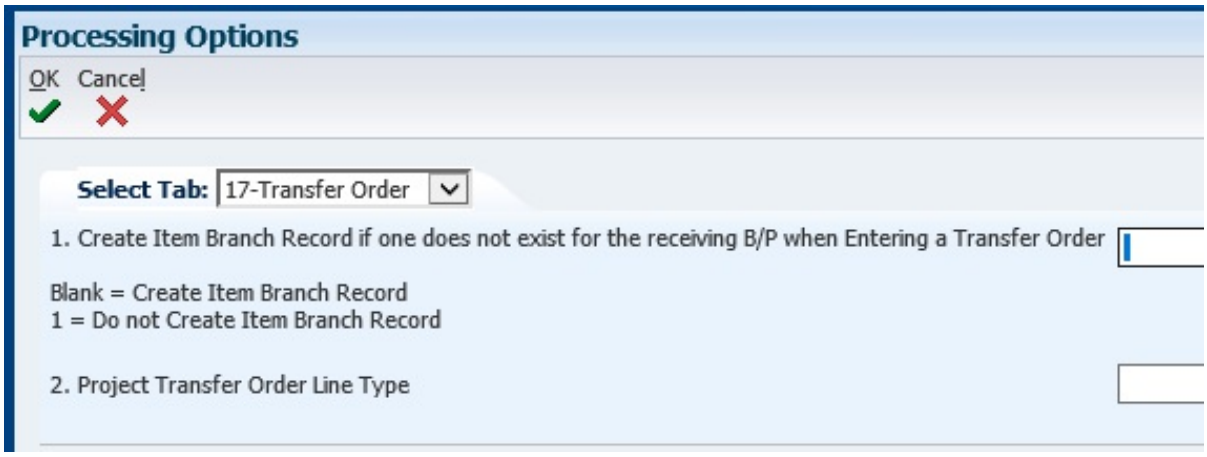
P4310 – Blanket order version



Auto generate item branch record in ST/OT

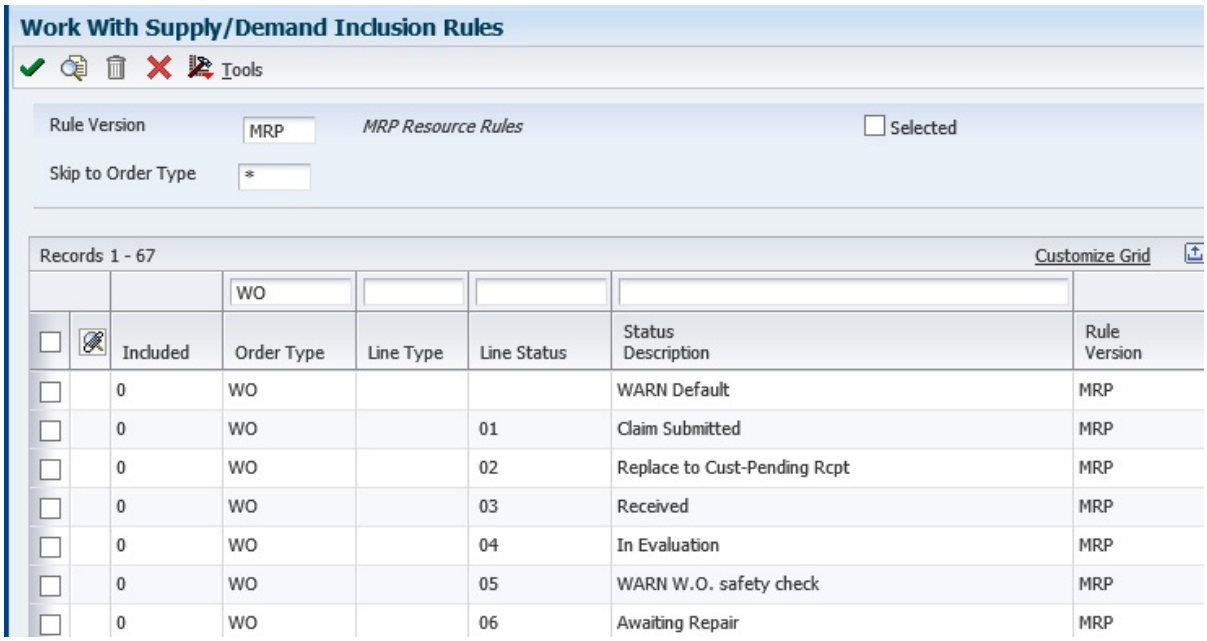
ST/OT process. If you don't want unwarranted material movements within a plant, there is a processing option on the P4310 side which decides whether to create a new item branch record if one does not exist. I have seen companies turning this to '1-do not create item branch record' and give error to the person moving materials from one branch to another. This can control products/items moved into unnecessary branches impacting cycle count and costing issues.

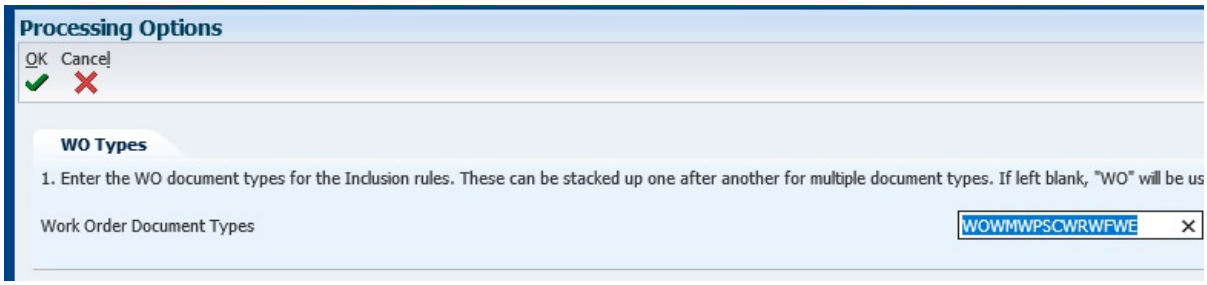
P4310 Transfer Order entry PO side version



S&D inclusion rules for workorder types

If your system has multiple work-order types under manufacturing process (like WO,WR,WE,WM) you may get error when entering S&D inclusion rules. There is a one-field processing option in the version which decides what order types are valid. This field is maintained without any commas.





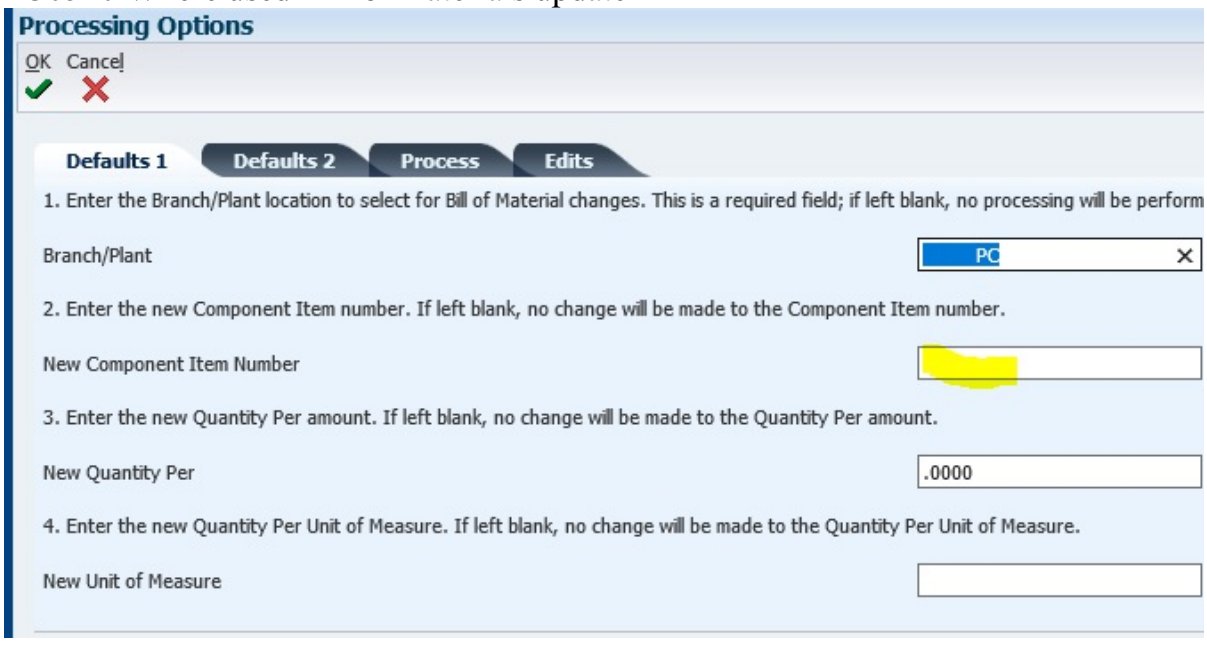
Auto replace of components in bill of materials.

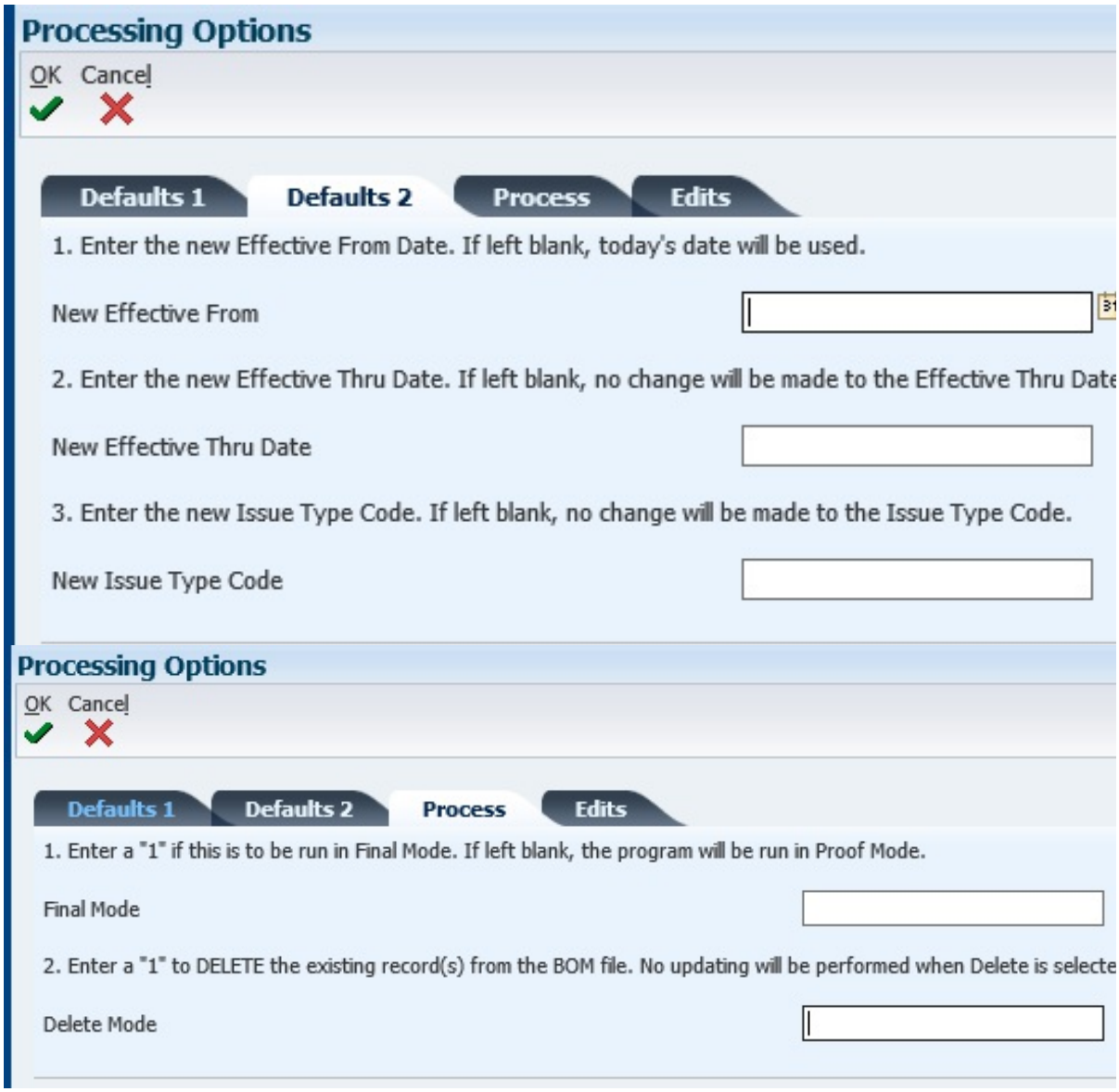
In a manufacturing business, where bills of materials go through constant changes and universal replacements, there is a very powerful UBE which can make this activity very simple.

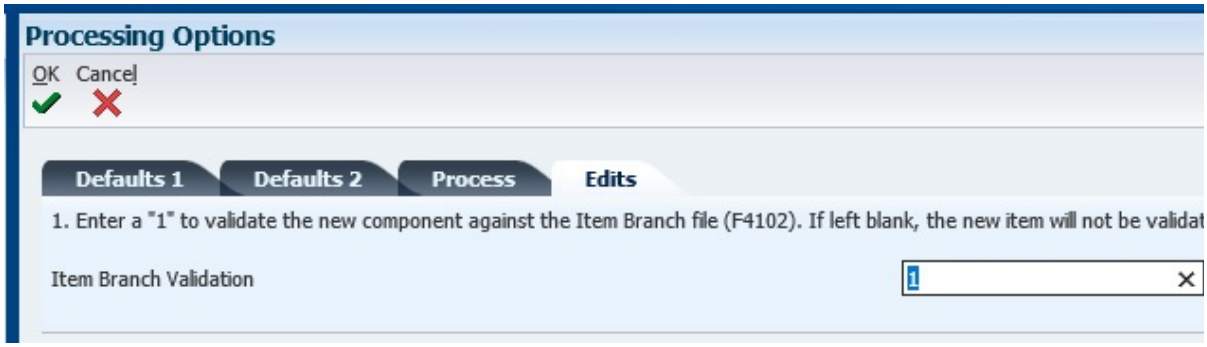
If you replacing comp1 of quantity of 1 with comp2 with quantity of 2 across multiple bills, the UBE will update the bills in PROOF and FINAL mode. Comp1 will get previous effective end-date and Comp2 will be made active. These is also an option to remove Comp1 altogether, if the business wants that way.

As usual, this has to be tested by user in non-production environment first and security granted only to certain roles.

R30520 Where used Bill of materials update





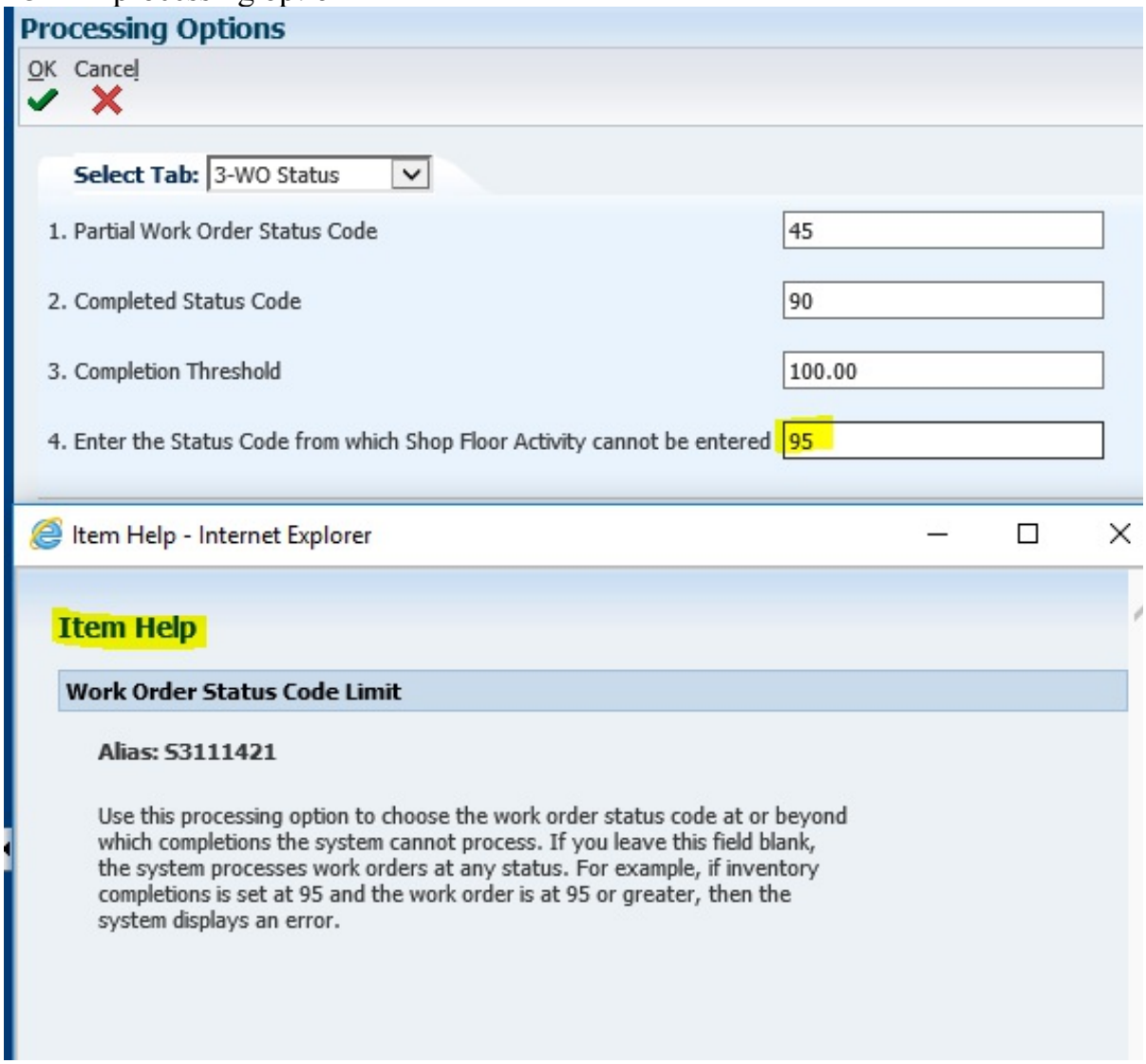


Locking Work order transaction after certain WO status.

In discrete workorder based manufacturing operations, users will come back with additional changes to material issues and/or labor AFTER workorder hits 95 (as an example). Or some times when the WO is at 96 or 97 status.

The best practice is to control them from entering any date by this processing option. Users will get error while trying to complete any transaction after certain point in the WO steps.

