



EPICOR ERP

ELEVATE

Disclaimer

This document is for informational purposes only and is subject to change without notice. This document and its contents, including the viewpoints, dates and functional content expressed herein are believed to be accurate as of its date of publication. However, Epicor Software Corporation makes no guarantee, representations or warranties with regard to the enclosed information and specifically disclaims any applicable implied warranties, such as fitness for a particular purpose, merchantability, satisfactory quality or reasonable skill and care. As each user of Epicor software is likely to be unique in their requirements in the use of such software and their business processes, users of this document are always advised to discuss the content of this document with their Epicor account manager. We welcome user comments and reserve the right to revise this publication and/or make improvements or changes to the products or programs described in this publication at any time, without notice. The usage of any Epicor software shall be pursuant to an Epicor license agreement. Usage of the solution(s) described in this document with other Epicor software or third party products may require the purchase of licenses for such other products. Epicor, Grow Business Not Software and the Epicor logo are trademarks or registered trademarks of Epicor Software Corporation in the United States, certain other countries and/or the EU. All other trademarks mentioned are the property of their respective owners. Copyright © Epicor Software Corporation 2019. All rights reserved. No part of this publication may be reproduced in any form without the prior written consent of Epicor Software Corporation.

Epicor ERP

Table of Contents

Adjusting Cash Receipts	1
Advanced BAQs: Gathering, Compiling, and Evaluating Data with Subqueries	11
An Overview of Epicor Data Discovery (EDD)	18
Asset Management	28
Automate Data Entry with Service Connect	40
Basics of Navigating Epicor ERP	49
Build Advanced eCommerce Storefronts Using the Magento Ecosystem (ECC)	68
Build Your First Report with Epicor XL Connect	76
Build Your Manufacturing Storefront with Epicor ERP 10 and Epicor Commerce Connect (ECC)	81
Building and Deploying Dashboards for Manufacturing and Supply Chain Management	92
Building and Deploying Embedded Customizations for the Shop Floor	98
Building Business Activity Queries for Financials	104
Building Business Activity Queries for Manufacturing Operations	104
Come Play Factory Floor Frenzy with Epicor University	126
Creating an Updatable MRP Dashboard	128
Creating Collapsible Reports with SSRS	135
Creating Customized and Actionable Views with BAQs and Dashboards	142
Creating Parts and the Method of Manufacture (BOM/BOO), Part 1 and Part 2	151
Customer Led - Automating Shipments Using Barcode Scanning	163
Customer Led - Building Custom Executables to Perform Inventory Transactions	169
Deep Dive into Advanced Material Management: Streamlining Material Movement Within Manufacturing Processes	172
Deep Dive into the Scheduling Process	195
DocStar ECM-Building Workflow Applications-Part 1	201
DocStar ECM-Building Workflow Applications-Part 2	206
DocStar ECM-Building Workflow Applications-Part 3	211
DocStar ECM - Streamlining Your Epicor ERP 10 AP Process With AP Automation	217
Easy ERP Data Integration with REST Services	221
Epicor Data Analytics (EDA) for Epicor ERP	227
Epicor XL Connect for Finance – Review the Upgrade Steps from Version 5	232
Extreme BPM for Multi Stage Authorization Workflows	235
Financial Reconciliation	246
Fun with Searches	254
Getting the Most Out of the Buyer Workbench	262
Hands-on with CADLink and MBOM: Create and Transform EBOMs to MBOMs	273
Increase Inventory Accuracy with Cycle Counts	282
Lean Kanban Pull-Based Systems - Purchase and Stock Kanban Logic	287

<u>Learn How To Leverage the Performance Diagnostic Tool for Better System Performance</u>	297
<u>Learn to Manage Your 1099 Processing with Epicor ERP</u>	305
<u>Migrating Your XL Connect Reports to XL Connect 7</u>	317
<u>Optimize Your Stock Levels with the Automatic Update of Minimum, Maximum and Safety Values</u>	320
<u>Personalizing Your Epicor Data Analytics (EDA) Solution</u>	328
<u>Planning Your Material Requirements and Firming Up Jobs for Production, Part 1 and 2</u>	333
<u>Project Management</u>	340
<u>Prototyping UI Customizations and Building Integrations for ERP Using Visual Studio</u>	351
<u>Scheduling Tips, Tricks and Expert Advice</u>	355
<u>Simplifying Complex Order Items with the Product Configurator, Part 1 and 2</u>	360
<u>Tailoring and Tuning Your Active Home Page, Powered by Epicor Kinetic Design</u>	371
<u>Take Your Dashboards into the Field with Epicor Mobile Dashboards</u>	380
<u>Tasks & Workflows Part 1 – Creation and Setup</u>	384
<u>Tasks & Workflows Part 2 – See Them in Action</u>	390
<u>The Best Tips and Tricks to Improve Your Efficiency</u>	397
<u>Understand the Flexibility of Epicor ERP Posting Rules</u>	403
<u>Upgrading BPMs from ABL to C#</u>	412
<u>Using SQL Server in Production and Architectural Planning, Part 1 and 2</u>	433
<u>Using the Epicor ERP Report Routing/Printing Capabilities</u>	445

Adjusting Cash Receipts

System Requirements

Modules/Licensing	Product Version
<Accounts Receivable>	<10.2.300>

In this Lab review how **Adjust Cash Receipt** provides access to existing posted cash receipts and provides the ability to make adjustments to information such as the invoices included in the cash receipt and the cash receipt customer.

When you adjust a cash receipt, you cannot adjust the amount, currency, bank account or any bank fees or taxes manually added to the cash receipt. If you need to change this information, you must reverse the cash receipt using **Reverse Cash Receipt Entry** and then enter a new cash receipt in **Cash Receipt Entry**.

You cannot adjust the following types of cash receipts in **Adjust Cash Receipt**:

- Cash receipts that include debit notes, write offs or credit card payments
- Cash receipts with a receipt withholding amount
- Miscellaneous cash receipts
- Deposit cash receipts
- Cash receipts cleared by the bank reconciliation process
- Cash receipts paid using Electronic Interface

Example: Here are two examples of ways to update cash receipt information in Adjust Cash Receipt:

- You accidentally apply a customer check to the wrong invoice and close it. When you create a cash receipt adjustment for the check payment, you can change the invoice to the correct invoice and apply the adjustment, using the same check number. The check is now applied to the correct invoice. The original, incorrect invoice re-opens.
- You receive a check from customer A. When you enter the cash receipt, you enter it for customer B and post the receipt. When you create a cash receipt adjustment for the check payment, you can change the customer from customer A to customer B.

Based on the posting rules defined for the **Cash Receipt Adjustment GL** transaction type, the **Adjust Cash Receipt** process first cancels the cash receipt and adds the previously paid invoice amount back into the invoice the cash receipt paid. A new record is then created for the adjusted cash receipt with the same check number.

The new record indicates that it is an adjustment and contains the new apply date and the reason for the adjustment. Any invoices added to the adjusted payments or ones no longer paid by the adjusted payment have their balances appropriately updated.

When you apply an adjustment to a cash receipt, an **Adjusted** indicator and the **Adjustment Date** for the receipt displays in **Cash Receipt Tracker**.

When you post an adjustment for a receipt that originally created an unapplied (UR) credit memo, and that credit memo is no longer applicable (because the cash moved to a different customer) the existing credit memo is cancelled.

Adjusting Cash Receipts

General process flow includes the following:

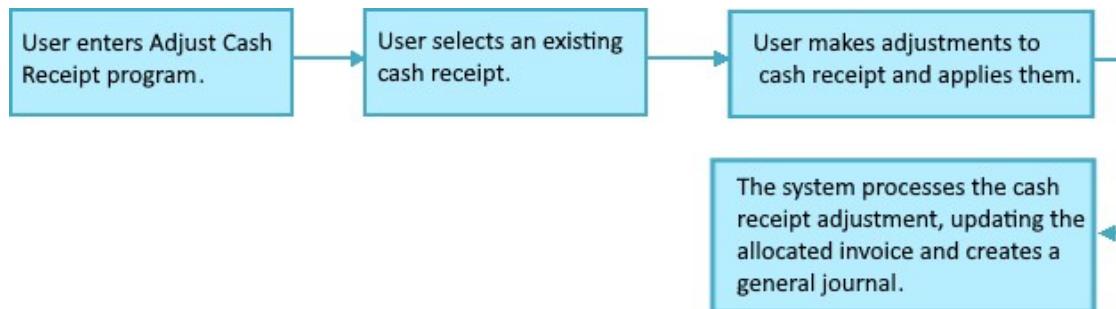
- Creates a receipt that contains a reversing entry. This negative receipt updates the balances of allocated invoices. This process leaves an audit trail.

Note If you remove an invoice with taxes applied at the time of cash receipt and apply the adjustment, the taxes are reversed and are not included in the new adjusted receipt.

- Creates a receipt that contains an adjustment entry and uses the same payment number (such as a check number). This adjustment receipt updates the balances of allocated invoices. This process leaves an audit trail.
- Allows the application of new cash receipts to invoices that have been removed from the cash receipt or are no longer fully paid by the cash receipt.

This process does not apply to deposits applied to a sales order.

Adjust Cash Receipt Process



When you adjust a cash receipt, customer facing reports such as the **Customer Statement** display only the final adjusted cash receipt.

Note: When searching for the cash receipt you want to adjust, you can use the fields in **Cash Receipt Search** to enter criteria that will limit the receipts returned by the search. You can search by legal number, check number, receipt number, bank account, or customer.

Note: If you add a cash receipt to an AR cash receipt batch in **Cash Receipt Batch Maintenance** and then adjust the receipt, the adjusted cash receipt replaces the original cash receipt in the AR cash receipt batch.

Menu Path: Financial Management > Accounts Receivable > General Operations > Adjust Cash Receipt

Workshop - Adjust Cash Receipt to Change Invoice Selection

In this workshop, customer Barriston Engineering has three outstanding invoices. They send you a check to pay two of the invoices, leaving the remaining invoice unpaid. You accidentally pay the wrong invoice and post the cash receipt. You must adjust the cash receipt to remove the incorrect invoice from the cash receipt and replace it with the correct invoice.

In this workshop, you perform the following tasks:

- Create an AR invoice group and three AR invoices.
- Post the AR invoice group.
- Create a Cash Receipt Entry group.

4. Add an invoice payment and select the invoices to pay.
5. Post the Cash Receipt group.
6. Adjust the Cash Receipt to remove the incorrect invoice and add the correct one.
7. Review the adjusted cash receipt.

Create AR Invoices

In this workshop task, create three AR invoices for customer Barriston Engineering.

Navigate to AR Invoice Entry.

Menu Path: Financial Management > Accounts Receivable > General Operations > Invoice Entry

1. From the **New** menu, select **New Group**.
2. In the **Group** field, enter **XXX-INS** (where XXX are your initials).
3. Accept the other defaults.
4. Click **Save**.
5. From the **New** menu, select **New Miscellaneous Invoice**. The **Header > Detail** sheet displays.
6. In the **Sold To Customer** field, enter **BARRISTON** and press **Tab**.
7. In the **Terms** field, verify or select **Cash on Delivery**.
8. Click **Save**.
9. Record the invoice number. You will use it in a later workshop task.
10. From the **New** menu, select **New Line**.
11. Enter the following:

Field	Value
Part/Rev	001MP
Quantity	100
Unit Price	3.25

12. Click **Save**.
13. From the **New** menu, select **New Miscellaneous Invoice**. The **Header > Detail** sheet displays.
14. In the **Sold To Customer** field, enter **BARRISTON** and press **Tab**.
15. In the **Terms** field, verify or select **Cash on Delivery**.
16. Click **Save**.
17. Record the invoice number. You will use it in a later workshop task.
18. From the **New** menu, select **New Line**.
19. Enter the following:

Field	Value
Part/Rev	001PP
Quantity	100
Unit Price	3.25

Adjusting Cash Receipts

20. Click **Save**.
21. From the **New** menu, select **New Miscellaneous Invoice**. The **Header > Detail** sheet displays.
22. In the **Sold To Customer** field, enter **BARRISTON** and press **Tab**.
23. In the **Terms** field, verify or select **Cash on Delivery**.
24. Click **Save**.
25. Record the invoice number. You will use it in a later workshop task.
26. From the **New** menu, select **New Line**.
27. Enter the following:

Field	Value
Part/Rev	1032KNUT
Quantity	100
Unit Price	6

28. Click **Save**.
29. Remain in AR Invoice Entry.

Post AR Invoice Group

In this workshop task, post the AR invoice group.

1. From the **Actions** menu, select **Group** and then **Post**. The **AR Invoice Post Process** window displays.
2. Click **Submit**.
The **Process Submitted** message displays.
3. Exit the AR Invoice Post Process window.
4. Exit AR Invoice Entry.

Create a Cash Receipt Entry Group

In this workshop task, create a cash receipt group.

Navigate to Cash Receipts Entry.

Menu Path: Financial Management > Accounts Receivable > General Operations > Cash Receipt Entry

1. From the **New** menu, select **New Group**.
2. In the **Group** field, enter **XXX** (where XXX are your initials).
3. In the **Bank Account** field, select **Main Checking Account**.
4. Click **Save**.
5. In the **Transaction Apply Date** field, today's date defaults.

Add an Invoice Payment and Select the Invoices to Pay

In this workshop task, add a new invoice payment and apply the payment to the first and third invoices.

1. From the **New** menu, select **New Invoice Payment**.

2. In the **Check** field, enter **XXX-1** (where XXX are your initials).
3. In the **Receipt Amount** field, enter **925.00**.
4. In the **Customer ID** field, enter **BARRISTON** and press **Tab**.
5. Click **Save**.
6. Navigate to the **A/R Receipt > Invoice Selection** sheet.
7. In the **Invoices** grid, select the **Selected** check box for your first invoice dated today for **\$325.00** and third invoice for \$600.00 you created in the previous workshop task. **Do not select the second invoice we will you that to test adjusting the cash receipt.**
8. Click the **Apply** button.
9. Click **Save** and remain in Cash Receipts Entry.

Post the Cash Receipt Group

In this workshop task, post the cash receipt group.

1. From the **Actions** menu, select **Post**.
The **Cash Receipt Post Process** window displays.
2. Click **Submit**.
3. Close the Cash Receipt Post Process window.
4. Exit Cash Receipts Entry.

Adjust Cash Receipt

In this workshop task, adjust the cash receipt by removing the first invoice and selecting the second invoice.

Navigate to **Adjust Cash Receipt**.

Menu Path: Financial Management > Accounts Receivable > General Operations > Adjust Cash Receipt

1. Click the **Search** (binoculars) icon. The **Search Form** displays.
2. In the **Customer** field, enter **Barriston** and click **Search**.
3. Select the receipt for your Check Number **XXX-1** (where XXX are your initials) for **925.00** and click **OK**.
4. In the **Adjusted Receipt Date** field, select today's date.
5. Navigate to the **Invoice Selection** sheet.
6. In the **Current Cash Receipts** grid, select the **Remove** check box for the first **325.00** invoice created.
7. Click the **Update** button.
Outstanding Invoices and credit memos for the customer display in the **Invoices** grid.
8. Review the **Unapplied** field. It should display the **325.00** that is no longer applied to the removed invoice.
9. Select the **Selected** check box for the other **325.00** invoice created. Note the **Unapplied** amount should now be **0.00**.
10. From the **Actions** menu, select **Adjust Cash Receipt**.

A message displays to inform you that the cash receipt was successfully adjusted.

11. Click **OK**.
12. Exit **Adjust Cash Receipt**.

Review the Adjusted Cash Receipt

In this workshop task, view the adjusted cash receipt in Cash Receipt Tracker.

Navigate to the Cash Receipt Tracker.

Menu Path: Financial Management > Accounts Receivable > General Operations > Cash Receipt Tracker

1. In the **Check...** field, enter **XXX-1** (where XXX are your initials) and press **Tab**.
2. The adjusted cash payment details display. Note the **Adjusted** indicator for the cash payment to inform you that the cash receipt was adjusted.
3. Navigate to the **A/R Receipt > Allocation sheet**.
4. The invoices to which the cash payment was applied display in the Invoices list. Note that the second 325.00 invoice selected in **Adjusted Cash Receipt** appears in this list and the removed first 325.00 invoice does not appear in the list.
5. **Exit** the Cash Receipt Tracker.

Workshop - Adjust Cash Receipt to Change Customer

In this workshop, you have outstanding invoices for both customers Barriston and Addison. Addison sends you a check to pay the invoice. When you create a cash receipt for the payment, you accidentally create the receipt and apply it to customer Barriston. You must adjust the cash receipt to select the correct customer who made the payment and apply the receipt to the correct invoice.

In this workshop, you perform the following tasks:

1. Create and post an AR invoice in AR Invoice Entry.
2. Create a Cash Receipt Entry group, add the payment and apply it to the invoice, then post the group.
3. Adjust the Cash Receipt to change the customer.
4. Review the adjusted cash receipt.

Create AR Invoices

In this workshop task, create and post an AR invoice for customer Barriston and one for Addison

Navigate to **AR Invoice Entry**.

Menu Path: Financial Management > Accounts Receivable > General Operations > Invoice Entry

1. From the **New** menu, select **New Group**.
2. In the **Group** field, enter **XXX-CD** (where XXX are your initials).
3. Accept the other defaults.
4. Click **Save**.
5. From the **New** menu, select **New Miscellaneous Invoice**. The **Header > Detail** sheet displays.
6. In the **Sold To Customer** field, enter **BARRISTON** and press **Tab**.

7. Click **Save**.
8. Record the invoice number. You will use it in a later workshop task.
9. From the **New** menu, select **New Line**.
10. Enter the following:

Field	Value
Part/Rev	1032KNUT
Quantity	10
Unit Price	40

11. Click **Save**.
12. From the **New** menu, select **New Miscellaneous Invoice**. The **Header > Detail** sheet displays.
13. In the **Sold To Customer** field, enter **ADDISON** and press **Tab**.
14. Click **Save**.
15. Record the invoice number. You will use it in a later workshop task.
16. From the **New** menu, select **New Line**.
17. Enter the following:

Field	Value
Part/Rev	1032KNUT
Quantity	10
Unit Price	40

18. Click **Save**.
 19. From the **Actions** menu, select **Group** and then **Post**. The **AR Invoice Post Process** window displays.
 20. Click **Submit**.
- The **Process Submitted** message displays.
21. Exit the AR Invoice Post Process window.
 22. Exit AR Invoice Entry.

Create and Post Cash Receipt for Barriston

Navigate to Cash Receipts Entry.

Menu Path: Financial Management > Accounts Receivable > General Operations > Cash Receipt Entry

1. From the **New** menu, select **New Group**.
2. In the **Group** field, enter **XXX** (where XXX are your initials).
3. In the **Bank Account** field, select **Main Checking Account**.
4. Click **Save**.
5. In the **Transaction Apply Date** field, today's date defaults.
6. From the **New** menu, select **New Invoice Payment**.
7. In the **Check** field, enter **XXX-5** (where XXX are your initials).

Adjusting Cash Receipts

8. In the **Receipt Amount** field, enter **400.00**.
9. In the **Customer ID** field, enter **BARRISTON** and press **Tab**.
10. Click **Save**.
11. Navigate to the **A/R Receipt > Invoice Selection** sheet.
12. In the **Invoices** grid, select the **Selected** check box for the **400.00** invoice you created for Barriston in the earlier workshop task.
13. Click the **Apply** button.
14. Click **Save**.
15. From the **Actions** menu, select **Post**.
The Cash Receipt Post Process window displays.
16. Click **Submit**.
17. Close the Cash Receipt Post Process window.
18. Exit Cash Receipts Entry.

Adjust Cash Receipt to Change Customer

Navigate to Adjust Cash Receipt.

Menu Path: Financial Management > Accounts Receivable > General Operations > Adjust Cash Receipt

1. In the **Check...** field, enter **XXX-5** (where XXX are your initials) and press **Tab**.
2. In the **Adjusted Receipt Date** field, select today's date.
3. From the **Update to Customer Pane**, in the **CustID** field, enter **ADDISON** and press **Tab** on your keyboard.
4. Navigate to the **Invoice Selection** sheet.
5. Review the **Current Cash Receipts** list. Note that the invoice paid by the original cash receipt for Barriston appears in the list. The **Remove** check box is selected and is view only.
6. Review the **Unapplied** field. It should display the **400.00** that is no longer applied to the removed invoice.
7. Review the **Invoices** grid. Note that the **400.00** invoice created for Addison in the earlier workshop task appears at the bottom of the list.
8. Select the **Selected** check box for the **400.00** invoice for Addison. Note the **Unapplied** amount should now be 0.00.
9. From the **Actions** menu, select **Adjust Cash Receipt**.
A message displays to inform you that the cash receipt was successfully adjusted.
10. Click **OK**.
11. Exit **Adjust Cash Receipt**.

Review the Adjusted Cash Receipt

In this workshop task, view the adjusted cash receipt in Cash Receipt Tracker.

Navigate to the **Cash Receipt Tracker**.

Menu Path: Financial Management > Accounts Receivable > General Operations > Cash Receipt Tracker

1. In the **Check...** field, enter **XXX-5** (where XXX are your initials) and press **Tab**.
2. The adjusted cash payment details display. Note the **Adjusted** indicator for the cash payment to inform you that the cash receipt was adjusted.
3. Review the Customer ID and Customer Name fields. Note that the customer for the cash receipt is now Addison.
4. Navigate to the **A/R Receipt > Allocation sheet**.
5. The invoices to which the cash payment was applied display in the **Invoices** list. Note that the 400.00 invoice from **Adjust Cash Receipt** appears in this list and the removed 400.00 invoice for Barriston does not appear in the list.
6. Exit the Cash Receipt Tracker.

Congratulations! You have completed the Adjusting Cash Receipts Lab.

Advanced BAQs: Gathering, Compiling, and Evaluating Data with Subqueries

In this hands-on lab you create a single Business Activity Query (BAQ) that includes three subqueries which retrieve and combine data from three tables for display in a Common Table Expression (CTE) table. A TopLevel query then selects from both the CTE table and joins to another database table. The SQL data generated by the BAQ also includes a Where Clause parameter that limits how many rows return.

At the conclusion of this lab, you will be able to:

- Create a CTE that has multiple subqueries and a main query which returns a result set
- Create a Top Level query to select from a CTE and a joined database table
- Create and use BAQ Defined Parameters to help ensure BAQ efficiency and performance

System Requirements

Modules/Licensing	Product Version
• Security Manager (To add custom programs to the menu through Menu Maintenance)	Epicor 10.x

Business Flow Requirements

After you create a subquery BAQ, embed it in a custom dashboard or a BAQ report. Place the custom dashboard or BAQ report on the menu. Users can then view the data generated by this custom query.

Create Common Table Expression Subquery

A Common Table Expression (CTE) is a temporary SQL in-memory table that can be queried from a top level query. In the example below, the CTE populates with data from three different database tables.

1. Login to ERP10 using **manager/manager**.
2. Make sure the current company is **EPIC06** (Epicor Education).
3. Navigate to **Business Activity Query Designer**.
Menu Path: Executive Analysis > Business Activity Management > Setup > Business Activity Query
On the **Standard** toolbar, click **New**.
4. In the **Query ID** field, enter **SalesTotal**.
5. In the **Description** field, enter **Total Value of Quotes, Orders, Invoices by Date**.
6. To indicate this query is available to all users, select the **Shared** check box.
7. Navigate to the **Query Builder > Subquery Options** sheet.
8. In the **Name** field, replace **Subquery1** with **CTE_Quotes_Orders_Invoices**.

Note: When you create a new BAQ, it automatically is a TopLevel subquery. For this example, this new query is actually type CTE. For now, leave this query as a TopLevel query; you can then make incremental saves to this query.

9. Navigate to the **Query Builder > Phrase Build** sheet.
10. Drag and drop a single table onto the designer canvas:
 - Erp.QuoteHed
11. Navigate to the **Display Fields > Column Select** sheet.
12. Move the following columns to the **Display Column(s)** list. If you press the first letter of the column name, you step through the columns; then double-click the column:
 - QuoteHed_Company
 - QuoteHed_CustNum
 - QuoteHed_QuoteNum
 - QuoteHed_EntryDate
 - QuoteHed_QuoteAmt

Tip! When multiple Union subqueries are in a BAQ, the column labels from the first subquery are used as the column header labels in the final viewable result. Since this BAQ includes information from three database tables, change the labels in this first subquery so they display more generic text.

13. For the **QuoteHed_QuoteNum** column, change the **Label** to **Record ID**.
14. For the **QuoteHed_QuoteAmt** column, change the **Label** to **Value**.

Create Calculated Field

The BAQ aggregates data from multiple subqueries. To set this up so the end-user can identify, sort, or group records by type (Quotes, Orders, or Invoices) when reviewing the result set, create a calculated field to categorize each row in the result set. For the current subquery, identify Quote records.

1. Click the **Calculator** icon.
2. The **Calculated Field SQL Editor** displays. Click **New**.
3. In the **Field Name** field, enter **QuotIdentifier**.
4. In the **Data Type** field, select **nvarchar**.
5. In the **Label** field, which identifies the field's column header in query results, replace the default value with **Record Type**.
6. In the **Editor** pane, enter '**Quotes**' (include the single quote characters).
7. Click **Save**.
8. Exit the Calculated Field SQL Editor window.
9. On the Display Column(s) grid, move the Calculated_QuotIdentifier column up and make it the first column in the list.
10. Click **Save** to save the BAQ.

Create Orders Subquery Included in the CTE

In the BAQ Designer, subqueries concatenate in sequential order. One or more subqueries of Union, UnionAll, Except or Intercept types can go after TopLevel or CTE subqueries.

Since a BAQ only returns a single result set, when one or more subqueries combine using the set operators, their fields (specified on the Display Fields > Columns Select sheet) should conform to the following rules:

- The number and the order of the columns must be the same in all subqueries.
- The data types must be compatible.
- Field aliases and labels of the result record set are taken from the first subquery.

Add a subquery that returns a list of sales orders into the CTE. The first subquery (CTE_Quotes_Orders_Invoices) will eventually be set to type CTE. In SQL language, the UNION clause combines the results of two SQL queries. This second subquery is a Union that brings Order information into the CTE results.

1. Navigate to the **Query Builder** tab and click the **Add Subquery** button (on the right of the **SubQuery** dropdown list). The default name assigned is **SubQuery2**.
2. Navigate to the **SubQuery Options** sheet.
3. Change the **Name** of this new subquery to **CTE_Orders**.
4. Change the **Type** to **Union**.
5. Navigate to the **Query Builder > Phrase Build** sheet and place a single table on the designer canvas:
 - Erp.OrderHed
6. Navigate to **the Display Fields > Column Select** sheet and move the following columns to the Display Column(s) list. If you press the first letter of the column name, you step through the columns; then double-click the column:
 - OrderHed_Company
 - OrderHed_CustNum
 - OrderHed_OrderNum
 - OrderHed_OrderDate
 - OrderHed_OrderAmt

Create Calculated Field

Create a calculated field that identifies all sales order records in the query result.

1. Click the **Calculator** icon.
2. Click **New**.
3. In the **Field Name** field, enter **OrderIdentifier**.
4. In the **Data Type** field, select **nvarchar**.
5. In the **Label** field, which identifies the field's column header in query results, enter **Record Type**.
6. In the **Editor** pane, enter '**Orders**' (include the single quote characters).
7. Save the record and exit the Calculated Field SQL Editor window.
8. On the **Display Column(s)** grid, move the **Calculated_OrderIdentifier** column up and make it the first column in the list.

Create Invoice View Subquery

This last subquery returns the list of invoices. Still adding subqueries to the CTE, you create this third subquery as a Union to bring Invoice information into the CTE results.

1. Navigate to the **Query Builder** sheet and to the **SubQuery Options** tab.
2. Click the **Add Subquery** button (on the right of the **SubQuery** dropdown list). The default assigned name is **SubQuery3**.
3. Change the **Name** of this new subquery to **CTE_Invoices**.
4. In the **Type** field, select **Union**.
5. Navigate to the **Query Builder > Phrase Build** sheet.
6. Enter "Inv" in the Search field; from the filtered results, double-click this table:
Erp.InvcHead
7. Navigate to the **Display Fields > Column Select** sheet and move the following columns to the **Display Column(s)** list. If you press the first letter of the column name, you step through the columns; then double-click the column:
 - InvHead_Company
 - InvHead_CustNum
 - InvHead_InvoiceNum
 - InvHead_InvoiceDate
 - InvHead_InvoiceAmt

Create Calculated Field

The last calculated field that you create identifies invoice records in the query result.

1. Click the **Calculator** icon.
2. Click **New**.
3. In the **Field Name** field, enter **InvoicelIdentifier**.
4. In the **Data Type** field, select **nvarchar**.
5. In the **Label** field, enter **Record Type**.
6. The label identifies the field's column header in query results.
7. In the **Editor** pane, enter '**Invoices**' (include the single quote characters).
8. Click **Save**.
9. Exit the **Calculated Field SQL Editor** window.
10. On the **Display Column(s)** grid, move the **Calculated_InvoicelIdentifier** column up and make it the first column in the list.
11. Click **Save** to save the BAQ.
12. Navigate to the **Query Builder/Subquery List** sheet. Verify that the **TopLevel** query is first, followed by the two **Union** subqueries.

Change to a CTE

Complete the definition of the Common Table Expression (CTE) and add a TopLevel query to select from the CTE.

1. Navigate to the Subquery Options tab. From the Active SubQuery drop-down list, select the **CTE_Quotes_Orders_Invoices** (TopLevel) query.
2. Change the type to **CTE**.
3. Navigate to the **General** tab to review the SQL query.

Create TopLevel Query to Select and Display Results from the CTE

Now create the TopLevel query. The TopLevel query selects from the CTE populated by the three subqueries. It joins the ERP.Customer table to display the customer name.

1. Navigate to the Query Builder sheet and click the **Add Subquery** button (to the right of the Subquery dropdown list). The default assigned name is SubQuery4.
2. Navigate to the SubQuery Options sheet.
3. Change the Name of this new subquery to **QuotesOrdersInvoices**.
4. In the **Type** field, select **TopLevel**.
5. Navigate to the **Query Builder > Phrase Build** sheet.
6. Click on the Subqueries button (center icon under the textbox for table searches) to add a subquery to the data results. The table list should change and show a single table **CTE_Quotes_Orders_Invoices**.
7. Drag the **CTE_Quotes_Orders_Invoices** subquery to the designer canvas.
8. Navigate to the **Display Fields > Column Select** sheet.
9. Move the following columns to the Display Column(s) list. You can **<Shift>** click to select these columns at the same time; then click the **Right Arrow** button to move them to the list:
 - Calculated_QuotIdIdentifier
 - QuoteHed_Company
 - QuoteHed_CustNum
 - QuoteHed_QuoteNum
 - QuoteHed_EntryDate
 - QuoteHed_QuoteAmt
10. Save the BAQ.

Include Additional Information in TopLevel Results

The TopLevel query selects the Customer Number from the CTE for each record type. You want the customer name to display as well. Modify the TopLevel query to both select from the CTE but and join to another table.

1. With **QuotesOrdersInvoices** still active, return to the **Query Builder/Phrase Build** sheet and click the **Connected Only Tables** icon (the **Chain Link** icon to the left of the **SubQueries** icon).
2. Drag and drop the **Erp.Customer** table to the design canvas.

3. These items do not automatically connect, so manually create the join. At the top left of the design canvas, click **Add Connection**. In the design canvas, drag from the **CTE_Quotes_Orders_Invoices** table to the **Customer** table. The connection appears.
 4. To select the connection, click the **Diamond** icon.
 5. In the bottom grid, confirm that the **Table Relations** sheet is active. Click the **Add Row** icon just above and to the left; a new empty row appears in the **Table Relations** grid.
 6. In the **CTE_Quotes_Orders_Invoices Field or Any Expression** value, select **QuoteHed_CustNum**.
 7. Verify that in the **Operation** column, the default **Equal To (=)** sign displays.
 8. In the **Customer Field or Any Expression** value, select **CustNum**.
- The **Customer** table is now joined to the CTE results. The TopLevel subquery will display the customer name.
9. Return to the **Display Fields** sheet.
 10. In the **Customer** table, select and move **Name** to the **Display Columns** list.
 11. Highlight **Customer_Name** and use the Arrow buttons to move it up after **QuoteHed_CustNum**.
 12. Click **Save**.

Create Query Parameter

The subqueries created so far return all Quotes, Orders, and Invoices for all customers and dates, so they return too many rows. Use BAQ Defined Parameters and Table Criteria to limit how many rows the BAQ retrieves. In this example, create a Defined Parameter and apply it in a Table Criteria. When the query executes, users input a date in this parameter and the entered date value displays in the SQL Where clause.

1. In the **Query Builder** sheet, make sure that **QuotesOrdersInvoices** is the Active SubQuery.
2. From the **Actions** menu, select **Define Parameters**.
3. On the **Query Parameters** window, click **New**.
4. In the **Parameter Name** field, enter **DateParam**.
5. From the **Data Type** list, select **Date**.
6. Accept the remaining default values and click **Save**.
7. Close the Query Parameters window.

Apply Table Filters

You now define which BAQ fields you want to filter using the date parameter. As the TopLevel subquery selects from the Union results in the CTE, only apply the parameter to the TopLevel subquery.

1. Navigate to the **Query Builder > Phrase Build** sheet and verify that the **Active SubQuery** is set to **QuotesOrdersInvoices**.
2. On the design canvas, select the **CTE_Quotes_Orders_Invoices** table.
3. At the bottom of the screen, verify the **Table Criteria** sheet is selected.
4. In the grid, click the **Add Row** button.
5. In the new row, from the **Field** list, select **QuoteHed.EntryDate**.

6. In the **Operation** column, verify the default **Equal To (=)** sign displays.
7. From the **Filter Value** list, select the **Specified Parameter** option.
8. Click the word **Specified**.
9. The **Select Parameter** window displays.
10. Verify the **Date** parameter you created is highlighted. Click **Select**.
11. Click **Save**.

Test the BAQ

1. Navigate to the **Analyze** sheet.
2. Click the **Test** button.
The **Parameters** window displays.
3. To retrieve results, use the following dates that have sales records in the Demonstration Database:
 - 01/24/2018 (January 24) (Should display Orders and Invoices)
 - 03/07/2018 (March 7) (Should display Orders and Invoices)
 - 01/09/2018 (January 9) (Should display Quotes, Orders, and Invoices)Click **OK**.
The grid populates with records.
4. Confirm that record types from three different database tables return and the customer name correctly displays for each result row.
5. You can adjust the grid to test how data displays on dashboards and reports. Right-click anywhere in the grid and select **Show Group By** and **Show Summaries**.
 - Activate the **Show Summaries** option to cause the Sigma (Σ) symbol to appear in the column headings that contain numeric data. When you click the icon, the **Select Summaries** window displays; choose from the list of summarization options.
 - Activate the **Group By** option to group records together using a selected column.
6. Drag the **Record Type** column to the pane above the grid.
7. In the **Value** header click the Sigma (Σ) icon.
8. In the **Select Summaries** window, select **Sum**.
9. Click **OK**.

The BAQ results are now organized by Quotes, Orders, and Invoices, and the total value for each type displays for the chosen date.

An Overview of Epicor Data Discovery (EDD)

Data Discovery applications are a class of modern self-service business intelligence applications. They are extremely easy to use and designed to provide a very fast method of asking and answering questions about your data by pivoting, selecting data, drilling down, and otherwise interacting with a data visualization.

Epicor Data Discovery (EDD) is a new Data Discovery application which you can use from a standalone web browser on your computer, tablet, or modern smartphone as well as from within Epicor ERP. In this lab we will explore how to quickly build Data Discovery Views against Epicor ERP data, have an interactive conversation with your data to identify problems and solutions, and embed that intelligence back into the ERP Active Homepage for ongoing quick monitoring.

At the conclusion of this lab, you will be able to:

- Explore data using an existing Data Discovery View in a web browser
- Create an all new Data Discovery View using a custom BAQ as a data source
- Embed and personalize Data Discovery views inside the Epicor ERP Active Homepage

Log in to Epicor Data Discovery in a Web Browser

Data Discovery is a web based application which can be used in a web browser on a desktop computer or embedded within Epicor ERP. We will start by using Data Discovery standalone in a web browser.

1. On the Desktop locate the **Epicor Products** icon and double click it
2. In the window that opens click the **EDD (Data Discovery)** icon to launch **Epicor Data Discovery**

A chrome web browser is opened to the Data Discovery login screen

3. Maximize chrome so it takes up the full screen
4. Enter user **epicor** and password **epicor** and click **Log In**

The Data Discovery homepage is shown

Searching for Views

This is the Epicor Data Discovery application homepage. Data Discovery has two types of data analysis views which you can browse from the homepage.

- **Discovery Views** - single interactive visualizations used to do detailed interactive data analysis.
- **Dashboards** - combine multiple charts, filters, and other widgets on a single surface.

When you first open the application, you're taken directly to a list of the dashboards that are available, but to start with something a little simpler let's switch to see a list of Discovery Views and search for a view.

1. Locate the search bar at the top of the screen and find the **Discovery View** toggle button which looks like a line chart.
2. Click the **Discovery View** toggle button.

A list of all Discovery Views is shown. The search bar at the top of the screen lets you filter down to find views by name, datasource, or folder.

1. Locate the **search** box at the top left-hand corner of the screen and enter “Customer”.
2. As you type the list of views is filtered to those with the word “Customer” in the name.
3. Locate the **Customer Days Past Due** view and click on it.
4. You are taken to the Customer Days Past Due Discovery View in Exploration mode.

Review Data Discovery Exploration Mode

This is what an Epicor Data Discovery view looks like. Each view is an interactive data visualization which allows you to filter, pivot, and drill down to have an interactive conversation with your data. Using this interface, you can ask and answer questions about your business in a quick and easy way.

Take a moment to familiarize yourself with the environment.

- **Navigation Bar** – The bar along the top of the screen is called the navigation bar and contains actions such as saving the view, returning to EDD home, and so on.
- **Data Panel** – The data panel on the left-hand side of the screen contains all the data elements you can use in your visualization. In this case we are connected to a BAQ and the data panel is showing the available fields as a set of **Measures** (aggregate calculations such as **Total Sales**, **Order Count**, **Average Price**, and so on) and **Dimensions** (elements you can group and filter by such as **Customers**, **Parts**, **Orders**, and **Dates**).
- **Data Mapping Panels** – The data mappings such as **Rows**, **Columns**, **Size**, and **Highlight** show the data that is currently shown in the visualization and control how it is displayed.
- **Data Visualization** – The center of the view is the data visualization, the title of the view, and interactive options for the visualization.
- **Filter Panel** – The filters pane on the righthand side of the screen contains data filters which limit the data shown in the visualization.
- **Transactions Panel** – The transactions panel which is currently closed at the bottom of the screen can be opened to show the underlying data behind the visualization in a table.

Using Dimension Filters

The filter panel on the righthand side of the screen lets you quickly and easily limit the data shown on the visualization.

1. Locate the **Customer Group** filter on the righthand side of the screen and expand it until you see a list of customer groups. This requires expanding twice.

A list of customer groups like N/A, Aerospace, Automotive, and so on is shown. Most dimension filters will include an “N/A” or “Not Available” option which you can use to filter out data that does not have any value for the dimension. In this case N/A is customers that don’t belong to a customer group.

2. Select Aerospace, Automotive, and Distribution.

As you click the chart instantly starts to respond showing your filters almost as fast as you select them.

3. On the **Navigation Bar** at the top right of the screen locate the undo button and click it until all the customer group filters have been removed.

All customer group filters are removed, and the chart has returned to its original state. You can use undo and redo on the navigation bar to quickly return the visualization to a previous state.

4. Locate the **Invoice Days Overdue** filter on the righthand side of the screen and expand it.
Notice that the filter for a measure looks different. Instead of a checklist you can choose to filter by the value of transactions greater than, less than, and so on.
5. Select **Greater Than** from the dropdown.
6. Enter 3000 into the input box below.
The chart responds automatically and filters down to only include invoices that are extremely overdue
7. Place your mouse cursor over the **Invoice Days Overdue** header in the filter panel and drag and drop it out of the filters panel. For example, drag it over the chart and drop it.
The filter is entirely removed from the filter panel and the chart updates.
8. Drag and drop all remaining filters out of the filters panel to remove them.
The filters panel is empty and no filters are applied to the view.

Adding new Measures and Dimensions to the visualization

The data shown on the visualization is defined by a number of panels into which data elements (dimensions, and measures) can be dragged from the data panel on the far left. Notice that there are panels like **Rows**, **Columns**, **Highlight**, and **Animate**. Different visualization types will add and remove data panels and enable/disable data elements within them to show you which data is currently being shown. These panels are often called “data mappings” because they map a data value to how it will be displayed on the data visualization.

Columns: Sets the data element that will be shown horizontally on the visualization. The **Customer** dimension is currently on columns so customers are shown horizontally across the chart.

Rows: Sets the data element that will be shown vertically. The **Customer Days Overdue** measure is on rows which defines the height of each bar in the bar chart.

Highlight: Sets a measurement that will highlight the data points depending on its value. For example, below we will use Invoice Balance to light up the customers with high invoice balances quickly.

Animate: Sets a dimension which the chart will play through. For example, adding **Years** to animate will play an animation where the chart shows one year’s data at a time in order, playing through time.

Size: Sets a measure that will control the size of data points. This is most often used to create a bubble chart where each point is sized according to a measure of your choice.

Category: For visualization types such as pie charts and scatter plots category sets the dimension which will determine how many data points are shown. For example, adding **Customer** to category on a scatter plot will result in one data point per customer on the scatter plot.

1. Locate the data panel on the left-hand side of the screen and expand **Measure Groups > Measures**.
2. Locate the **Invoice Days Overdue** measure and drag and drop it into the **Rows** panel.
The chart is updated and now shows two bars. One for each of the measures in the Rows panel. You can also quickly search through the data panel when there are many dimension and measures.
3. Inside the **Rows** mapping place your cursor over the **Customer Days Overdue** measure and click the sorting icon which appears to sort by the measure.
The chart is updated to sort by **Customer Days Overdue**.
4. Click the sort icon again to reverse the sort order.

The chart is updated to reverse sort by **Customer Days Overdue**.

5. In the data panel on the left-hand side of the screen expand the **Dimension > Cust Group**.
6. Drag and drop the **Customer Group** dimension attribute to the **Columns** panel.

The **Customer Group** is added to the **Columns** panel, but it is disabled. Let's find out why.

7. Hover over the **Customer Group** attribute in the **Columns** panel.

A tooltip is displayed explaining that this visualization only knows how to use one dimension attribute at a time, so you have to toggle between the two you have selected. You can always hover over a data element to find out why it is disabled.

8. Click on the **Customer Group** attribute in the **Columns** mapping.

The chart changes to show by **Customer Group** and the **Customer** attribute is disabled.

9. Drag and drop the **Customer** attribute out of the **Columns** panel to remove it entirely.

Exploring Visualization Options

So far all we've done is work with the same kind of bar chart. You can easily change out the type of chart or view the results in a pivot table as well as modify other options like the chart color scheme.

1. Locate the **Visualization Type** panel directly above the **Rows** panel and review the list of options.

The buttons along the top show the major types of visualizations and, when selected, variants of the visualization are shown below. For example, under Bar there are options for grouped bar, stacked bar, and 100% stacked bar.

2. Under **Compare** click the **stacked bar** button which looks like two stacked bars and is immediately to the right of the selected grouped bars button.

The chart updates to show the two measures stacked instead of side by side in groups

3. Under % of Total click the 100% stacked bar button.

4. The chart updates to show the two measures stacked as a percentage. The vertical axis is updated from zero to 100 percent.

5. Click the icon that looks like a **Line** chart directly to the right of the selected bar chart button on the top row.

The chart is changed into a line chart with one line for each measure.

6. Click the icon that looks like a **Pie** chart.

The chart is changed into a pie chart that only shows one measure, **Customer Days Overdue**. The second measure, **Invoice Days Overdue** is disabled. A pie chart can only show one measure at a time so it's automatically selected the first measure to display. Data Discovery will always try to show a useful chart even if it cannot use all the data available or has to take a guess at how you would like the data to be displayed.

7. Click the **Invoice Days Overdue** measure in the **Rows** panel.

The chart is updated to show **Invoice Days Overdue** by **Customer Group**.

8. Click the **Pivot Table** icon to the right of the **Pie** icon.

The chart is replaced with a Pivot Table. This pivot table might be a little easier to read if we flipped the data between **Rows** and **Columns**.

9. In the **Rows** panel locate the swap icon which looks like two arrows pointing between Rows and Columns and Click it.

The contents of Rows and Columns are switched and the table pivots.

Using Highlight to draw attention to data points

The highlight panel is a great way to help find key data points visually and works on **Pivot Tables**, **Bar**, and **Dot-plot/Scatter** visualizations. You can use highlight to light up data points by any measure and set a color scheme to emphasize large, small, or average values.

1. In the data panel at the far left locate the **Invoice Balance** measure and drag and drop it to the **Highlight** panel.

The pivot table highlights cells from gray to a dark blue color depending on the size of the invoice balance. Additionally, a histogram chart is shown in the highlight panel which shows the distribution of values by invoice balance. This also acts as a key for the color scale from gray to blue.

2. Locate the color scheme selector button which looks like a small color gradient from gray to blue at the top right of the **Highlight** panel and click it.

A popup is shown with color schemes that can be used to highlight different types of values.

3. Scroll down the color list and select one of the **Outliers** color schemes such as the Green to Red scheme.

The popup is closed and the table updates with the smaller invoice balances highlighted in green and the large invoice balances highlighted in red. You can use different schemes to highlight the large, small, or median values depending on what is important to you easily.

4. In the visualization selection panel click the **bar** chart icon to change back into a bar chart.

The pivot table is replaced with a horizontal bar chart and the highlight element is disabled. Since there are two measures each using a different color we can't use that and also use a color highlight at the same time on the bar chart.

5. Drag the **Customer Days Overdue** measure out of the **Columns** mapping to remove it.

The chart is updated to show a single series bar chart, and our highlight on **Invoice Balance** is now shown lighting up bars from green to red.

Selecting Data points, Drilling Down, and Viewing Underlying Data

The bar chart is now showing us which customer groups have very overdue invoices (the size of the bars) and which groups have the largest overdue balance (the bars that are red). A natural next step is to ask which customers are both very late and have large balances?

1. Click on the largest red bar, **Commercial** to select it.

The bar is selected and a new **Data Selection** Panel appears on the right side of the screen instead of filters.

2. Review the options available in the data selection panel.

The top of the panel shows details about the data point. The total overdue balances, the total sum of overdue days over all invoices. The bottom half of the panel shows additional actions you can take on the selected data. Let's break down the group and see which customers are the cause.

3. In the **Data Selection** Panel click the **Drill** button to drill down.

The panel is updated to show a list of the dimensions that you can use to drill down by.

4. In the **Data Selection** Panel expand **Customer** and click the one attribute under it, also named **Customer**.

The chart changes to show by customers instead of customer groups and a new filter is automatically added to the filter panel which filters down to the customers in the automotive group. We can see that **Empire State Tractors** has the bigger balance overdue.

5. Locate and click the **Transaction Panel** button to the right of the chart title which looks like a small table.

The transaction grid is shown. This grid shows the underlying transactions from the BAQ we are querying within.

6. Click on the **Empire State Tractors** bar in the bar chart to select it.

The **Transaction Details** Panel updates to show just the invoices from **Twin Cities Motor**. This is a good way to view the actual transaction details which you can take back to the ERP system, such as invoices you need to follow up with the customer on. Another way to do this is to simply continue to drill down in the chart and go down to the invoice level.

7. Click on the **Empire State Tractors** bar again to deselect it.

The Transaction Details Panel updates to show transactions for both Twin Cities and Dalton.

8. Click the close button at the top right of the **Transaction Details** panel to close the panel.

The transaction details panel is closed.

9. Click on the **Dalton** bar in the bar chart to select it.

10. In the **Data Selection** Panel click the **Drill** button to drill down.

The panel is updated to show a list of the dimensions that you can use to drill down by.

11. In the **Data Selection** Panel expand **Invc Head** and click the **Invoice** attribute.

The chart changes to show by invoices and is now limited to just the Dalton invoices.

This is a good example of what we mean when we say Data Discovery is for having a conversation with your data. You can interactively filter, add data, and highlight data. If you notice something that seems interesting you can then ask another question by drilling down until you find the transactions you need to follow up on such as very overdue invoices. So in this section we started from an overview of the overdue invoices by customer group then asked, "which customers are responsible?" and then "which invoices are the most overdue?" and so on.

Create a new Dashboard

Data Discovery Dashboards provide a way to combine many views together with filtering on a single dashboard surface so that you can easily monitor the status of a business process and expand into detailed analysis to quickly answer questions and solve issues.

1. Click the **Home** button at the top left-hand corner of Data Discovery to return to the view list.
2. When prompted to discard your changes choose **Yes**.

The homepage with the list of data discovery views is shown.

3. On the search bar locate the **Dashboard View** toggle button to the left of the view toggle button and click it to view a list of dashboards.

The list of dashboards is shown.

4. Click the + button at the top left below the search box to create a new Discovery Dashboard.

A new blank dashboard is shown.

Add a View to the Dashboard

1. Click the large circular + button at the top right of the dashboard surface.

A new dialog to select a component is shown and the dashboard is changed into design mode.

2. Locate the search box and enter “**Customer**” into it.

The list of views is filtered.

3. Locate the **Customer Days Past Due** view and click on it to add it to the dashboard.

The dialog is closed and the Customer Days Past Due view is added to the dashboard. Notice that when the chart is small it is displayed in a condensed mode.

4. Move your mouse cursor to the center of the **Customer Days Past Due** view and drag it down about half way down the page and let go.

Notice that a grid appears and the view will snap to the grid. On smaller sized displays the views will automatically reposition to fit onto the screen and the grid will resize to fit.

5. Move your mouse cursor to the bottom right corner of the **Customer Days Past Due** view and resize it until it takes up the full width of the dashboard and about 3 grid boxes in height.

Notice that as you enlarge the view it switches to show the full chart.

Create a New View

In addition to choosing existing views you can quickly create a new view and add it directly to the dashboard.

1. Click the large circular + button at the top right of the dashboard surface.

A new dialog to select a component is shown.

2. In the component selection dialog click the large square + button to create a new view.

A new Select Data Source dialog appears.

3. In the search box enter “**bookorders**” to locate the **EPIC06-BookOrders** BAQ.

The list is filtered and EPIC06-BookOrders is visible.

4. Select the **EPIC03-BookOrders** BAQ and click **Ok**.

A new blank discovery view is shown with the EPIC03-BookOrders BAQ data in the data source panel on the left.

When you are using Data Discovery against a BAQ it automatically inspects the data in the BAQ and makes decisions about what is likely a measurement which it can sum, average, or count and which is a dimension

which you can use to group and filter data. So, any field you add to a custom BAQ, excepting some special data types, will be shown in the EDD Data Panel on the left.

It is important to understand that if you are creating a custom BAQ for use with EDD that EDD does not simply run the BAQ query, but instead we query inside of the results of that BAQ. The BAQ defines the data space inside which a user can filter, group, and pivot on data.

Additionally, note that we have not left the dashboard, we've zoomed into the exploration mode for our new view and can return to the dashboard at any time. When using the dashboard users can zoom into views to do detailed exploration at any time.

Creating Dotplots, Scatter Plots, and Bubble Charts

The last chart type we have not explored is the dotplot style. You can use it to create dotplots, scatterplots, and bubble charts.

1. In the data panel expand **Measures** and drag and drop **Book Value** to the columns panel.
No chart is shown because we have not yet added enough data elements to draw a chart. Most chart types require at least one dimension and one measure to display.
2. In the data panel expand the **Prod Group** dimension and drag the **Product Group** to the **Rows** panel.
We now have a dot plot chart. Dot plots are similar to bar charts, but instead of rectangles they show circles. These are particularly useful for showing goal and actual measures together.
3. Drag and drop **Product Group** to the **Category** mapping.
Nothing changes on the visualization since nothing is listed on rows, but a data element on rows is required data discovery guesses that it can use the category data for rows.
4. In the data panel expand **Measure Groups > Count** and drag and drop **Count(Customer)** to the **Rows** panel.
The chart is changed to a scatter plot showing Count of Customers vs Book Value with one data point per product group.
5. In the data panel drag and drop the **Selling Quantity** measure to the **Size** panel
The data points update and are now scaled. Large Selling quantity results in a large circle, and small results in a small circle.
6. In the data panel expand the **Customer** dimension and drag and drop the **Name** attribute to the filters panel on the right.

Now that we have a new chart with a filter on it we can return to the dashboard surface.

Return to the Dashboard

1. At the very top left of the screen click the **Back** button.
You are taken back to the dashboard with your new chart added and selected.
2. Resize the new chart so that it takes up the top half of the dashboard surface.
Notice that as you size the bubble chart up it switches from a condensed display mode to the full bubble chart. If you use Data Discovery on a small device such as a mobile phone or embed views into small

spaces in dashboards or on the ERP Active Homepage the condensed view allows showing a summary of the same view in a smaller space.

3. With the new chart selected locate the properties panel at the righthand side of the screen and change the view title from New View to **Product Group Bookings**.
4. Above the dashboard surface locate the title “New Dashboard” and select it.
5. Type to enter a new title such as **My Dashboard**.
6. At the very top right of the screen click the Save icon.
7. Enter a Description such as “**My sample dashboard**”.

The save dialog is shown.

8. Select the **Private** Views folder.
9. Click **Save** to save the dashboard.

Your dashboard is now saved and you are returned to dashboard view mode. If you returned to the Data Discovery List view (home) you could find and launch your personal dashboard.