P31114 processing option



Linking Sales orders to Workorders

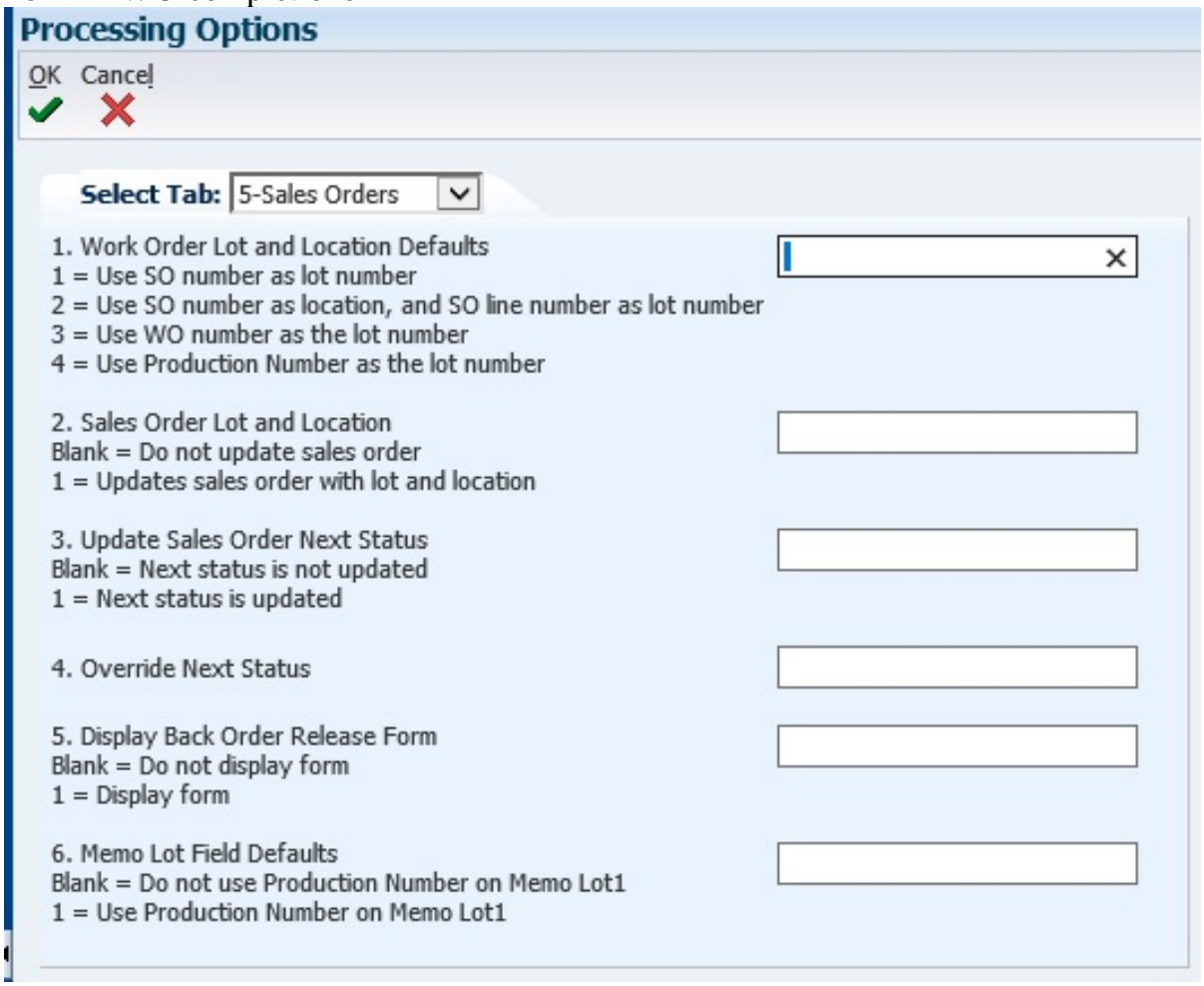
The most powerful and at the same time risky processing option on WO completions.

If you have sales orders creating work orders (line type W), work order completion can update the sales order status automatically. In a lot controlled environment it can even commit the location/lot to the sales order.

While this works perfected in full completion WO process, partial completion pose

dangers of sales order status code accuracy. Also, if CSR has capability to re-prioritize and re-commit sales orders from another lot/location, completing the original workorder will mess up the sales order status codes. If the sales order has moved past 580, system will through error. If the sales order is among valid status codes, WO completing will automatically update the SO status putting distribution in confused state!

P31114 WO completions



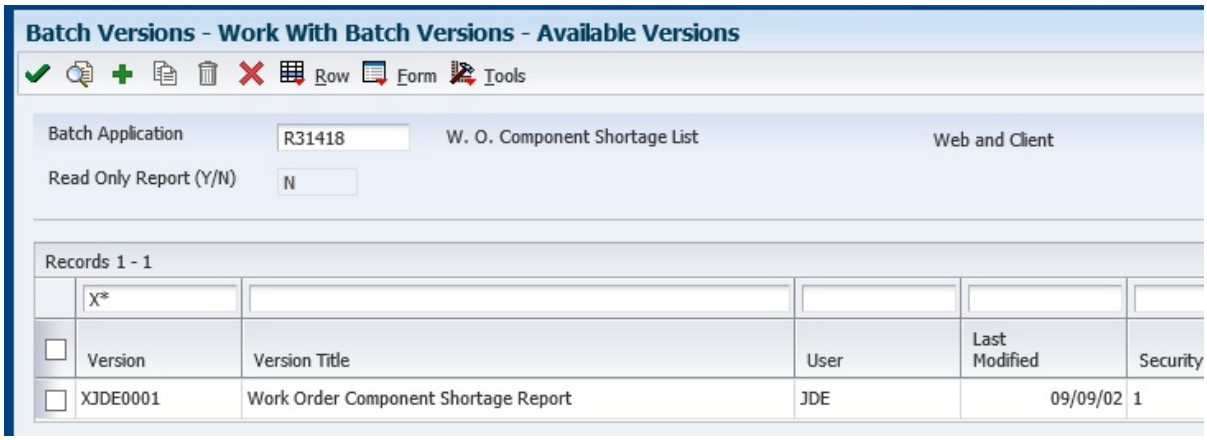
Generate Work order Shortage at anytime

The standard shortage report R31418 is generated along with R31410-Attach partslist and routing. But planners would like to know the shortages are more frequent levels. This is more applicable where you attach partslist and routing irrespective of the shortages to keep the production floor busy.

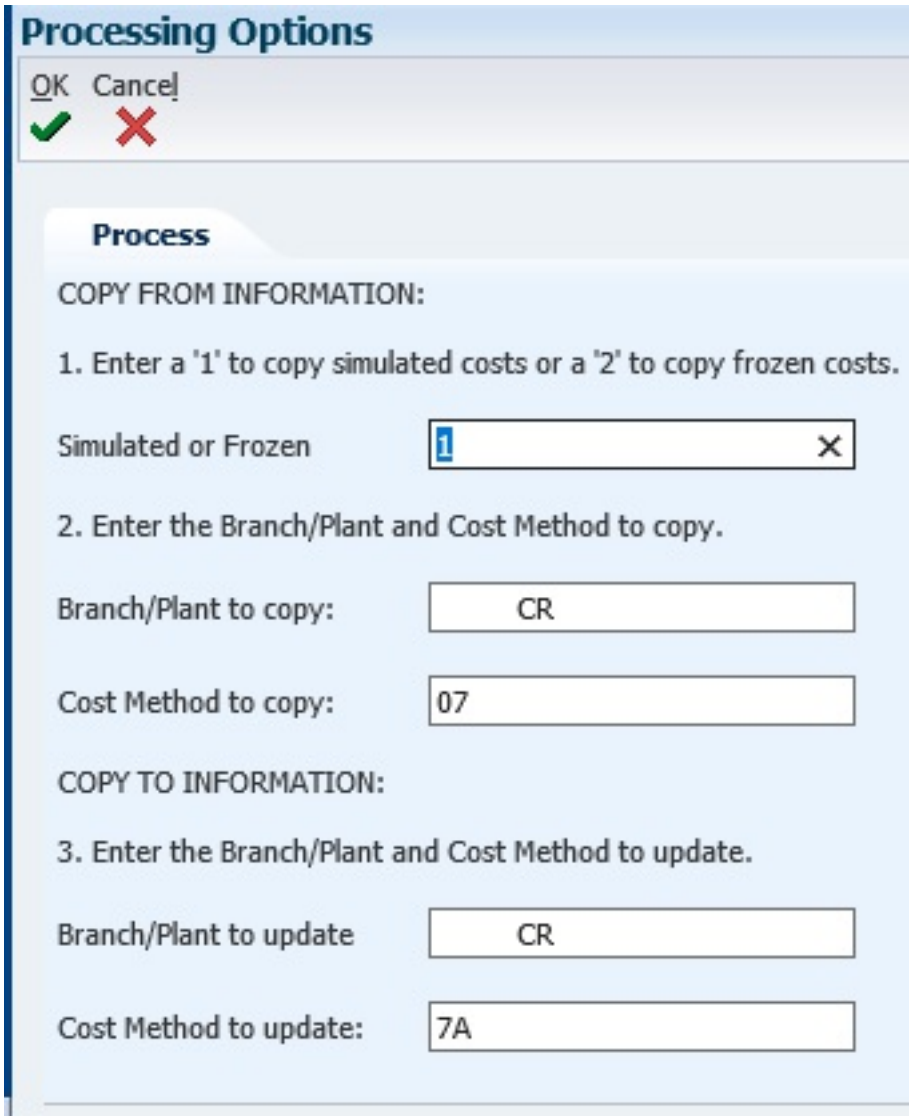
You can run this report stand-alone manually or in the scheduler with data selection of WO status code at range like >=40 and <=92. These status code depends on your specific WO configurations

This report gives all shortages against each workorders and also a summary of the

item-level shortages on the last page(s).



Copying cost from one branch to another
R30890 cost copy

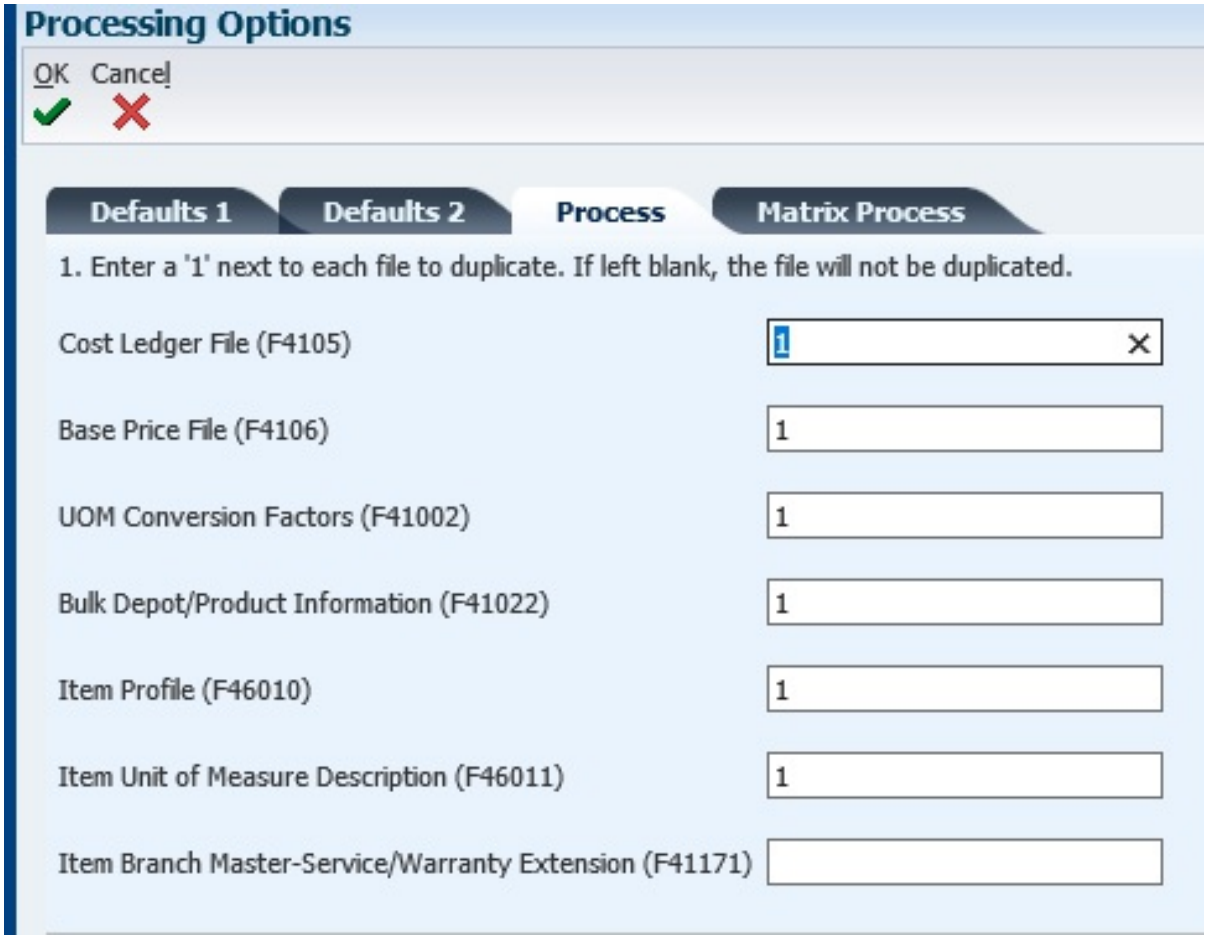


In a multi-branch manufacturing environment, this is a very powerful UBE to copy costs. User(s) trained with hands-on execution of the reports, preferable with a sample data set. If you have virtual branch plants to complete service or non-manufacturing activities, you may copy frozen costs from the source plant to destination branch.

In a DRP environment, you will simulate & freeze the cost in the main manufacturing plant (where bills and routings are maintained). You will then copy the simulated cost to DRP branches. You will complete cost freeze at those DRP branches separately to get the inventory impact.

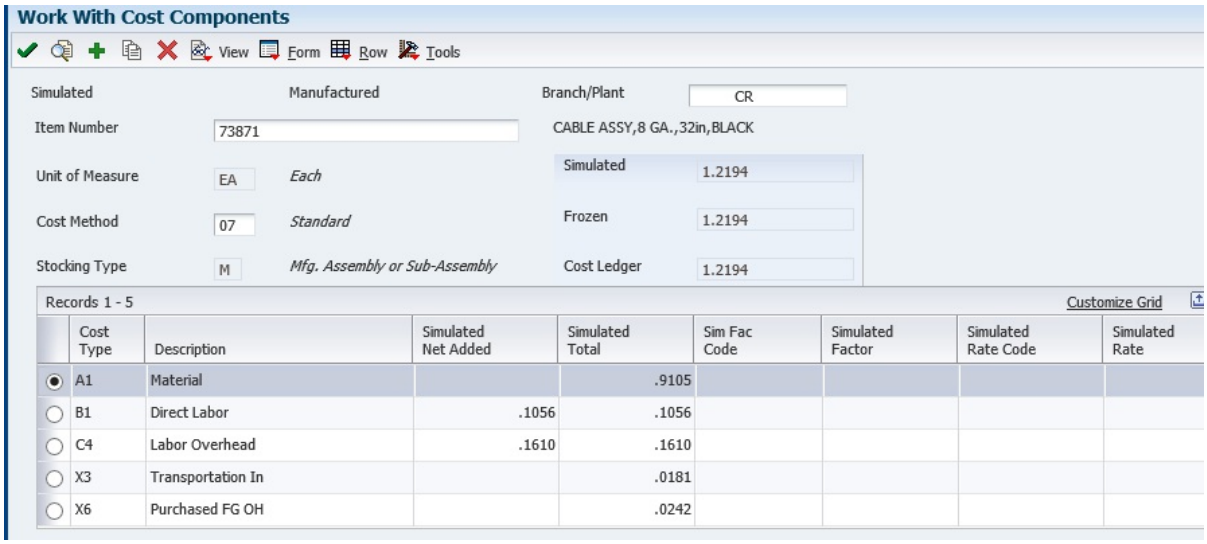
This batches creates records in F30026 table and NOT in F4105 table. If you need to copy costs in F4105 table directly (in different cost method) there are two options. You may configure new cost method and run this batch program. Or, using Z-file processor for F4105 to cut and paste the different cost methods for historical analysis and reference in that table

Creating item branches copy ASAP
R41826 ITEM BRANCH COPY



Very powerful tool to copy item branch records from one branch to multiple branches. If the record does not exist in the destination branch this batch will create one. We have seen this on scheduler nightly to keep adding new parts into other branches from the main branch plant.

Adding new lines to cost components
P30026 COST COMPONENTS



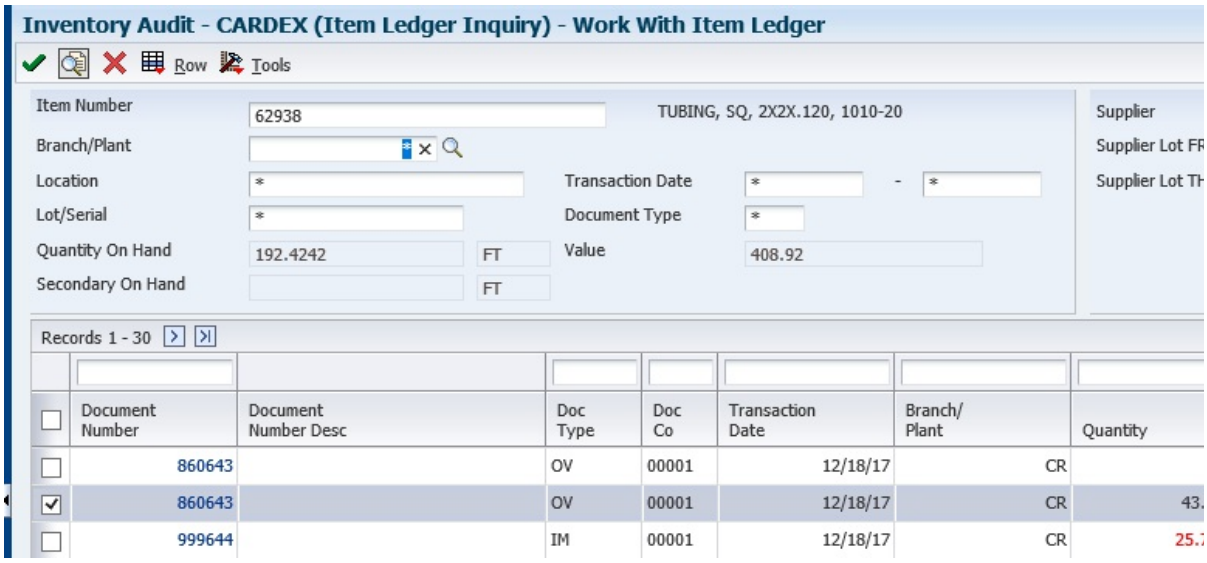
Cost accountant love to maintain X-costs but will stay back when the manual data maintenance is involved.

A simple custom UBE can make entries into the F30026 table for X* cost types with factors. (Use processing options to enable multiple cost types). The UBE can run only for purchased items (stocking type=P) to build-up the additional costs. Cost types at manufacturing parts will get added during the cost simulation process.

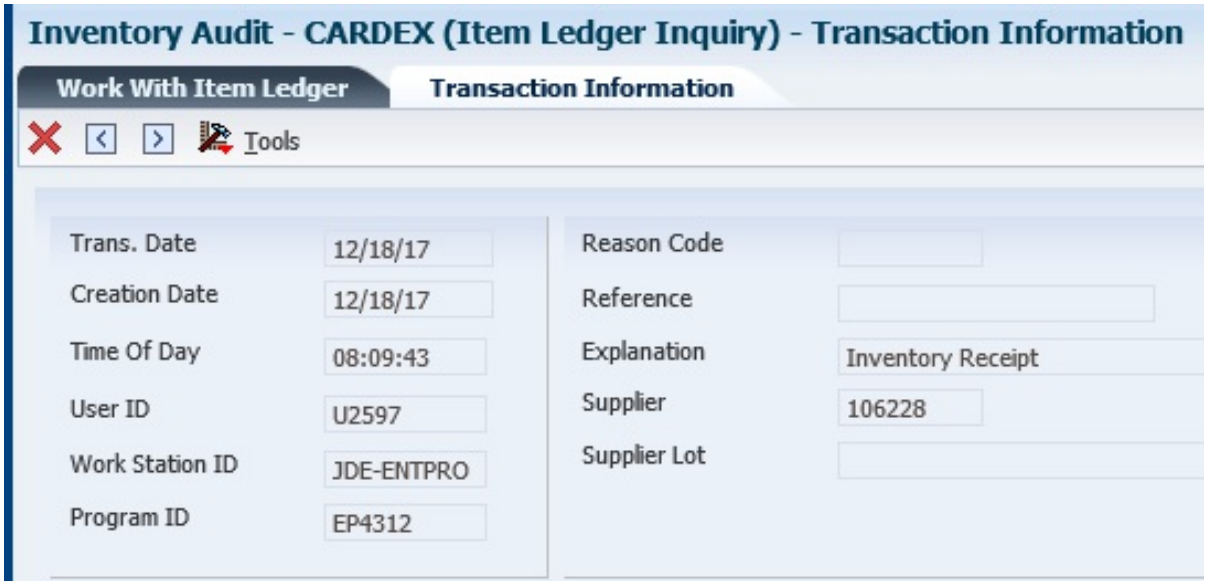
Inventory transactions: who, what, when?

The typical troubleshooting during cycle count or workorder variance calculations involve analyzing inventory transaction. If there are multiple transactions of the components against the same work order (due to incorrect WO status), the easiest way is available on the row exit.

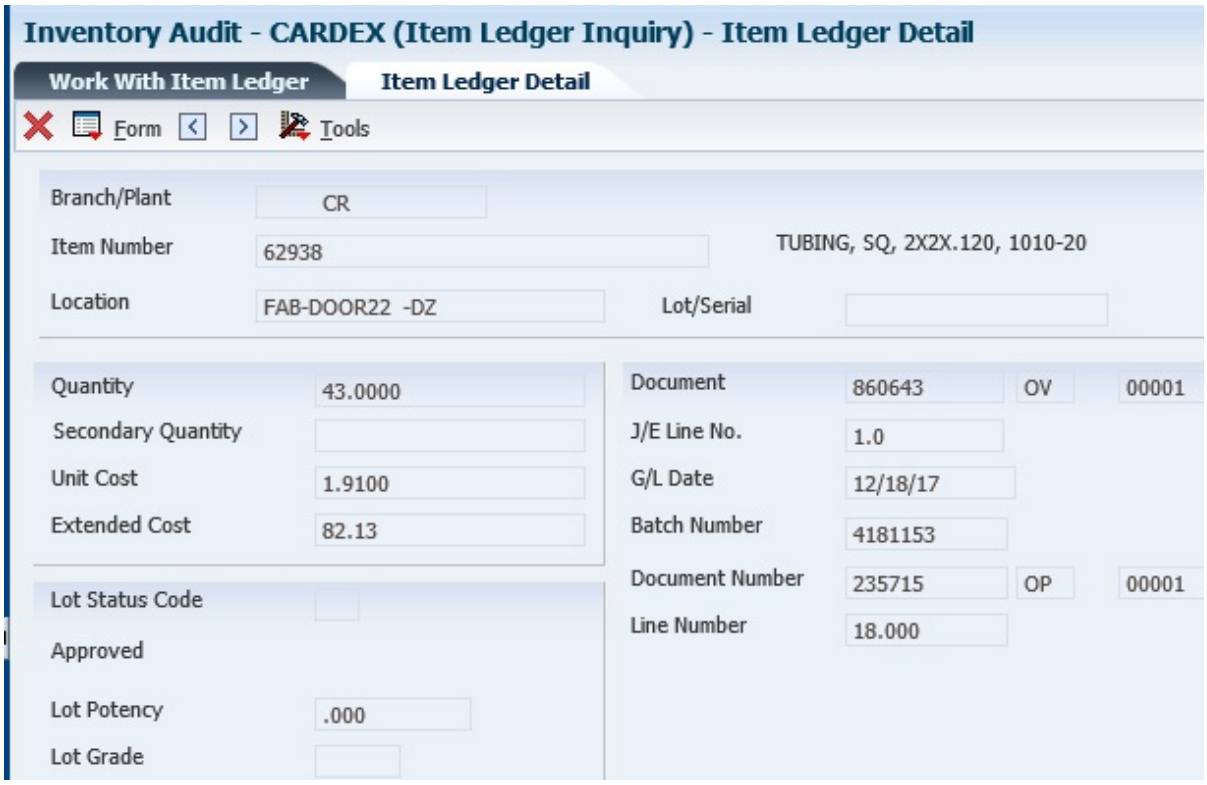
Highlight the data row and go to row exit for transaction details. This is much easier than running multiple reports or asking IT for data dump. Row transaction will give GL details, if there are Inventory to GL integrity issues.



Row>Detail



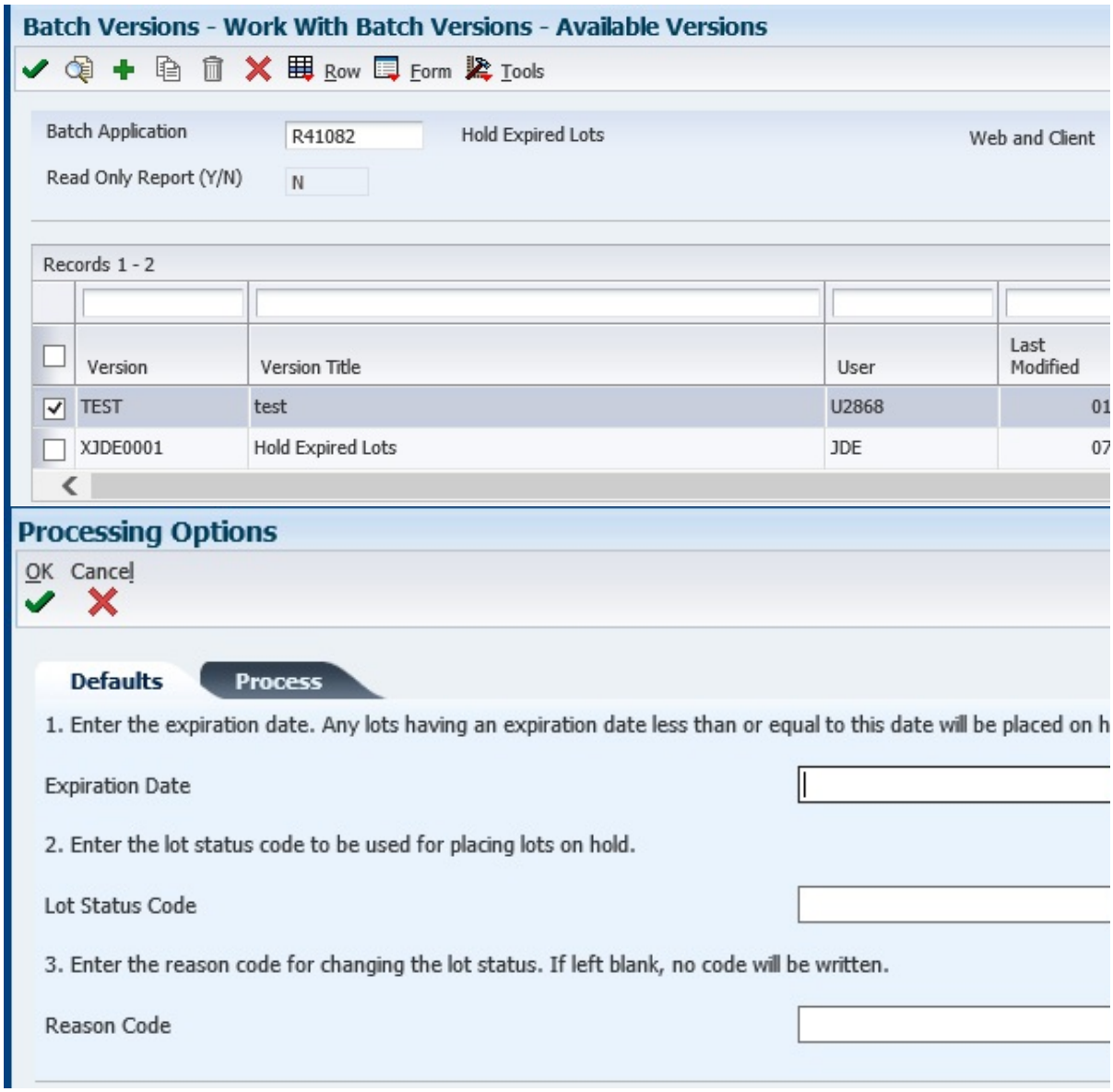
Row>Transaction

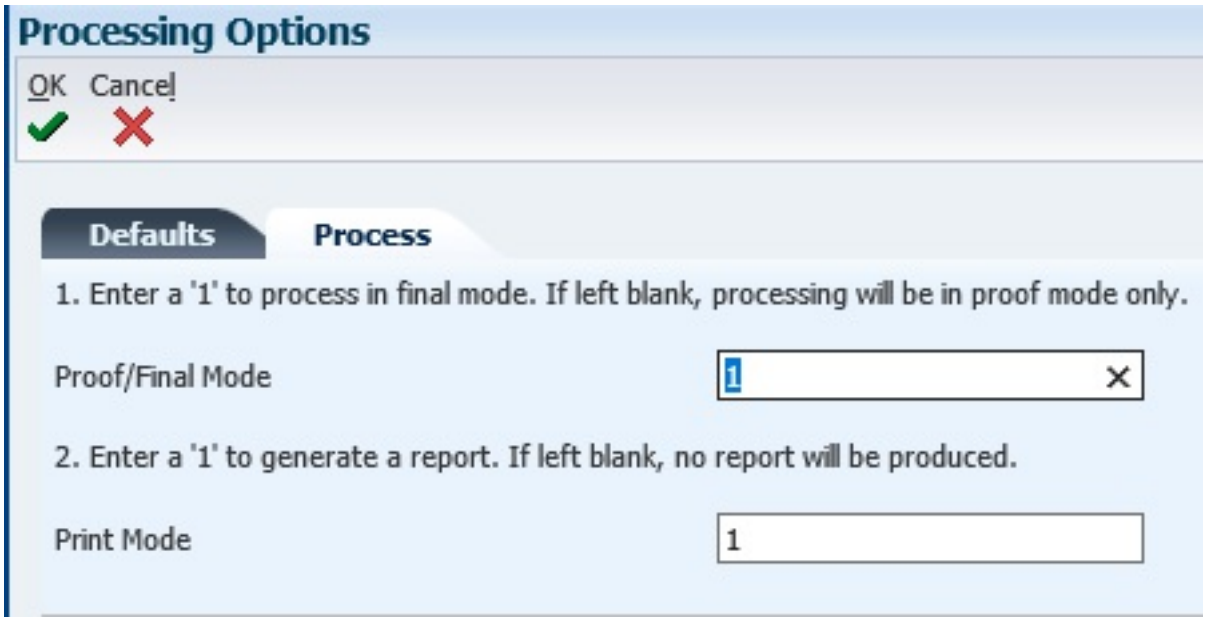


Automate lot holds

When the product lot expires, system put the expiry dates. User(s) would like to get these items go on a auto hold for quick reporting and re-mediation fixes. Otherwise, the inventory availability will show these quantities as not available with no explicit holds.

Use the R41082 to place your custom hold codes when the lots get expired. This job can run nightly basis. You can also a valid reason code. For initial implementation run the batch on proof mode to know the inventory impact or any data issues.


Batch Versions - Work With Batch Versions - Available Versions
Row
Form
Tools
Batch Application
R41082
Hold Expired Lots
Web and Client
Read Only Report (Y/N)
N
Records 1 - 2
Version
Version Title
User
Last Modified
TEST
test
U2868
XJDE0001
Hold Expired Lots
JDE
Processing Options
OK
Cancel
Defaults
Process
1. Enter the expiration date. Any lots having an expiration date less than or equal to this date will be placed on h
Expiration Date
2. Enter the lot status code to be used for placing lots on hold.
Lot Status Code
3. Enter the reason code for changing the lot status. If left blank, no code will be written.
Reason Code


Processing Options
OK
Cancel
Defaults
Process
1. Enter a '1' to process in final mode. If left blank, processing will be in proof mode only.
Proof/Final Mode
1
2. Enter a '1' to generate a report. If left blank, no report will be produced.
Print Mode
1

Tips & Tricks

SECTION - 2

How to fix WO if the status got moved to 40 by user-error?

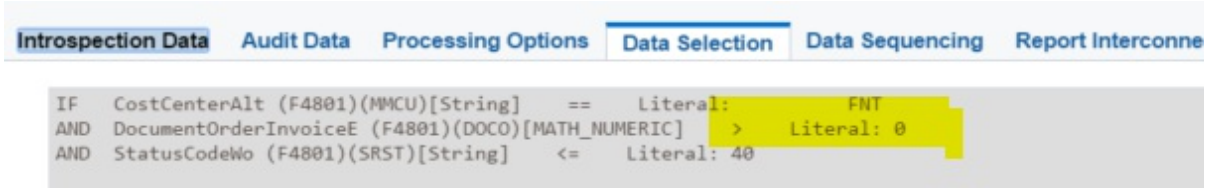
Intro: WO PL/Rtg attachment UBE (R31410) updated WOs with partslist (from Bill) and Routing (from product routing structures) and update the order status to 40 (from 10). This can be reversed manually. The data selection in this UBE has lot of controls so that not ALL orders are taken to 40 status by mistake. User should never remove these data selection line and also pay full attention when entering the values. See below

In 9.1 onward, there is a processing option which controls whether this report can be executed without any data selection. Always invoke that option!

On the second line, Doc number (which is WO#) should be keyed in. Do not change it to value >0.

The last line, ensures only orders <=40 are picked up

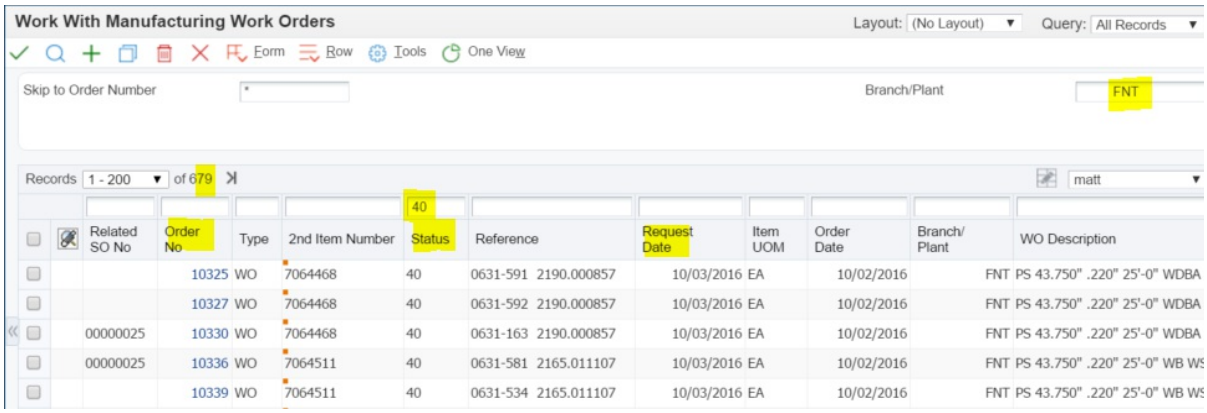
See below for user's mistake



If you are not sure what data-selection you modified, you can cancel the jobs at the PRINT option screen. The UBE will not start unless you click OK in the final PRINT screen.

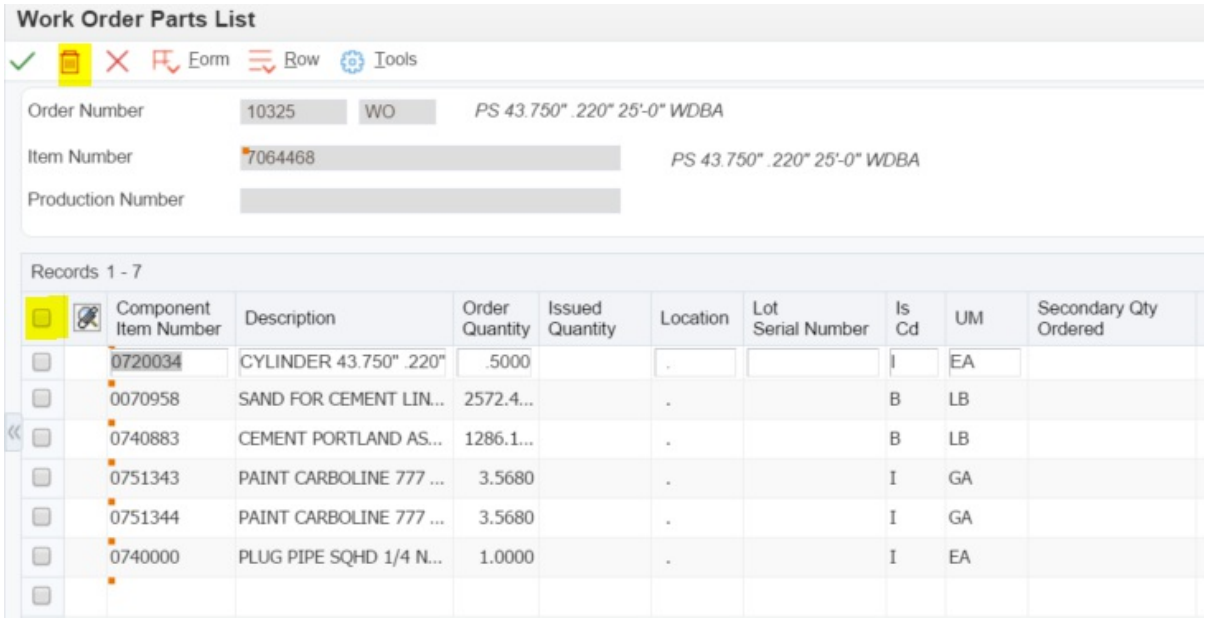
Step 1: How to find these orders?

Export the entire data to excel for reference. Analyze by project# and requested date to see whether any orders need to be reverted back to status 10.

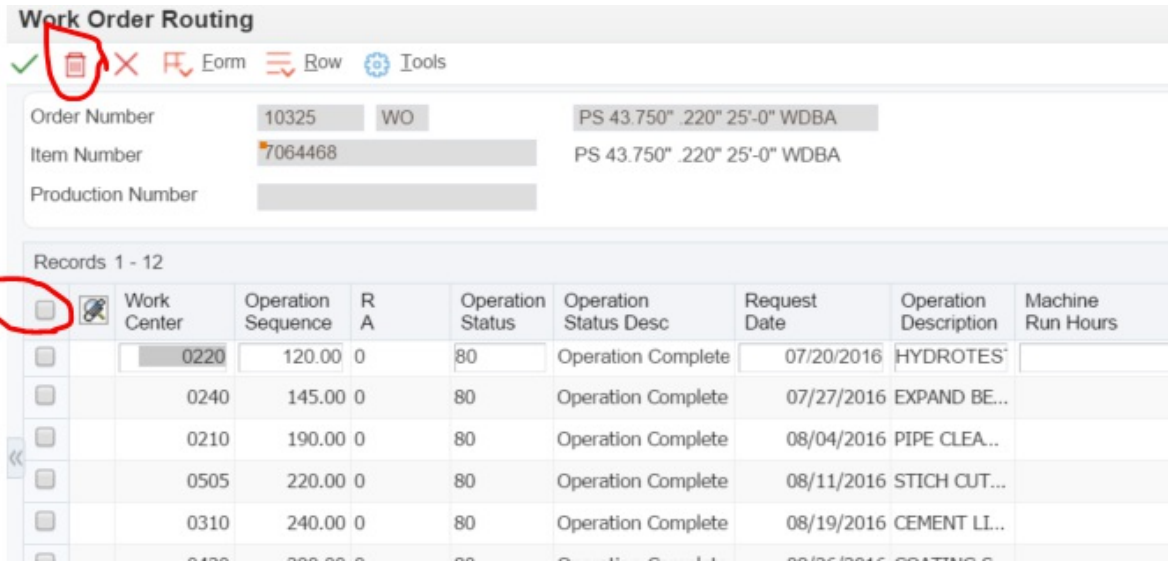


2 Reverted back the status 10. This is two step process: (1) remove PL and Rtg from each workorder manually. There is a WO repost program that run every night which clears these soft commitments across all items so that inventory availability looks reasonable (2) put back the WO status to 10. This can be done manually. Or there is a batch process which can move status to 10 on a 'range' of orders. (example: 10325 to 11178)

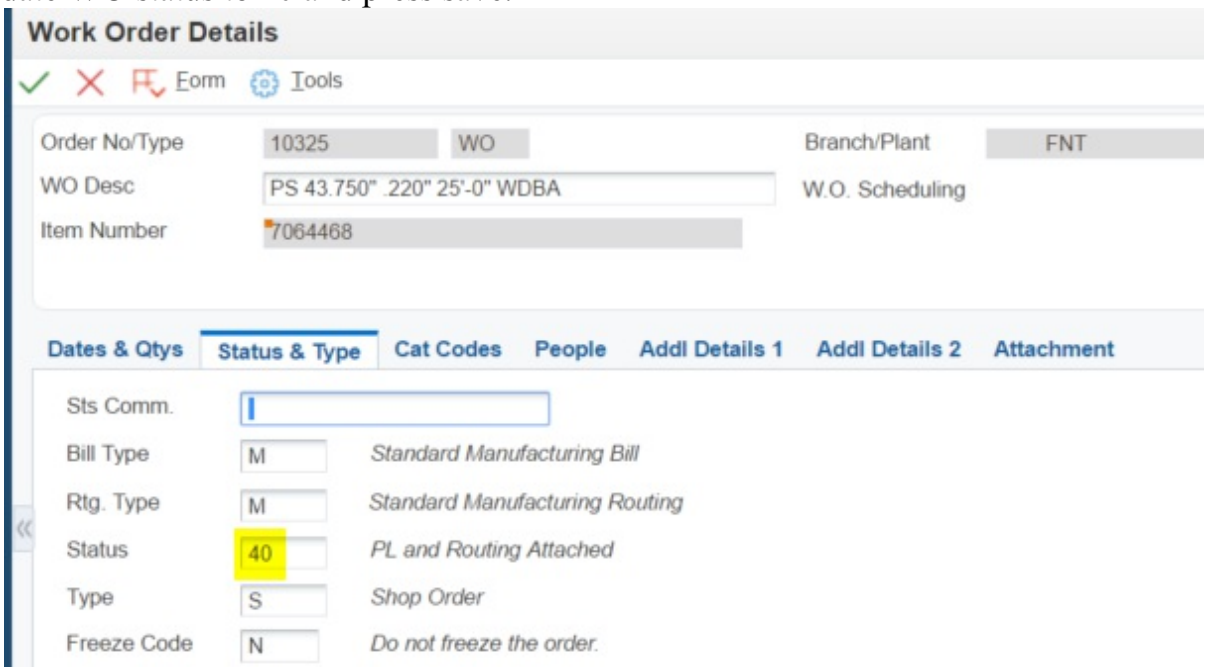
3 Removing partslist. Open WO Entry application and locate your order. Go to row exit and open partslist. Highlight all lines by clicking the top box. Press delete.