Notice that in view mode all of the filters that were available on either of the views are shown in the filters panel. Common filters that exist on both views will filter both of the views. In this case the **Customer** filter will work with both charts at once.

Log in to ERP with the Active Homepage Enabled

So far we have used data discovery in its standalone mode in a web browser. We can also embed any of the Discovery Views we have created inside of Epicor ERP on the Active Homepage.

Open ERP in Active Homepage mode.

1. On the Desktop locate the **ERP 10** icon and double click it.
The **Login Screen** appears.
2. Check the **Active Homepage** checkbox to enable active home if it is not checked.
3. Enter user **epicor** and password **epicor**.
4. Click **Log In** to continue.

The ERP Active Homepage is displayed.

Add an Epicor Data Discovery Chart View to the Homepage

Staying in Edit mode add Data Discovery views to the new tile group.

1. Click the **Edit** button located on the top righthand side of the screen below the navigation bar
The homepage layout is changed into edit mode.
2. In the Widget list on the righthand side of the screen locate the **Discovery Chart View** widget type and click it.
The **Discovery Chart View** dialog is shown.
3. In the **View** dropdown locate the **Customer Days Past Due** view and select it.

Notice that you can customize the Title and specify other settings for the tile.

4. Accept the default settings by clicking **Ok**.

The Data Discovery view is now added as a new tile on your homepage. Because the starting size for the tile is small it is shown in a compact “Data Card” mode which presents a summary highlighting one data point at a time. To view the full chart simply expand the size of the tile.

5. Place your mouse cursor over the bottom right corner of the new EDD Tile, click, and drag to expand the height and width of the view.

Notice that as the space expands the chart will change from compact mode into the full chart view.

6. Locate and click the **Save** button located under the Epicor logo at the top right of the screen.

The homepage layout is saved and you have exited edit mode.

Expand into Exploration Mode from the Homepage Tile

When not in Edit mode you can click on the header of the tile to jump into the full Data Discovery Exploration Mode at any time.

1. Locate the **Customer Days Past Due** Tile and click the header bar at the top of the tile.

The Full data discovery view is opened in Exploration Mode

2. In the Filter Panel Expand the **Customer Group** Filter until you see a list of Customer Groups.

3. Click on the **Aerospace** Group.

The chart is filtered to just show Aerospace Customers.

4. Locate the ... icon at the top right of the screen, click it, and click **Save As** on the dropdown menu

The Save Dialog is shown.

5. Enter a custom name such as Late Aerospace Customers.

6. Select the Private Views folder to set this as a personal view.

7. Click Save As New to save your new Data Discovery View.

You are returned back to the homepage and your customized view should be shown on the home screen.

What Data Discovery products are and how you can have a conversation with your data to gain new insights and identify issues to resolve.

How to use Data Discovery standalone from a web browser

How to create an all new Data Discovery view using BAQs

How to embed Discovery Views in the ERP Active Homepage and use them for ongoing operational analytics

Asset Management

Asset Management is a great way to register and track your fixed assets as well as calculate the periodical depreciation at the periodical closings.

This lab will go through the basic steps in the process and will also highlight some tips and tricks for your asset management activities.

At the conclusion of this lab, you will be able to:

- Understand the setup for your fixed assets
- Create a new asset
- Identify asset activities
- Create an asset addition
- Create an asset disposal
- Post asset activities

System Requirements

Modules/Licensing	Product Version
Epicor ERP	10.2.300
Accounts Payable	
Asset Management	
General Leger	

Business Flow Requirements

For the successful completion of this Lab, the following Application Setup was performed:

- Setup of the General Ledger module
- Assigning Fiscal Calendar and GL Controls in Company Configuration
- Creation of Asset Registers, Asset Classes, Asset Groups, and Depreciations Methods

Log in to ERP 10

1. From the desktop, open **ERP10**.
2. In both the **User** and **Password** fields enter **manager**.
3. Navigate to the **Main Menu**, and in the left pane, verify that the **Epic06**, **Epicor Education company**, and **the Main site** are selected.

Review an Asset Register

Note: You should link an asset to at least one asset register, but each asset may be linked to multiple registers. All activities controlled by parameters (depreciation, disposal) and amounts that result from these activities are recorded, maintained, and reported per asset register.

Navigate to **Asset Register**.

Menu Path: Financial Management > Asset Management > Setup > Asset Register

To review an asset register:

1. In the **Asset Register** field, enter **MAIN** and press **Tab**.
2. Review the following information displays:

Fields	Data
Asset Register	MAIN
Description	Main Asset Register
GL Book	MAIN
Calendar	Main Fiscal Calendar

3. Exit Asset Register.

Review an Asset Class

Use Asset Class Maintenance to enter asset class records. You leverage asset classes when you want to group assets together on reports to see assets divided by General Ledger divisions and departments. Asset classes are optional, but highly recommended. They prevent the need to have a group code for all possible division/department and asset type combinations.

In this workshop, create an asset class record for company vans to use for reporting purposes. Set up the GL controls, so that transactions posted for this asset class use 00 for the Division segment.

Navigate to **Asset Class Maintenance**.

Menu Path: Financial Management > Asset Management > Setup > Asset Class

1. In the **Class** field, enter **VAN**, then press **Tab**.
2. In the **Description** field, verify Delivery Van displays.
3. Navigate to the **GL Control > Detail** sheet.
4. In the **Type** field **Division** displays.
5. In the **Control** field, **MAIN** displays.

This GL control holds the segment value **Division** for the **Main Site**.

6. Exit Asset Class Maintenance.

Review an Asset Group

Use Asset Group Maintenance to enter asset groups. You can select GL controls that define the accounts associated with the group. The GL Controls are used for the journals to post depreciation, asset additions, asset disposals, and asset impairments. Examples of group codes are site and machinery, office equipment, motor vehicle leased, and motor vehicle owned.

Navigate to **Asset Group**.

Menu Path: Financial Management > Asset Management > Setup > Asset Group

1. In the **Group Code** field, enter **INSVEH** and press **Tab**.
2. In the **Description** field, **Insights Vehicles** displays.
3. Click **Save**.

4. Navigate to the GL Control > Detail sheet.
5. In the Type field **Asset Group** displays.
6. In the **Control** field, **Equipment** displays.

This GL control holds the general ledger accounts associated with this group of assets.

7. Exit Asset Group Maintenance.

Review a Depreciation Method

Use Depreciation Method Maintenance to specify depreciation methods for assets. Several methods are available for you to calculate depreciation. These methods are based on either the passage of time or the level of activity (or use) of the asset. If you need, you can also define custom formulas to calculate depreciation.

Navigate to **Depreciation Method**.

Menu Path: Financial Management > Asset Management > Setup > Depreciation Method

1. In the **Method** field, enter **StraightLine** and press **Tab**.
2. In the **Description** field, **Life Straight Line** displays.
3. In the **Depreciation Charge Basis, Annual** displays.

Available options:

Annual - Calculates the depreciation amount the asset receives for the year and (either prorating equally or using a spread code) distributes the value per each period.

Period - Calculates the depreciation amount per each individual period.

4. In the **Calculation Method** field, **Life Straight Line** displays.
5. The formula for the Life Straight Line method displays in the **Formula** field.
6. In the **Period Calculation** field, verify **Prorate Equally** displays.
7. Click **Save**.
8. Exit Depreciation Method Maintenance.

Create an Asset

Use Asset Maintenance to enter and update records for fixed assets. You can organize assets by group, class, and project. You can also import, export, and duplicate assets. Specify an asset register for each asset. Identify the depreciation, cost information, annual charges, period charges, and prorate options for the asset. Many depreciation methods are available. You can also establish parent/child relationships between assets. If you would like, you can add a photo of the asset to the record.

Navigate to **Asset Maintenance**.

Menu Path: Financial Management > Asset Management > Setup > Asset

1. From the **New** menu, select **New Asset**.
2. In the **Asset Number** field, enter **XXX** (where XXX are your initials).
3. In the **Description** field, enter **XXX Van** (where XXX are your initials).
4. In the **Asset Group** field, search for and select **Insights Vehicles**.

5. In the **Asset Class** field, select **Delivery Van**.
 6. In the **Acquired** field, select the first day of the previous month.
 7. In the **Placed in Service** field, verify the first day of the previous month displays.
- This is the date that the asset was commissioned. This date serves as the first date of depreciation.
8. Click **Save**.
 9. Remain in Asset Maintenance.

Add a Register to an Asset

1. From the **New** menu, select **New Asset Register**. The **Register > Detail** sheet displays.
2. In the **Register** field, search for and select **MAIN**.
3. In the **Method** field, select **Life Straight Line**.
4. In the **Useful Life** fields, enter **10** and verify **Years** displays.
5. In the **Depreciation Convention** field, select **Entire Month**.

These conventions define how the depreciation amount for the first year is adjusted. Available conventions are:

Half year - The asset was placed in service at the midpoint of the fiscal year.

Mid month - The asset was placed in service in the middle of the fiscal period.

Quarter - Each quarter is one fourth the total number of periods.

Mid quarter - The asset was placed in service in the middle of the quarter. This convention is applicable for a year that has several periods divisible by four, and the quotient from this division is a whole non-zero number.

Full month - The asset was placed in service during the first half of the fiscal period and the application assumes it was acquired at the beginning of the period; otherwise, the application assumes the first day of the next period.

Entire Month - The default option, this convention indicates that regardless of what day the asset was placed in service, a full period's depreciation is calculated against the asset.

Next Month - Depreciation begins in the period after the asset was placed in service.

Service Date - This convention is used to calculate depreciation for the first period. The days remaining in the period are divided by the total days in the period to calculate the depreciation amount.

Acquisition Date - The acquisition date is used to calculate depreciation for the first period. The days remaining in the period are divided by the total days in the period to calculate the depreciation amount.

6. In the **Residual** field, enter **500.00**. This is the scrap value of the van.
7. In the **Depreciation on Disposal/Revaluation** field, select **Full Month**.

The following depreciation options are available:

Pro-rated to disposal date - Calculate depreciation based on depreciation convention.

Full Month - Always apply full month of depreciation.

None - Do not depreciate asset at all.

8. Click **Save**.
9. Navigate to the **Asset > Detail** sheet, verify the status icon displays as **NEW**. Status options include:
 - New** - This status is assigned automatically once an asset is created. It is maintained until the first depreciation charge is posted. An asset can be deleted if it has zero cost.
 - Active** - This status is assigned automatically once the first depreciation is posted.
 - Disposed** - This status is assigned once the asset is fully disposed.
 - Inactive** - This status is assigned if the asset is not depreciated in all Asset Registers.
10. Exit Asset Maintenance.

Create an AP Invoice for an Asset Purchase

Use AP Invoice Entry to record the purchase of an asset. After you create an AP invoice entry group and an invoice, you can add asset lines.

Navigate to **Invoice Entry**.

Menu Path: Financial Management > Accounts Payable > General Operations > Invoice Entry

To create an AP invoice group, invoice, and asset line:

1. From the **New** menu, select **New Group**.
2. In the **Group** field, enter **XXXAsset** (where XXX are your initials).
3. Click **Save**.
4. From the **New** menu, select **New Invoice**.
5. In the **Supplier** field, enter **Adelphi** and press **Tab**.
6. In the **Invoice** field, enter **XXX-1** (where XXX are your initials).
7. In the **Invoice Date** field, select today's date.
8. In the **Amount** field, enter **10,000.00**.
9. From the **New** menu, select **New Asset Line**. The **Lines > Detail** sheet displays.
10. In the **Description** field, enter **Mini Van**.
11. In the **Supplier Qty** field, enter **1**.
12. In the **Unit Cost** field, enter **10,000**.

This value defines how much each unit of the asset is worth.
13. Click **Save**.
14. From the **Actions** menu, select **Group > Post**. The AP Invoice Post Process window displays.
15. Click **Submit**.
16. Close the AP Invoice Post Process window and exit AP Invoice Entry.

Create an Asset Addition

Use Asset Addition Entry to enter cost or depreciation additions to assets. You can also add an asset addition from an AP invoice line item or use an asset addition to add grant value to an asset. When you finish, indicate the

asset addition as available to post.

Note: An asset addition must not be entered earlier than the acquisition date of an asset.

Navigate to **Asset Addition Entry**.

Menu Path: Financial Management > Asset Management > General Operations > Asset Addition Entry

To enter an asset addition using an AP Invoice:

1. In the **Asset Number** field, search for and select **XXX** (where XXX are your initials).
2. Navigate to the **Detail** sheet.
3. From the **New** menu, select **New Addition**.
4. In the **Addition Type** field, verify **Purchase** displays. A **Purchase** addition uses the AP interface.
5. Verify the **Acquisition** check box is selected.
6. Enter **Adelphi** in the **Supplier** field and press **Tab**.
7. Click the **Invoice** button and select **XXX-1** (where XXX are your initials).
8. Enter **1** in the **Line** field and press **Tab**.
- The **Apply Date** and **Addition Cost** fields populate.
9. Select the **Ready to Post** check box.
10. Click **Save**.

Post the Asset Additions

Use Asset Posting Process to post asset activities. The posting transactions that generate are based on the fiscal period and year you enter. This program can be run as many times as you need within a single period. This process posts the calculated depreciation for each new calculated depreciation record. The posting program also posts the net change (if any) between what was previously posted and what will now calculate.

Navigate to **Asset Posting Process**.

Menu Path: Financial Management > Asset Management > General Operations > Asset Posting Process

1. In the **Starting Date** field, select the first day of the current year.
2. In the **Ending Date** field, select the last day of the next month.
3. In the Group Activities field, verify By Activity Type and Apply Date displays.
4. In the **Asset Activities** section, clear all check boxes except for **Post Additions**.
5. Click **Submit**.
6. Exit Asset Posting Process.

Asset Tracker

This tracker is a display-only version of the primary entry program. Use the tracker to review current information about a selected record. You cannot add or edit records in a tracker.

Use the Asset Tracker to view fixed asset records. You can view detailed information by asset number or by asset register, including cost summaries and activities such as additions and depreciations, recorded for the selected asset.

Each tracker can contain sheets from the primary entry program and supplemental sheets unique to the tracker. Information on primary sheets and fields is included in the Application Help for the entry program. Supplemental sheet information is included in the Application Help for the specific tracker.

In this workshop, use the Asset Tracker to verify the new asset additions display for asset XXX1 and Insights1 to review the record information.

Navigate to **Asset Tracker**.

Menu Path: Financial Management > Asset Management > General Operations > Asset Tracker

1. In the **Asset Number** field, search for and select **XXX** (where XXX are your initials).
2. Navigate to the Register > Activities > Additions sheet.
3. Click the **Retrieve** button.
4. Verify that the new addition displays.
5. Verify the **Posted** check box is selected.
6. Minimize the Asset Tracker.

Calculate Depreciation for Assets

Use the Asset Depreciation Calculation program to calculate the depreciation of assets for the current year, current period, or for an asset's useful life. This program can be run as many times a month as you need. To get an accurate calculation, you must post additions, impairments, and disposals before you run this program.

Through this calculation, depreciation charges are determined for all registers in which an asset is included. This calculation uses the asset calendar linked to the register.

Navigate to **Asset Depreciation Calculation**.

Menu Path: Financial Management > Asset Management > General Operations > Asset Depreciation Calculation

To run the asset depreciation calculation:

1. In the **Calculate Option** field, select **Asset Useful Life**.
2. Click **Submit**.
3. Exit Asset Depreciation Calculation.

View Depreciation Results in the Asset Tracker

Maximize the **Asset Tracker**.

Menu Path: Financial Management > Asset Management > General Operations > Asset Tracker

1. From the **Asset** sheet, in the **Asset Number** field, verify **XXX** (where XXX are your initials) displays.
2. Navigate to the Register > Activities > Depreciations sheet.
3. Click the **Retrieve** button.
4. View the depreciation results.
5. Minimize the Asset Tracker.

Post Depreciation

In this workshop, use Asset Posting Process to post the depreciation calculated for the company vans.

Navigate to **Asset Posting Process**.

Menu Path: Financial Management > Asset Management > General Operations > Asset Posting Process

1. In the **Starting Date** field, select the first day of the current year.
2. In the **Ending Date** field, select the last day of the next month.
3. In the **Group Activities** field, verify **By Activity Type and Apply Date** is selected.
4. In the **Asset Activities** section, clear all check boxes except for **Post Depreciations**.
5. Click **Submit**.
6. Exit the Asset Posting Process.

View Posted Status

In this workshop, use the **Asset Tracker** to verify the depreciation for asset XXX has been posted and review the record information. Navigate to the **Asset Tracker**.

Menu Path: Financial Management > Asset Management > General Operations > Asset Tracker

1. Maximize the **Asset Tracker**.
2. Click **Refresh**.
3. In the **Asset Number** field, verify XXX (where XXX are your initials) displays.
4. Navigate to the **Register > Activities > Depreciations** sheet.
5. Click **Retrieve**.
6. In the **Depreciation Transactions** grid, verify the **Posted** check box is selected. Depreciation for two periods has posted.
7. Navigate to the **Register > Detail** sheet. Review the **Book Value**.
8. Navigate to the **Register > Cost Summary** sheet. Review the **Current Year Summary** and the **Current Values**.
9. Minimize the Asset Tracker.

Create an Asset Disposal

Use **Asset Disposal Entry** to enter cost or depreciation disposals to fixed assets. This program is useful for creating an asset, recording new asset disposal activity, as well as adjusting, deleting, and viewing unposted asset disposal activities.

Three disposal types are available in the Epicor application:

- **Miscellaneous** - A disposal that does not interface with another program
- **Transfer** - A disposal that interfaces with Inventory
- **Sale** - A disposal that interfaces with Accounts Receivable

Asset Management

If a company disposes of a long-term asset for an amount different from its book value, an adjustment must be made to net income on the cash flow statement.

Navigate to **Asset Disposal Entry**.

Menu Path: Financial Management > Asset Management > General Operations > Asset Disposal Entry

1. In the **Asset Number** field, enter **XXX** (where XXX are your initials).
2. From the **New** menu, select **New Disposal**.
3. Navigate to the **Detail** sheet.
4. In the **Disposal Type** field, select **Sale**.
5. In the **Apply Date** field, enter the 1st day of the month two months from today.
6. In the **Description** field, enter **DISP1**.
7. In the **Disposal Cost** field, verify **10,000** displays. This is the current cost of the asset (usually the original cost unless it was partially disposed).
8. In the **Proceeds** field, enter **9,900.00** and press **Tab**.
9. In the **Customer** field, enter **Barriston** and press **Tab**.
10. Select the **Ready to Post** check box. This allows this disposal to be posted when you run the Asset Posting Process in a future workshop.
11. Click **Save**.
12. Exit Asset Disposal Entry.

Post Asset Disposal

In this workshop, use the Asset Posting Process to post the Disposal.

Navigate to **Asset Posting Process**.

Menu Path: Financial Management > Asset Management > General Operations > Asset Posting Process

1. In the **Starting Date** field, select the first day of the previous month.
2. In the **Ending Date** field, select the last day two months from today.
3. In the Group Activities field, verify By Activity Type and Apply Date is selected.
4. Clear the Include Child Assets check box.
5. In the **Asset Activities** section, **clear all check boxes** except for **Post Disposal**.
6. Click **Submit**.
7. Exit Asset Posting Process.
8. Return to **Asset Tracker** and click **Refresh**.

You can view the results of each asset and the posting in the Asset Tracker, on the **Register > Activities > Disposal** sheet.

Asset Impairment

Use Asset Impairment Entry to enter impairments on a specific asset. An impaired asset is an asset whose market value fell below its carrying amount and is not expected to recover; the asset's market value is less than the book value of the asset.

Navigate to **Asset Impairment Entry**.

Menu Path: Financial Management > Asset Management > General Operations > Asset Impairment Entry

Asset Revaluation

If a company chooses the revaluation accounting model for a group of assets, those assets undergo a periodic revaluation that may change the asset carrying value. The **Asset Revaluation** program enables you to record revaluations, in order to display correct values in asset reports, trackers and financial statements.

When a revalued asset is disposed, the balance on the revaluation surplus account associated with the asset is transferred from the revaluation surplus account to a Disposal Revaluation Surplus context account. If the asset being revalued holds **Grant Amount**, then the “grant depreciation” amount will be applied to the asset cost, and the remaining part of the grant will be written off as unrecognized grant (liability account). If the revaluation is not posted at the beginning of the year, depreciation calculation for the following periods treats revaluation in the same way as any other activity that changes the asset cost.

The revaluation method involves accumulated depreciation of the asset which is applied to asset cost. This amount is calculated in the net book value on the cost account to produce the new book value.

Congratulations! You have completed the Manage Your Assets with Epicor ERP lab.

Bonus: Viewing Asset Reports

This section describes some key reports you use to review asset transactions. You can run these reports whenever you need. You can also set up each report to generate and print through a recurring automatic schedule.

Asset Depreciation Report

Use the Asset Depreciation report to view depreciation for an asset register during a fiscal year and period time range. You can filter by asset or asset group.

Navigate to **Asset Depreciation Report**.

Menu Path: Financial Management > Asset Management > Reports > Asset Depreciation

To set up and run this report:

1. Select the **Main Asset Register**.
2. In the **To Period** field, enter the current period.
3. To only display the main information on the report, select the **Print Summary** check box.
4. If you need, use the **Filter** sheet to limit the report to individual assets or asset groups.
5. Click **Print Preview** on the **Standard** toolbar.

Asset Depreciation Forecast Report

Use the Asset Depreciation Forecast Report to view the full year depreciation value forecast. The forecast displays regardless of whether depreciation has been posted or not.

Navigate to **Asset Depreciation Forecast Report**.

Menu Path: Financial Management > Asset Management > Reports > Asset Depreciation Forecast

To set up and run this report:

1. Select the **Main Asset Register**.
2. Enter the **Start Year** of the forecast report.
3. Select how many **Years** you want projected in the report. Five years is the maximum.
4. If you need, use the **Filter** sheet to limit the report to individual assets or asset groups.
5. Click **Print Preview** on the **Standard** toolbar.

Asset Overview Report

Use the Asset Overview report to view the status of your fixed assets including depreciation, activities, and cost information.

Navigate to **Asset Overview Report**.

Menu Path: Financial Management > Asset Management > Reports > Asset Overview

To set up and run this report:

1. Select the **Main Asset Register**.
2. Select the **Print Summary** check box to include only primary information on the report.
3. Select the check boxes to print all **Additions** and **Disposals** that occurred for the selected asset register.
4. Select the **Print Costs** check box to include the costs of each asset assigned to the selected asset register.
5. If applicable, select the **Print Unposted Depreciations** and the **Print Depreciation Details** check boxes to include the depreciation information you need.
6. To organize the report to print each asset on a separate page, select the **Print one Asset per Page** check box.
7. If you need, use the **Filter** sheet to limit the report to individual assets or asset groups.
8. Click **Print Preview** on the **Standard** toolbar.

Asset Annual Schedule Report

Use the Asset Annual Schedule report to view a total change in asset cost and depreciation per transaction type for a given fiscal year. The report is based on asset transactions, such as additions, impairments, disposals, and depreciations.

Navigate to **Asset Annual Schedule Report**.

Menu Path: Financial Management > Asset Management > Reports > Asset Annual Schedule

To set up and run this report:

1. Select the **Main Asset Register** you need.

2. Change the **Fiscal Year** from the default if necessary for your report.
3. Select the ending date for transactions to be included in your report in the **Cut-Off Date** field.
4. Select the **Print Details** check box to include all individual transaction details on the report.
5. In the **Group by** fields:
 - **Clear** the **Report Category** check box.
 - **Select** the **Asset Group** check box.
 - **Select** the **Asset** check box.
6. If you need, use the **Filter** sheet to limit the report to individual assets and asset groups.
7. Use the **Summary Fields** sheet to select specific fields for your report.
8. If you need, use the **Filter** sheet to limit the report to individual assets or asset groups.
9. Click **Print Preview** on the **Standard** toolbar.

Congratulations! You have completed the Manage Your Assets with Epicor ERP bonus activity.

Automate Data Entry with Service Connect

This session focuses on the main features of Epicor Service Connect and the integration with the Epicor ERP. Service Connect is a powerful development tool that allows you to build workflows which can automate processes within an application or connect different business entities, applications, or users. It harnesses the power of XML and other open standards.

Service Connect workflows use XML documents as the primary interface. The workflows are designed to send documents to, and use documents from exposed services of other applications, such as .NET Business Objects Epicor 10. Service Connect workflows primarily map structures to convert this data so information is ready to use by other processes.

By using the document as the interface, you can quickly integrate applications and processes into a **loosely coupled** environment. To insert a new routine or new piece of information into the process, it is quicker and easier to incorporate into a loosely coupled environment than into an environment built on traditional programming practices.

Service Connect is designed to fully leverage the Service Oriented Architecture (SOA) of other applications. You can set up Service Connect workflows themselves as services designed to consume and return information on demand. In that sense, you can use Service Connect to create its own SOA environment.

At the conclusion of this lab, you will be able to:

- Understand how Service Connect is built to support processes that connect different business entities, applications, and users
- Understand data conversions and the purpose of an internal envelope
- Become familiar with Service Connect services
- Work with the Epicor Service Connect Administration Console to define connectivity processing options for Service Connect
- Use the Workflow Designer to define workflows
- Create conversions and use .NET methods to transform a set of data from a specific source format to a specific target format

Workshop – Import .NET Reference

Log in to the ESC Administration Console

1. Navigate to the **Epicor Service Connect Administration Console**. There is a folder on your desktop named **ERP10 Shortcuts**.
2. Launch the Service Connect Administration Console shortcut.
3. In the **User Name** field, enter **admin** and leave the **Password** field blank.
4. Click **OK**. The **Epicor Service Connect Administration Console** displays. If necessary, contact your system administrator for help.

Add a .NET Reference

1. In the **Epicor Service Connect Administration Console**, in the tree view, expand the **Connectivity** node.

2. Right-click the **.NET References** node and select **Add Reference**. The **Add .NET Reference** window displays.
3. On the welcome screen, click **Next**.

Enter .NET Reference Information

1. In the **Add .NET Reference - .NET reference information** window, in the **Assembly Type** field, select **Epicor 10 assembly**.
 2. Next to the **Assembly path** field, click the ... (browse) button. The **Select assembly** window displays.
 3. Navigate to the client folder:
C:\Epicor\ERP10\LocalClients\ERP10.
 4. Search for and select the **Erp.Contracts.BO.Part.dll** and click **OK**.
 5. In the **Reference Name** field, the default **Part** name is displayed.
 6. Verify the **Import all methods** check box is selected.
 7. Click **Next**.
- The **Logon to Epicor** window displays.

Enter Epicor Logon Settings

1. The **Client config** field will default to the correct location for the ERP10.sysconfig file.
2. Enter **epicor** for both the **user name** and **password** field.
3. The **Company** field should default to **EPIC06** and the plant to **mfgsys**.
4. Click **Next**.
5. In the **Import .NET reference** window, verify the information and click **Next**.
The .NET assembly import process can take few minutes.
6. Once complete, at the bottom of the **Add .NET Reference** window, the **Reference is successfully imported** message displays.
7. Click **Finish**.

Workshop – Create a Basic Workflow

In this workshop, create a workflow that updates the Type code for several parts at one time. The workflow accepts an Excel spreadsheet as input.

Create Parts

In the Epicor application, create three simple purchased parts.

Navigate to **Part Maintenance**.

Menu Path: Material Management > Inventory Management > Setup > Part

1. Click **New** and select **New Part**.
2. In the **Part** field, enter **00C1-XXX** (where XXX are your initials) and press **Tab**.

3. In the **Description** field, enter **Purchased Part**.
4. In the **Type** field, verify **Purchased** displays.
5. Accept all other defaults and click **Save**.
6. Repeat steps 1-5 and enter the following two parts:

Field	Data
Part	00C2-XXX (where XXX are your initials)
Description	Purchased Part
Type	Purchased
Field	Data
Part	00C3-XXX (where XXX are your initials)
Description	Purchased Part
Type	Purchased

7. Exit Part Maintenance.
8. Remain in the Epicor application.

Create Folders and Sample Data

1. On your local drive, create a new spreadsheet in the following folder:
C:\Insights19\Labs\Service Connect\XXX_PartTypeUpdate.xlsx
2. In the **XXX_PartTypeUpdate** (where XXX are your initials) folder, create a spreadsheet in Microsoft Excel (R) with the sample data in the table below. Make sure to save and close Excel when done.

Part	Description	CurrentType	NewType	Company
00C1-XXX (where XXX are your initials)	Updated type P to M - ESC	P	M	EPIC06
00C2-XXX (where XXX are your initials)	Updated type P to M - ESC	P	M	EPIC06
00C3-XXX (where XXX are your initials)	Updated type P to M - ESC	P	M	EPIC06

Add a Message Type

Message types indicate the type of information coming into Service Connect.

The information you define in this task is added to documents that enter Service Connect through an input channel.

1. In the **Epicor Service Connect Administration Console**, expand the **Connectivity > Message attributes** nodes.
2. Right-click **Message Types** and select **Add new Message Type**. The **Add New Message Type** window displays.
3. In the **Message type name** and **Message type description** fields, enter **XXX_Parts** (where XXX are your initials).
4. Click the **Add** button. The **New Action** window displays.
5. In the **Action name** field, enter **UpdateType**.

6. In the **Action description** field, enter **Update Part Type Code**.
7. In the **New Action** window, click **OK**.
8. In the **Add New Message Type** window, click **OK**. Notice the new message type is now displayed in the list in the right pane.

Add a Sender

Senders indicate who is sending information to Service Connect. Along with a Message Type, the Sender can be added to a document as it enters Service Connect to determine which workflow should process the information.

1. In the Epicor Service Connect Administration Console, under Connectivity > Message attributes node, right-click **Senders** and select **Add New Sender**. The **Add New Sender** window displays.
2. In the **Sender name** and **Sender description** fields, enter **XXX_Internal** (where XXX are your initials).
3. Click the **Add** button. The **New Sub-sender** window displays.
4. In the **Sub-sender name** field, enter **XXX_InvMgr** (where XXX are your initials).
5. In the **Sub-sender description** field, enter **Inventory Manager**.
6. In the **New Sub-sender** window, click **OK**.
7. In the **Add New Sender** window, click **OK**. Notice, the new sender is now displayed n the list in the right pane.

Add an Input Channel

In this workflow, the input channel is a file folder Service Connect monitors for an Excel spreadsheet. Configure the input channel to add the message attributes created earlier and to convert the .xls file to XML.

1. In the **Epicor Service Connect Administration Console**, navigate to **Connectivity > Communication Setup > EPICORTI > Channels > Input Channels**.
2. Right-click **Input Channels** and select **Add New**. The **Channel properties** window displays.
3. In the **Channel Name** field, enter **XXX_PartTypeUpdate** (where XXX are your initials).
4. In the **Listener type** field, select **FILE**.
5. Select the **Use scan interval** check box and accept the default value of **1 seconds**.
6. Optionally, select the **High-loaded channel** option to move the channel to a separate free thread as soon as possible to guarantee the maximum performance of the channel.

The system tries to allocate more resources (separate thread) for a high-loaded channel to improve performance and to balance the overall load.

7. Click the **Configure** button. The **Channel configuration** window displays.
8. Verify the **Message properties** sheet displays and select the following information:

Field	Value
SenderId	XXX_Internal (where XXX are your initials)
SenderIdSubName	XXX_InvMgr (where XXX are your initials)
MsgType	XXX_Parts (where XXX are your initials)
Action	UpdateType

9. Navigate to the **Communicator properties** sheet and enter the following information.

Field	Value
File path	C:\Insights19\Labs\Service Connect\IN
Mask	*.xlsx
Conversion	excel2xml.dll

10. In the **Channel configuration** and **Channel properties** windows, click **OK**. The folder you entered in the File path field is now **hot**, meaning that Service Connect consumes any .xls file you add to it. You cannot retrieve a file once it is consumed.

Create the Workflow

1. From the ERP10 Shortcuts folder, open the **Workflow Designer**.
2. Log in as **admin\<no password>**.
3. From the **File** menu, select **New Process**. The **New Process** window displays.
4. Verify the **Blank process** option is selected and click **OK**.
5. On the Standard toolbar, click **Save**.
6. To the **Workflow Designer** message, click **Yes**.
7. In the **Save New Workflow** window, next to the **Package** field, click the **New** button. The **Create Package** window displays.
8. In the **Package name** field, enter **XXX_SCCourse** (where XXX are your initials) and click **OK**. The **Save New Workflow** window displays.
9. In the **Save workflow as** field, enter **XXX_PartTypeUpdate** (where XXX are your initials) and click **Save**.

Generate a Schema

The input channel you created earlier converts the spreadsheet to XML. To use the XML inside of the workflow, you must generate a schema for it.

1. Return to the **Epicor Service Connect Administration Console**, expand the **Connectivity > Schemas** nodes.
2. Right-click the **User Schemas** node and select **Generate Schema**. The **Generate Schema** window displays.
3. Next to the **Sample data file** field, click the browse button (...), navigate to and select **C:\Insights19\Labs\Service Connect\XXX_PartTypeUpdate.xlsx** and click **Open**.
4. Next to the **Generated schema** field, click the browse button (...). The **Save Schema** window displays.
5. In the **File Name** field, verify the **XXX_PartTypeUpdate.xsd** schema name defaults and click **OK**.
6. Verify the **Use conversion settings from input channel** option is selected and click **Next**.
7. From the list of available channels, select the channel **XXX_PartTypeUpdate** (where XXX are your initials) and click **Next**.
8. Make sure you have closed the spreadsheet before the next step.
9. Select the **Open generated schema in Schema Viewer** check box.

10. Click **Finish**. The generated schema id displayed. Remain in the **Schema** window. You can as well generate schema in Workflow Designer. From the **Tools** menu, select **Generate Schema from Sample Data** utility. Its interface is similar to schema generation from Administration Console.

Add a Conversion to the Workflow

The Conversion workflow element takes the document entering the workflow and maps the data to a .NET Call to update the database.

1. Return to the workflow designer and from the **Items** toolbar on the left, click the **Conversion** button.
2. To the right of the **Start** workflow element, click in the workflow design area. The **Properties** window displays.
3. On the **General** sheet, next to the **Input schema** field, click the **Browse** button. The **Select a schema** window displays.
4. In the left pane, select **User Schemas** and in the right pane, select the **XXX_PartTypeUpdate.xsd** schema and click **Next**.
5. In the **Specify the root element** window, accept the default values and click **Finish**.
6. Next to the **Output schema** field, click the **Browse** button. The **Select a schema** window displays.
7. In the left pane, select **.NET Reference Schemas**.
8. In the right pane, double-click the **Part** folder.
9. Select **Erp_Proxy_BO_PartImpl_UpdateExt_Request.xsd** and click **Next**. Make sure that you select request schema for the **UpdateExt** method.
10. In the **Specify the root element** window, accept the default values and click **Finish**. Remain in the **Properties** window.

Define the Conversion

1. Next to the **Conversion** field, click the **Edit** button. The **New Transformation - Conversion type** window displays.
2. On the left side of the **New Transformation** window, expand the following nodes: **msg > req > dta > table > row**.
3. On the right, expand the following nodes: **msg > req > dta > Erp_Proxy_BO_PartImpl_UpdateExt_Request > ds > UpdateExtPartDataSet > Part**.
4. Map the **Company** node on the left to the **CompanyID** node on the right (it displays under **Erp_Proxy_BO_PartImpl_UpdateExt_Request**). To create the mapping, click the **Company** node and hold the left mouse button while you drag the mouse to the **CompanyID** node on the right. Release the mouse button to create the mapping.
5. Create the following mappings. All of the right nodes display under **Part**.

Left node	Right node
Company	Company
Part	PartNum
Description	PartDescription

Left node	Right node
NewType	TypeCode
row	Part

6. In the Standard toolbar, click **Save**. The **Save Transformation File** window displays.
7. In the **Save Transformation File** window, enter **XXX_UpdateType.xslt** (where XXX are your initials) and click **OK**.
8. Exit the XML Mapper.
9. In the **Properties** window, navigate to the **Appearance** sheet.
10. In the **Caption** field, enter **Update Type** and click **OK**.
11. Save your workflow. Ignore the warning message.

Add a .NET Call

The .NET Call workflow element takes the document from the Conversion and uses it to call a .NET business object that updates the target database.

1. In the **Items** toolbar, click the **.NET Call** button.
2. To the right of the **Update Type** conversion, click in the workflow design area. The **Properties** window displays.
3. On the **General** sheet, next to the **Request ID** field, click **Select**. The **Request ID** window displays.
4. Expand the **Part > Erp.Proxy.BO.PartImpl** node.
5. Select **PartImpl.UpdateExt** and click **OK**.
6. Navigate to the **Appearance** sheet.
7. In the **Caption** field, enter **Part Update** and click **OK** to close the **Properties** window.

Connect the Workflow Elements

The Connection links workflow elements and shows the order of operations. You must connect all elements.

1. In the **Items** toolbar, click the **Connection** button and make the following connections:
 - Connect **Start** to the **Update Type** conversion
 - **Update Type** to **Part Update**
 - **Part Update** to **Finish**
2. On the Standard toolbar, click **Save**.
3. From the File menu, select **Validate Process**.

Add a Message Map

A message map uses the message attributes added to the document when it enters the input channel and routes it to a workflow for processing.

1. Return to the **Epicor Service Connect Administration Console**, navigate to **Connectivity > Message Map**.

2. Right-click **Message Map** and select **Add new Request**. The **New Request ID** window displays.
3. In the **Sender name** field, select **XXX_Internal** (where XXX are your initials).
4. In the **Sender subname** field, select **XXX_InvMgr** (where XXX are your initials).
5. In the **Message type** field, select **XXX_Parts** (where XXX are your initials).
6. In the **Message action** field, select **Update Type**.
7. Next to the **Request ID** field, click the **Select** button.
8. In the **Request ID** window, clear the **Channels**, **Web Methods** and **.NET Methods** check boxes.
9. In the **RequestID** column, select the row with **XXX_SCCourse\XXX_PartTypeUpdate** (where XXX are your initials) and click **OK**.
10. Click **OK**.

Run the Workflow

1. In Windows Explorer, navigate to C:\ESCSamples\XXX_PartTypeUpdate.
2. Right-click **PartTypeUpdate.xls** and select **Copy**.

Important! Copy and paste the file into the folder monitored by the Service Connect input channel. If you cut and paste, or if you move the file, you will lose it when Service Connect consumes it in the workflow.
3. Navigate to the C:\ESCSamples\XXX_PartTypeUpdate\IN folder.
4. Right-click and select **Paste**. The file disappears when it is accepted into Service Connect. It should take about one second.

Verify the Results

Verify the workflow results in the Epicor Service Connect Administration Console and in the Epicor application.

1. In the Epicor Service Connect Administration Console, navigate to **Document Tracking > Inbound Messages**.
2. Check for a message where the **Execution point is XXX_PartTypeUpdate** (where XXX are your initials) and the timestamp is current.
3. Double-click the status to view the details.
4. In the **Activity Progress** window, double-click an execution point to view the trace details of that activity.

Example: Double-click the **Part.Erp.Proxy.BO.PartImpl.UpdateExt** execution point. In the Trace Details window, open the Message Data sheet. Here you can view the XML dataset the .NET business object returns. The dataset should include information for the three parts the workflow updated.
5. Click **OK** until you exit all dialog boxes.

Verify Part Maintenance

Navigate to the Epicor application.

Navigate to **Part Maintenance**.

Menu Path: Material Management > Inventory Management > Setup > Part

1. In the **Part** field, search for and select **00C1-XXX** (where XXX are your initials).
2. In the **Type** field, verify **Manufactured** displays.
3. In the **Description** field, view the new description for the part.
4. Repeat steps 1-3 and verify the two remaining parts **00C2-XXX** and **00C3-XXX** (where XXX are your initials).
5. Exit Part Maintenance.
6. Remain in the Epicor application.

Basics of Navigating Epicor ERP

The Epicor application is a feature-rich Enterprise Resource Planning (ERP) software package. To gain a thorough understanding of its features, you first need to know how to navigate within the application. In addition to navigational knowledge, you are able to personalize the application to fit your needs which can increase efficiency within your processes.

System Requirements

Modules/Licensing	Product Version
Base ERP License	Epicor 9 or later

Login to Epicor ERP

You can now switch between three modes that control the visual design, user interaction, and navigational aspect of the application – the **Modern Shell Menu**, **Classic Menu**, and **Active Home Page** styles. Select the mode you would like to work with at the time of login.

- **Classic Style Menu** – The original interface style used for navigating the Epicor application. This interface has a starting Main Menu with a tree view you expand for selecting programs.
- **Modern Shell Style Menu** – Enhanced menu using the Home Page as your starting point where you can place favorite Epicor programs, application shortcuts, documents or pictures.
- **Active Home Page** – Redesigned home page view. New role based visual experience for users. Displays charts and graphs and can embed other web URL's into the home screen, providing key performance indicators, analytics and quick access to functionality focused for each user role.

Note: You can define which mode you prefer for an automatic mode login in the application configuration file.

Login using the Classic Menu Style

1. On your Desktop, double-click the **ERP10** icon.
2. In the **User name** field, enter **manager**, and then press the **Tab** key.
3. In the **Password** field, enter **manager**.
4. **Select the Classic Style** check box and press the right arrow.

Review the Main Menu – Classic Style Menu

The Classic Menu style represents a traditional way of navigating in the Epicor application. The highest level of the user interface is called the Main Menu. The Main Menu structure is displayed in the following order:

1. Company
2. Site
3. Module Group
4. Module

5. Folder
6. Program

Review the Menu Bar and Tool bar

The Menu bar on the Main Interface allows you to do the following:

- Set your view of the Main menu.
- Change the company and site you are logged into or change the language for your session.
- Change the User ID under which you have logged in or change your password.
- Change the workstation.
- Change Preferences and Styling Options.
- Set Tracing Option and switch to developer mode.
- Access the Application Help.
- View navigation history and search for programs.
- Exit the Epicor application and save your settings when you exit and so on.

Select Options from the Menu bar to review the options.

1. On the Menu Bar, click **Options**. The Options menu provides personalization and styling options. It also allows you to change the user, site, company, language, password, and workstation. Selections made on this menu become the default look of the main interface. By default, **Save Settings on Exit** is selected.
2. On the **Menu** toolbar, hover over the icons. Review the options that are available.
3. Exit the application.

Login and Review the Modern Shell Style Menu

The Modern Shell style menu was introduced in Epicor ERP version 10.0. Use this interface to create a unique Home page that provides more efficient access to programs within the application that you use on a regular basis.

Login using the Modern Shell style menu:

1. On your Desktop, double-click the **ERP10** icon.
2. In the **User name** field, enter **manager**, and then press the **Tab** key.
3. In the **Password** field, enter **manager**.
4. Clear the **Classic Style** and the **Active Home Page** check boxes and press **Enter**.

Explore the Home Page

When you launch the application using the Modern Shell menu, you are automatically presented with the Home Page.

- **Tiles** – Main building blocks of the home page to quickly access Epicor forms, URL links, documents or programs you use the most.

Types of tiles include:

- **Link** – Link to URL, program, document, or Epicor form.
- **BAQ Gadget** – Informational link to a predefined BAQ gadget.
- **Favorites List** – List of your favorite Epicor forms.
- **General** – Standard tiles delivered by Epicor.
- **Epicor Social** – Streaming messages from Epicor Social Enterprise.
- **Tile Groups** – Organize tiles into groups such as Favorites list, or maintain your custom groups, for example, most frequently used Purchase Management forms.
- **Epicor Tiles** – Tiles that provide quick access to recent programs and settings and help functionality.

Tiles include:

- **Menu Tile** – Access the Application menu.
- **Settings Tile** – Change user settings and personalization options.
- **Help Tile** – Provides quick access to Help tools.
- **Recent Forms Tile** – Access recently launched ERP forms.
- **Company Selector** – Provides quick access to review and change the selected company.
- **Top Bar / Navigation Arrows** – Tools to move through the currently open programs.
- **Open Forms Bar** – Quickly access open forms. Open forms are visually displayed.
- **Application Bar** – Tools to locate application and content specific options.
- **Context Menu** – Right-click programs or tiles to add them to the Home page or to Favorites. Right-click tiles to edit or delete them.

Tour the Menu

Use the **Menu** application launched from the **Home Page** to access **Companies**, **Modules** and **Programs** found within the Epicor ERP application. Once you are in the Main menu, the structure is similar to the Classic Style menu.

- **View Mode** - You can view the Menu interface in two ways, **Zoom view** and **Tree view**.
- **Contents Pane** - You can choose between the **List view** and **Tile view** to display the contents of the folder selected from the Main Menu pane.

Login and Review the Active Home Page

The Active Home Page was introduced in Epicor ERP version 10.2.300. Use this interface to create a unique Home page that has the same functionality available in the Modern Shell Menu but also provides a streamlined interface, and allows you add active, dynamic content.

Login using the Active Home Page

1. On your Desktop, double-click the **ERP10** icon.
2. In the **User name** field, enter **manager**, and then press the **Tab** key.

3. In the **Password** field, enter **manager**.
4. Clear the **Classic Style** check box.
5. Select the **Active Home Page** checkbox and press **Enter**.

Explore the Active Home Page

When you launch the application using the Active Home Page, you are automatically presented with the Home Page.

- **Widgets** – Main building blocks of the home page to quickly access Epicor forms, URL links, documents or programs you use the most.

Types of widgets include:

- **App Link** – Link to an application in the ERP menu
- **BAQ Grid** – Displays grid based on BAQ query
- **Discovery Chart View** – Displays a chart from Epicor Data Discovery
- **Discovery KPI View** – Displays a KPI from Epicor Data Discovery
- **Image** – Displays an image
- **Local Application or Document** –Link to an application or document your company uses
- **Social** – Link to launch Epicor Social Enterprise
- **Text Label** – Displays a text label
- **Website** – Add a link to a website or embed a website
- **Tabs** – Organize widgets into tabs such as Shortcuts list, or maintain your custom tabs, for example, most frequently used Purchase Management forms.

Left Side Bar – Provides quick access to the menu, favorites, and recent programs

Side Bar icons include:

- **Top button** – Expands side bar panel
 - **Menu** – Access the Application menu
 - **Favorites** – Access Application menu options you have designated as favorites
 - **Recents** – Access recently launched ERP forms
 - **Epicor Data Discovery** – Access Epicor Data Discovery data visualization tool
 - **Social** – Access Epicor Social Enterprise
-
- **Top Bar** – Provides quick access to ERP functions
- Top Bar icons include:
- **Search** – Opens a search panel to perform a menu search, enterprise search, or web search
 - **User Context Menu** – Review and change company, site, language, workstation, or user, change settings

- **Knowledge on Demand Videos** – View available knowledge on demand videos
- **Help** – View online help, feature summaries, education courses, training on demand courses and access Epicor Learning Center
- **Actions** – Access utilities like Solution Tracking, Tracing Options, and Developer Mode
- **Refresh** – Refresh the data on the Active Home Page
- **Edit** – Make changes to the Active Home Page layout
- **Layout Selector** – Select a different Active Home Page layout, one of four system layouts or any custom layouts published by your IT administrator.

Add Favorites to the Menu

1. Click the **three-line button** on the top left corner of the Active Home Page to expand the main menu pane.
2. Click **Menu** and navigate to **Financial Management > Accounts Receivable > Setup**
3. Click the heart beside **Customer** program to add it to your favorites.
4. The Add Favorites window displays.
5. In the **Folder** field, click the + sign to add a new favorites folder.
6. In the New Folder Name field, enter your name.
7. Click **Save**.
8. Click the **Favorites** icon.
9. Click the Favorites link at the top of the Favorites pane to look at the Favorites folders. Your name should display as a Favorites folder.
10. Click your name.
The Customer program displays.

Use the Search Panel

Use the Search Panel to search the menu for programs, trackers and reports that meet the search criteria.

Note: You can also use the Search panel to search the information in your enterprise or search the web using a defined web browser.

1. Click the **Search** icon to open the **Search Panel**.
2. In the **Search** field, enter **purchase** and click **Menu Search**.
3. Review the menu search results in the **Search Results** page.
4. Click the Home icon to return to the Home page.

Change Company and Site

1. From the Top Bar, select a different company in the **Company** field.
2. In the **Site** field, select a different site.

The Top Bar displays your current company name and site.

3. From the Top Bar, select the **Epicor Education** company and the **Main** site.

Tour the Application Help

Application Help explores a specific aspect of the user interface or program.

Important Application Help menu options:

- **Contents F1** – Select this option to access Application Help from the Main Menu. Once opened, use the table of contents to navigate to the help topic or enter a keyword to search.
- **Feature Summary** – Select this option for a high-level overview of the major new functionality released with each version of our Epicor application.
- **Knowledge On Demand** – Select this option to access available short, targeted videos that answer one question or explore one process in ERP.
- **Epicor Web Home** – This link displays the Epicor homepage www.epicor.com.
- **EPICweb** – This link displays the login screen to access the epicweb.epicor.com site where support is available.
- **MYEPICweb** – This link displays the login screen to access the EpicWEB portal where you can download information, access support services, and register for Epicor Education Courses.
- **Epicor Learning Center** – This link displays the login screen to access the Epicor Learning Center where you can register for courses and take Training on Demand courses.
- **Education Courses** – Select this option to access Epicor ERP embedded education courses.

Launch Help and Use Search

1. From the **Help Menu**, select **Contents** to launch Application Help.
2. You can also press the **F1** key in any program to launch the Help system.
3. In the **Search** field, enter **Accounts Payable**.
4. Click the spy glass to initiate the search.
5. The search engine returns multiple results and displays the results in the **Contents** pane.
6. Click any topic to review.

Review Knowledge on Demand Videos

1. On the Top Bar, click the **Knowledge on Demand** icon to launch the ERP Knowledge on Demand window.
2. Select categories in the Categories menu to view all available Knowledge on Demand videos.
3. Click a Knowledge on Demand video to start playing the video.
4. Close the ERP Knowledge on Demand window.

Review Embedded Courses

1. From the Help Menu, select **Education Courses** to launch the Embedded Education window.
2. Expand the tree view and select any of the courses listed. For example, **Getting Started > System Flow**.
3. Click **Launch** to launch the course.
4. Use the tree view to display and review topics within the course.
5. Exit Education Courses.

Field Help and Technical Details

The **Field Level Help** function gives you the capability to display help for a specific field. The field help functionality is a quick reference tool. Rather than looking through the Application Help to find a field definition, you can activate this feature to get the field help by clicking the required field.

To enable the Field Help in a program, from the **Help** menu, select **Field Help**. When you select a specific field on the interface, the field level help and technical details (if you have permission to view technical details) display for that specific field.

- **Field Level Help** - This is the text description of the field taken from the Application Help. The Field Help can be used as a learning tool to view descriptions of each field.
- **Technical Details** - This is the field's data dictionary information. Use the technical specifications of a field when building BAQs, BPM methods, and when using other advanced functions of the application.

Note: Technical details are only viewable when permission to access the corresponding business object has been granted. This permission is set in **Process Security Maintenance**, for the **bo.DataDict** business object.

View Field Help and Technical Details

Navigate to **Part Maintenance**.

Menu Path: Production Management > Engineering > Setup > Part

1. Click in the **Non-Stock Item** check box.
2. From the **Help** menu, select **Field Help**. The **Field Help** displays in the left pane of the window.
3. Click the **Pin** icon to dock the sheet to the program window and view the field description that displays.
4. If you have access permission to the data dictionary, you can view the technical information for this field.
5. To view technical information, click **Technical Details**. Technical information from the data dictionary displays for this field. To switch back to the field description, click **Field Level Help**.
6. To open a help browser window to display the field help for the sheet, click **Open Help Browser** on the pane header.
7. Exit Part Maintenance.

Add a Tab to the Home Page

Use tabs on your homepage to help you organize your widgets into categories.

1. Click **Edit**.
A message displays informing you this is a system layout and asking you if you want to make a copy.

2. Click **Yes**.
3. Click the plus (+) sign beside the My Shortcuts tab to display the **Add a Tab** window.
4. In the **Title** field, enter **Insights 2019**.
5. Click **OK**.
The new Insights 2019 tab displays beside the My Shortcuts tab.
6. Click **Save** to save your changes.

Add a Widget to the Home Page

A widget is the primary asset on the Epicor ERP Home Page.

1. Select the **Insights 2019** tab.
2. Click the **Edit** icon to open the **Add Widget** pane.
3. Select the **App Link** widget to open the **Add an App Link Widget** window.
4. In the **Color** field, select a color for your widget.
5. In the **App** field, enter the **ABC Code** and select the **ABC Code** program from the list.
6. In the **Title** field, enter **ABC Code Insights**.
7. Click **OK**.
The ABC Code Insights widget displays on the Insights 2019 tab.
8. Click **Save** to save your new widget.

Move a Widget to a Different Tab

1. Click **Edit**.
2. On the new **ABC Code Insights** widget, click the three dots in the header.
The widget menu opens.
3. Select **Default** to move the widget to the Default tab.

Move a Widget on a Tab

1. Hover your mouse over the **ABC Code Insights** widget until the arrow changes to a four directional arrow.
2. Click and hold the mouse, then drag the **ABC Code Insights** widget to above the **Customer Tracker** widget.
3. Release the mouse.
The **ABC Code Insights** widget now displays above the **Customer Tracker** widget.

Resize a Widget

1. Hover your mouse over the right edge of the ABC Code Insights widget until the arrow changes to a diagonal, two directional arrow.
2. Click and hold the mouse, then drag the edge of the widget down and to the right to increase the widget size.