4 Removing routing. Open WO Entry application and locate your order. Go to row exit and open routing. Highlight all lines by clicking the top box. Press delete.



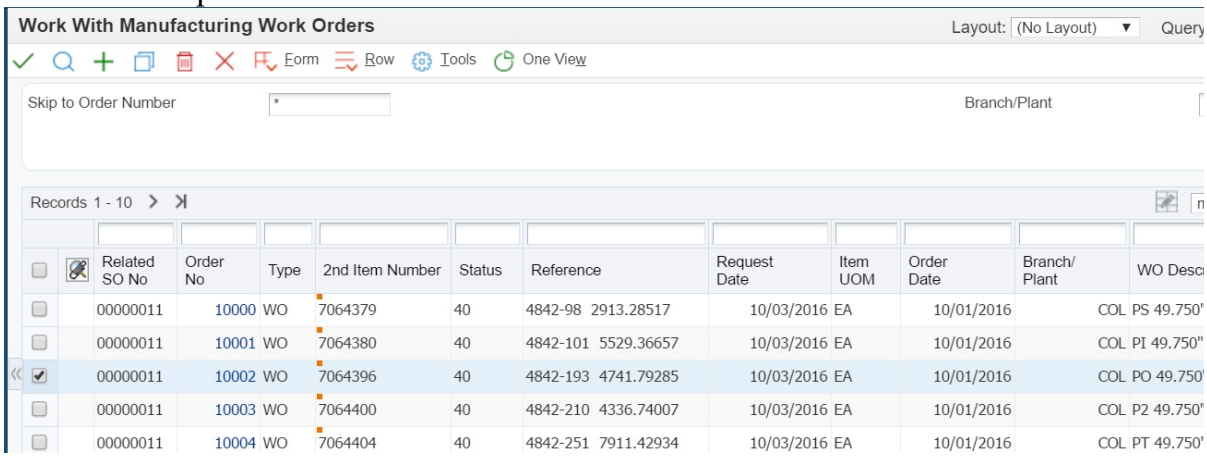
5 Updating WO status. Locate your order and select. (don't go row exit). Update WO status to 10 and press save.



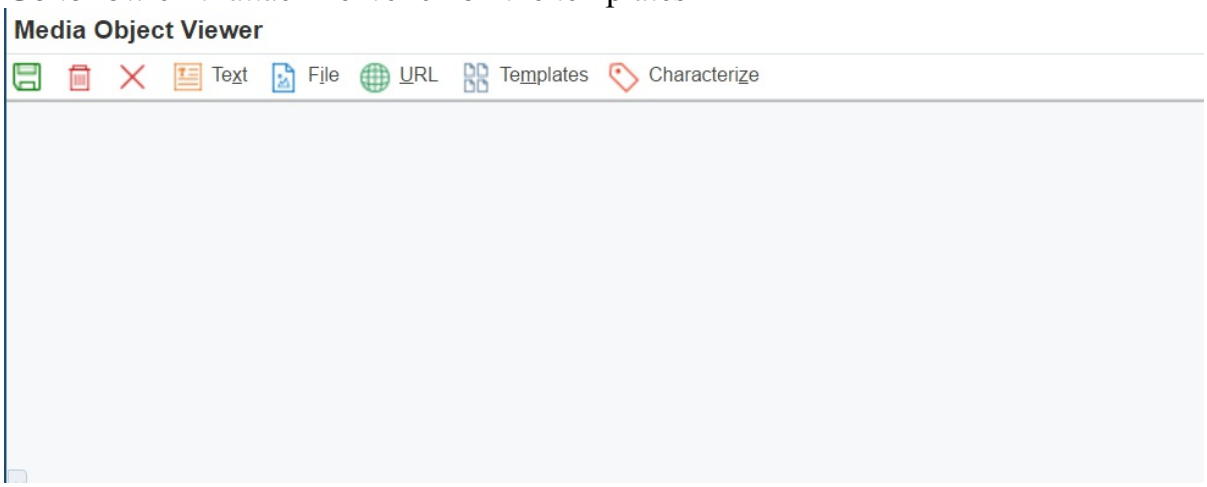
How to append template as text attachment to WO?

Business need: Lot of quality data like test date, some values (not in test result entry) need to be captured and stored in the system. Without adding a formal test result entry for each type of data capture, there is an option to add a standard template and add it to WO transactions. This template is stored as text attachment to the workorder. This could be added to any other type of transaction as well (example: test result entry)

1 Open the WO transactions

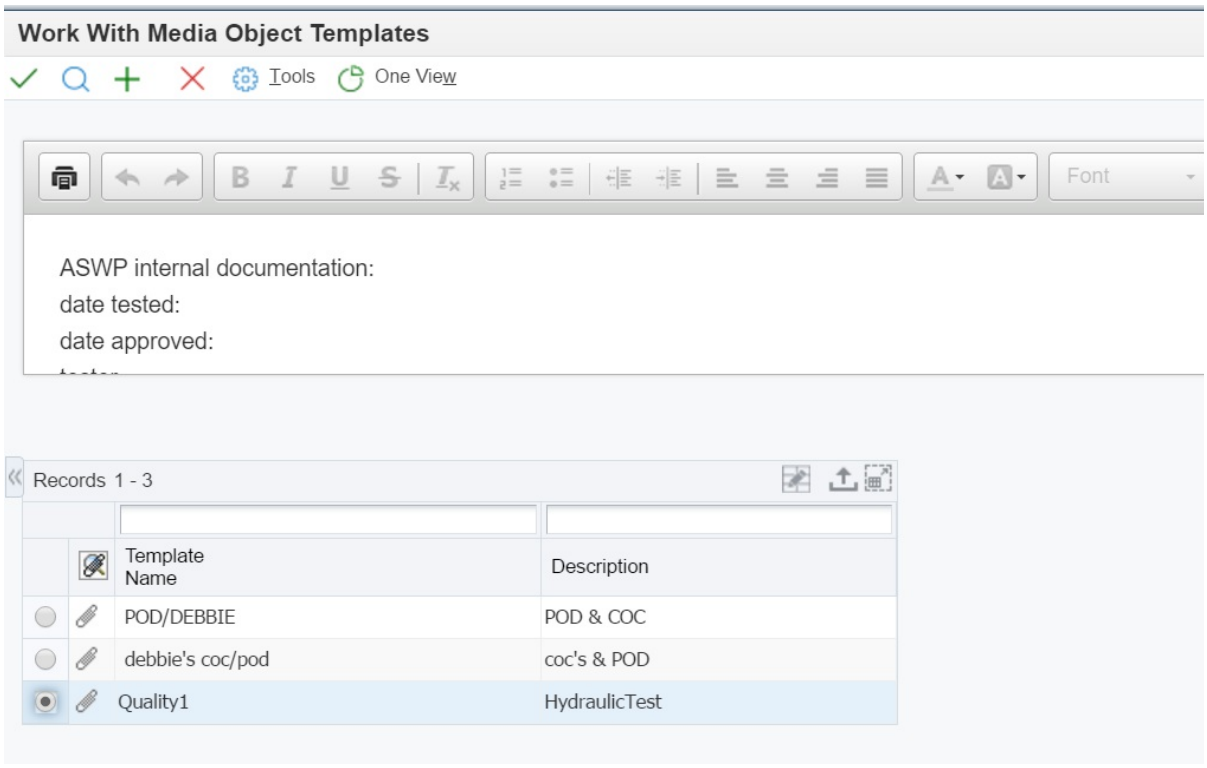


Go to row exit>attachment click on the templates

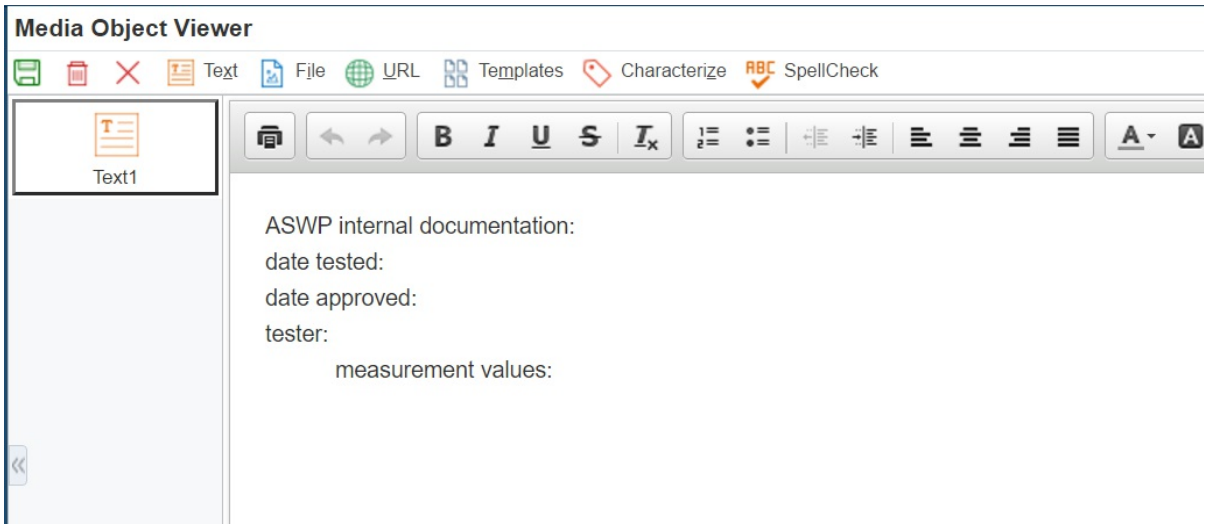


Click on templates

2 Press find to get existing templates. There could be other functional area templates like PO or SO, ensure you select the right template



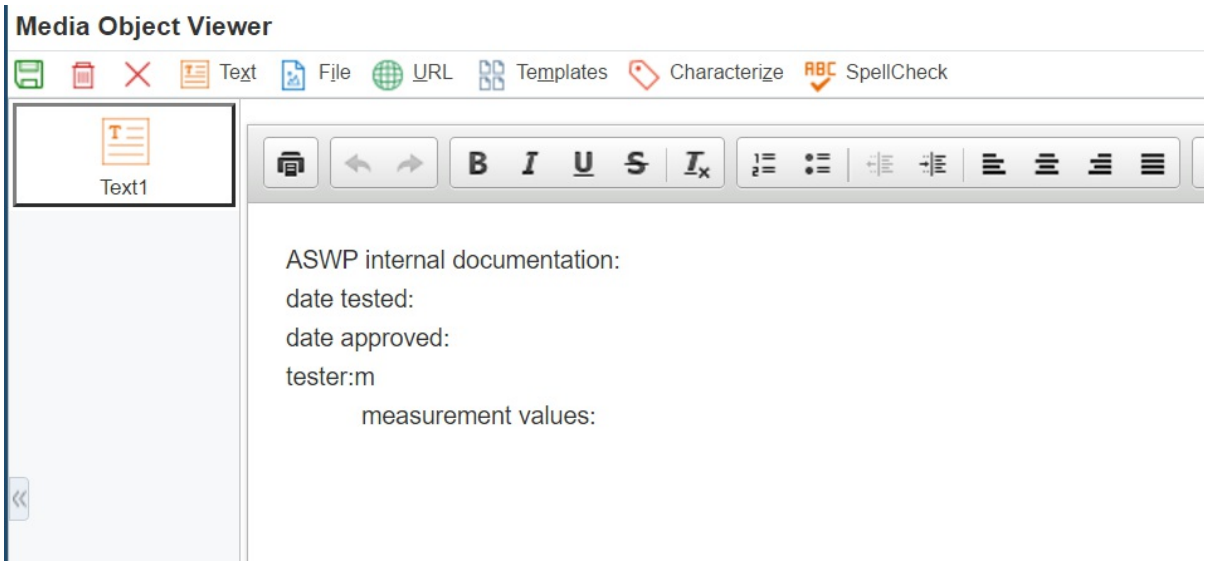
Click select, the format comes into the WO as text1 attachment. Press save button



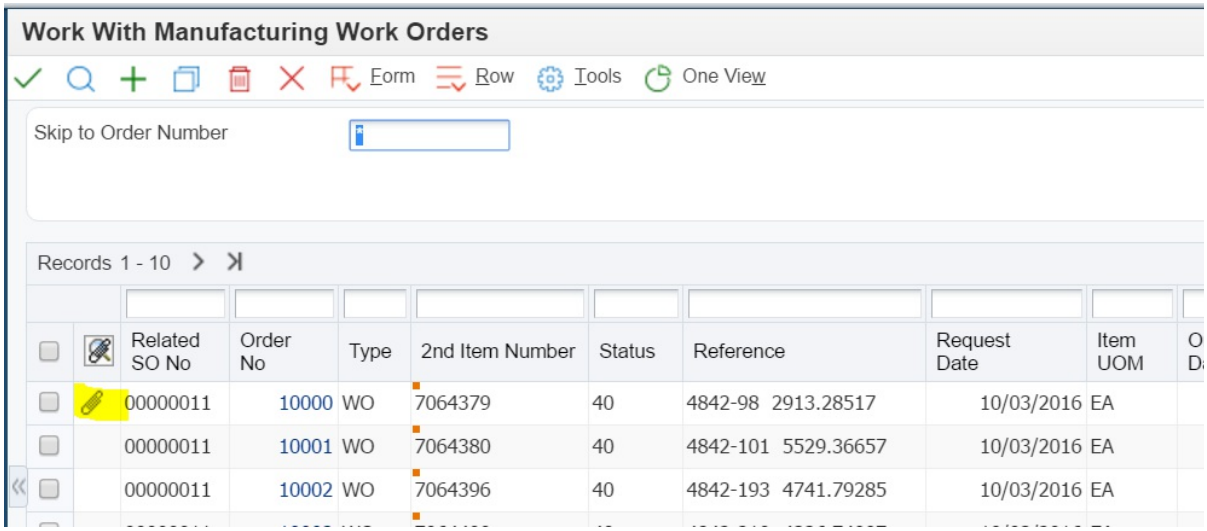
Enter some value (see example below: tester=m). add more content and press save.

Any other user can come back to this screen; add more content or update content.

This template can be updated/revised by ONE PERSON for the functional group to make the content standardized.



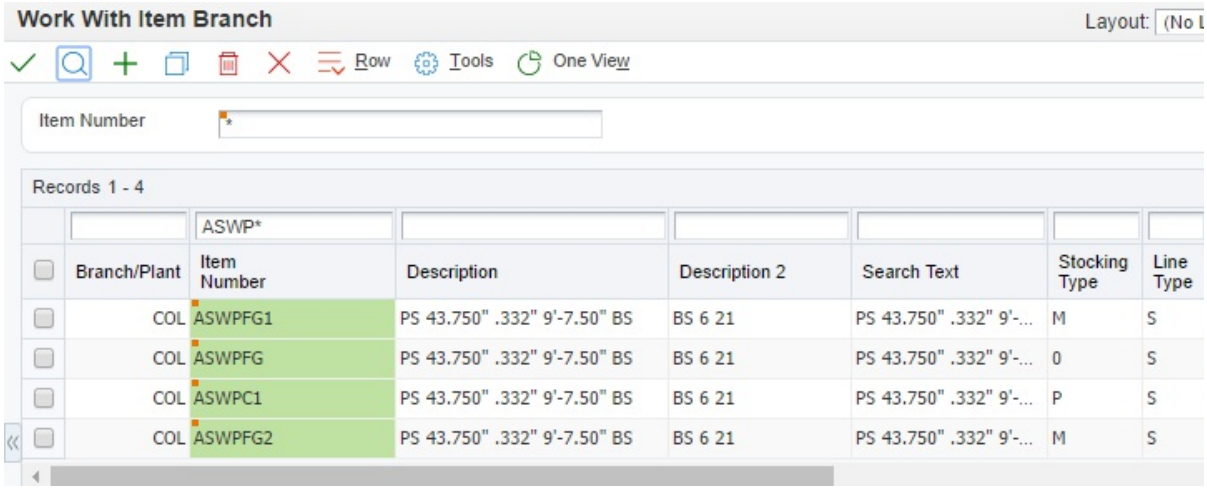
Once you save, the order will show with 'paperclip' icon. This is an indication that some attachment exist for that record



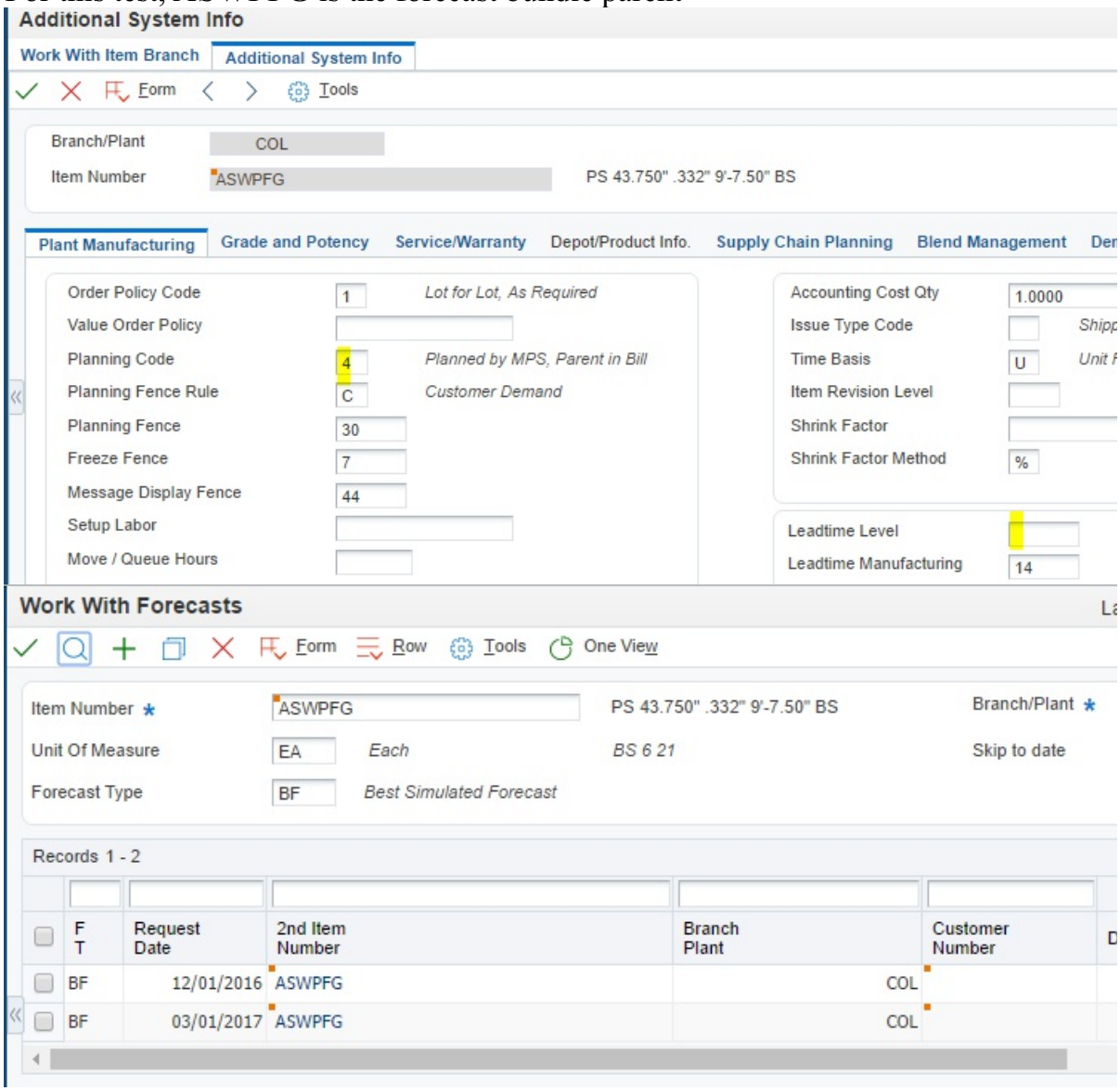
Running planning bills

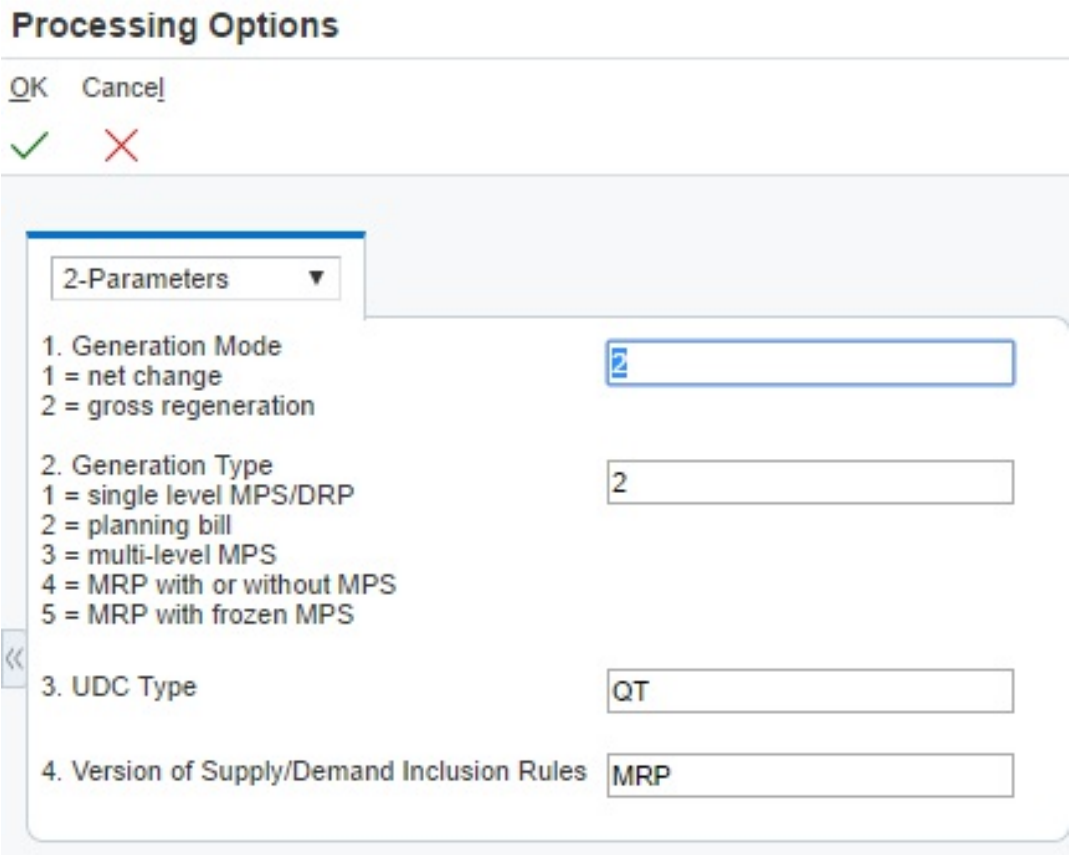
Following example show how to configure planning bills.

If you have forecast at product family level, JDE can build the detailed SKU level forecast based on the planning bills. MRP (separate batch run) can update forecast table with SKU level forecasts.



For this test, ASWPFG is the forecast bundle parent





Run a version of R3483 with planning bills

The batch will generate detailed forecast entries for the sub-levels in P3460 (Forecast entry application)

How WIP gets generated and cleared?

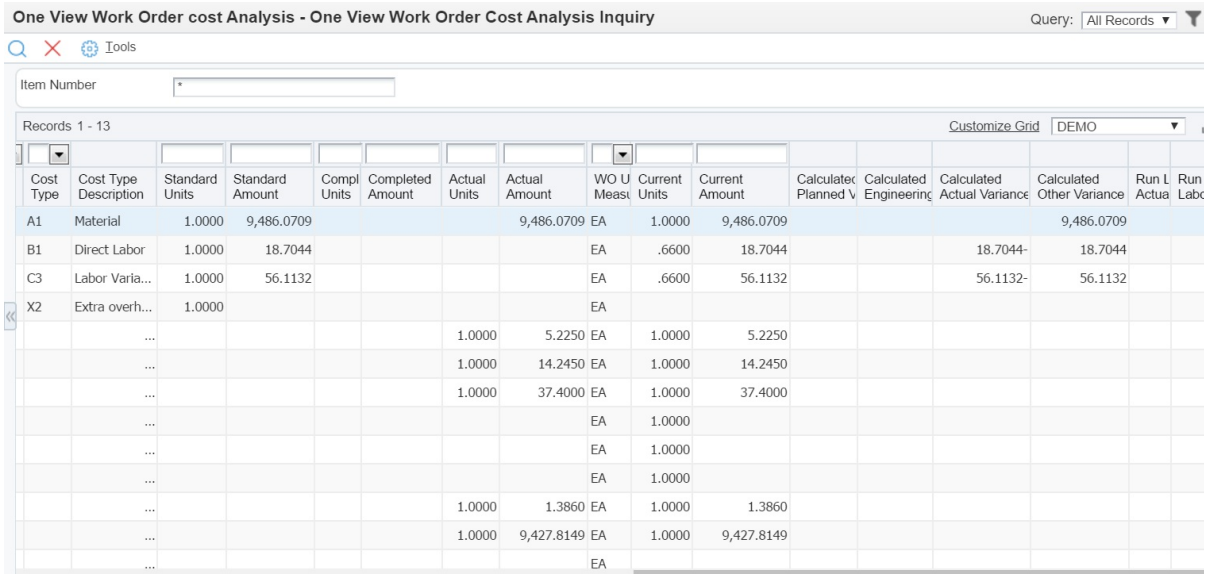
Create a WO and attach partslist. Make material issues.

Report completion using superbackflush (in this case only labor hours are back flushed)

Run manufacturing accounting final after material issues and after WO completion (assuming there is delay between these two steps)

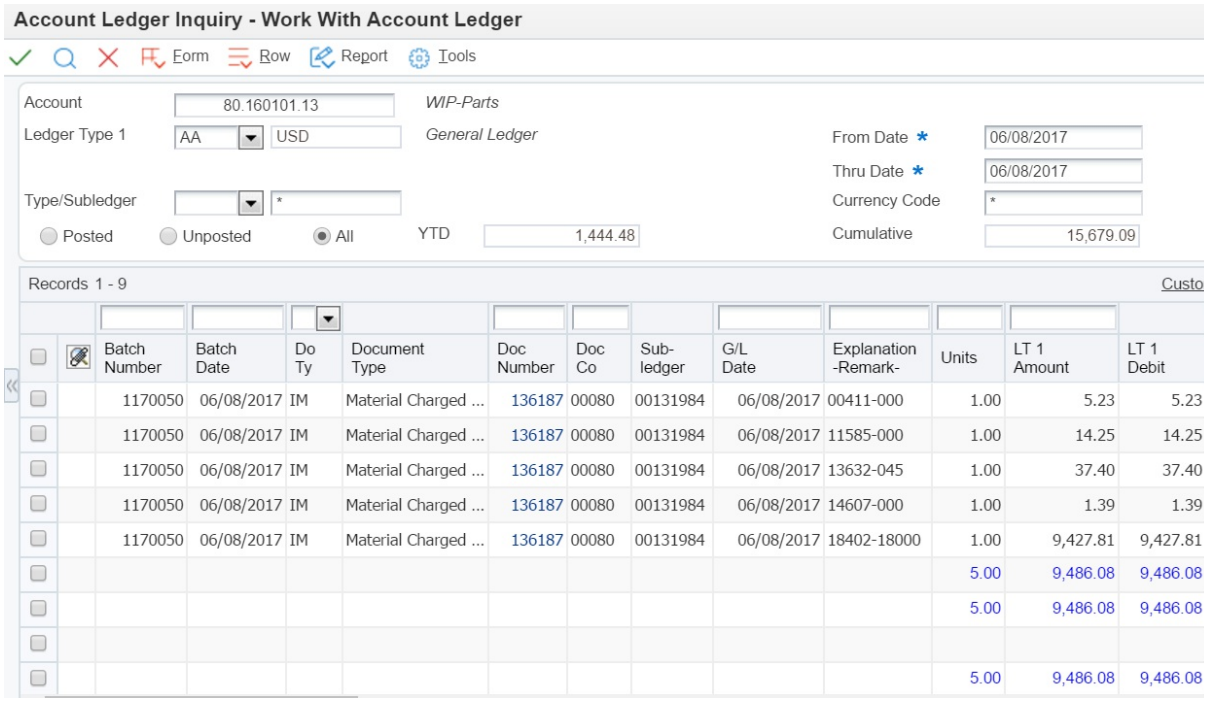
Use OneView inquiry tools:

Screen shot after material issues. Look at actual units and actuals amounts



Cost Type	Cost Type Description	Standard Units	Standard Amount	Compl Units	Completed Amount	Actual Units	Actual Amount	WO U Measu	Current Units	Current Amount	Calculatec Planned V	Calculated Engineering	Calculated Actual Variance	Calculated Other Variance	Run L Actua	Run Labc
A1	Material	1.0000	9,486.0709				9,486.0709	EA	1.0000	9,486.0709				9,486.0709		
B1	Direct Labor	1.0000	18.7044					EA	.6600	18.7044			18.7044-	18.7044		
C3	Labor Varia...	1.0000	56.1132					EA	.6600	56.1132			56.1132-	56.1132		
X2	Extra overh...	1.0000						EA								
	...					1.0000	5.2250	EA	1.0000	5.2250						
	...					1.0000	14.2450	EA	1.0000	14.2450						
	...					1.0000	37.4000	EA	1.0000	37.4000						
	...							EA	1.0000							
	...							EA	1.0000							
	...							EA	1.0000							
	...					1.0000	1.3860	EA	1.0000	1.3860						
	...					1.0000	9,427.8149	EA	1.0000	9,427.8149						
	...							EA								

All the material issues $ goes into WIP account.

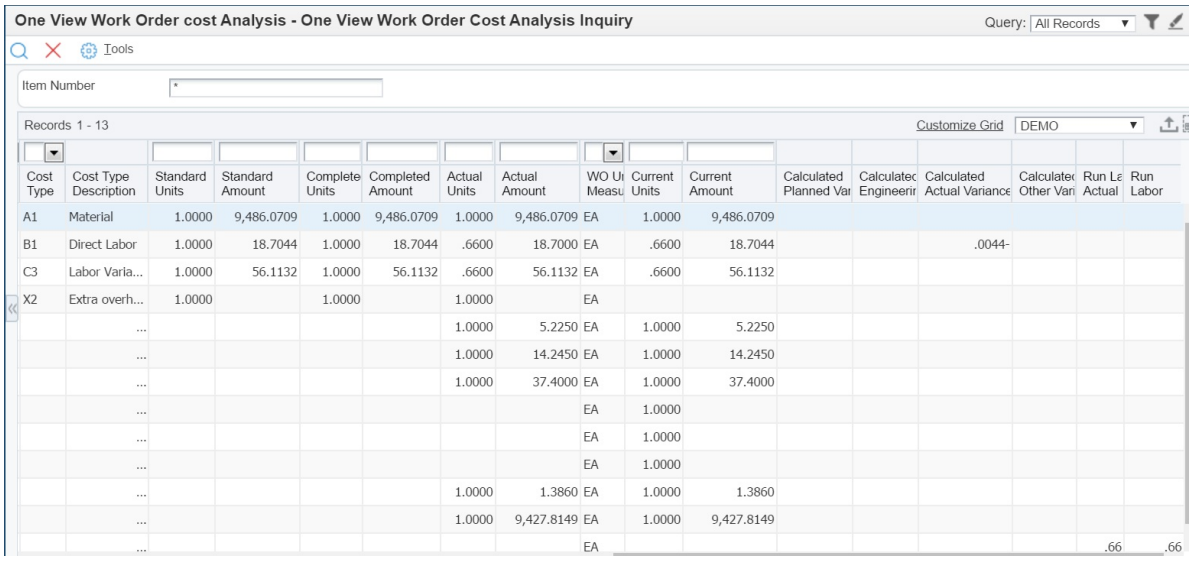


Batch Number	Batch Date	Do Ty	Document Type	Doc Number	Doc Co	Sub-ledger	G/L Date	Explanation -Remark-	Units	LT 1 Amount	LT 1 Debit
1170050	06/08/2017	IM	Material Charged ...	136187	00080	00131984	06/08/2017	00411-000	1.00	5.23	5.23
1170050	06/08/2017	IM	Material Charged ...	136187	00080	00131984	06/08/2017	11585-000	1.00	14.25	14.25
1170050	06/08/2017	IM	Material Charged ...	136187	00080	00131984	06/08/2017	13632-045	1.00	37.40	37.40
1170050	06/08/2017	IM	Material Charged ...	136187	00080	00131984	06/08/2017	14607-000	1.00	1.39	1.39
1170050	06/08/2017	IM	Material Charged ...	136187	00080	00131984	06/08/2017	18402-18000	1.00	9,427.81	9,427.81
									5.00	9,486.08	9,486.08
									5.00	9,486.08	9,486.08
									5.00	9,486.08	9,486.08

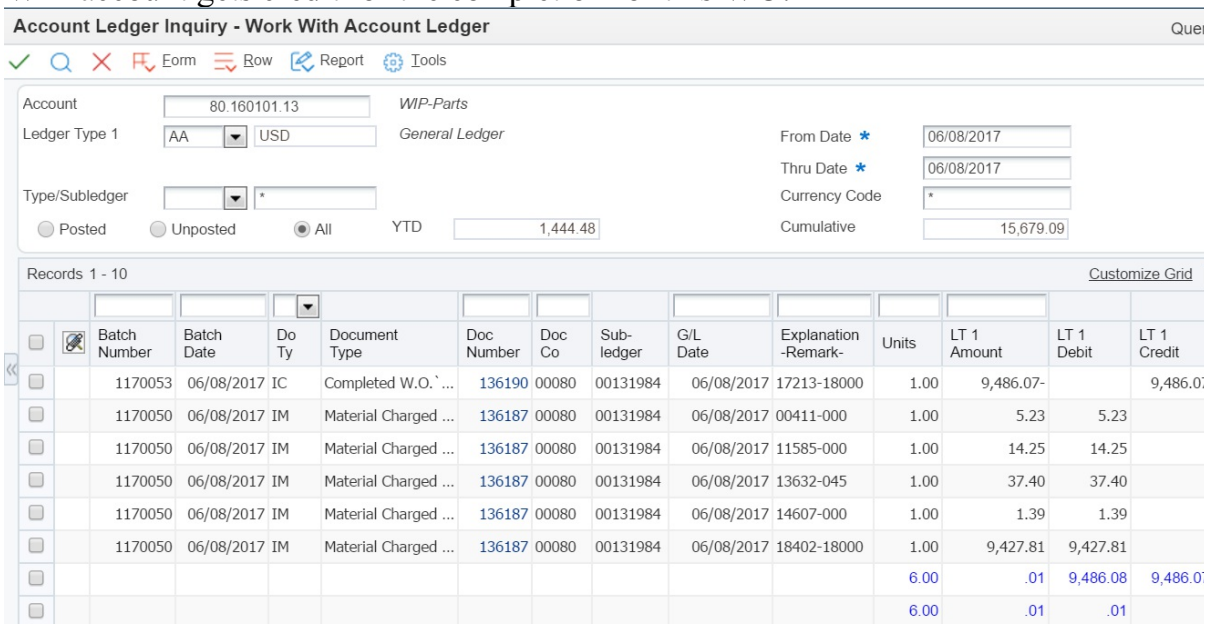
Refresh OneView after WO completion & mfg accounting final.

Completed amount and completion units gets updated (including labor hours). Superbackflush does not require labor hours update process.

Technically, the different between completed amount and actual amount is the WIP amount.



WIP account gets credit for the completion for this WO.