3. Release the mouse.

NOTE: You can also change the width of widget by dragging the left or right edge, and change the length by dragging the top and bottom edge.

Remove a Widget

1. On the **ABC Code Insights** widget, click the three dots in the header.
The widget menu opens.
2. Select **Remove**.
A remove verification window displays.
3. Click **Yes**.
4. Click **Save**.

Program Interface

The program interface contains the function needed to enter and manipulate data.

Use the options on the program interface to create new records, modify existing records, and access additional program capabilities. The program user interface also provides an explorer-type tree view of records currently open in the program and an area where you can enter and modify data.

Important: When you launch a program using the **Classic Menu** or the **Modern Shell Menu**, the usage and functionality is identical.

The following workshops can be performed in either of these environments.

- When running the Epicor ERP application using the **Classic Style** menu, access to programs is gained directly through the **Main Menu**.
- When using the **Modern Shell Style** menu, on the Home Page, Click the **Menu** tile to gain access to the Epicor programs.

The standard program interface features include:

- **Menu Bar** – Displays the standard menus, such as the File, Edit, Actions and Tools menus. Each menu contains a list of related options. You can select which menus display on this menu bar.
- **Standard Toolbar** - Contains controls to manipulate data on the current record. You can create, save, and delete records. You can also cut, copy, and paste text into different fields. Standard toolbar controls also allow you to perform additional functions such as viewing tracing logs or printing records.
- **Navigation Toolbar** - Find specific records created by the current program. Use the Search control to find records and the navigation tools to scroll through records you created since entering the program and records pulled in from the Search window.
- **Currency Toolbar** – If your company uses the **Currency Management** module, use the Currency toolbar to access currency management controls.
- **Tree View** – A navigational explorer type view that displays the record or records with which you are currently working. You can expand and collapse the tree folders.
- **Sheets** – The main input and display area for a program. Sheets may contain grids and other elements. Often, sheets contain tab panels allowing multiple views.

Create a Record on the Detail Sheet

Navigate to **Work Force Maintenance**.

Menu Path: Financial Management > Accounts Receivable > Setup > Work Force

1. On the **Standard** toolbar, click **New**.
2. Navigate to the **Work Force > Detail** sheet.
3. In the **Work Force ID** field, enter **XXX1** (where **XXX** are your initials).
4. In the **Name** field, enter **your name**.
5. Click **Save**.
6. Review the information in the tree view and on the **Work Force > List** sheet.

Create a Record on the List Sheet

Another way to add a record is from the grid view located on a particular sheet, such as the List sheet.

1. Verify you are on the **Work Force > List** sheet.
2. Click anywhere in the grid of the **List** sheet to activate the cursor.
3. Press **Enter** to add a new row to the grid.
4. In the **Rep ID** field, enter **XXX2** (where **XXX** are your initials), and then press the **Tab** key.
5. In the **Name** field, enter a friend's name, and then press the **Tab** key.
6. Click **Save**.

Use the Search Icon to Search for Records

There are various methods used to find records. One is the binoculars Search icon, found on the **Standard** toolbar.

1. Navigate to the **Workforce > Detail** sheet.
2. On the **Standard** toolbar, click **Clear** to clear the Work Force records.
2. On the **Navigation** toolbar, click the binoculars **Search** icon.
3. In the **Work Force Search** window, click **Search**.
4. Click **Select All** and **OK** to pull in all records.

Note: To select multiple records, you can also press and hold down the **Ctrl** key on your keyboard while selecting the records, and then click **OK**. The records appear in the order they were selected.

5. In the tree view, locate your name.
6. Select it by clicking on the record in the tree view so that it displays in the **History field** from the **Navigational** toolbar and on the **Work Force > Detail** sheet.

Delete a Record

If a record is no longer needed, it can be removed by deleting it.

1. Navigate to the **Work Force > List** sheet.
2. Select the **XXX1** record (where **XXX** are your initials).

Notice the record populates on the **History** field from the Navigational toolbar and is marked as selected in the tree view.

3. On the **Standard** toolbar, click **Delete**.
4. In the **Delete Confirmation** window, click **Yes**.
5. On the **Standard** toolbar, click **Clear** to clear the Work Force records.
6. In the **Clear Confirmation** message, click **Yes**.

Update an Existing Record

Update or modify existing records in the Epicor application.

1. On the **Work Force > Detail** sheet, click the **Work Force ID** button.
2. Click the **Search** button.
3. In the **Search Results** grid, select **Beverly Joseph** and **Brian Howard** by pressing the **Ctrl** key and selecting both names.
4. Click **OK**.
5. Next to the **History** field on the **Navigational** toolbar, click the down arrow.
A drop-down list of the selected records opens.
6. From the drop-down list, select **Brian Howard**.
7. In the **Role** field, select a different role than what displays.
8. In the **Reports To** field, select **Beverly Joseph**.
9. Click **Save**.
10. On the **Standard** toolbar, click the **Clear** icon.
11. The **Clear this form?** Message displays.
12. To the message, click **Yes**.

Modify Toolbar Positions

Each default toolbar, as well as any custom toolbars you create within the application can be placed on any side of the program's window. In addition to the toolbar docking feature, you can also position each toolbar as a floating toolbar. This toolbar always displays on top of the program, regardless of which sheet within the program you select – providing quick, easy, and flexible placement.

1. To move the **Standard** toolbar, click the **Move Control**.

Note: Each toolbar has a dotted vertical line on its left side, referred to as the **Move Control**. Use the Move Control to click and drag the toolbar into the desired position. Move the cursor over this line until the cursor becomes a cross-bar.

2. Drag and drop the **Standard** toolbar to the left of the tree view pane.

The Standard toolbar icons now display vertically to the left of the tree view pane.

3. To move the **Main Menu** toolbar, click the **Move Control**.
4. Drag and drop the **Main Menu** toolbar on the bottom of the window.
5. To float the **Navigational** toolbar, click the **Move Control**.
6. Drag and drop the **Navigational** toolbar in the middle of the window.
7. Double-click the **Title** bar of the floating **Navigational** toolbar to return to the default position.
8. From the **Tools** menu, select **Reset Layouts to Base**.
9. In the **Reset Layouts to Base** window, click **OK**.
10. Exit Work Force Maintenance and then re-open Work Force Maintenance.
All layouts have returned to their default locations.

Personalize Sheet Layouts

Each program contains two or more sheets. By clicking and dragging each sheet's tab, you can change the order in which sheets are displayed. You can also pull a sheet completely out of the program so it displays as a floating window.

1. Navigate to the **Workforce > List** sheet.
2. Drag the **List** sheet to the far left so that it displays left of the **Detail** sheet.
3. From the **Tools** menu, select **Save Layouts**.
4. Drag the **List** tab and dock it on the top of the screen until it "snaps" into place at the top of the form. This enables you to view multiple sheets.
5. Select the **Workforce List** title bar, drag it to the middle of the window and release it. This creates a floating sheet.
6. Double-click the **Title** bar of the floating **Workforce List** to return to the default position.
7. Select the **Workforce List** title bar again, drag it to the right of the window and release it.
8. From the **Tools** menu, select **Reset Layouts to Base** to reset the layouts to the default position.
9. In the **Reset Layouts to Base** window, click **OK**.
10. In the tree view, click the **Auto Hide** thumb tack to hide the contents from view.
Move the mouse to the other side of the window. The tree view disappears.
11. Hover the mouse over the **Work Force** tab and watch the tree view display.
12. Click the **Auto Hide** thumb tack icon again to "pin" the tree view in place again.
13. Exit Work Force Maintenance.

Personalize Grid Views

Some sheets contain grids that display information through a combination of rows and columns. You can manipulate the order of the columns that display within each grid, as well as modify each grid.

Navigate to **Customer Tracker**.

Menu Path: Financial Management > Accounts Receivable > General Operations > Customer Tracker

1. On the **Standard** toolbar, click the binoculars **Search** icon.
2. In the **Customer Search** window, click the **Search** button.
3. Select **Dalton Manufacturing** and then click **OK**.
4. Navigate to the **Orders > All** sheet.
5. Click **Retrieve**.
6. Change the column order by dragging the **Part** column header to the right of the first column.
7. When the arrows display, release the column header.
8. Click the **Part** column divider and drag the mouse to the right to expand the column width.
9. Right-click the **Part** grid title and select the **Show Group By** option.
10. Click and drag the **Part** column header to the **Group By** area.
11. When the arrows display, release the column header.
Notice the Sales Orders are now grouped by part number.
12. To display the record detail, expand the groupings by clicking the “+” symbol.
13. From the **Tools** menu, select **Reset Layouts to Base** to reset the layouts to the default position.
14. In the **Reset Layouts to Base** window, click **OK**.
15. Navigate to the **Financial > Invoices > Open** sheet.
16. Click **Retrieve**.
17. Right-click the **Amount** grid title and select the **Show Summaries** option.
18. On the **Amount** grid title, click the **Summaries (Σ)** button and select **Average** and **Sum**, then click **Ok**.
Notice the application displays the Average and Total invoice amounts for the Amount column.
19. Remain in the Customer Tracker.

Use the Context Menu

The Context Menu provides an easy way of navigating throughout the application without exiting an open program.

1. From the **Invoice** column, select Invoice **10014**.
2. Right-click on the **Invoice** number field and select **Open with > Invoice Tracker**
The AR Invoice tracker opens.
3. Navigate to the **Line > Detail** sheet.
4. Right-click on the **Part/Rev** field for part **DCD-200-ML** and select **Open with > Part Entry**.

Part Maintenance displays.

5. Exit Part Maintenance, AR Invoice Tracker, and Customer Tracker.

Bonus Workshops:

Complete the following optional workshops to learn more about personalizing your programs and personalizing the Modern Shell Menu home page.

Modify Sheet Properties

A sheet is a layer of a program's interface that contains related functionality. Most programs contain at least two sheets. There are many features of sheets that you can personalize, including font, font size, back color, fore color, and tab stops.

Navigate to **Opportunity/Quote Entry**.

Menu Path: Sales Management > Quote Management > General Operations> Opportunity /Quote Entry

1. From the **Tools** menu, select **Personalization**.
2. In the **Opportunity/Quote** tree view, click once.
3. In the **Control Properties** window, click in **BorderColor** field, navigate to the **Web** sheet, and select **Red**.
Notice the tree border is now red.
4. Navigate to the **Summary** sheet and click the **Disc %** field title.
5. In the **Control Properties** window, click in the **Text** field and change the text to **Discount Percent**.
6. Click within the **Disc %** field.
Notice the **Disc %** field title changed to **Discount Percent**.
7. In the **Control Properties** window, expand the **Font** field.
8. In the **Bold** field, select **True**.
Notice the **Discount Percent** field is now in bold.
9. In the **Control Properties** window, click **OK**.

Modify Grid Properties

Grids display information using a combination of columns and rows. Each column displays a category of information, such as Part Number. Each row displays data from individual records. Through the personalization features you can manipulate the order of the columns that display within each grid as well as modify each grid.

1. Navigate to the **Summary > Lines** sheet.
2. From the **Tools** menu, select **Personalization**.
3. Click once in the grid view.
4. In the **Control Properties** window, click in the **Columns** field to display the **Column Properties** window.
5. In the **Column Properties** window, for the **RevisionNum** field, select the **Hidden** check box.
6. In the **Control Properties** window, click **OK**.
7. On the **Lines** sheet, notice the **Rev** field is now hidden.

Create a Personalization

1. From the **Tools** menu, select **Personalization**.
2. Click the **Opportunity / Quote...** button.
3. In the **Control Properties** window, expand the **Font** field.
4. In the **Bold** field, select **True**.

5. In the **Text** field, change **Opportunity / Quote...** to **Quote Number**.
6. Click within the **Quote Number** field.
7. Click **OK**.

Export the Personalization

1. From the **Tools** menu, select **Personalization**.
2. Click the **Export** button.
3. Select **Desktop** as the destination folder.
4. Click **Save**.
5. Exit the **Control Properties** window.
6. Exit Opportunity/Quote Entry.

The personalization is saved as an XML file. The name of the file will be the application name followed by an underscore and the user name of the person that created the personalization.

Import the Personalization

1. Navigate to the **Home Page**.
2. On the Application menu bar, click **Change User**.
3. In the **User Name** field, enter **epicor**.
4. In the **Password** field, enter **epicor**.
5. Click the Right Arrow.
6. Click the **Menu** tile.
7. Navigate to **Opportunity / Quote Entry**.

Menu Path: Sales Management > Quote Management > General Operations > Opportunity/Quote Entry

8. From the **Tools** menu, select **Personalization**.
9. In the **Control Properties** window, click **Import**.
10. Select the newly created file from the **Desktop**.
11. Click **Open**.
12. In the **Personalization Change Information** window, click **OK**.
13. Close and reopen **Opportunity / Quote Entry**.
14. Confirm the personalizations display.
15. Remain in Opportunity / Quote Entry.

Delete All Personalizations

In this exercise, delete your current personalizations.

Navigate to **Opportunity / Quote Entry**.

Menu Path: Sales Management > Quote Management > General Operations > Opportunity/Quote Entry

1. From the **Tools** menu, select **Personalization**.
2. In the **Control Properties** window, click **Delete**.
3. In the **Delete Personalizations** window, click **Yes**.
4. In the **Personalization Change Information**, click **OK**.
5. Exit Opportunity / Quote Entry.
6. Reopen **Opportunity / Quote Entry** to view its restored format.
7. Remain in Opportunity / Quote Entry.

Personalize the Tab Key

Personalize the application to make the Enter key function like the Tab key. You can do this from any open program.

1. From the **Tools** menu, select **Options**.
2. Navigate to the **Hot Keys** sheet.
3. From the **Command** drop down menu select **Save**.
4. From the **Short Cut** drop down select **F2**.
5. Navigate to the **Global Options > Hot Keys** sheet.
6. Select the **Handle <Enter> as Tab** check box.
7. In the warning message, click **OK**.
8. Click **OK** and exit the **Options** window and **Opportunity / Quote Entry**.
9. Re-open **Opportunity / Quote Entry**.
10. From the **New** menu, select **New Quote**.
11. On the **Customer** field, enter **Dalton** and press **Enter**.
12. Continue pressing **Enter** to tab through the fields.
The **Enter** key now functions as **Tab**.
13. Click **F2**.
Notice the application Saves the record.
14. Exit **Opportunity / Quote Entry**.

Advanced Personalization in the Modern Shell

The ability to use the Advanced Personalization options in the Epicor application requires user authorization. Personalization is defined as any change made to the application that only affects that user's interface. All personalizations are stored by User ID and do not affect any other users on the system.

Advanced personalization features allow additional changes to the user interface, such as changing fonts, font sizes, colors, tab stops, and hiding or displaying columns in grids. Once a personalization is made for one user, it can be exported from one machine and imported to others who would also like the same personalizations.

Note: To use Advanced Personalization options, the user ID must have the **Allow Personalization** and **Can Maintain Favorites Program** check boxes selected in the **Options** sheet in **Account Security Maintenance**.

Login Using the Modern Shell Style Menu

1. On your Desktop, double-click the **ERP10** icon.
2. In the **User name** field, enter **manager**, and then press the **Tab** key.
3. In the **Password** field, enter **manager**.
4. Clear the **Classic Style** and the **Active Home Page** check boxes and press **Enter**.

Add a Tile to the Home Page

1. Click the **Menu** icon.
2. Navigate to **Financial Management > Accounts Receivable > General Operations**
3. **Right-click on Invoice Entry** and select **Add to Home**
The Add new tile window displays.
4. Select **Create a new tile group** and enter a title for your group.
5. Click the **right arrow**.
The link title and current company default. You may change these settings if needed.
6. Click the **right arrow**.
7. Verify the **Default for link type** button is selected and choose a **color** for your tile, for example **Orange**.
8. Click **Save**.
9. Navigate to **Financial Management > Accounts Receivable > General Operations**
10. **Right-click on Cash Receipt Entry** and select **Add to Home**
The Add new tile window displays.
11. Select the **tile group** you created before.
12. Click the **right arrow**.
The link title and current company default.
13. Click the **right arrow**.
14. Verify the **Default for link type** button is selected and choose a **color** for your tile, for example **Blue**.
15. Click **Save**.
16. Click the **Home** button to navigate back to the Active Home Page.
17. Notice the new Favorite's shortcut and the new Group.
18. Click **Add group**.
19. Enter a title such as **XXX Statistics** (where XXX are your initials).
20. Click **Save**.
21. From the new group window, click the **plus (+)** sign to add a new form.
22. From the **Type menu**, select **Discovery View** and click **Ok**.
23. From the **View menu**, select **Customer Past Due Balance**.
24. Select the **Show Card View when expanded?** Checkbox.

25. Select the **Animate through points on Card View?** Checkbox.
26. Click **Save**.
27. Expand the new Tile as needed and notice the application displays real-time animated data.
28. Drag and drop the rest of the groups to customize the Home Page layout.
29. Exit the Epicor Application.

Add Programs to the Favorites Group - Modern Shell Style

The **Favorites** bar displays your personal selection of both internal and external program shortcuts. This toolbar provides quick access to an internal program without having to open its folder path through the main interface. In addition, this functionality allows you to link external programs and files such as **Microsoft® Office Word** and **Microsoft® Office Excel**.

Using the Modern Shell Style menu, add a frequently accessed program to your Favorites Group.

1. Navigate to the **Home Page**.
2. Right-click the **Favorites** group and select **Add Tile** (lower right-hand corner of the application).
3. In the **Add a new tile** window, select a tile color to use for this new favorite program.
4. Complete the following information. After each question, click the right arrow to move to the next question.

Question	Answer
What group will this tile belong to?	Favorites
What type of tile do you want to add?	Link
What type of link is this?	Epicor Form
What form would you like to open?	Customer Menu Path: Sales Management > Order Management > Setup > Customer
What is the link title?	Customer Maintenance
Would you like to select a different Company context?	Epicor Education - Main
What do you want displayed on your link tile?	Default for link type
Do you want to be able to expand your tile?	Selected
What is the default size of your tile?	1 x 1 (Width x Height)
What is the expanded size of your tile?	2 x 2 (Width x Height)

5. Click **Save**.

The **Customer** tile now displays in your **Favorites** group.

Expand and Restore Tile Size

1. Click the diagonal arrow on the corner of the **Purchasing** tile to expand the tile.
2. Review the programs, trackers and reports on the tile.
3. Click the diagonal arrow on the corner of the expanded tile to return it to its original size.

Delete Tile

1. Right-click the **Customer** tile you created.
A check mark displays in the top left corner of the tile.
2. Click the **Delete Tile** icon in the application menu
3. An **Are you sure?** A confirmation window displays. Click **OK**.

The **Customer** tile is now deleted.

Build Advanced eCommerce Storefronts using Magento ecosystem (ECC)

Magento is a highly robust and flexible eCommerce platform that provides a scalable solution for all your eCommerce needs.

Magento provides sophisticated frontend eCommerce features and connects seamlessly with the Epicor ERP system. It can stand alone as the key housing point for custom enhancements, while utilizing all features and functions encompassed in Epicor Customer Connect.

The key values we want to demonstrate are:

- Effective merchandising tools
- CMS and promotional capabilities for marketing efforts
- Sales reports to help store administrators analyze their business performance

At conclusion of this lab, you will be able to:

- Update a category hierarchy
- Assign products to categories
- Configure attributes (search, layered navigation, product detail page)
- Update CMS content
- Create coupons
- Run sales reports

Background

ECC is connected to E10.1 and E10.2 via XML over HTTP/HTTPS. When products, prices, customers are modified in and E10.2 the data is pushed up to ECC.

As users navigate through the website, messages are sent from ECC to E10.1 and E10.2 to request prices, stock levels, orders, invoices, shipments etc. When a user builds a basket or checks out messages are sent from ECC to validate the basket and create the order.

The same process applies to quotations and returns.

In setting up this demonstration products, customers etc. have been web enabled in E10.1. The data has then been pushed to ECC to create the website.

Starting ECC

Before we start both Magento and ECC need to be running.

1. From the desktop, click on the '**VMWare Player**' icon (or from the start menu, '**VMWare Player**') to start the player.
2. Next, there will be one virtual machine for ECC titled, '**INSIGHTS-M2-2019**'. Click on this machine.
3. The screen will change and show you the status for the machine. Click on the chevron titled, '**Play Virtual Machine**'. This will start the virtual machine.

4. Please do not click inside the virtual machine window while it loads.
Note: If you do, you will need to press CTL + ALT to regain your mouse cursor.
5. Finally, iconize the window.

Browser Choice

ECC works with many different browsers. For this lab session, we have Chrome, Firefox, Internet Explorer, and Safari available. The lab tutor for this session will be using Chrome.

On the Chrome bookmark bar, there is an ECC drop down menu. This provides access to the admin panel and the web sites associated with this lab session.

Merchandising

Merchandising plays a key role in successfully managing and growing an eCommerce business. Magento offers easy-to-use tools that allow your merchandisers to update product catalogs and promotional content with efficiency.

In this section:

- Log into the Magento admin panel
- Navigate to the Catalog Management portal
- Create your site's category structure and hierarchy

To start, please open the chrome browser and complete the following steps:

1. Navigate to admin side of the site within your browser: **lab.eccdemo.com/admin1234**
2. On the portal page, please login as:
User: admin Password: Epicor123
3. Next, open a new tab within the browser and navigate to the frontend of the site: **lab.eccdemo.com**.

Category Management

Scenario: We need to create a special category that features a group of products we will be showcasing for our new promotion. When working in the admin section of the Magento platform, the category structure can be compared to an upside-down tree. The “root” category resides at the very top of the tree, while the hierarchy of categories and sub-categories follow below.

To accomplish this, we will need to complete two tasks:

1. Create this special category within the admin section.
2. Add to the mega menu in the front-end of the site.

Note: that if a category is disabled or hidden, it will appear as greyed out text.

Step 1: Create a New Category

1. In the admin menu, select **Products > Categories**. In the upper-left of the page, click the '**Add Sub-category**' button. Next, complete the following required fields:
 - Type **Featured Products** into the **Category Name** field.

- Verify **Enable Category** field is defaulted to “Yes”.
 - The ‘Include in Menu’ field is defaulted to “Yes”. Please change this value to “No”. We will manage this within the Mega menu a little later in this demo.
2. Scroll down to the ‘Content’ section. Complete the remaining optional fields as needed:
 - Type “All featured products are 50% off!” into the description field.
 3. Scroll down to the ‘Display Settings’ section. Verify the default value for “Anchor” is “Yes”.
 4. Scroll down to the ‘Search Engine Optimization’ section:
 - **URL Key:** This will automatically be filled-in when saved.
 - **Mega Title:** Type “**Featured Products**”.
 - **Meta Keywords:** Type “Samsung, tablets, note tablets, galaxy, galaxy note pro”.
 - **Meta Description:** Type “**Shop our massive in stock selection of featured tablets by Samsung. Same day shipping and most orders ship free.**”
 - When complete, click the ‘Save’ button.

Step 2: Add Subcategories

1. In the category tree on the left, click to select the new category you created in the previous step.
2. Click the ‘Add Sub-category’ button.
3. Name the sub-category “**Best Sellers**” and ensure ‘Enable Category’ is set to “Yes”.
4. Scroll down to the ‘Content’ section.
 - Type “Best Selling Products Spring 2019” into the description field.
5. Scroll down to the ‘Display Settings’ section. Verify the default value for “Anchor” is “Yes”.
6. Scroll down to the ‘Search Engine Optimization’ section:
 - **URL Key:** This will automatically be filled-in when saved.
 - **Mega Title:** Type “**Best Sellers**”.
 - **Meta Keywords:** Type “Samsung, tablets, note tablets, galaxy, galaxy note pro”.
 - **Meta Description:** “**Shop our massive in stock selection of bestselling products by Infinix. Same day shipping and most orders ship free.**”
7. Click the ‘Save’ button.

Step 3: Add the new category and sub category to the front-end of the Magento site

1. Click on Codazon > Manage Megamenu.
2. Next, locate **fastest-fashion-main-menu**.
3. Then, drag **Categories List** click on the Pencil icon to edit.
4. In the **Menu Item Title** field enter **Featured Products**.
5. In the **URL** field enter **/featured-products.html**.
6. Click on **Select** button and select your category.

7. Click the **Save Menu** button.

Step 4: View Category Updates on Front-end of Site

1. Return to the browser with lab.eccdemo.com and refresh the browser.
2. You will now see **Featured Products** in the top navigation
3. Hover over **Products** in the main navigation to view sub-category **Best Sellers**.

Product Management

In this section, we will:

- Show you how to assign your products to categories.
- Show you how to create and assign product attributes.
- Demonstrate how product attributes can display on the frontend of your site.

Product/Category Assignment

Now that we've created our '**Featured Products**' category, we'll need to assign products to it.

To assign products to categories at the product level:

1. Navigate to the products module under **Catalog > Products**.
2. Expand **Filters**.
3. Enter **iPhone 7 16GB Black** in the **Name** field and click the **Search** button.
4. Select the **Edit** button.
5. Scroll down to **Categories**.
6. Expand the category tree, select the checkbox for the **Featured Products** and **Best Sellers** category.
7. When complete, click the **Save** button.

To assign products to categories on the category level [Level 1 Category]

1. Navigate to the category module under **Catalog > Categories**.
2. Select the **Featured Products** Category.
3. Scroll down to **Products in Category**.
4. Change the **Yes** selection to **No** and enter **iPhone 7 16GB Gray** in the name field.
5. Click the **search** button.
6. Select the product in the search results.
7. Save category.

You now need to assign product **iPhone 7 16GB Gray** to sub-category **Best Sellers** so front-end navigation is correct.

To assign products to categories on the category level [Level 2 (Sub) Category]:

1. Navigate to the category module under **Catalog > Categories**.
2. Select the **Best Sellers** Category.
3. Scroll down to **Product in Category**.
4. Change the **yes** selection to **no** and enter **iPhone 7 16GB Gray** in the name field.
5. Click the **Search** button.
6. Select the product in the search results.
7. Save category.

View Product to Category Assignment Updates on Front-end of Site

Return to the browser with **lab.eccdemo.com** and refresh the browser.

1. Click on **Featured Products**.
2. To confirm all the actions applied are correct, review the products now populated on the **Featured Products** landing page.

You should now be able to navigate to the featured products category through the main site navigation and view the products that are assigned to it.

Product Attributes

Scenario: We'd like to display 2 attributes as layered navigation (filter) on the product listing page as well as display them on the product detail page.

Step 1: Assign attributes to products

1. Navigate to **Catalog > Products**.
2. Search for **iPhone 7 16GB Gray** and select the result listed on the page.
3. Scroll down to **Color**, select **Grey** from the color drop-down.
4. Scroll down to **Size**, select **16** from the size drop-down.
5. Click the **Save** button.
6. Repeat the above steps for the **iPhone 7 16GB Black** product by selecting **Black** as the color option instead of gray.