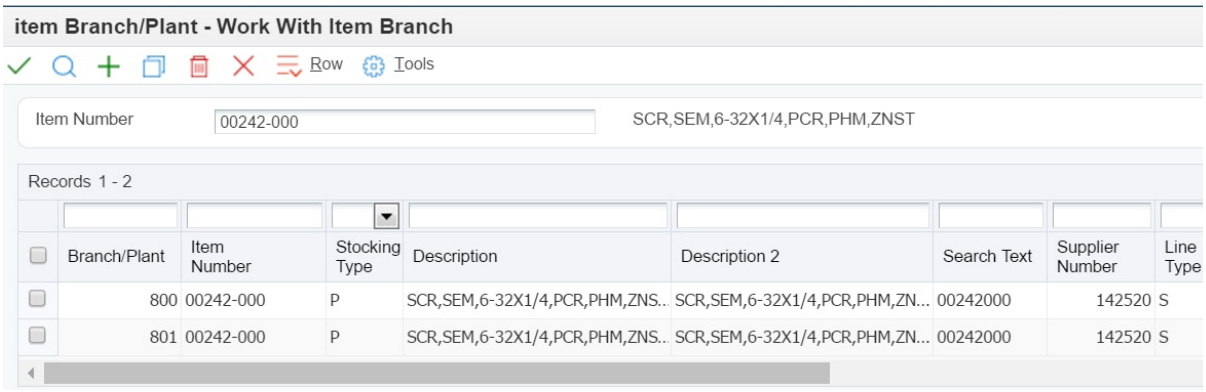


How to update floor stock items

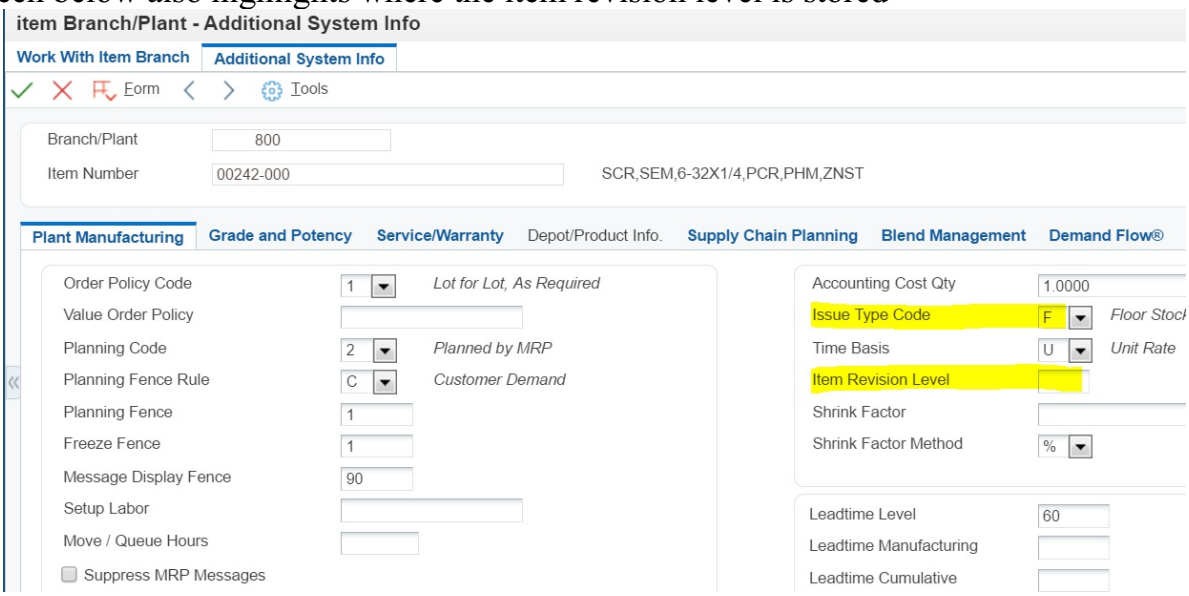
Purpose: To define items as ‘floor stock’ or ‘free stock’ so that items show up in bills and WO partslist but DO NOT get issued at the Warehouse

The screen shots below show the change to fields AFTER floor stock condition

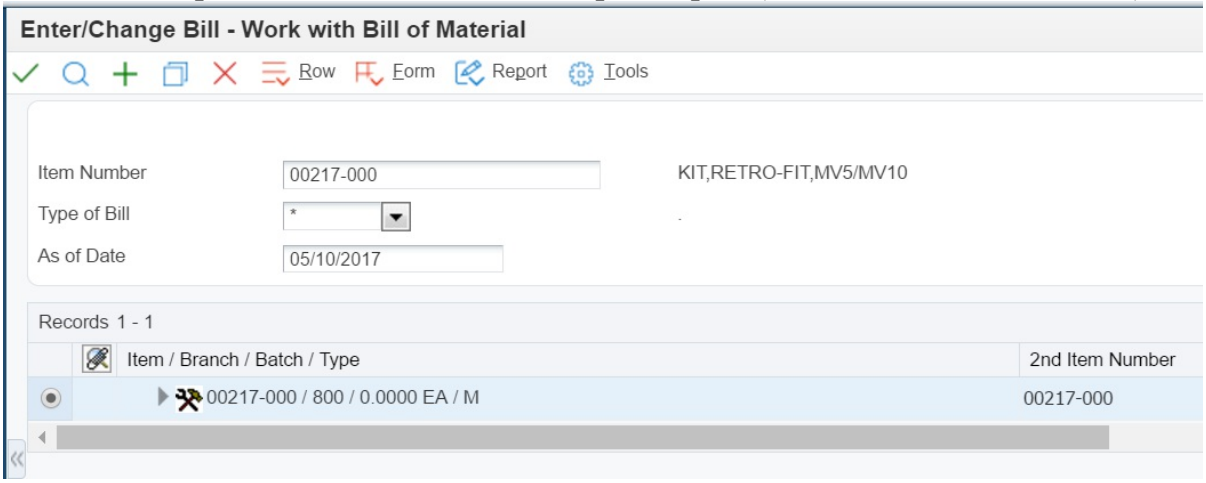
1 Open item branch. Go to additional system info



2 Issue type code should be F..(normal default code is I- manual issues)..The screen below also highlights where the item revision level is stored

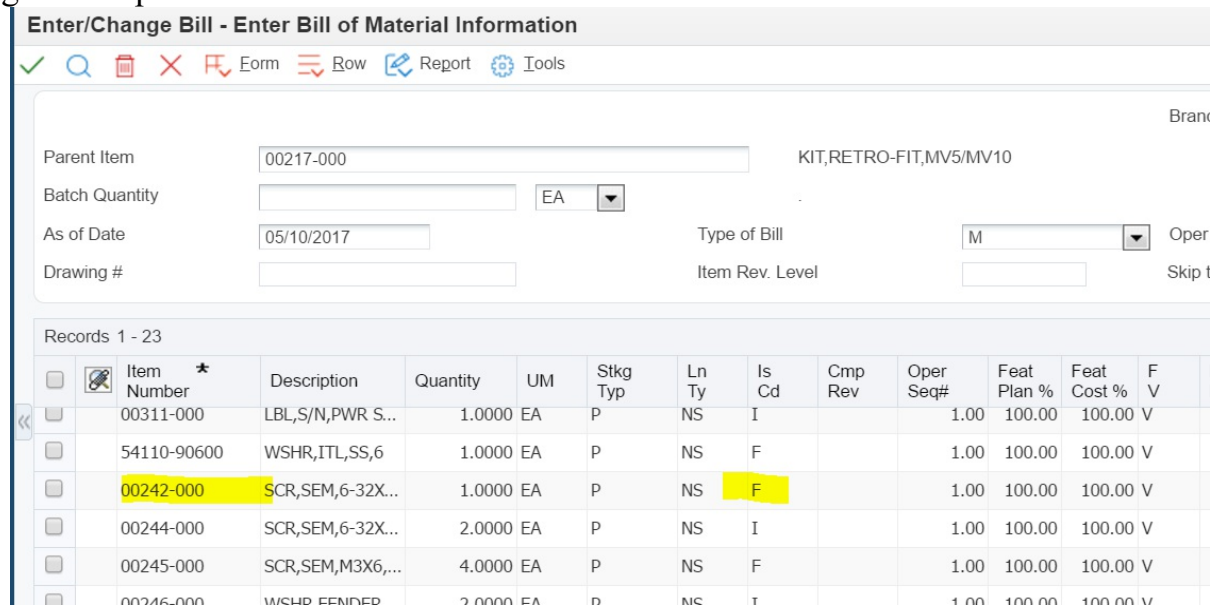


3 Open bills of materials for the parent part (which has floor stock item)



4 Issue code F is populated from item branch. If the item is originally set to "I", then user need to change the item branch and open ALL the bills to update the issue code again. Because, system takes default value of "I" and updated the bills at the

original setup.



Product Costing

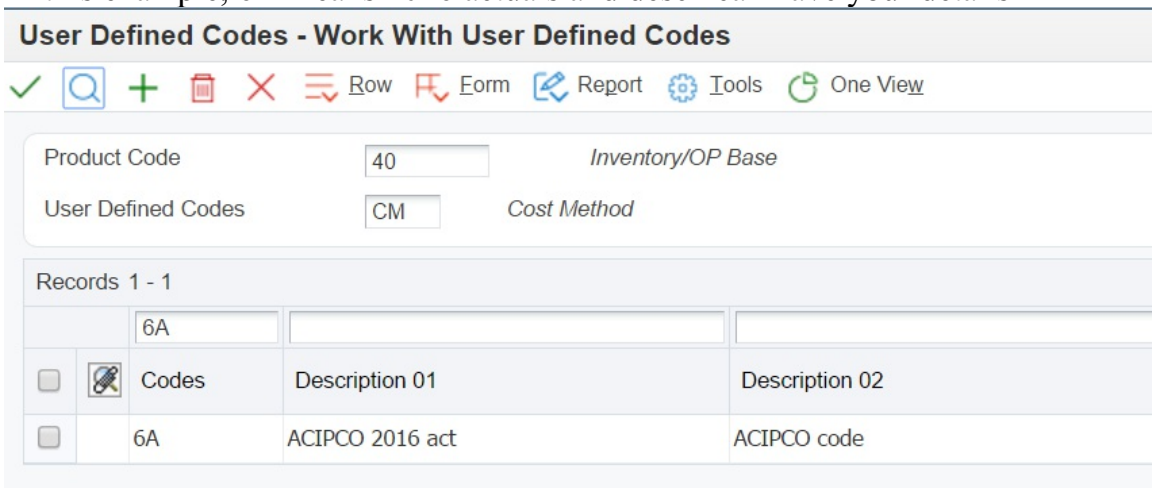
Adding additional cost method for historical analysis.

You have 2017 cost at the end of the year. You simulate/freeze ALL costs for 2018. Now you want to have historical reference in JDE for 2017 vs 2018 compare analysis. Since JDE does not keep as of cost details, the easiest way is to copy back 2017 cost back in P4105 (unit cost) table.

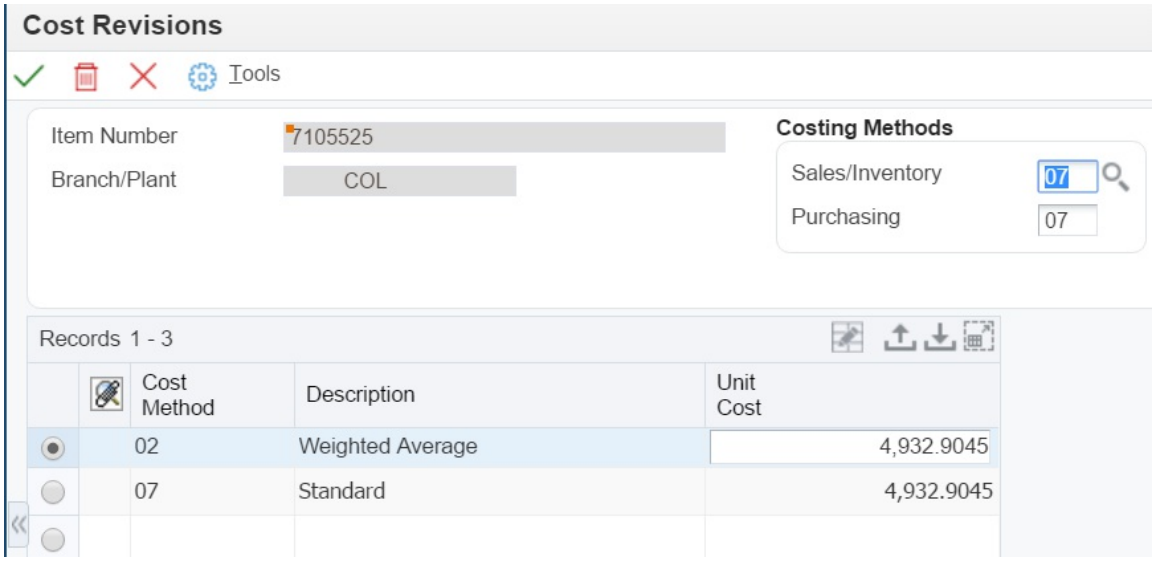
You will add new cost methods in a UDC first. See example below

Add your unique code in 40/CM udc. Do not use anything in 00-55 range, they are hard-coded.

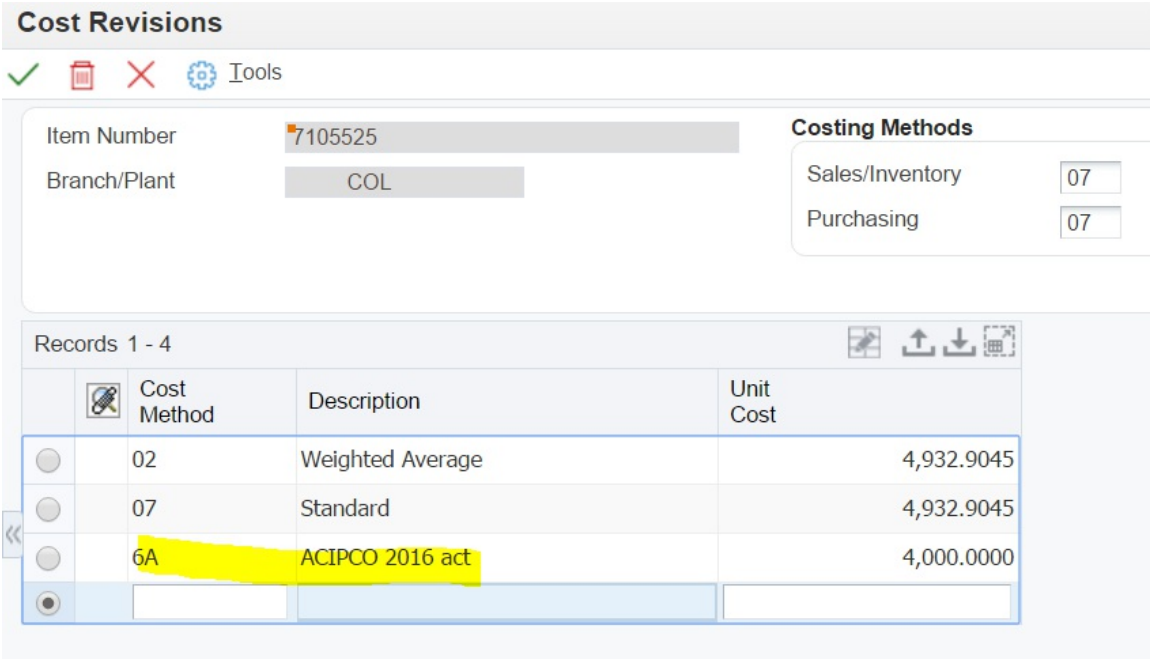
In this example, 6A means 2016 actuals and desc2 can have your details



Cost revision before addition



Open Unit cost application, P4101 and add the 06A value to it. No transaction is impacted in GL

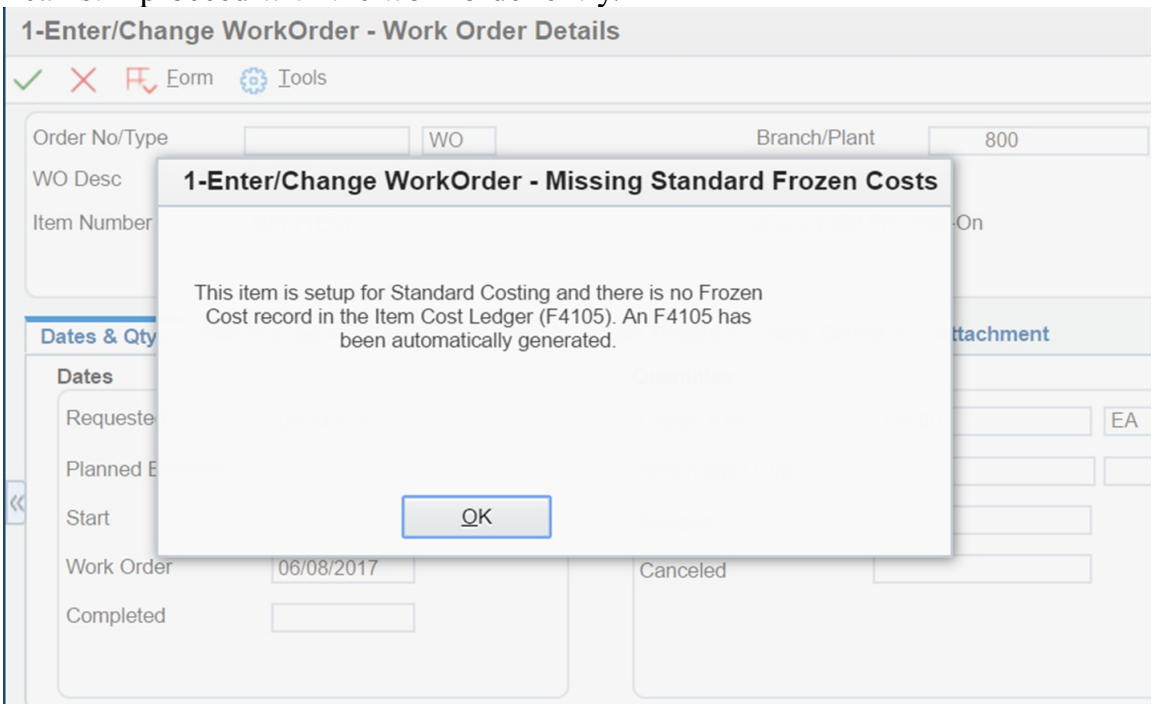


You can also ask IT to add this by using an batch upload utility. Please ask them to load in PY first, verify and then approve for PD. You can build up history like 6A, 7A etc and also make budgets like 7B, 8B etc.

FAQ:

What happens if there is no cost rollup done and user starts workorder.

JDE give warning with a big window (not the traditional yellow soft warnings) but user can still proceed with the work order entry.



ShopFloor

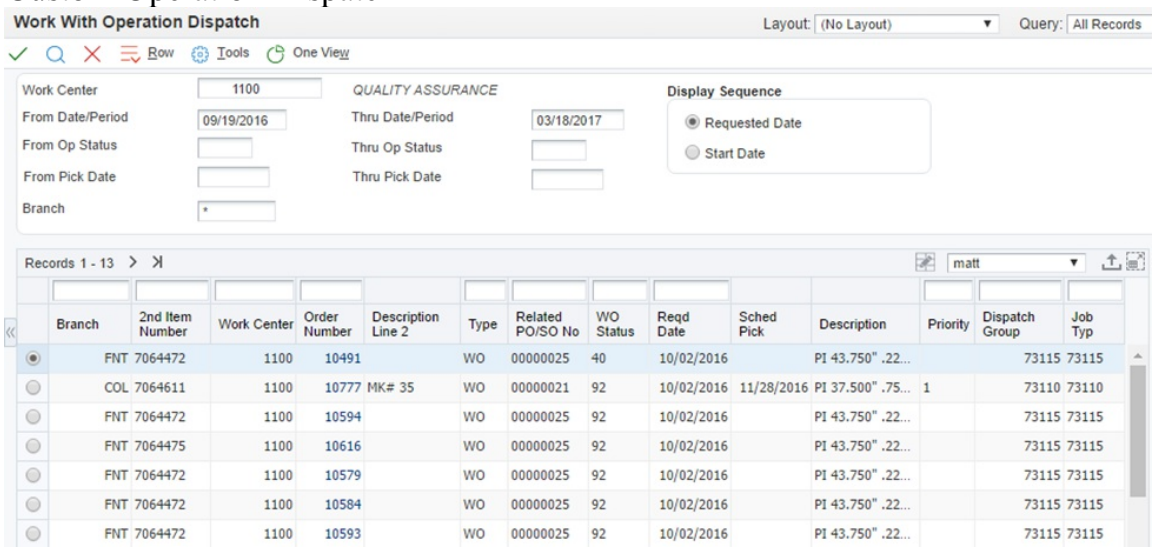
Operation Dispatch

Dispatch Inquiry is a powerful tool often unused. In a discrete workshop type of manufacturing environment, there is always need to monitor activities going on against a workcenter. JDE can accomplish the need without the need for any other software tools.

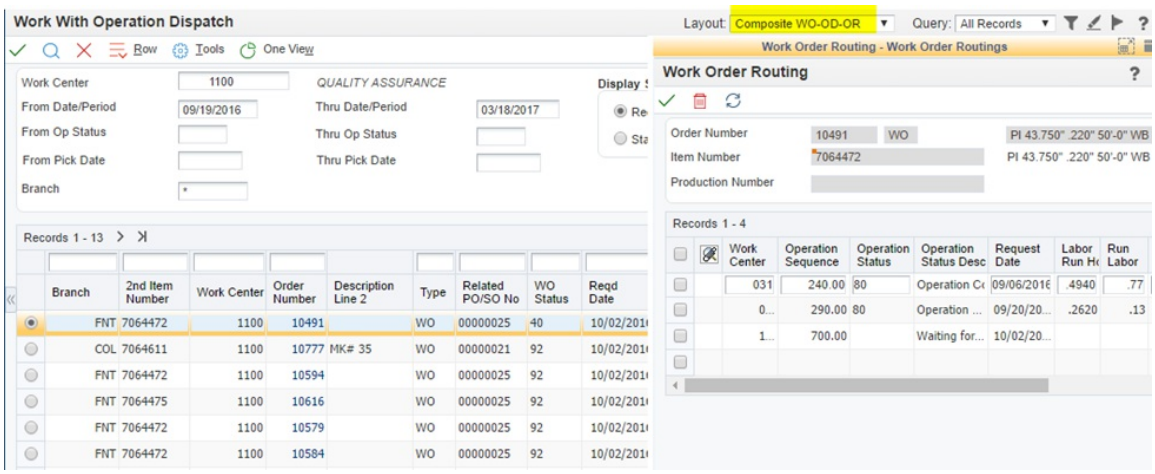
Basic dispatch inquiry lack any controls that can be added to the application logic.