Step 2: Enable attributes on PDP page and layered navigation

1. Navigate to **Stores > Product**.
2. Search **color** within the **Attribute Label** field.
3. Select **Search**.
4. Select the **color** attribute.
5. Select **Storefront Properties** from the left menu so we can verify the following:

- Use in Layered Navigation is set to Filterable (with results).
 - Visible on Catalog Pages on Storefront is set to Yes.
6. Save your changes.
 7. Repeat steps 2-7 for the **size** attributes.

Step 3: View Layered Navigation and Product Page Attribute Updates on Front-end of Site

1. Return to the browser with **lab.eccdemo.com** and refresh the browser.
2. Click on **Featured Products**.
3. You will now see the attributes color and size appear in the layered navigation.
4. Navigate to one of the product detail pages, and select the **More Information** tab.
5. You will now see the attributes color and size appear on the PDP.

Marketing

Magento out-of-box functionality allows your marketing team to easily update promotional content and discounts without any development knowledge. With the included tools on the platform, teams can work toward increasing average order value by applying targeted promotions, while optimizing the content on your site as you plan for your next campaign.

In this section, you will:

- Update the “**About Us**” CMS page.
- Create a custom 50% off coupon.

CMS Content Updates

Scenario: Our HQ location has changed and we need to update our “**About Us**” page in the website’s footer which is controlled by CMS. Magento CMS pages stand for “content management system” which gives the admin the ability to edit, create, and publish content directly on the site.

Step 1: Make text change on appropriate CMS Page

1. Navigate to **Content > Pages**.
2. Expand filters.
3. In the search type **About Us**.
4. Click **Search** button.
5. Open the **About Us** page.
6. Scroll to the **Content** section from the left panel.
7. Change the existing title, **Welcome to Codazon Store** to **Welcome to My Store**.
8. Click the **Save** button to save your changes.

Step 2: Clear Magento cache and view changes on front-end

View your newly implemented changes on front-end “About Us” page.

Creating Coupons

Scenario: We need to create a 50% discount for the products in the featured products category. We want the promotion to run from March 1st, 2019 through March 30th, 2019. When a specified set of conditions are met by the customers shopping cart, discounts will be applied to orders based on the established coupon codes/shopping cart price rules. Shopping cart price rules create discounts for orders at the checkout level, based on a set of conditions. The applied discount will be populated for review on the shopping cart page under the subtotal.

Set up a shopping cart price rule:

Step 1: Add a New Rule

1. On the admin menu, select ‘Marketing > Cart Price Rules’. Then, click the ‘Add New Rule’ button. The options include ‘Rule Information’, ‘Conditions’, ‘Actions’, and ‘Labels’.
2. Under General Information, populate the ‘Rule Name’ (required field) with “50% off all featured products”.
3. Next, set **Status to Active**.
4. To establish the scope of the rule, do the following:
 - Select **Lab Website** under the websites options.
 - Select ALL the **Customer Groups** to which the promotion applies.
5. For the **Coupon** field, leave as is.
6. For the **Uses per Customer** field, leave blank to allow unlimited uses.
7. To make the promotion available to all customers, hold down the Ctrl key (PC) or Command key (Mac), and click each option available.
8. If we want this promotion to run for a specific period, say from March 1st, 2019 through any future date, we would do the following:
 - a. Click the **Calendar** button next to the **From Date** field and choose **March 1st, 2019**. The promotion will start at the beginning of that day.
 - b. Next, click the **Calendar** button next to the **To Date** field and select any future date. The promotion will stop at the end of that day.

Step 2: Define the Actions

The shopping cart price rule actions describe how prices are updated when the conditions of the rule are met.

Shopping Cart Price Rule Actions

1. Scroll to the **Actions** tab and use the following settings:
 - a. **Apply:** Percent of product price discount
 - b. **Discount Amount:** 50

Step 3: Define the Conditions

In this step, the conditions are described that must be met for an order to qualify for the promotion. The rule goes into action whenever the set of conditions is met.

1. Stay in the **Actions** module and scroll to the bottom to where it says “apply the rule only to cart items matching the following conditions.”
 - a. Under **If ALL of these conditions are TRUE** click the + symbol and select **Category**.
 - b. New verbiage appears saying “Category is ...” Click the “...” and use the **List** icon to select the **Featured Products** category.
 - c. Select the **Checkmark** icon.
 - d. Save changes.

We now have a cart rule that applies a 50% discount to any items that belong to the featured products category.

Step 4: Test the Shopping Cart Price Rule on Front End of Site

1. Return to the browser with lab.eccdemo.com and refresh the browser.
2. Click on **Featured Products**.
3. Place your cursor over one of the product images displayed. In the hover effect select, **Add to Cart**.
4. Click the **Shopping Cart** Icon on the right of the top navigation.
5. Select **View and Edit Cart**.
6. To confirm all action previously taken is correct, you now see your discount applied to the cart total.
7. Please note that the coupon will only apply to those products in the **Featured Products** category.

Build Your First Report with Epicor XL Connect

XL Connect 7 for Epicor is an Excel-based reporting platform that helps you build your reports in minutes rather than days. The XL Connect 7 software connects directly to your data and gives you the power to make it dynamic. This allows you to dive deeper into the numbers and find the answers you need rather than rely on additional reports and additional time. Made easy with the user friendly and intuitive XL Connect 7 Query Tool, drill down repeatedly and add fields to uncover actionable information within a quick drag-and-drop interface.

In this session, you will see how the Excel reporting and analytics solution can quickly generate the answers you need from your information with our intuitive XL Connect 7 reporting solution.

At the conclusion of this lab, you will be able to:

- Understand the many uses of XL Connect 7
- Commit any data for reporting with XL Connect 7 Remote
- Create simple to dynamic reports

Open Excel and XL Connect

1. Open a fresh session of Excel.
2. Click on **Load XL Connect 7**.

Open an Excel worksheet

1. From the Excel Top Menu bar, click **XL Connect**.
2. From the **XL Connect** menu, select **Load XL Connect** on the left-hand side.
3. The **Navigation Pane** displays on the left-hand side.

Navigation Pane

In XL Connect 7 Remote the Navigation Pane contains many pre-built tables and functions, but it can also be used to save frequently used queries created from imported data.

1. Click on the **Load XL Connect** button from the menu bar.
The **Navigation Pane** displays vertically along the left-hand side of your worksheet.
2. The **Navigation Pane** is collapsed by default and can be expanded by clicking on the **Chevron Arrow** button in the upper right-hand side of the **Navigation Pane**.
3. Click the arrows within the **Navigation Pane** to expand each section to view the **Shared Queries**, **Epicor ERP**, and **BizProperties** sections.

Load Sales Order Data

1. Load the **Navigation Pane**: **XL Connect > Load XL Connect**.
2. On the **Navigation Pane** to your left, go to **Epicor ERP > Sales Management > Order Management > Sales Order Detail by Order Date**.
3. Drag the table to cell **A1**.

4. In the **Company** filter, click the dropdown arrow on the right side of the white box and select **EPIC03**.
5. For the **StartDate** filter, click on the **Select a date** box and navigate to **July 25, 2008**.
 - a. Since the default view for the **Select a date** filter is by month, to navigate more quickly click on the **month name (April)** to view the entire year and click on the **year name (2019)** to view the entire decade.
 - b. Use the **arrows** at the top to go backward or forward one-time period.
6. For the **EndDate** filter, click on the **Select a date** box and navigate to **April 18, 2014**.
7. Press the **OK** button at the bottom right.
8. Make sure the **Target Cell** box says '**[Sheet Name]!A1**'. If not, select cell **A1** with your mouse.
9. Select **OK**.

The **Sales Order Detail by Order Date** table is now in your workbook.

Create the List/Table from the Query Data Tool:

1. Open a new tab in your Excel workbook.
 2. If not already loaded, load the **Navigation Pane: XL Connect > Load XL Connect**.
 3. Select the **XL Connect 7 toolbar > Query Data**.
 4. To the **What would you like to create?** message, select **Table**.
 5. To the **Where is your data?** message, select **Epicor ERP**.
 6. To the **Which data set?** message, select **Sales Order Detail by Order Date**.
 7. To the **Return my results as a** message, select **Table**.
 8. In the **Company** filter, click the dropdown arrow on the right side of the white box and select **EPIC03**.
 9. For the **StartDate** filter, click on the **Select a date** box and navigate to **July 25, 2008**.
 10. For the **EndDate** filter, click on the **Select a date** box and navigate to **April 18, 2014**.
 11. From the **XL Connect Query Editor** window, click **Select Columns** and select the **CustomerName** field only.
 12. Check the box for **Remove Duplicates** beside **Select Columns**.
 13. Select **OK**.
- The **Cell Selection** window will open.
14. Select cell **A1** as your target cell and press **OK**.

Filter Lists: Which of My Customers Names Begin with T?

1. Select the **XL Connect > Query Data**.
2. To the **What would you like to create?** message, select **Table**.
3. To the **Where is your data?** message, select **Epicor ERP**.
4. To the **Which data set?** message, select **Sales Order Detail by Order Date**.
5. To the **Return my results as a** message, select **Table**.

6. In the **Company** filter, click the dropdown arrow on the right side of the white box and select **EPIC03**.
 7. For the **StartDate** filter, click on the **Select a date** box and navigate to **July 25, 2008**.
 8. For the **EndDate** filter, click on the **Select a date** box and navigate to **April 18, 2014**.
 9. From the **XL Connect Query Editor** window, click **Select Columns** and select the **CustomerName** field only.
 10. Check the box for **Remove Duplicates** beside **Select Columns**.
 11. **Add Filter to CustomerName** using a **LIKE** statement.
 12. Type **T*** in the third box of the filter.
 13. Click **OK**.
- The **Cell Selection** window displays.
14. Select cell **C1** as your target cell and press **OK**.

Exploring Functions

Epicor XL Connect Functions can be created for any available table within any module. This section describes how to work with user made Functions.

What is the total Sales Order Amount in January 2014?

1. Load **XL Connect**: **XL Connect>Load XL Connect**.
 2. Select **XL Connect > Query Data**.
 3. To the **What would you like to create?** message, select **Function**.
 4. To the **Where is your data?** message, select **Epicor ERP**.
 5. To the **Which data set?** message, select **Sales Order Detail by Order Date**.
 6. In the **Company** filter, click the dropdown arrow on the right side of the white box and select **EPIC03**.
 7. For the **StartDate** filter, select or type in **1/1/2014**.
 8. For the **EndDate** filter, select or type in **1/31/2014**.
 9. To the **What action would you like to take?** message, select **Sum**.
 10. To the **What information would you like returned?** message select **ExtendedPrice**.
 11. Click **OK**.
- The **Cell Selection** window displays.
12. Select cell **E1** as your target cell and press **OK**.

Drilldown on any XL Connect Function

Epicor XL Connect provides the ability to Drill Down on data returned by a XL Connect Function to the Transaction Detail. The drilldown details can be returned in a list or a pivot table format.

1. To drilldown on a function, right-click on the **Function Total** and select **XL Connect Drilldown** from the right-click menu.
2. The drilldown data will be inserted into the open workbook, generating a new tab labelled **Drilldown (n)**.

3. Practice generating a drilldown from cell **E1** to see **MTD Balance**, then drilldown on cell **F32** to see the **Invoice Detail for January 2016**.

Create the List/Table: What Are My Sales by Customer June 2014?

1. Open a new tab in your Excel workbook.
 2. If not already loaded, load the **Navigation Pane: XL Connect > Load XL Connect**.
 3. Select the **XL Connect 7 toolbar > Query Data**.
 4. To the **What would you like to create?** message, select **Table**.
 5. To the **Where is your data?** message, select **Epicor ERP**.
 6. To the **Which data set?** message, select **Sales Order Detail by Order Date**.
 7. To the **Return my results as a** message, select **Table**.
 8. In the **Company** filter, click the dropdown arrow on the right side of the white box and select **EPIC03**.
 9. For the **StartDate** filter, select or type in **1/1/2014**.
 10. For the **EndDate** filter, select or type in **1/31/2014**.
 11. From the **XL Connect Query Editor** window, click **Select Columns** and select the **CustomerName** field only.
 12. Check the box for **Remove Duplicates** beside **Select Columns**.
 13. Select **OK**.
- The **Cell Selection** window will open.
14. Select cell **A1** as your target cell and press **OK**.

Create the Function:

1. Select **XL Connect > Query Data**.
 2. To the **What would you like to create?** message, select **Function**.
 3. To the **Where is your data?** message, select **Epicor ERP**.
 4. To the **Which data set?** message, select **Sales Order Detail by Order Date**.
 5. In the **Company** filter, click the dropdown arrow on the right side of the white box and select **EPIC03**.
 6. For the **StartDate** filter, select or type in **1/1/2014**.
 7. For the **EndDate** filter, select or type in **1/31/2014**.
 8. To the **What action would you like to take?** message, select **Sum**.
 9. To the **What information would you like returned?** message select **ExtendedPrice**.
 10. Fill in **Filter CustomerName** using a = statement.
 11. Reference cell **A2** in the third filter box using the gray grid box.
 12. Anchor your **CustomerName** as **\$A2**.
 13. Click **OK**.
- The **Cell Selection** window displays.

14. Place your formula in cell **B2**.
15. Use **Excel Autofill** handle to fill in the sales for additional account members.

How to commit external data with XL Connect 7 Remote for Epicor 10

Any data which can be imported and saved to an Excel worksheet can be committed for use with the XL Connect 7 Query tool. Tables, named ranges and loose ranges of data can also be saved to Excel memory. It is even possible to set up Excel Connections to External Sources, refresh the connections and commit the data to Excel memory. This section will provide a brief overview of how to use the XL Connect 7 Query tools to Select Data and commit to Excel memory. Then open the Query Data tool and start reporting and analyzing.

1. Get your data into **Excel**:
 - Type your data.
 - Copy and paste your data.
 - Export your data to Excel.
 - Set up an **External Data** connection using the **Get External Data** section of the **Data** ribbon.

2. From the **XL Connect 7** ribbon, choose **Select Data**.

The **Select Data** field displays.

3. Verify data type information.

Data committed confirmation popup displays.

- Click on the **Query Data** button to start creating lists and functions from the committed data.
- Select **XL Connect > Query Data**.
- To the **What would you like to create?** message, select **Table/Function/Data Validation**.
- To the **Where is your data?** message, select **EXCEL**.
- To the **Where is your data?** message, select **NAME OF COMMITTED DATA**.

Build Your Manufacturing Storefront with ERP 10 and Epicor Commerce Connect (ECC)

In this lab session you will learn the basics of setting up an e-Commerce site, configuration of E10 and establish communication with ECC front end.

Epicor Commerce Connect is Epicor's e-Commerce solution. It is built on the Magento platform, offering a rich and sophisticated ecommerce experience. Magento is one of the world's leading ecommerce solutions.

Epicor Commerce Connect integrates your Epicor ERP system with your e-Commerce platform. The ERP remains the central point for pricing, products, invoicing, ordering etc., whilst Magento provides the front end e-Commerce features.

The key values we want to demonstrate are:

- Tight integration with ERP
- Awesome e-Commerce features as standard
- The B2B experience for customers
- The B2C experience for guests shopping on your site

At the conclusion of this lab, you will be able to:

- Use ECC and Magento to tightly integrate your ERP and e-Commerce solutions
- Use ECC to create B2B, B2C and B2B2C web sites
- Understand the integration between E10 and ECC

There are several other lab session on ECC:

- There is a P21 session covering similar ERP aspects – Build your Digital Distribution Storefront with Prophet 21 and Epicor Commerce Connect (ECC). This lab will cover similar ECC aspects to this lab with a focus towards P21.
- There is a general lab session for P21, Eclipse and E10 customers – Build Advanced e-Commerce Storefronts using Magento ecosystem (ECC). This session covers how to use the power of Magento ecosystem to build good looking digital storefronts and add-ons to rapidly add new functionality.

Things we can show in the Solutions Pavilion:

- Integration with Epicor E10.1 or E10.2, deeper dive into specific areas. Using user defined fields with ECC.
- Themes for great looking customer experience.

At the conclusion of this lab, you will be able to:

- Upload products from E10 to ECC.
- Manage prices within ECC.
- Create a micro site.
- Use accessories, substitutes and document links to help increase sales.

Background

ECC is connected to E10.1 or E10.2 via XML over HTTP/HTTPS. When products, prices, customers are modified in E10.1 or E10.2 the data is pushed up to ECC.

As users navigate through the website, messages are sent from ECC to E10.1 or E10.2 to request prices, stock levels, orders, invoices, shipments etc. When a user builds a basket or checks out messages are sent from ECC to validate the basket, create the order.

The same process applies to quotations and returns.

In setting up this demonstration products, customers etc. have been web enabled in E10.1 or E10.2. The data has then been pushed to ECC to create the website.

Starting ECC

Before we start the Magento and ECC need to be running.

1. From the desktop click on the **VMWare Player** icon (or from the start menu VMWare Player) and start the player.
2. There will be one virtual machine for ECC titled **INSIGHTS-M2-2019**. Click on the virtual machine.
3. The screen will change and show you the status for the machine. Click on the chevron entitled **Play virtual machine**. This will start the virtual machine.
4. Don't click inside the window when it starts. If you do you need to do **CTL** and **ALT** to get the mouse cursor back.
5. After the system has booted iconize the window.

Browser Choice

ECC works with many different browsers. The four common browsers (Chrome, Firefox, Internet Explorer and Safari) are available for this lab sessions. Any of the browsers can be used. This document is written using Chrome as the browser, the lab tutor will use Chrome for the session.

On the Chrome bookmark bar there is an ECC drop down giving access to the admin panel and the web sites that are used as part of this lab session.

E10 Session

This lab sessions requires a login to E10. If you wish to use the classic menu for E10 use the desktop icon "ERP10 - Classic Menu" or you can use the new UI using the desktop icon "ERP 10". This document is written using the E10 UI, the lab tutor will use the new E10 UI for the session.

- The login for E10 is epicor/epicor
- Ensure that you are using company EPIC06, Epicor Education
- This is shown on the top right hand side
- If not please open the menu and choose company EPIC06

Passwords

All ECC logins have a password of Epicor123.

Task Agent

Task agent must be running for this lab session.

6. Open the Windows start icon (bottom left).
7. Navigation to Epicor and look for **TaskAgent Service Configuration**.
8. From the Task Agent Service Configuration window select the **Actions** menu.
9. Select the **Restart Service** option.
10. Select **OK** from the Service Restarted dialogue.
11. Close the window.

E-Commerce Trading

In this section you will see the tight integration of ECC with E10. You will:

- Login to the website Customer Connect as a B2B customer to the B2B site which is configured as a portal site.
- Existing customer logs into the site.
- Review B2B aspects of the site.
 - Look at orders, invoices, shipments – see how the documents link together.
- Create a basket, checkout see the order flow through to the ERP.
 - Review the order in E10 from the order entry screen.
 - Review the Customer Connect dashboard for recent orders.
- Create a quotation.
 - Add products to the quotation.
 - Submit to the ERP and amend the price in the ERP making the quote web ready.
 - Revert to ECC and accept the quote, along with an existing quote that is already web ready.
- Returns
 - Take a recently shipped order and return 1 line from the order.

Customer Connect

Use the browser.

1. Start from the home page from the ECC link using the Customer Connect option (eccdemo.com).
2. Log into ECC using Jim Johnson from Addison as a customer using the **Log In** option at the top right of the page.
Email Address: jim.johnson@wfo.epicor.com Password: Epicor123
3. On login you are presented with a dashboard showing the five most recent orders and five most recent invoices. Click the **view all** button to review all orders. From this page you can re-order a complete order or drill into an order for further details. Every ECC grid allows you to enter a search for specific data.
4. Enter **5016** in the **Order Number From** field and **5020** in the **To** field and click **Search**.

- Click anywhere on the **5016** order line, except for the Reorder link. You will be re-directed to the order detail page. On this page expand the + (Plus) sign on the left hand side of the **Parts** section to show shipping information.

	Kit	Part Number	Description	Price	Qty	UOM	Total Price
+ [Yellow]		DSS-1000	DSS Satellite Assembly	\$118.00	30	EA	\$3,540.00
+ [Yellow]		DCD-300-OR	Steel O-Ring	\$20.80	1000	EA	\$20,800.00
						Subtotal :	\$24,340.00
						Shipping & Handling :	\$0.00

- From the order detail screen, click **117** to view **Packing Slip 117**.

Note: The packing slip has a link to a tracking site. The details are entered into E10 and are uploaded to ECC. The details are available from the My Account shipping screens, and via Customer Connect.

Note: The link cannot be followed as none of the lab systems are connected to the internet.

- Click **back** to return the order 5016.

The order shipment page allows you to return to the sales order (via the **Back** link) or move to view all shipments (via the **Go to Shipments** link). You can access links to shipment tracking sites (where available), the order and the invoice details.

- From the order detail screen, click **200** to view **Packing Slip 200**.
- Click the **Invoice Number 10141** link. The Invoice Details for invoice 10141 displays. As in step 7 you are able to navigate back to the shipment details or forward to view all invoices.
- Click **Go to Invoices List** link. ECC displays a list of invoices.
- Look at payments by opening the **Customer Connect** menu and selecting **Payments**.
- In the **Invoice Number** field, enter **10141** and select **Search**. From this screen you are able drill down into the invoice details as you did on step 9.
- Select the order number (**5016**) to drill down to the order that we viewed in the beginning.

Create a Basket

Continuing from the previous sections, logged in as Jim Johnson.

- Navigate to the home page – click on the Epicor logo.
- Select the **Tooling** menu.

Click on the **Teng Tools ¼" Drive Socket Set 36Pcs** link to go to the Product Details page.

Note: The default price for this item is \$62.49. This customer has a price list created in E10 for a customer price of \$61.00 with quantity breaks for 3, 5 and 10 items.

- Add quantity 1 of these to the cart.
- Using the breadcrumbs above the menu, select the **Tooling** link to return to the Socket Set list page.
- Select product S910.
- Using the search bar, search for a product using the customer specific SKU ANDT-001, this is a customer specific SKU unique to Anderson.

Note: The customer specific SKU is also shown against the product as well as the generic SKU.

7. Search using the cross reference SKU ALT-ABC. Add the item to the cart.

Note: The cross reference SKU is also shown against the product as well as the generic SKU.

8. Using the Search bar, search for **Pump**.

9. Click on configure Product for part Pump.

Note: This part is an EWA based configurator

10. Select:

- a. Mount Type as skid Mount,
- b. Pump Type as Impeller Pump
- c. Inlet size as 50*50
- d. Voltage : Single Phase

11. Click on **Save**.

12. Click on the configure Product for the part PumpEWC.

Note: This part is an EWC based configurator.

13. Select:

- 14. Mount Type as skid Mount,
 - a. Pump Type as Impeller Pump
 - b. Inlet size as 50*50
 - c. Voltage : Single Phase

15. Click on **Save**.

16. Select the cart icon.

17. From the cart summary page change the quantity for the **Teng Tools ¼" Drive Socket Set 36Pcs** to 4, 6 and 11 to see the price breaks in action.

18. Checkout using the Proceed to Checkout option.

19. Use the default delivery address and shipping method.

20. Select the Epicor Payment method from the Review & Payments page.

21. Select **Place Order**.

The order summary page shows the Web order number. **Note:** The order summary details can be configured within ECC to show the ERP order number as well.

22. Select Continue Shopping to return to the home page.

Product and Account Management

In this section you will:

- Remove a part from the web site
- Web enable an ERP account
- Review products, ERP account and new shopper uploaded to ECC

For this section you will need to use E10 and the Magento admin console.

1. From the browser view the menu **Machine Building Parts**.

Note: There is one part with no image.

2. Login to Magento Admin.

3. Navigate to **Customers -> All Customers**

There is only one for Dalton.

4. Switch to Epicor ERP 10.

5. Navigate to the Part maintenance screen. Use the menu search function and search for **Part** or navigate to **Material Management > Inventory Management > Setup > Part**, or use the **UD_Part** screen on favourites.

6. Enter Part **4600-1** and press tab.

7. On the **Detail** page uncheck the **Web Saleable** box.

8. Click **Save**.

9. Navigate to the Customer screen. Use the menu search and search for **Customer** or navigate to **Sales Management > Customer Relationship Management > Setup > Customer**.

10. Enter **DALTON** in the **Customer** field and press **Tab**.

Note: the **Web Customer** check box is already selected.

11. Using the left hand side navigator expand the account and contacts.

12. Select **Nancy Drew-Hardy**.

13. On the **Contacts Detail** tab select the Web User check box.

14. Click **Save**.

15. Use the menu search and search for **ECC Customer/Consumer Synchronization** or navigate to **System Setup -> Commerce Connect**.

16. Open the screen and select Master Files then select the **Submit** button.

17. Move to the parts tab and select the **Submit** button.

18. Switch back to the Magento Admin in the browser.

19. Navigate to **Epicor -> Log**.

20. See that the top messages are an STK message and a CUCO. If not wait a short while and select **Search**.

The part will have been deleted and the contact will have been created.

21. Navigate to **Customers -> All Customers**.

Note: There are now five shoppers, including Nancy.

22. From the front end view the menu **Machine Building Parts**. The part has now been deleted.

Group Products Together

1. From the front end enter scarf in the search area and select the search icon.

Four scarfs are returned.

2. Go to the admin screen.

3. Navigate to ->Catalog>Products.
4. Select the drop down next to **Add Product**, and select the **Grouped Product** option
5. Enter the following details:

Attribute Set	General
Product Name	100% Cashmere Scarf
SKU	SCRF100
Stock Status	In Stock
Visibility	Catalogue, Search
Categories	Configured Parts
Default UOM	EA
Price Display Type	Default
UOM	EA
UOM Filter	EA

6. Expand the Grouped Products section and select Add Products to Group.
7. Select filter and enter **SCR** in the SKU edit box. Select **Apply Filters**.
8. Select the **Select All** option.
9. Select **Add Selected Products**.
10. Expand the Images and Videos section. Click on the text below the camera.
11. Navigate to **C:\ECC\ECC Lab 2019\Img**. Select the image **SCRF100.JPG**. Then select **Open**.
12. Select the **Save** option.
13. Return to the frontend and enter **Scarf** in the search area.
14. Select the **View Details** option for the new product. You can now choose which colour of scarf to add to the cart.
15. Enter a quantity for at least one of the options and select **Add to Cart**.
16. Click on the cart symbol to view the actual products that have been added to the cart.

User Defined Fields

In this section you will:

- Review how UD fields on the part record can be uploaded to ECC
- Review UD data via E10 screen extensions
- Enable a UD field on the order header table
- Enable a simple extension to the ECC checkout page

This section looks at UD fields from two perspectives. UD fields have been added.

- Size
 - UD field added to the part table is size_c – integer
This is used for the phone, note, pants and clothing data sets
- Colour

- UD field added to the part table is colour_c – string
This is used for the phone, note, pants, clothing and general data sets
- Inside Leg measurement
 - UD field added to the part table is insideLeg_c – integer
This is only used for the pants data set
- Product set
 - UD field added to the part table is productSet_c – string
This field is used to determine which attribute to create in ECC, and which UD columns should be sent to ECC as part of the product upload.
- Certificate of conformance required
 - UD field added to the order header table is u_conformance_c – string
This field is used to show if a certificate of conformance is required when the order is placed in ECC

Two customer screens have been created UD Part with the 4 part UD fields added to the attribute tab. UD Order where the conformance UD field has been painted onto the main tab.