There is a scope for simple customization where you can bring sales order information and show only open workorders in specific work centers. The operation status code is used to control the definition of open work orders. Time entry is a must to track the labor usage and the user can enter the operation status at the time of the work activity completion

Custom Operation Dispatch



Custom Operation Dispatch with cafe1 link to WO Routing



Work Orders from Sales Orders

Items with line type W can trigger workorder automatically as you enter the sales order for the customer. The work order completion can update the Sales order status and also hard-commit the inventory. This is very useful feature on make-to-order environment where 1-1 relationship with SO and WO is required. Both sales and work order tables captures the other side of the information.

However, at many instances, this feature need to disabled after few weeks of going live.

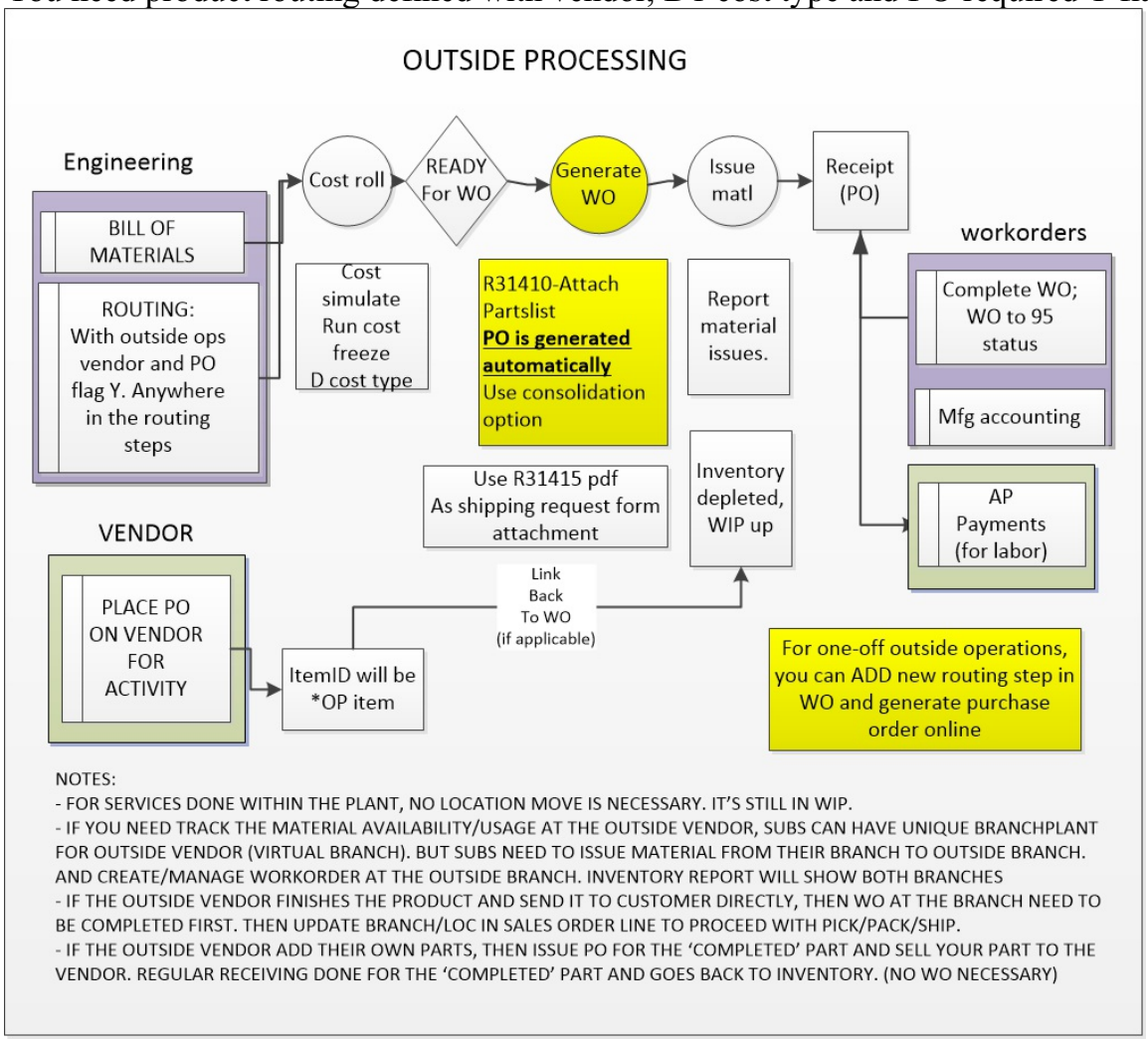
The major reasons are,

* WO updating the SO status. If the sales order got picked and moved further in the status codes, JDE will throw error. If the sales order is brought back to lower status, JDE will automatically update the status. This pose confusion at CSR levels
* Due to SO-WO link, an existing workorder cannot be committed to another priority customer
* Combining multiple workorders for batch size manufacturing environment is not possible
* If the sales order is canceled or pick date got changed, it will not reflect on the work order which is already in progress. This pose lot of WIP inventory and customer is not ready to pick the items

How to generate OutsideOps PO from WO routing

JDE generates outside operations purchase order automatically from the WO Print R31410 UBE

You need product routing defined with vendor, D1 cost type and PO required Y flag.

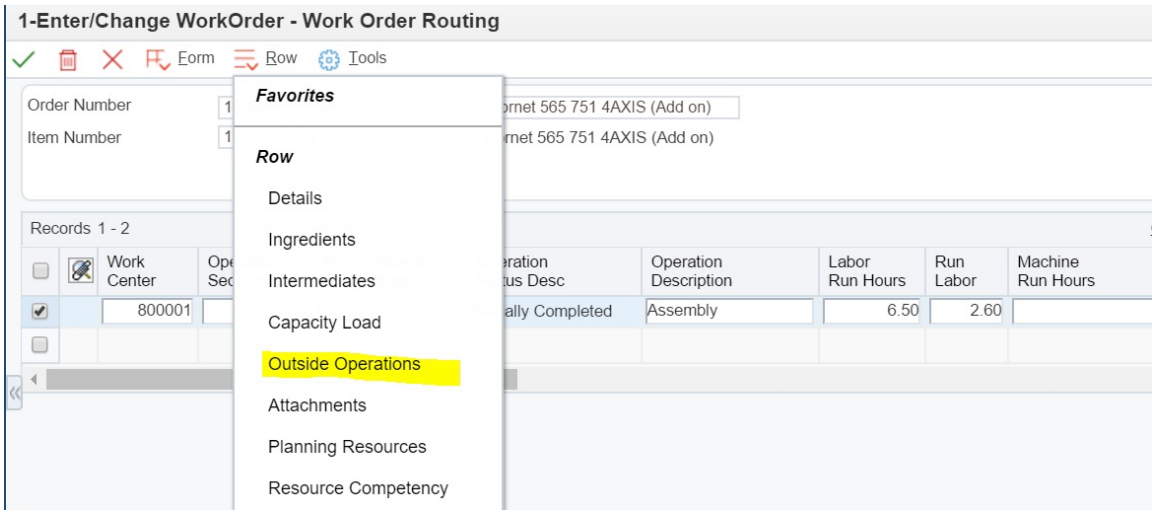


But there instances where product routing does not call for outside operation steps.

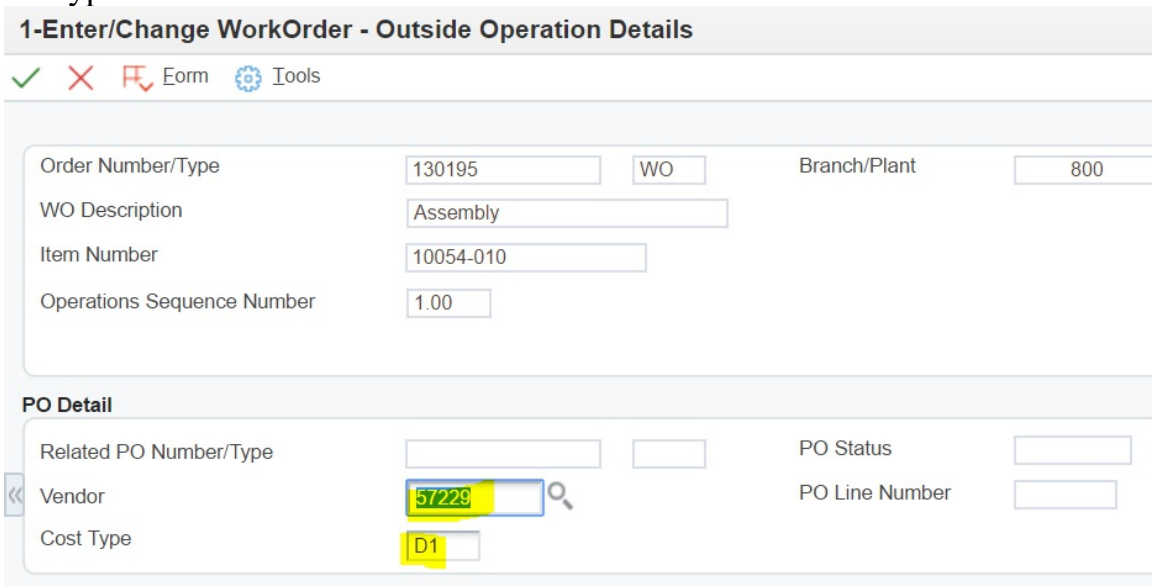
Planner to send out materials due to scheduling needs and there is a way they can create this step manually in the work order.

1 Open existing workorder. Go to WO routing

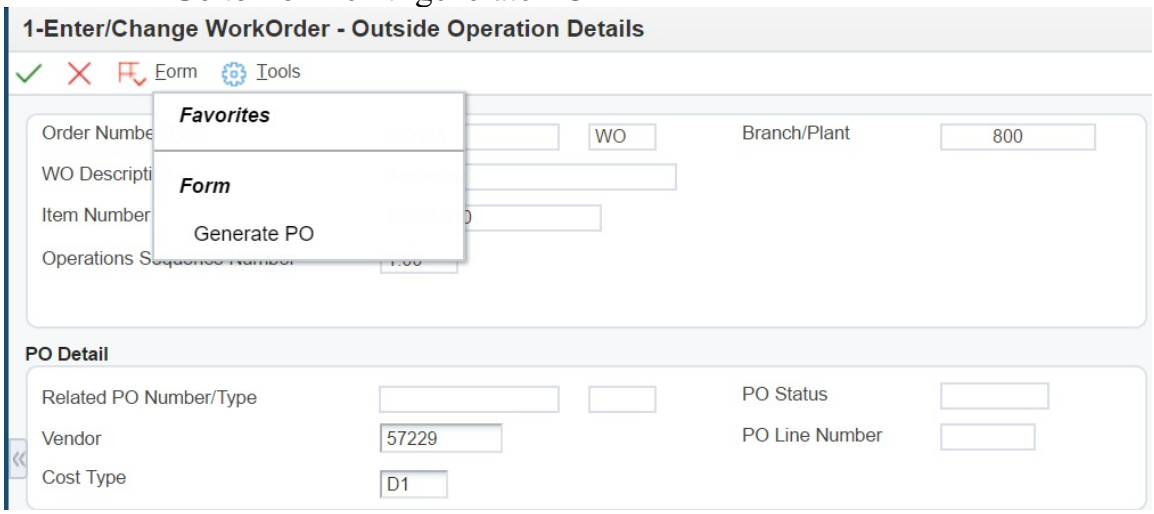
2 Got to row exit>outside operations



3 Enter vendor# (you can find the vendor from search button) and use D1 as cost type

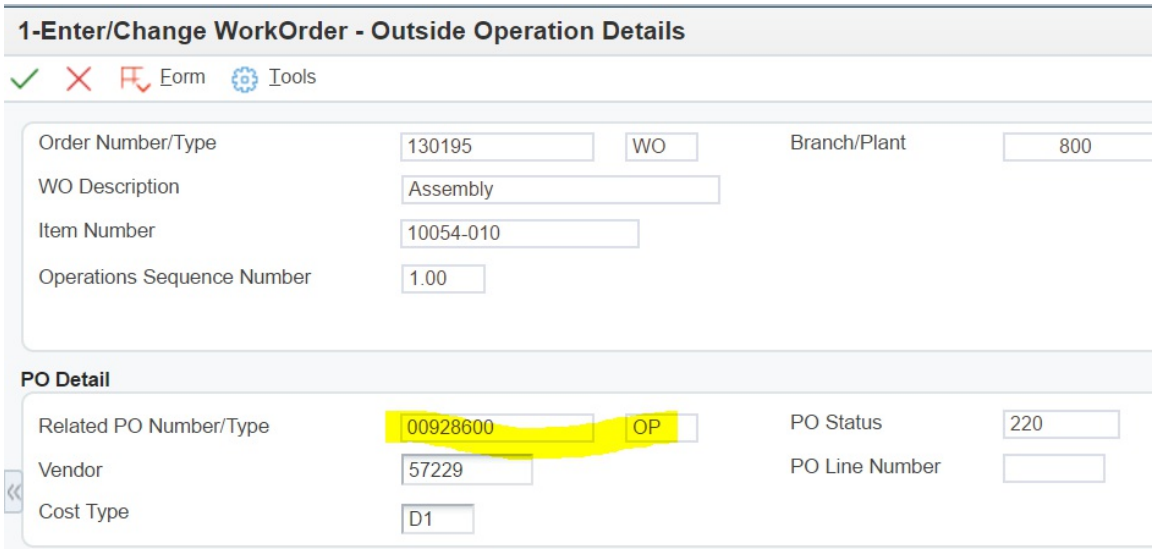


4 Go to Form exit>generate PO



5 PO number gets generation. The type of PO (whether OP or OO) comes from configurations.

Press OK to save this. This step is critical. If you have made mistake you can cancel out now.



Manufacturing Accounting

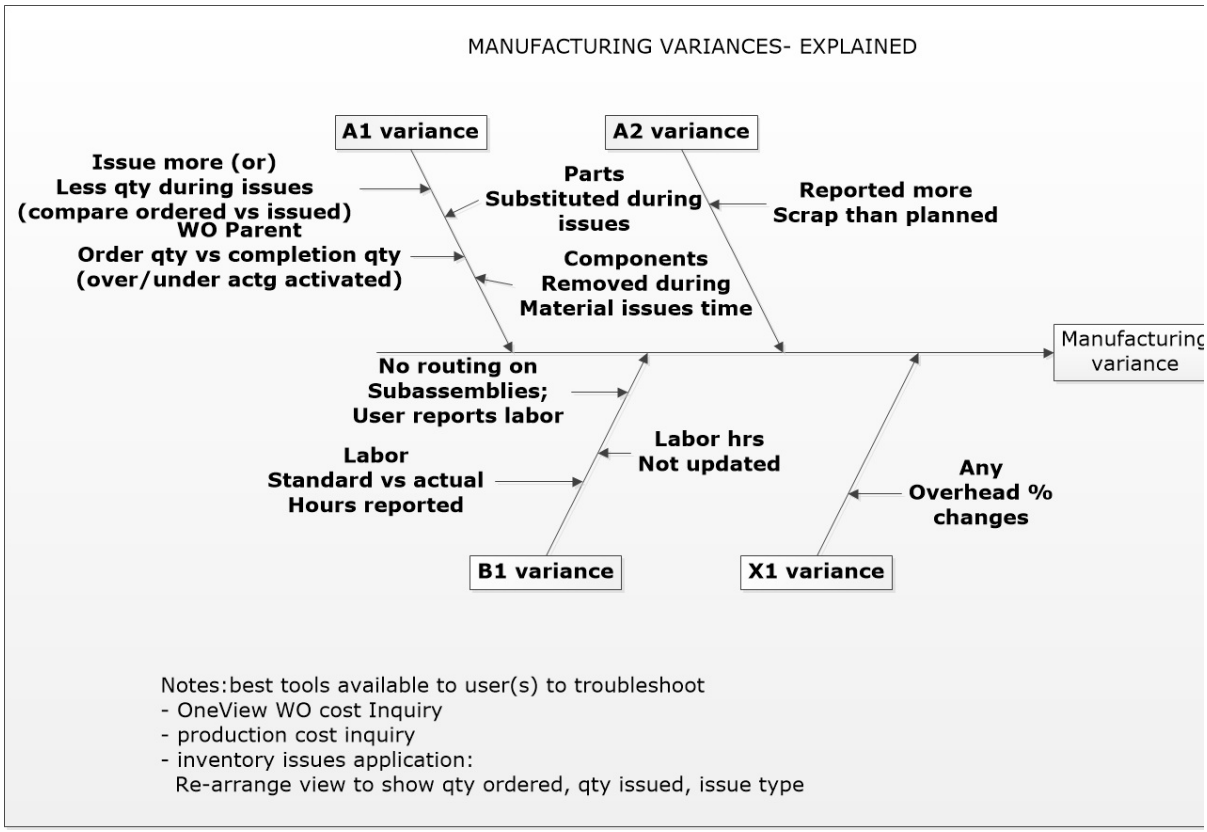
Simple Tips:

* Always run a blind version of R31802A (in scheduler overnight) without status update on WO status like 45(material issued) to WO complete (95). This will update GLDate in Cardex and also generate WIP entries. Users always assume there is a need to 'close' workorders completely for the month-end process. This blind version syncs perpetual to GL on a daily basis.

Manufacturing Accounting troubleshooting

Like MRP message processing, WO manufacturing accounting in Standard Cost environment takes few weeks to stabilize. Operations may issue less or more components to Work orders, report over completion, etc. These changes create major $ impact to manufacturing accounting. Finance need to set the threshold values for variances per order or per period basis. That will help in focusing on major dollar impact rather than on penny differences. One View WO Cost Inquiry is the best available tool to compare the WO costs. It tells you 'calculated' variances without running variance accounting programs. (see chapter on OneView Inquiries)

Chart below will give various check points on variance calculations



Case Study 1

Implementing E1 manufacturing in industrial automation company

The purpose of this whitepaper is to explain the uniqueness of the JDE manufacturing modules implementation and share the lessons learned during the project. The document explains the major business benefits gained from another Tier-1 system to JDEdwards (JDE) E1 system

The client is a leader in industrial automation products. This company got acquired by a world-wide company and they decided to merge to the corporate system. The manufacturing implementation was the first in the new world-wide organization.

The implementation started in Nov 2016 and got completed in May 2017. Manufacturing modules includes PDM, planning (MRP), shop floor management, product costing & manufacturing accounting. Forecasting was limited to user upload of data into the system on monthly basis.

Major business benefits

- The business is mostly sales order driven. There were daily excel files updated and shared for production meetings. Users spent lot of time in preparation of these files. JDE helped to present the data in Cafe1 view showing customer orders with inventory & WO progress. Production meetings were short and productive!
- In their previous system, WIP was a physical location and that enabled lot of cycle count issues. JDE helped them in moving away from a WIP location but still monitor the WIP $ correctly. WO parts issue and completion were not systematic previously. JDE bought the discipline and visibility across all users so that duplication efforts are minimized. WO variance in very huge dollars became manageable overnight!
- Doing rework or de-kitting a product was a time-consuming process previously. Simple repair workorder process made their tasks easier. There was no need for closing all open work orders at the month-end for accounting reconciliation.
- The product structure has multiple levels and phantoms was not implemented in the previous system. To avoid generating multiple workorders for each sub-assembly, phantoms are being introduced progressively.
- Floor stock. There was no consistent identification in the previous system and hence some were having real inventory in the books. Adopting floor stock in item branch and bills (issue type code=F) enabled WH to pick the right materials quicker.

Implementation Challenges

PDM: Extracting data from PLM software had resource constraints and time delays. The cut-over criteria were kept changing, like how many years of past sales data, inventory positions and defining current bills. A component from vendor showed up on the go-live date, which was considered obsolete in the cutover. There was wrong assumption that all uom were each. Adding different UOM after conversion posed challenge in the bills, since it has already taken the item master properties. That also initiated continuous addition of uom conversions. On the bills, some of the critical sub-assemblies were dropped for no reason only to be found during cost-rollups. In their

previous system, make part can't be placed on PO so there was constant changing of stocking types.