For this section you will use the E10 screens and the Magento admin console.

Initially we will review the changes made for the part upload. Two BPMs have been created.

1. Login in to E10.
2. Select the search option and select **Menu Search**. Enter **Method Directive** – open then Method Directives Maintenance form.
3. Select **Method Codes**.
4. In the **Search By Business Object** section, select **ECC Extension**. In the **Where Method Name Starts At** enter **STK**.
5. Select the methods **StkAttributeSet** and the **StkCustomTagPart**.
6. Expand the directives on the left hand side.
7. Click on the **StkCustomTagPart** option on the left hand side.
8. Click on the Workflow and the **Execute Custom Code** icon.
9. Under **Action**, click on the hyperlink and review the C# code to return the correct UD fields for the upload to ECC
10. Close the windows and click on the **StkAttributeSet** option.
11. Click on the ABC workflow and the **Set Argument** icons.
12. Under **Action**, click on the hyperlink and the review the expression.

```

Specify C# expression

Available variables
Parameters
  eccExtPart
    attributeSet
Temp-tables
  iPPart (eccExtPart.Part)
Call context
  callContextBpmData
  callContextClient

Editor
eccExtPartPartRow.UDField<System.String>("productSet_c") == "C" ? "clothing" :
eccExtPartPartRow.UDField<System.String>("productSet_c") == "G" ? "general" :
eccExtPartPartRow.UDField<System.String>("productSet_c") == "T" ? "pants" :
eccExtPartPartRow.UDField<System.String>("productSet_c") == "N" ? "note" :
eccExtPartPartRow.UDField<System.String>("productSet_c") == "P0" ? "phone" :
eccExtPartPartRow.UDField<System.String>("productSet_c") == "P" ? "pump" : ""

```

This code sets the attributeSet tag within the part upload (STK) message from E10 to ECC.

13. Select the search option and select **Menu Search**. Enter **ECC**. Open the screen **ECC UD Field Map**

14. Select **MapID**. Enter STK in the Starting At field.
15. Select the **STK_Part** entry.

This screen shows the mapping between the UD fields and the data sent to ECC. Three new mappings have been created that use the previous StkCustomTagPart BPM to return the correct values for the upload. These custom mappings will create attributes for size, colour and inside leg for those parts that use these fields (as defined by the data in the productSet_c UD field)

```

<attributes>
  <attribute>
    <code>colour</code>
    <description>Colour</description>
    <value>Blue</value>
  </attribute>
  <attribute>
    <code>size</code>
    <description>Size</description>
    <value>10</value>
  </attribute>
</attributes>
  . . .

```

The next section adds a certificate of conformance checkbox to the checkout page of ECC.

1. From the browser create login in to ECC as Jim Johnson.
Email Address: jim.johnson@wfo.epicor.com Password: Epicor123
2. Create a basket and go to the checkout page.
3. Navigate through the checkout page to the Review & Payment page.
4. Select the **Epicor Payment Method**.

Note: There is no checkbox for a certificate of conformance.

5. In a new tab login to the Magento admin page.
6. Navigate to Epicor->Configuration Test Custom Message. On the settings sub page change the **Display Certificate of conformance** from No to Yes.
7. Select **Save Config**.

8. Revert to the front end tab and refresh the checkout page CTRL + F5.

Note: The certificate check box is now shown on the page.

9. Check the checkbox.
10. Place the order.
11. Revert to E10 and select the search option and select **Menu Search**. Enter **UD**.
12. Open the UD Order Entry frame and the UD Part frame.
13. Go to the UD Order Entry frame and open up the search, choosing the most recent order created.
14. Review the order.

Note: The ECC Conformance field is not set to Yes. We have not completed the UD mapping set up in E10.

15. From the ECC UD Field Map screen. Select **MapID** and enter **GOR**.
16. Select the Gor_OrderHed row. Select OK.

17. On the screen note that the field mapping is shown. Select the Enabled check box in the header section.
18. Select Save.
19. Revert to ECC.
20. Create a new basket and proceed to the checkout page.
21. Navigate through the checkout page to the Review & Payment page.
22. Select the **Epicor Payment Method**.
23. Check the **Certificate of Conformance** checkbox.
24. Place the order.
25. Revert to E10 and search for the most recent order on the UD Order Entry screen.

Note: This time the ECC Conformance field shows a Y – the UD fields are now flowing from ECC to E10 for the order header.
26. Switch to the UD Part screen.
27. Enter **CHIN-BLACK-32-32** in the **Part** field and tab out.
28. Switch to the Attribute tab. The ECC UD fields can be seen.
29. Enter **zt001** in the **Part** field and tab out.
30. Switch to the Attribute Tab and enter **1** for the size.
31. Navigate to the ECC Customer/Consumer Synchronization screen System Setup -> Commerce Connect.
32. Open the screen and select the Parts tab then select the Submit button.
33. Switch to the Magento Admin in the browser.
34. Navigate to Catalog>Products.
35. Expand the filters section and enter **zt001** in the **SKU** field. Select Apply Filters.
36. Drill into the product and scroll down to see that the **size** field is now 1.

Customer Quotations

In this section, you will login in as a business to business customer, create a quote using the price list created above and then manage this quote via E10. Accept the quote in ECC.

1. Click the **My Account** link. If you not logged in, log into ECC using Jim Johnson from Addison as a customer.

Email Address: jim.johnson@wfo.epicor.com **Password:** Epicor123
2. In the **Customer Connect** menu select the **Account RFQs** menu.

You will be presented with a list of existing quotes from E10.
3. Select **New Quote**.
4. In the **Required** field, enter the required date, for example **June 29th**.
5. In the **Reference** field, enter a reference for the quotation, for example **Quote-1**.
6. In the lines section, select the **Add by Search** option.
7. In the **Keyword/SKU Search** field, enter **Teng** and click **Search**.

8. In the search results, enter **1** in the quantity required and select **Add to Quote**.
9. Change the quantity to **3**.
Note: the price changes to \$57.95.
10. Select **Quick Add**.
11. In the **SKU** field, enter **S910**, the system will show a popup with the full SKU and description. Select the product and select **Add Lines**.
12. In the **Line Comments** field, enter a comment.
13. In the **Comment** section, enter a quote comment.
14. Select the **Save and Continue** option at the top of the page.
15. At the bottom of the page, select the **Back** button or use the **Customer Connect** menu to navigate to the **Account RFQs** page.
16. The newly created RFQ can be viewed and modified if required.
17. Switch to E10 and from the **Menu Search** panel enter **Opportunity Quote**. Select the quote entry screen.
18. Select the search option from the tool bar and press **Search**.
19. Select the most recent quotation and select **OK**.
20. Select the **Line** tab.
21. Move to line two for the S910 product.
22. In the **Unit Price** field, change the price to **299.99**.
23. Select the **Header** tab and select the **Quoted** and **Web Ready** check boxes.
24. Click **Save** to save the quotation and close the Opportunity/Quote window.
25. On the left hand side, expand the quote and the lines. Select the **S910** line. Comments can be reviewed under the line->comment->web tab or for the order header->comments->web.
26. Switch back to your browser and select **Refresh Data**. The status of the quotation has now changed to from Pending to Awaiting Acceptance.
27. Select the quotation to view the quote details and note that the price is \$299.99.
28. Click **Confirm** to convert the quote to an order.
29. Click the **Back** button at the bottom of the screen to return the **RFQ** page.
30. The quotation status has now changed to **Ordered**.
31. Navigate to the **Customer Connect > Dashboard** page. The new orders can be seen in the list and can be viewed by selecting the order.

Building and Deploying Dashboards for Manufacturing and Supply Chain Management

In this lab, you will create a new dashboard that displays late receipts and alternate suppliers for the part number associated with each receipt. Additionally, you will add a tracker view to allow for easy searching for receipts by part number or days late, and add rules to highlight information within the dashboard.

At the conclusion of this lab, you will be able to:

- Create a new dashboard using existing BAQs and a custom BAQ
- Add Grid Views to the dashboard
- Add a Tracker View to the dashboard with multiple search criteria
- Add a rule to highlight specific information in a grid
- Build and deploy the dashboard to the Menus and Favorites

Business Flow Requirements

The completion of this lab requires a custom BAQ that has already been created in our training environment. The steps to create this BAQ are included at the end of this Lab.

Workshop Constraints

All workshops in this course can be performed in a shared database.

Log In

1. From the desktop, open **ERP10**.
2. In both the **User** and **Password** fields, enter **manager**.
3. In the left pane, verify that the **Epic06**, **Epicor Education** company, and the **Main** site are selected.

Create New Late Receipts Dashboard

Menu Path: Executive Analysis > Business Activity Management > General Operations > Dashboard

1. Verify the **Developer Mode** is enabled.
 - If enabled, there will be an empty **Dashboard** tree view at the left.
 - If not enabled, from the **Tools** menu, select **Developer**.

Define Dashboard General Properties

1. From the **New** menu, select **New Dashboard**.

Field	Value
Definition ID	LV19_LateReceipts
Caption	Late Receipts

Field	Value
Description	Late Receipts With Alternate Vendors

Add a Receipt Status Query and Grid to the Dashboard

1. From the **New** menu (or **File** menu), select **New Query**.
2. Click the **Query ID** button to open the **Search**.
3. In **Query ID Starts With**, enter **zRec** and click **Search**.
4. Select the **zReceiptStatus** query, and click **OK**.
5. In the **Dashboard Query Properties** form, in **Caption**, enter **PO Receipts**.
6. Select **Auto Refresh on Load**.
7. Click **OK**.
8. Click **Save**.
9. Navigate to the **Late Receipts** sheet, and then click **Refresh** to confirm that multiple receipt records are returned.
10. Find the **DaysLate** column using the horizontal scroll bar.
11. Drag the **DaysLate** column header and drop it to the right of the **Date** column.
12. Click **Save**.

Set Grid Caption and Add a Filter to Show Only Late Receipts

1. In the **Tree View of Dashboard**, right-click on **zReceiptStatus: Summary** grid, and select **Properties**. The **Dashboard Grid Properties** window displays.
2. In the **Caption** field, enter **Late Receipts Only**.
3. For the **Grid Caption**, enter **Late Receipts**.
4. Select the **Show Group By** check box.
5. Navigate to the **Filter** sheet.
6. From the **ColumnName** list, select **Calculated_DaysLate**.
7. From the **Condition** list, select **Greater Than** sign (**>**).
8. In the **Value** field, enter **0 (zero)**.
9. Click **OK**.
10. Confirm that the grid refreshes with only those Receipts with **DaysLate** greater than 0.

Publish the Late Receipts Part Number and Publish Vendor ID to the Title Bar

1. In the **Tree View of Dashboard**, right-click **zReceiptStatus: PO Receipts** query, and select **Properties**. The **Dashboard Query Properties** window displays.
2. Navigate to the **Publish** sheet.
3. In the **Publish Columns** pane, select the check boxes for:

Vendor_NameRcvDtl_PartNum

4. In the **Titlebar Subscriber** pane, select the **Publish to Title** check box.
 5. From the **TitleBar Subscriber** drop-down list, select **Vendor_Name**.
 6. In the **Title Caption** field, enter **Supplier: (insert a space after the colon)**.
 7. Click **OK**.
 8. To view the results, click **Refresh**.
- Note that the name of the dashboard, at the top of the window, changes as you select different vendors in the grid.
9. Click **Save**.

Add an Alternate Vendors Query and Grid to the Dashboard and Setup Filtering Based on Published PartNum

This is a custom BAQ that has already been created in our training environment. The steps to create this BAQ are included at the end of this Lab.

1. From the **New** menu (or **File** menu), select **New Query**.
2. Click the **Query ID** button to open the **Search**.
3. In **Query ID Starts With**, enter **LV** and click **Search**.
4. Select the **LV19_VendorsForPart** query, and then click **OK**.
5. On the **General** sheet, in **Caption**, enter **Alternate Vendors**.
6. Select **Auto Refresh on Load**.
7. Navigate to the **Filter** sheet.
8. Set **ColumnName** to **VendPart_PartNum**.
9. Set **Condition** to **Equal To** sign (=).
10. Set **Value** to **zReceiptStatus – PO Receipts: RcvDtl_PartNum**.
11. Click **OK**.

Confirm Alternate Vendors for Parts

1. In the **Receipt Status** grid, click the **Part** column header to sort the results by **Part Number**.
2. Select the row for part **CS-87-4578**.
3. In the **LV19_Vendors for Part** grid, verify two suppliers are displayed.

Add and Configure a Tracker View for Advanced Search

1. In the **Tree View of Dashboard**, right-click **zReceiptStatus: PO Receipts** query, and select **New Tracker View**. The **Dashboard Tracker View Properties** window displays.
2. On the **General** sheet, in the **Caption** field, enter **Late Receipt Part Search**.
3. Below the grid, click **Clear All** to clear the **Visible** check box for all rows.
4. For the fields in the table below, enter the following:

Column	Visible	Prompt	Condition
RcvDtl_PartNum	select	select	Starts With
Calculated_DaysLate	select	select	GreaterThanOrEqualTo

5. Select the **Input Prompts Only** check box.

6. Click **OK**.

7. In the **Dashboard** window, click **Save**.

Export Dashboard Definition

As you create your dashboard, you can, periodically, save a copy to provide a backup. Backups allow you to revert to an earlier point if you make a change that you do not like.

1. From the **File** menu, select **Export Dashboard Definition**.

2. Save the file to the desktop as **LV19_1**.

Rearrange Grids

1. Resize any of the panes however you decide would be the most user-friendly.

2. Drag the **Late Receipt Part Search** tracker to display to the right of the **Late Receipts Only** grid.

3. Click **Save**.

Add a Rule to Highlight Receipts Over 30 Days Late

1. In the **Tree View of Dashboard**, right-click the **Late Receipts Only** grid icon, and then select **Properties**.

2. Navigate to the **View Rules** sheet.

3. Click the **New View Rule** button.

4. From the **Select Field** list, select **Calculated_DaysLate**.

5. From the **Rule Condition** list, select **GreaterThan**.

6. In the **Rule Value** field, enter **14**.

7. Click the **right arrow** button next to the **Select Field** list to save the rule.

8. Click the **New Rule Action** button.

9. From the **Select Field** list, select **Calculated_DaysLate**.

10. From the **Setting Styles** list, select **Warning**.

11. Click the **right arrow** button to save the rule action.

12. Click **OK**.

13. Click **Refresh**.

14. In the **Late Receipts** grid, scroll through the records until you find one that is over 30 days. The **DaysLate** field will be highlighted in yellow.

15. Click **Save**.

Test the Dashboard

1. In the **Late Receipt Part Search** tracker view, in the **Part** field, enter part **CS**.
2. Leave the **DaysLate** field empty.
3. Click the **Refresh** icon in the main toolbar.
4. In the **Late Receipts** pane, confirm that multiple late receipts for the part are displayed.
5. Clear the **Part** field.
6. In the **DaysLate** field, enter **10** and click the **Refresh** icon.
7. In the **Late Receipts** pane, confirm that late receipt records are displayed.

Build and Deploy the Dashboard to the Main Menu and Favorites Bar using Modern Shell

1. From the **Tools** menu, select **Deploy Dashboard**. The **Deploy Dashboard** window displays.
2. Select the **Deploy Smart Client Application** and **Add Favorite Item** check boxes.
3. Click **Deploy**.
4. When the deployment is finished, click **OK**.
5. Exit Dashboard.

Add the Dashboard to the Menu for All Users

Menu Path: System Setup > System Maintenance > Menu Maintenance

1. In the **Tree View**, expand **Main Menu > Material Management > Purchase Management** and highlight **General Operations**.
2. From the **New** menu, select **New Menu**.
3. Enter or select the following:

Field	Value
Menu ID	UDLVLTPO
Name	LV19 Late Receipts Tracker
Order Sequence	86
Program Type	Dashboard-Assembly
Icon	Tracker
Dashboard	Ice.UI.App.LV19_LateReceipts

4. Click **Save**.
5. Exit Menu Maintenance and close ERP10.

Test Your New Tracker

1. From the desktop, open **ERP10**.
2. In both the **User** and **Password** fields, enter **manager**.
3. Navigate to **Material Management > Shipping/Receiving > General Operations > LV19_ Late Receipts Dashboard**.

4. In the **Late Receipts Part Search**, in the **Part** field, enter **CS** and click **Refresh**.

Bonus Workshop: Create New Part-Vendor Business Activity Query

Note: The following are the steps to create the custom BAQ used in this Lab. This BAQ has already been created in our training environment. These steps are not required in either the classrooms or the Learning Center.

Menu path: Executive Analysis > Business Activity Management > Setup > Business Activity Query

Create a New Business Activity Query and Set General Properties

1. From the **New** menu, select **New**.
2. In the **Query ID** field, enter **LV19_VendorsForPart**.
3. In the **Description** field, enter **Vendors for Part**.
4. Select the **Shared** check box.

Select the Table and Columns to Generate the Query

1. Navigate to the **Query Builder** tab.
2. In the **Phrase Build** table list, select the **Erp.Vendor** table and drag it into the **Designer** grid area.
3. In the **Phrase Build** table list, select the **Erp.VendPart** table and drag it into the **Designer** grid area. The table should appear in the grid area and a link should automatically be created between the tables (Company and VendorNum).
4. Navigate to the **Display Fields** sheet.
5. Click to expand and view the available columns for the **Vendor** table.
6. Select and move the following columns to the **Display Columns** grid:

VendorNum

- a. **Name**

7. Click to expand and view the available columns for the **VendPart** table.
8. Select and move the following columns to the **Display Columns** grid:

PartNum

EffectiveDate

BaseUnitPrice

PricePerCode

Minimum Price

ExpirationDate

9. Navigate to the **Analyze** sheet.

10. Click the **Analyze** button and verify that the result message is **Syntax is OK**.
11. Click the **Test** button and verify that multiple **Vender/Part** records are returned by the BAQ.
12. Click **Save**.
13. Exit the BAQ Designer form.

Building and Deploying Embedded Customizations for the Shop Floor

You want to make additional information available for users to view on the shop floor. This lab demonstrates how you customize MES to display a dashboard that displays custom information.

At the conclusion of this lab, you will be able to:

- Build and deploy a dashboard
- Add a dashboard to the menu
- Open MES in developer mode
- Modify MES menu to call the dashboard
- Make your customization the default for those logging into MES

System Requirements

Modules/Licensing	Product Version
N/A	Epicor 8.x

Business Flow Requirements

To customize the Epicor ERP interface, grant selected user accounts access within **User Account Security Maintenance**. Locate the user account, navigate to the **Options** sheet, and activate both the **Security Manager** (Menu Maintenance access) and the **Customize Privileges** check boxes.

Adding Dashboards to the MES

During this workshop, add a custom dashboard that displays when users click a button on the MES menu. First create and deploy a dashboard using the smart client. Then in the MES Developer Mode, use the Customization Tools Dialog window to link the custom dashboard to one of the available buttons.

Create a Simple Dashboard

1. Log into Epicor as **manager/manager**.
2. Navigate to **Dashboard.Menu Path**: Executive Analysis > Business Activity Management > General Operations > Dashboard
3. If necessary, navigate to **Tools > Developer**. By default, Developer mode should be active.
4. Click **New** and select **New Dashboard**.
5. In the **Definition ID** field, enter **Customer-XXX** (where XXX are your initials).
6. In the **Caption** and **Description** fields, enter **MES Customer Dashboard**.
7. Click **New** and select **New Query**.
The Dashboard Query Properties window displays.
8. In the **Query ID** field, enter **zCustomer01** and press **<Tab>**.

9. Click **OK**.
10. Click the **Dashboard** sheet.
11. On the Standard toolbar, click **Refresh** and view the results.
12. Right-click the **zCustomer01:Summary** data grid in the tree and select **Properties**.
13. Change the caption to **Customer Summary**.
14. Hide the following columns so they do not display. Clear the **Visible** check box next to each column:
 - Customer_Company
 - Customer_No Contact
 - Customer_Credit Hold
 - Customer_Credit Hold date
 - Customer_Credit Hold Source
 - Customer_GlobalCust
 - Customer_CustNum
15. Click **OK**. These columns disappear from display and the dashboard is now ready to deploy.
16. Click **Save**.

Deploy the Dashboard

1. From the **Tools** menu, select **Deploy Dashboard**.
The Deploy Dashboard window displays.
2. Select the **Deploy Smart Client Application** check box and click **Deploy**. This process creates a business object (also called a service) for the custom dashboard. You can then add this dashboard to both the Main Menu and the MES interface.
3. Once the process is finished, click **OK**.
4. Click **Save** and exit the dashboard.

Create a New Menu Option

1. Navigate to **Menu Maintenance**.
Menu Path: System Setup > Security Maintenance > Menu Maintenance
2. In the tree view, expand Main Menu > Executive Analysis > Trackers.
3. Highlight the **Trackers** node.
4. Select **New > New Menu**.
5. In the **Menu ID** field, enter **MES-XXX** (where XXX are your initials).
6. In the **Name** field, enter **MES Customer Dashboard**.
7. In the **Order Sequence** field, enter **1**. This places your menu item at the top of this Main Menu node.
8. In the **Program Type** field, select **Dashboard-Assembly**.

9. In the **Dashboard** field, select **MES Customer Dashboard** you created.
10. Click **Save** and **Exit** Epicor ERP.

Tip: You must completely log out of Epicor ERP and then log back in to refresh the menu icons. This also makes the dashboard available for your MES customization.

11. Log into the Epicor ERP application. In the **User name** and **Password** fields, enter **manager/manager**.
12. Navigate to the **Customer MES Dashboard**.
Menu Path: Executive Analysis > Trackers
13. Verify the Customer MES Dashboard displays. Double-click the **Customer MES Dashboard**.
14. Click **Refresh** to verify the Customer MES Dashboard launches.
Important: As a good business practice, always test your customization at each step of the development process. This makes sure the customization displays what you want and that you catch errors.
15. Exit the dashboard.

Create an MES Developer Icon

1. Copy the Epicor **ERP10 MES** icon and paste it elsewhere on the desktop.
2. Right-click the copied icon; from the context menu, select **Properties**.
3. On the **General** sheet, change the icon's name to **ERP10 MES Developer**.
4. Click on the **Shortcut** sheet.
Locate the **Target** path. In the path change the switch from **/MES** to **/MESC**.
Example: Epicor.exe /Skip **/MESC** "/Config=MES.sysconfig"
5. Click **OK**.

Customize a Blank Button

1. Launch MES using the **ERP10 MES Developer** icon.
2. When the **Select Customization** window displays, verify the Base layer is selected and click **OK**.
3. Both the **MES Menu** and the **Select Customization** window displays. Select the **Base Only** check box and click **OK**.
4. Right-click anywhere in the form and select **Customization**. The **Customization Tools Dialog** window displays.
5. Navigate to the **Script Editor** sheet.
6. Verify the **C#** option. Notice you can also use **Visual Basic** to create custom code.
7. On the **MES Menu**, navigate to the **Supervisor** sheet.
8. Select the blank button under **PCID Generator**.
9. Navigate to the **Properties** sheet.
10. In the **Customization Tools Dialog**, in the Tree view, note that **button3** becomes highlighted.
11. Go to the Properties sheet. In the **Epibinding** property, delete the placeholder content.
12. In the **Text** property, enter **Customer Dashboard**.

Highlight the **EpiGuid** property. Right-click the **EpiGuid** property and **Copy** the GUID value.

Example: Copy the content to your clipboard or paste it into **NotePad**.

13. Remain in the Customization Tools Dialog window.

Use the Form Event Wizard

1. In the Customization Tools Dialog, navigate to the Wizards sheet.
2. Navigate to the Form Event Wizard sheet.
3. In the Select Event Type field, select Load.
4. Click the Right Arrow button.
5. In the View / Edit Handling Code box, enter the following code on the line below

```
//Add Event Handler Code.
```

btnDash.ReadOnly = false;

6. Press Update Selected Event Code and navigate to the Script Editor sheet.
7. Maximize the Customization Tools Dialog.
8. Below public class script // Add Custom Module Level Variables Here enter the following code (You can copy/paste this script from the Class & Lab Content shortcut. Open the Labs folder and CustomMES folder. Double-click the MESCustomCode.txt file):

EpiButton btnDash;

9. In the **InitializeCustomCode** method in the line below opening bracket, enter:

```
btnDash = (EpiButton)csm. GetNativeControlReference("paste your EpiGuid number here");
```
10. Replace the text between **paste your EpiGuid number here** with the EpiGuid value you previously recorded.
11. In the **Initialize Custom code** section right after the **// End Wizard Added Custom Method Calls**, enter the following code.

```
this.btnDash.Click += new System.EventHandler(this.btnDash_Click);
```
12. In the **Destroy Custom code** section right after the **// End Custom Code Disposal**, enter this code.

```
this.btnDash.Click -= new System.EventHandler(this.btnDash_Click);
```
13. Just before the closing bracket, enter the following code.

private void btnDash_Click(object sender, System.EventArgs args){ProcessCaller.LaunchForm (this.oTrans, "MES-XXX");}

Tip: MES-XXX is the Menu ID you created in Menu Maintenance. Replace XXX with your initials.

14. From the Tools menu, select Test Code. The **** Custom Code Compiled Successfully. **** message displays.
15. Click Save. The Customization Save Dialog displays.
16. In the **Name** and **Description** fields, enter **MES-XXX** (where XXX are your initials).
17. Click Save.
18. In the **Customization Comment** window, click **OK**.
19. Close the Customization Tools Dialog window and exit MES.

Test the Customization

1. Launch the ERP10 MES Developer icon.
2. On the Select Customization window, select the MES-XXX (where XXX are your initials) customization layer and click OK.
3. On the SysMonitorForm customization window, click OK again.
4. In the **Employee ID** field, enter **105** and press <Tab>. You are logged in as Charles L. Johnson.
5. When the Menu.Mes.Shift.Select customization window displays, click OK.
6. The Shift Select window displays. Accept the 1 default and click OK.
7. Navigate to the Supervisor sheet.
8. Click the Customer Dashboard button.
9. In the Process Calling window, click OK.
10. In the Select Customization window, click OK. The MES Customer Dashboard displays.
11. Click Refresh to verify the dashboard works properly.
12. Close the dashboard and then exit the MES Menu.

Make the Customization Available to All

1. Launch Epicor ERP and log in as **manager/manager**.
2. In Epicor go to **System Setup > Security Maintenance > Menu Maintenance**.
3. Create a new menu under **Processes**. Click **New > New Menu**. Update the following fields:
 - a. In the **Menu ID** field, enter **NEWMES**.
 - b. In the **Name** field, enter **MES Menu**.
 - c. In the **Order Sequence** field, enter **2**.
 - d. In the **Program Type** field, verify **Non Menu Item** displays.
 - e. In the **Program** field, enter **Erp.Menu.Mes.dll**.