Costing: Standard costing was used in the implementation. That required lot of data cleanup on the item master cost data since there were not accurate. The inaccurate bills showed up quickly on cost analysis. There was X1 factor added for material burden and that required more testing & validation.

JDE Security: This plant joined the corporate system so the security roles were just assigned in the beginning itself. But the plant users had multiple roles like CS manager responsible for planning function, Cost accountant role which includes WO to cycle count, etc. This required lot of repetitive changes to the security access to their required applications/reports. Finally, a new role was added just for cost accountant since it is not the same as regular finance role.

User Experience

Conference Room Pilots: (CRP) Two CRPs were executed to verify/validate the data upload, transaction processing and user hands-on experience. There were two rounds of UATs as well to re-define some business processes with full converted data.

Training and Documentation: User training was done predominantly during CRP execution. Additional sessions were conducted to walk thru the process and clarify any functional issues. Since the super users were conducting CRP tests it was helpful with the knowledge transfer and faster learning.

Typical user feedback after training:

- Lots of concepts and areas. User learning and absorption is time consuming
- Lots of screens and applications to inquire basic data.
- Confusion between form exit and row exit options.
- Why more order numbers cannot be inserted in the data selection field.
- Status flows in SO, PO and WO transactions. Why some reports update them and others do not?
- There are lots of configurations needed in every module and users underestimated the learning curve.

Next Phases:

There are several potential areas for continuous improvement and system utilization:

Bar codes are already printed in the workorder documentation. Next stage of the project will implement bar code scanners on mfg and inventory

Receipt routing: based on the inspection requirement, the items (coming from purchase order or thru workorder) go into receipt routing for QA clearance. This is a changed process, where QA report WO completions so that inventory gets updated after their approvals.

OneView enhancements: Ability to see shortages with scheduled PO delivery dates; quick metrics on time spent on workorders from release to completion; Zero cost components alerts, etc are some of the enhancements planned during support period.

MRP enhancements: The basic model MRP was rolled-out in this short implementation time frame. There are potential opportunities to bring in forecast

consumption (including customer specific forecasts), using period of supply concepts and lead time rollups.

WO completions: Current model is the use of manual WO material issues (ITC=I) but super backflush so that product routing standard hours are captured as actuals. (PFBF=B). Once the system stabilizes, superbackflush may include consuming hard-committed inventory and routing labor. Additional labor can be reported from stand-alone time entry.

KEY STATISTICS

Number of WO released in a week: 50
Number of quality specs: not used

Total customer AB#: 25+
Total vendor AB#: 500+
Number of JDE users: 60
E1 System 9.1 release, toolset 9.1.5
Oneview, Cafe1, watchlist, UPK used.

Case Study 2

IMPLEMENTING E1 MANUFACTURING IN HEAVY ENGINEERING COMPANY

The purpose of this whitepaper is to explain the uniqueness of the JDE manufacturing modules implementation and share the lessons learned during the project. The document explains the major business benefits from the transition of legacy system to JDEdwards (JDE) E1 system

The client is a large heavy metal products manufacturer and this first phase was at a smaller facility. Their legacy system was outdated technologically and they decided to adopt tier-1 ERP system.

The implementation started in March 2016 and got completed in Oct 2016. Manufacturing modules includes PDM, planning (MRP), shop floor management, product costing, manufacturing accounting and quality management. Forecasting not used since this plant is ETO type of industry.

Major business benefits

- There was disconnect between sales orders and manufacturing orders. Using line type W, there was workorders generated for each sales order line. To assist with field-level installation, each product has quantity of one in every sales order line. Activating WO completions to update back SO helped in better operations monitoring.
- Manufacturing operations goes through multiple routing steps and there could be hold-ups at each operation. JDE's dispatch inquiry was not enough to track the workorders. This was modified to show open routings, after labor entry updates the operation status to 80. Updating WO request date manually helped to clear the backlog

visually in the inquiry application. The inquiry linked the SO pick date so that CSRs and Planners are on the same page all the time!

- One of the sub-assembly level product was kept in FT in the old system. This posed challenges in the physical count and in usage. The UOM was changed to EA and this necessitated all the changes to bills. This was a major conceptual change and it took a while for adoption in the system.
- The product is serial number driven but there was a need for a fractional quantity and the barcode interface was not reading the serial number table. Hence all the products were lot controlled. Lot trace/track is a critical piece like any other industry.
- Simple DRP/MRP usage. Some sales orders can be placed for pick at the DC and hence the need for DRP. Most of the finished goods have their unique itemids for each project and product structures were built for that project.

Implementation Challenges

Bills/routing: Legacy system had lot of past inaccurate data. The data was not updated frequently and operations had their own way of running the manufacturing. There was lot of data clean-up (like removing phantom lines) and deciding the cut-off point for conversion was a challenge given the fast-moving business model. Used the JDE Z-file process to upload converted data. There was flex-accounting turned-on and need to use routing filed job-type to enable correct account posting of labor.

Costing: Standard costing was used in the new implementation. That required lot of data cleanup on the item master cost data. The outside operation as a part of normal routing was not managed well and had to bring those costs upfront for the cost roll-up. WIP was never correct in their legacy system. JDE enabled a correct visibility of WIP at WO level

Time Entry: This is a discrete manufacturing shop environment. Capturing and monitoring labor time was a major focus. This was not done in legacy system. Also, management wanted to capture idle time due to tools, downtime, rework time, etc. The client expected a simple clock-in and clock-out application, which is not available in JDE. Regular JDE time entry was adopted with minimal data entry. When the operation was completed from labor side, a manual ops status update to 80 was done to refresh the dispatch list

Quality Module: JDE does not provide data upload functionality in the quality module tables. A custom data upload utility was built for them.

Next phases

There are several potential areas for continuous improvement and system utilization:

Bar codes are printed in the workorder documentation. Next stage of the project will implement bar code scanners on mfg and inventory

Capacity planning and workorder scheduling. Production scheduling is identified as the next project step. JDE does not provide the routing attributes capabilities (example:

Machine 1 can handle only certain diameter products). Constraint based production scheduling software is a must for the shop management.

Receipt routing: based on the inspection requirement, the items (coming from purchase order or thru workorder) go into receipt routing for QA clearance. This is a changed process, where QA report WO completions so that inventory gets updated after their approvals.

Multi-level S&D inquiry. Single item S&D inquiry does not give total project level analysis. Custom inquiry is being built to bring all project related products into one visible screen for the management review. This could be used in their daily shop floor stand-up meetings as well to prioritize orders.

MRP enhancements: The basic model MRP was rolled-out in this short implementation time frame. There are potential opportunities to bring in product forecasts (including customer specific forecasts, replacing early order material list), using period of supply concepts and lead time rollups.

Super backflush: Backflush was used in the initial implementation since many items are manually issued anyway. There are places where super backflush can be used but that require revamping the product structures.

KEY STATISTICS

Number of WO released in a week: 200
Total quality records: TBD
Number of quality specs: not used
Number of quality test-ids: 14 to start with

Total customer AB#: 25+
Total vendor AB#: 500+
Number of JDE users: 150
E1 System 9.2 release, toolset 9.2
Oneview, Cafe1, watchlist, UPK used.

Case Study 3

IMPLEMENTING E1 MANUFACTURING IN OIL & GAS INDUSTRY

The purpose of this whitepaper is to explain the uniqueness of the JDE manufacturing modules implementation and share the lessons learned during the project. The document explains the major business benefits from the transition of legacy system to JDEdwards (JDE) E1 system

The client is $25million family owned company in the Oil & gas industry manufacturing gas sampling equipment. The support on their legacy system was ending and they decided to adopt tier-1 ERP system.

The implementation started in June 2015 and got completed in Oct 2015. Manufacturing modules includes PDM, planning (MRP), shop floor management, product costing, manufacturing accounting and quality management. Forecasting not

used since the data was still at family level.

Major business benefits

- Legacy system was used with re-order point. In E1, safety stock concept was used. Client moved to demand-driven planning from static ROP levels. Long-lead time system orders gave visibility to combine procurement process ahead. Using fixed order quantity in workorders helped them to avoid multiple change-overs in machine shop.
- No paper based logs. Orders having engineering or estimation issues were noted and kept in a log book. There were more than 25 workorder priority codes and these were constantly changed on daily basis. Usage of media attachment and remark fields made the transactions transparent to any user.

- Outside operations. Besides the outside operations defined in the master routing, operations can send items out if in-house capacity is not available. This was completely manual process with no visibility. Using JDE WOs generating outside operations purchase orders gave visibility and control to operations, purchasing and accounting.
- Lot/Serial number. Client has major needs on customer certification and the need to capture quality testing data. Quality module was implemented along with workorders to capture test results. Serial numbers are generated upfront during WO entry and monitored along the mfg process.
- Operations were capturing labor hours used in inventory transactions as a part of routing step. If the inventory is short, there were multiple routing steps to go back and forth. Using WO inventory commitment and shortage analysis removed multiple routing steps and release the order only when all the materials are available.

Implementation Challenges

Combined bills/routing: Legacy system has one single table for bills and routing with lot of text lines. The data was not updated frequently and operations had their own way of running the manufacturing. Splitting the data into bills, routing and routing attachment was challenging with multiple uploads in CRPs. Client's tech team developed in-house process to append all text lines into item master notes.

Costing: Company was using average costing and the variation on the finished goods cost was very high due to labor skills used. This also resulted in lack of margin visibility. Standard costing was used in the new implementation. That required lot of data cleanup on the 'time-basis' on the routing. The outside operation as a part of normal routing was not managed well and we have to bring those costs upfront for the cost roll-up.

Time Entry: This is a machine shop environment. Capturing and monitoring labor time was a major focus. Operations had the concept of 'labor balancing' to account the entire time spent by an operator on work-order or non-productive work. The client expected a simple clock-in and clock-out application. Regular JDE time entry was adopted with minimal data entry. Labor balancing concept was removed since WO time

and payroll time need not match each other.

Quality Module: JDE does not provide data upload functionality in the quality module tables. Client did the table conversion using SQL from the spreadsheets and that needed lot of front-end testing

Next phases

Capacity planning and workorder scheduling. Production scheduling is identified as the next project step. JDE does not provide the routing attributes capabilities (example: SAW machine 1 can handle only certain diameter products). Constraint based production scheduling software is a must for the machine shop management.

Receipt routing: based on the inspection requirement, the items (coming from purchase order or thru workorder) go into receipt routing for QA clearance. This is a changed process, where QC can review the lot dates and enter the country of origin (COO) in the lots. The COO gets printed in the shipping documents for customs.

Dispatch list enhancement. Custom changes proposed to check whether the last operation is complete or not. Shop floor operators need dispatch list to monitor the job status and hence this is a critical requirement.

MRP enhancements: The basic model MRP was rolled-out in this short implementation time frame. There are potential opportunities to bring in product forecasts (including customer specific forecasts), using period of supply concepts and lead time rollups.

Usage of phantoms: The average bill has five levels and many of intermediate products can be configured as phantoms. Since those items can be sold as well, the decision has been deferred for after go-live phase

KEY STATISTICS

Number of WO released in a week: 150
Total quality records: 9375
Number of quality specs: 54
Number of quality test-ids: 137

Total customer AB#: 4900
Total vendor AB#: 930
Number of JDE users: 70
E1 System 9.1 release, toolset 9.1
Oneview, watchlist, UPK used.

OneView Inquiries:

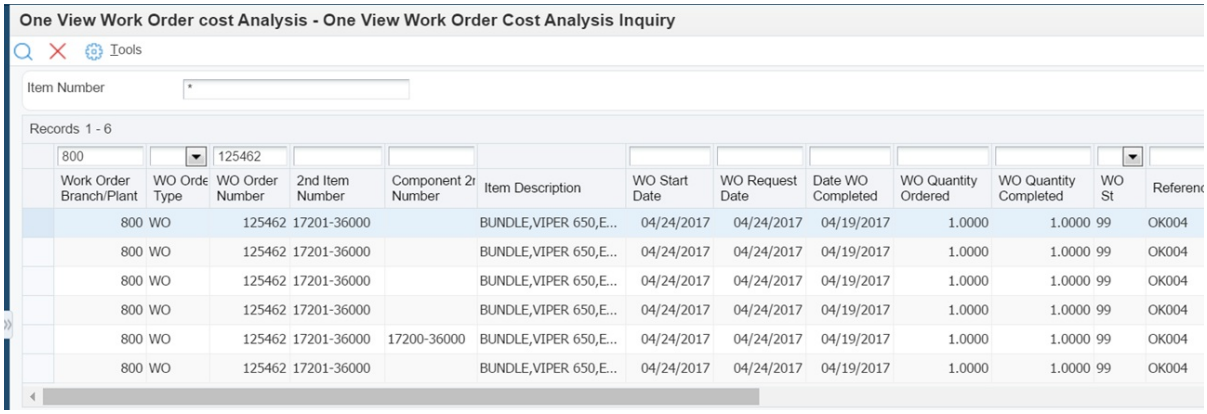
How to interpret OneView Work Order Cost Analysis?

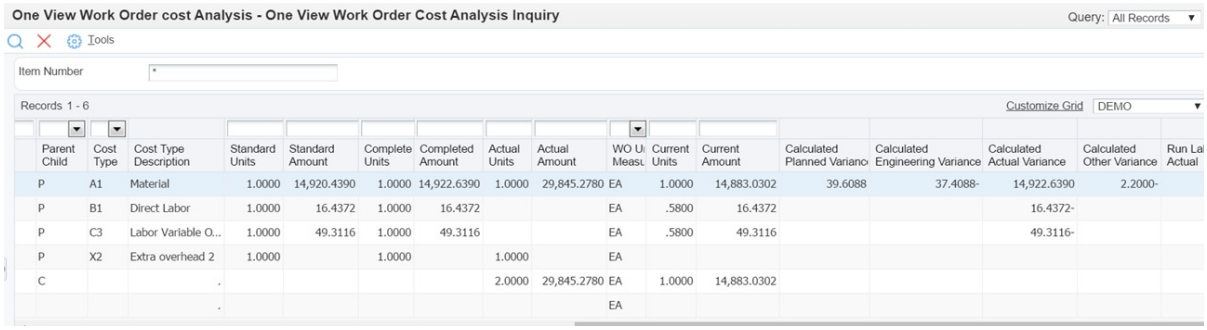
In discrete manufacturing environment, Operations & Cost Accounting need a tool to see how the WO costs are progressing. The days of doing Journal Entries after period close are over!. This Oneview Inquiry is the best tool and it deserves it's own chapter since this is very powerful

This is somewhat replica of F3102 table where advanced users build their queries. In most implementations there are custom reports written on that table. This oneview inquiry replaces those needs. Since this is an inquiry tool, all users can have access and the data gets updated as the work order gets processed.

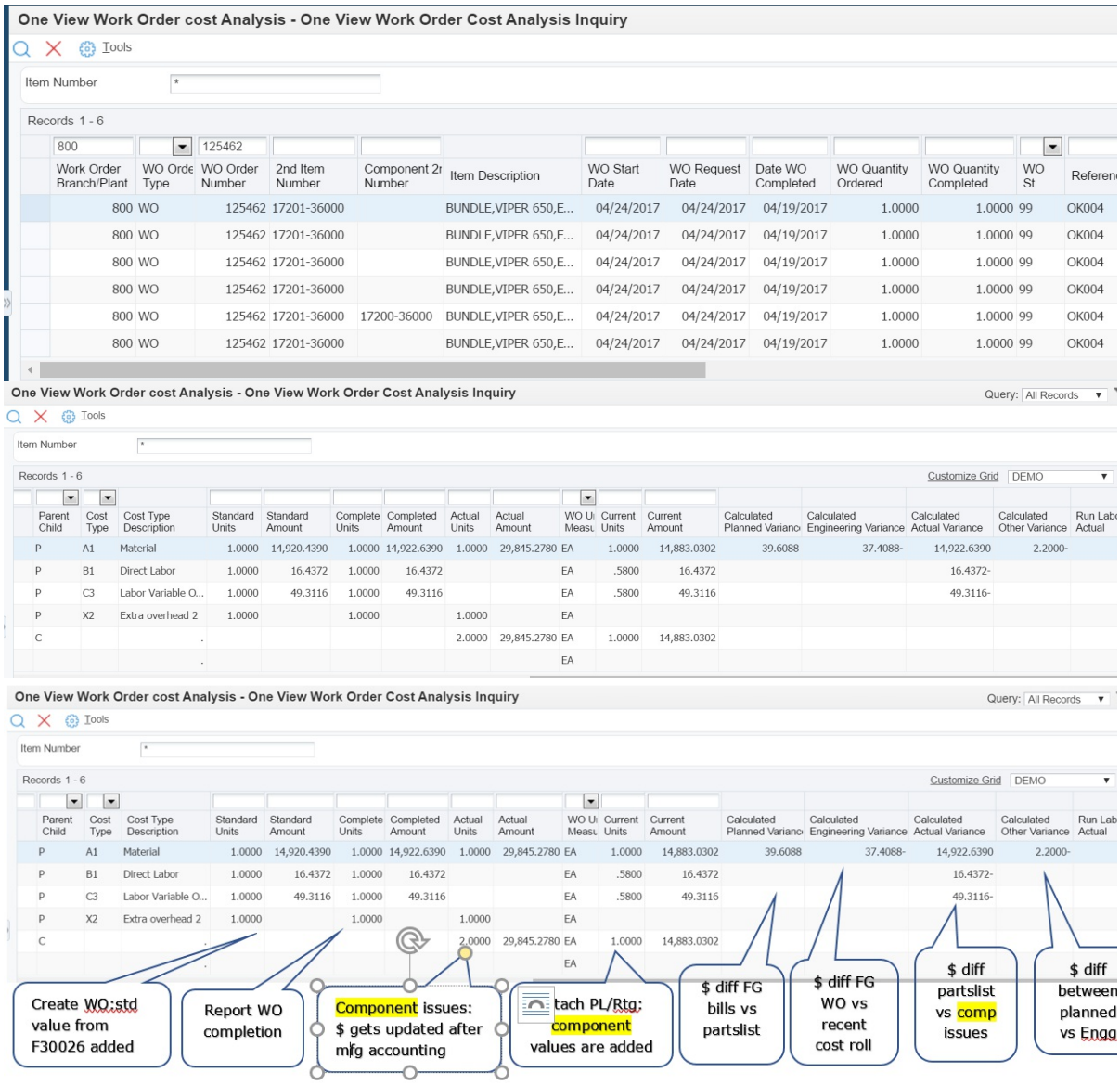
Running manufacturing accounting final is the obvious need to get $$ values in the grid. The tool gives the calculated variances even if the work order is not yet complete.

Manufacturing variance often happens to a set of products due to it's bills or routing accuracy issues. Using this tool, Managers can analysis a specific product across multiple weeks range. This is not possible using regular Production Cost Inquiry.





How to interpret OneView Work Order Cost Analysis



Another useful Oneview inquiry is the Oneview Inventory Inquiry (P41271)

About the Author:

Mathur (matt) Ravikumar holds a bachelor of engineering degree and have done post-diploma work in management/accounting. He has worked in manufacturing and information technology field for more than three decades.

He has written business white papers, newspaper articles and published content in professional magazine 'Performance Advantage' by APICS (Association for Operations Management- with 30000 industry professionals). He has presented paper two times in the world-wide Oracle User conference Collaborate.

He was a speech-writer to a company CEO and still love to hear great speeches. The acquired and published material content are available at his website. He frequently blogs at blogger websites and also in linked-in.

He is a regular meditator and trekked to Himalayas (Mount Kailash) towards a spiritual journey in 2016. His publications are available in Amazon.com and in kobobooks. (Search: matt ravikumar) He lives near San Francisco/California and can be reached by email, mattravikumar@gmail.com (or) matt@enterpriseprojects.com

He does political cartooning on weekends and his works are available under these social media:

www.cartooncartons.com;

facebook.com\cartooncartons (Twitter:#cartooncartons)

Www.mattravikumar.com