Tip: Note that the namespace for this program is “Erp”, indicating it is an application side program. If the namespace is “Ice”, that value indicates the program is part of the Epicor ERP framework.

4. In the **Customization** field, select **MES-XXX** (where XXX is your initials).
5. Click **Save**.
6. Exit **Menu Maintenance** and **Epicor ERP**.
7. Navigate to **C:\Epicor\ERP10\LocalClients\ERP10**
8. Double-click on **ConfigEditor.exe**.
9. Open **MES.SysConfig**
10. On the Application sheet, update the **MESCustomeMenuID** setting to use the **NEWMES** value.
11. Click **Save and Close**.

Test the Customization in RunTime

1. Test using the runtime **ERP10 MES** icon. Double-click this icon.
2. For the **Employee ID**, enter 105 Charles L. Johnson.
3. Click the **Supervisor** tab.
4. Click the **Customer Dashboard** button. Your new dashboard displays!

Building Business Activity Queries for Financials

Use Business Activity Queries (BAQs) to display unique views of data you can design. These views can help you monitor business activity, calculate data results, even enter and update data. During this lab, you will create some BAQs that address a specific business case. These BAQs will help you better use the Epicor application, and you can also use them as examples when you develop your own BAQs.

At the conclusion of this lab, you will be able to:

- Identify system tools that help you create BAQs
- Create the Journal Entry BAQ; this query displays journal entries from Main Book and their debit and credit amounts.
- Create the Customer Updatable BAQ; use this query to review customers and then update their Address and Phone Number through a grid interface
- Create the Total Invoice Amount and Invoice Balance Subquery BAQ; through this query, users can enter a date range. This query then interacts with subqueries to display the total Invoice Amount and Invoice Balance for Accounts Payable and Accounts Receivable during the selected date range.

BAQ Tools

When you create a new BAQ, you use a couple of key database tools. These tools, the Data Dictionary and Field Help, can help you identify the table and columns you want in your query. Both tools were used to create the BAQs for this lab.

Data Dictionary Viewer

The Data Dictionary Viewer is a system tool that displays each table and table column in the database.

1. Click the **Menu** tile.
2. Launch the **Data Dictionary Viewer**.
3. **Menu Path:** System Setup > System Maintenance > Data Dictionary Viewer
4. Click the **Table...** button.
5. In the **Starting At** field, enter **GLJ**.
6. Select the **Product** radio button option.
7. Click **Search**.
8. In the **Search Results** grid, select **GLJrnDtl** and click **OK**.
The **Tables** sheet displays information about the **GLJrnDtl** table.
9. Select the **Description** field.
10. Navigate to the **Fields > Detail** sheet.
Technical details about the **Description** field displays.

Field Help

You can use Field Help to identify the <table>.<column> value for a specific field in an interface. To use this database tool, launch the program that contains the table you need. Then activate Field Help.

1. Launch **Journal Detail Tracker**.

Menu Path: Financial Management > General Ledger > General Operations > Journal Detail Tracker

2. From the **Help** menu, select **Field Help**.

The Field Help pane displays.

3. Click the **Thumbtack** icon to pin this pane in place.

4. Click the **Technical Details** button.

5. Click in the fields.

Notice the Field Name, EpiBinding, Column Label and Like values. As you create a BAQ, you can use these fields. The EpiBinding value displays the <table>.<columnName> you need for your BAQs.

6. Navigate to the **Journal Line > Detail sheet**.

Notice the <table> for these fields are from GLJrnDtl.

Journal Detail BAQ

You want to keep better track of your journal entries on your main book. In this workshop, you will create a BAQ that displays the current journal entries, debit and credit amount, and their entry and posted dates.

You can create this BAQ using Epicor versions 8.xx and higher.

Create the Query

Navigate to the **Business Activity Query Designer**.

Menu Path: Executive Analysis > Business Activity Management > Setup > Business Activity Query

1. Click **New**.
2. In the **Query ID** field, enter **GLJournal**.
3. In the **Description** field, enter **Main Book Journal Detail**.
4. Select the **Shared** check box.
5. Click **Save**.

Select the Query Table

1. You only need one table for this BAQ, GLJrnDetail (Journal Detail).
2. Navigate to the **Query Builder** sheet.
3. On the Active SubQuery toolbar, verify SubQuery1 displays.
4. Navigate to the **Query Builder > Phrase Build** sheet.
5. In the **Filter** enter **GLJrn**.
6. In the tree view, double-click the **Erp.GLJrnDtl** table.

Add Table Criteria

Add criteria that filters the journal entries. You only need the BAQ to display data on a specific book.

1. The Erp.GLJrnDtl table displays in the grid. Highlight this table.
2. Navigate to the **Table** Criteria sheet.
It should be active by default.
3. Click the **New** button.
A row displays in the Criteria applied on GLJrnDtl grid.
4. From the **Field** list, select **BookID**.
5. From the **Operation** list, select **Equals (=)**.
6. From the **Filter Value** list, select specified constant.
7. Click **specified**.
The Specify Value window displays.
8. In the **Value** field, enter **Main**.
9. Click **Save**.

Selects Fields for Display

Define the fields you want to appear on the BAQ.

1. Navigate to the Display Fields > Column Select sheet.
2. Click the **Alphabetize** button.
3. Expand the **GLJrnDtl** node.
4. Double-click the following fields for display:
 - CreditAmount (Credit Amount)
 - DebitAmount (Debit Amount)
 - Description (Operation Code)
 - GLAccount (GL Account)
 - JEDate (Journal Entry Date)
 - JournalCode (Journal Code)
 - JournalLine (Journal Line)
 - JournalNum (Journal Number)
 - PostedDate (Posted Date)
5. In the **Display Columns** grid, order the rows in this order:
 - GLJrnDtl_GLAccount
 - GLJrnDtl_Description
 - GLJrnDtl_JournalCode
 - GLJrnDtl_JournalNum

- GLJrnDtl_JournalLine
 - GLJrnDtl_JEDate
 - GLJrnDtl_PostedDate
 - GLJrnDtl_DebitAmount
 - GLJrnDtl_CreditAmount
6. Rename the label of the following columns:
- GLJrnDtl_JournalCode = Journal Code
 - GLJrnDtl_JournalNum = Journal Number.
 - GLJrnDtl_JournalLine = Journal Line.
 - GLJrnDtl_JEDate = Apply Date
 - GLJrnDtl_PostedDate = Posted Date
7. Click **Save**.

Test the BAQ

1. Navigate to the Analyze sheet.
2. Click the Analyze button to verify the BAQ syntax is OK.
3. Click the Test... button.

The **Query Results** grid displays your **Main** book journal entries. You can now use this BAQ in a dashboard or a BAQ report.

Customer Updatable BAQ

The BAQ is typically used to create read-only queries. However, you can create an updatable BAQ that displays customer information and allows the user to update the address and phone number. You then embed this BAQ in an updatable dashboard; users then update customer address and phone number through a grid interface.

You can create this BAQ using Epicor versions 9.xx and higher.

Create the Query

1. Click **Clear** to remove the previous query from the BAQ Designer. If asked if you want to clear this form, click **Yes**.
2. Navigate to the **General** sheet and click **New**.
3. In the **Query ID** field, enter **CustomerUpdate**.
4. In the **Description** field, enter **Customer Updatable Query**.
5. Select the **Shared** check box.
6. Select the **Updatable** check box.

Select the Query Tables

You only need one table for this BAQ, Customer.

1. Navigate to the Query Builder sheet.
2. On the Active SubQuery toolbar, verify SubQuery1 displays.
3. Navigate to the Query Builder > Phrase Build sheet.
4. In the **Filter** enter **Customer**.
5. In the tree view, double-click the **Erp.Customer** table.

Selects Fields for Display and Update

Next select the part fields you want to display and/or update.

1. Navigate to the Display Fields > Column Select sheet.
2. Click the **Alphabetize** button.
3. In the tree view, expand the **Customer** table.
4. Double-click the following columns:
 - Address1 (Address)
 - Company (Company)
 - CustID (Customer ID)
 - CustNum (Customer Number)
 - Name (Customer Name)
 - PhoneNum (Phone)
5. In the Display Columns grid, order the rows in this order:
 - Customer_Company
 - Customer_CustNum
 - Customer_CustID
 - Customer_Name
 - Customer_Address1
 - Customer_PhoneNum

Define Updatable Fields

Now that you have selected the fields that display, indicate which fields you want to be updatable. You can allow or prevent data access for each field you selected.

1. Navigate to the Update > General Properties sheet.
2. Clear the **Allow New Record** check box.
You only want users to update existing customer records
3. Select the **Allow Multiple Row Update** check box.
Users can then modify multiple customers at the same time before they need to click Save. If you do not select this check box, users need to save after they make changes to each part record.

4. Notice the **Updatable** column.

This column indicates which fields are available for data entry on the updatable BAQ. Currently no fields are selected for update.

5. Next indicate which fields you want users to update. Select the **Updatable** check boxes on the following fields:

- Customer_Address1
- Customer_PhoneNum

Activate Update Processing

To activate the updatable BAQ, define the update method that makes the changes to the database. For this BAQ, you need to select the Customer business object and the UpdateExt method.

1. Navigate to the Update > Update Processing sheet.
2. Select the **BPM Update** radio button option.
3. Indicate which business object this updatable BAQ updates. Click the **Business Object** button.
Find and select **Erp.Customer** and click OK.
5. The **Tables to update** field indicates which tables have columns that update when the data changes.
Notice the Customer table is selected; you selected these tables on your query.
6. The **UpdateMethod** displays the business object method that updates the database with the changes.
This method is always the UpdateExt method.
7. The **Query to Object Column Mapping** and **Object to Query Column Mapping** sheets display how the updated data is moved from the business object into the database.
8. The **Query to Object Column Mapping** sheet displays the first part of the database transaction, as the fields are saved to the tt (temporary table) columns.
9. The **Object to Query Column Mapping** sheet displays the second part of the database transaction. It illustrates which columns from the temporary tt tables update the database (Customer) tables in the database.
10. Click **Save**.

Test the Updatable BAQ

1. Navigate to the **Analyze** sheet.
2. Click the **Analyze** button to verify the BAQ syntax is OK.
3. On the **Updatable Query** toolbar, click the **Get List** button.
4. To the “This operation may cause data update in the database. Continue?” message, click **Yes**.
The Query Results grid populates with the Parts in the database.
5. Double-click a row.
The Fields window displays.
6. Change some Customer in this window and click OK.
7. Double-click another row.
The Fields window displays.

8. Change some Customer values in this window and click OK.
Notice two rows are highlighted, indicating they have new data.
9. Click **Update**.
10. To the “This operation may cause data update in the database. Continue?” message, click Yes.
Notice your changes now display in the **Query Results** table.

Total Invoice Amount and Invoice Balance SubQuery BAQ

You want to create a BAQ that shows total invoice amount and invoice balance for Accounts Receivable and Accounts Payable created during a specific date range. When users launch this query, they enter this range and the BAQ then pulls the Accounts Receivable and Accounts Payable with start dates in the selected date range. Users can then group the results and display the Accounts Receivable and Accounts Payable.

You do this by creating a BAQ that has two subqueries. You then combine the subquery data results into one dataset. You create this BAQ using Epicor versions 10.xx.

Create the TopLevel BAQ

1. Return to the Business Activity Query Designer.
2. Remove the previous query from the BAQ Designer by clicking the Clear button. If asked if you want to clear this form, click Yes.
3. Navigate to the General sheet and click the New button.
4. In the **Query ID** field, enter **FinanceValue**.
5. In the **Description** field, enter **Total Invoice Amount and Invoice Balance of Accounts Payable and Accounts Receivable by Date**.
6. Select the **Shared** check box.
7. Navigate to the Query Builder > Phrase Build sheet.
8. On the Active SubQuery toolbar, verify SubQuery1 displays.
9. Add the following tables on the designer canvas:
 - Erp.APInvHed
 - Erp.Vendor
10. Click the union line between Erp.APInvHed and Erp.Vendor tables. At the bottom of the screen, verify the Table Relations sheet displays.
11. Make sure you have the following Table Relations:
 - Company = Company
 - VendorNum = VendorNum
12. Navigate to the Display Fields > Column Select sheet.
13. Move the following columns to the Display Column(s) list.
 - Vendor_Name
 - APInvHed_Company

- APInvHed _InvoiceNum
- APInvHed _InvoiceDate

14. For each of the above columns, select the **Group By** check box.

15. Click the **Calculator** icon.

The Calculated Field Editor window displays.

16. Click New and enter these field values:

Field	Value
FieldName	APName
Data Type	nvarchar
Label	Document Type
Editor pane	'Accounts Payable'

17. Click Save.

18. Click New again to create another calculated field.

19. Enter these field values:

Field	Value
FieldName	APSumInvAmt
Data Type	decimal
Label	Total Invoice Amount

20. In the Functions area, expand the Aggregate node and double-click **Sum(x)**.

21. In the Fields section, expand the Available tables > APInvHed node and double-click **InvoiceAmt**.

22. Verify the Editor displays the following calculation:

sum(APInvHed.InvoiceAmt)

23. Click Save.

24. Click New again to create another calculated field.

25. Enter these field values:

Field	Value
FieldName	APSumInvBal
Data Type	decimal
Label	Total Invoice Balance

26. In the Functions area, expand the Aggregate node and double-click **Sum(x)**.

27. In the Fields section, expand the Available tables > APInvHed node and double-click **InvoiceBal**.

28. Verify the Editor displays the following calculation:

sum(APInvHed.InvoiceBal)

29. Click Save and exit the Calculated Field Editor.

30. Move the **Calculated_APName** column up and make it the first column on the list.

31. Navigate to the Analyze sheet and click **Test**.

Verify the query returns the list of Accounts Payable.

Create Accounts Receivable SubQuery

Indicate the current query is the top-level query. Then add a subquery that pulls in the accounts receivable information.

1. Navigate to the Query Builder > SubQuery Options sheet.
2. In the Name field, enter **AccountsPayable**.
3. Click Save.
4. On the Active SubQuery toolbar, click NewSubQuery.
5. In the Name field, enter **AccountsReceivable**.
6. In the Type field, select **Union**.
7. Navigate to the Query Builder > Phrase Build sheet.
8. Place the following tables on the designer canvas:
 - Erp.InvcHead
 - Erp.Customer
9. Click the union line between Erp.InvcHead and Erp.Customer tables. At the bottom of the screen, verify the Table Relations sheet displays.
10. Make sure you have the following Table Relations:
 - Company = Company
 - CustNum = CustNum
11. Navigate to the Display Fields > Column Select sheet.
12. Move the following columns to the Display Column(s) list.
 - Customer_Name
 - InvchHead_Company
 - InvchHead_InvoiceNum
 - InvchHead_InvoiceDate
13. For each of the above columns, select the Group By check box.
14. Click the Calculator icon.
The Calculated Field Editor window displays.
15. Click New and enter these field values:

Field	Value
FieldName	ARName
Data Type	nvarchar
Label	Document Type
Editor pane	'Accounts Receivable'

16. Click Save.
17. Click New again to create another calculated field.
18. Enter these field values:

Field	Value
FieldName	ARSumInvAmt
Data Type	decimal
Label	Total Invoice Amount

19. In the Functions area, expand the Aggregate node and double-click Sum(x).
20. In the Fields section, expand the Available tables > InvcHead node and double-click InvoiceAmt. Verify the Editor displays the following calculation:
 - sum(InvHead.InvoiceAmt)
21. Click Save.
22. Click New again to create another calculated field.
23. Enter these field values:

Field	Value
FieldName	ARSumInvBal
Data Type	decimal
Label	Total Invoice Balance

24. In the Functions area, expand the Aggregate node and double-click Sum(x).
25. In the Fields section, expand the Available tables > InvcHead node and double-click InvoiceBal.
26. Verify the Editor displays the following calculation:
 - sum(InvHead.InvoiceBal)
27. Click Save and exit the Calculated Field Editor.
28. Move the **Calculated_ARName** column up to make it the first column on the list.
29. Note: The number and the order of the columns is the same as specified in the TopLevel SubQuery. Be sure these columns are in the same sequence; if they are different, you will receive an error.
30. Click Save.
31. An error message is displayed:
Type 'int' of the Field 'InvoiceNum' N 3 in the subquery 'Accounts Receivable' does not correspond to the Field type 'nvarchar' in the subquery 'Accounts Payable'.
32. Click Close.
33. Select InvHead_InvoiceNum and click Remove Field.
34. On the prompt window click Yes.
35. Click the Calculator icon.
The Calculated Field Editor window displays.
36. Click New.
37. Enter these field values:

Field	Value
FieldName	ARIInvoiceNum
Data Type	nvarchar

Field	Value
Label	Invoice

38. In the Functions area, expand the Conversion node and double-click IntToString(x).
39. In the Fields section, expand the Available tables > InvcHead node and double click InvoiceNum.
40. Verify the Editor displays the following calculation:
 - convert(varchar, InvcHead.InvoiceNum)
41. Click Save and exit the Calculated Field Editor.
42. Move the **Calculated_ARInvoiceNum** column up and make it the fourth column on the list.
43. For **Calculated_ARInvoiceNum** column, select the **Group By** check box.
44. Click Save.

Create Query Parameters

Create the query parameters you need to filter the data to use parameter values you define. In this example, you filter results by a date range. When you launch the BAQ, these parameter values display for input.

1. From the Actions menu, select Define Parameters.
The Query Parameters window displays.
2. Click New.
3. In the Parameter Name field, enter **BeginDate**.
4. In the Date Type field, select date.
5. Accept the default values and click Save.
6. Click New again.
7. In the Parameter Name field, enter **EndDate**.
8. In the Date Type field, select date.
9. Accept the default values and click Save.
10. Exit Query Parameters.

Add Subquery Criteria

Define which BAQ fields you want to filter by date range parameters.

1. Navigate to the Query Builder > Phrase Build sheet.
2. With AccountsReceivable SubQuery in focus, on the design canvas, click the **Erp.InvcHead** table.
At the bottom of the screen, verify the Table Criteria sheet displays.
3. On the toolbar, click the Add Row button.
4. From the Field list, select **InvoiceDate**.
5. From the Operation list, select greater than or equal to (\geq).
6. From the Filter Value list, select specified parameter.
7. Click the word specified to launch the Select Parameter window.

8. Highlight **BeginDate** and click Select.
9. Click Add Row again.
10. From the Field list, select **InvoiceDate**.
11. From the Operation list, select less than or equal to (<=).
12. From the Filter Value list, select specified parameter.
13. Click the word specified to launch the Select Parameter window.
14. Highlight **EndDate** and click Select.
15. Repeat these steps to add similar criteria to the AccountsPayable subquery.

Table	Field	Operator	Parameter Value
Erp.APInvHead	InvoiceDate	>=	@BeginDate
Erp.APInvHead	InvoiceDate	<=	@EndDate

16. Once finished, click Save.

Test the BAQ

1. Navigate to the Analyze sheet.
2. Click the Test button.
The Parameters window displays.
3. Enter the **BeginDate** and **EndDate**.
These values define the date range you review.
4. Click OK.
The grid populates with records.
5. Right-click anywhere in the grid and select the **Show Group By** and **Show Summaries** options.
6. Drag the **Document Type** column to the pane above the grid.
The query results are now sorted by Accounts Payable and Accounts Receivable.
7. In the **Total Invoice Amount** column header, click the Sigma (Σ) icon.
8. In the **Select Summaries** window, select **Sum**.
9. In the **Total Invoice Balance** column header, click the Sigma (Σ) icon.
10. In the **Select Summaries** window, select **Sum**.
Scroll down to the bottom of each **Group By** section.
You now see the total invoice amount and invoice balance of the accounts payable and accounts receivable for the selected date range.

Building Business Activity Queries for Manufacturing Operations

Use Business Activity Queries (BAQs) to display unique views of data. These views help you monitor business activity, calculate data results, even enter and update data. During this lab, you will create BAQs that address a specific business case. Use them as examples when you develop your own BAQs.

At the conclusion of this lab, you will be able to:

- Create the Part Updatable BAQ; use this query to review parts and then update their Part Dimensions through a grid interface
- Create the Total Value Subquery BAQ; through this query, users enter a date range. This query then interacts with subqueries to display the total sales orders, quotes, and (time permitting, invoices) created during the selected date range

System Requirements

Modules/Licensing	Product Version
Security Manager (To add custom programs to the menu through Menu Maintenance)	Updatable BAQs -- Epicor 9.x
	Subquery BAQs -- Epicor 10.x

Business Flow Requirements

To implement the Updatable BAQ functionality, grant selected user accounts access within **User Account Security Maintenance**. Locate the user account, navigate to the **Options** sheet, and activate the **BAQ Advanced User** and **BPM Advanced User** check boxes.

Part Updatable BAQ

Through the base BAQ, you create custom read-only queries. However you can create an updatable BAQ that displays part information and allows the user to update part dimensions. You then embed this BAQ in an updatable dashboard; users then enter part dimension changes in the dashboard's grid.

You can create this BAQ using Epicor versions 9.xx and higher.

Create the Query

1. Navigate to the **Business Activity Query Designer**.
Menu Path: Executive Analysis > Business Activity Management > Setup > Business Activity Query
2. Verify the **General** sheet displays and click the **New** button.
3. In the **Query ID** field, enter **PartUpdate**.
4. In the **Description** field, enter **Part Updatable Query**.
5. Select the **Shared** check box.
6. Select the **Updatable** check box. (Don't press **Save** or you will get an error.)

Select the Query Tables

You only need one table for this BAQ — **Erp.Part**.

1. Navigate to the **Query Builder** sheet.
2. On the **Active SubQuery** toolbar, verify **SubQuery1** displays.
3. Navigate to the Query Builder > **Phrase Build** sheet.
4. In the **Filter** enter **Part**.
5. In the tree view, double-click the **Erp.Part** table.

Add Table Criterion

Add a criterion that filters the parts. This BAQ will only display manufactured parts.

1. The **Erp.Part** table displays in the designer canvas. Highlight this table.
2. Navigate to the **Table Criteria** sheet.
It should be active by default.
3. Click the **New** button.
A row displays in the Criteria applied on Part (**Erp.Part**) table data retrieval grid.
4. From the **Field** list, select **TypeCode**. If you press the T key you can step through all the fields that start with a “T” character.
5. From the **Operation** list, select **Equals (=)**.
6. From the **Filter Value** list, select specified constant.
7. Click specified.
The **Specify Value** window displays.
8. In the **Value** field, enter **M**. This indicates you will only pull manufactured parts into the query.
9. Click **Save**.

Selects Fields for Display and Update

Next select the part fields you want to display and/or update.

1. Navigate to the **Display Fields** > **Column Select** sheet.
2. Click the **Alphabetize** button.
3. In the tree view, expand the **Part** table.
4. Move the following columns to the **Display Column(s)** list. Press the first letter of the field name to step through the columns, then double-click the column:
 - **PartNum** (Part ID)
 - **PartDescription** (Part Description)
 - **PartHeight** (Part Height)
 - **PartLength** (Part Length)

- PartWidth (Part Width)
- TypeCode (Part Type) – Include this column to verify the table criterion works as expected. You can remove this column later.

Define Updatable Fields

Now that you have selected the fields that display, indicate which fields you want updatable. You can allow or prevent data access for each field you selected.

1. Navigate to the Update > General Properties sheet.

2. Clear the **Allow New Record** check box.

You only want users to update existing part records.

3. Select the **Allow Multiple Row Update** check box.

Users can then modify multiple parts at the same time before they need to click Save. If you do not select this check box, users need to save after they make changes to each part record.

4. Notice the **Updatable** column.

This column indicates which fields are available for data entry on the updatable BAQ. Currently no fields are selected for update.

5. Because you want users to update most of these columns, click the **Updatable** check box on the grid toolbar.

All fields are now selected for data entry.

6. Next indicate which fields you do not want users to update. Clear the check boxes on these fields:

- Part_PartNum
- Part_PartDescription
- Part_TypeCode

Activate Update Processing

To activate the updatable BAQ, define the update method that makes the changes to the database. For this BAQ, you need to select the Part business object and the UpdateExt method.

1. Navigate to the Update > Update Processing sheet.

2. Select the **BPM Update** radio button option. (It should be selected by default.)

3. Indicate which business object this updatable BAQ updates. Click the **Business Object** button.

4. Find and select **Erp.Part** and click **OK**.

5. The Tables to update field indicates which tables have columns that update when the data changes. (If this table doesn't display, click Save and Refresh.)

Notice the Part table is selected; you selected these tables on your query.

6. The UpdateMethod displays the business object method that updates the database with the changes.

This method is always the UpdateExt method.

7. The Query to Object Column Mapping and Object to Query Column Mapping sheets display how the updated data is moved from the business object into the database.
 - The **Query to Object Column Mapping** sheet displays the first part of the database transaction, as the fields are saved to the **tt** (temporary table) columns.
 - The **Object to Query Column Mapping** sheet displays the second part of the database transaction. It illustrates which columns from the temporary **tt** tables update the database (Part) tables in the database.
8. Click Save.

Test the Updatable BAQ

1. Navigate to the **Analyze** sheet.
2. Click the **Analyze** button to verify the BAQ syntax is OK.
3. On the **Updatable Query** toolbar, click the **Get List** button.
4. To the This operation may cause data update in the database. Continue? message, click Yes.
The Query Results grid populates with the Parts in the database.
5. Double-click a row towards the top of the grid.
The Fields window displays.
6. Change the part dimensions in this window and click OK.
7. Double-click another row.
The Fields window displays.
8. Change the part dimensions in this window and click OK.
Notice two rows are highlighted, indicating they have new data. The yellow fields indicate you did not change this data; the green fields contain updated data.
9. Click **Update**.
10. To the This operation **may cause data update in the database. Continue?** message, click **Yes**.
Notice your changes now display in the **Query Results** table.

Total Value SubQuery BAQ

Create a subquery BAQ that shows total sales orders, quotes, and invoices created during a specific date range. When users launch this query, they enter this range and the BAQ then pulls the orders, quotes, and invoices with start dates in the selected date range. Users can group the results and display the total quote, sales order, and invoice amounts.

You do this by creating a BAQ that has three subqueries. You combine the subquery data results into one dataset. You create this BAQ using Epicor versions 10.xx.

Create the TopLevel BAQ

1. Remove the previous query from the **BAQ Designer** by clicking the **Clear** button. If asked if you want to clear this form, click **Yes**.

2. Navigate to the **General** sheet and click the **New** button.
3. In the **Query ID** field, enter **SalesValue**.
4. In the **Description** field, enter **Total Value of Quotes, Orders, Invoices by Date**.
5. Select the **Shared** check box.
6. Click on the **Query Builder** tab. On the **Active SubQuery** toolbar, verify **SubQuery1** displays.
7. Navigate to the **Query Builder > Phrase Build** sheet.
8. Add the following tables on the designer canvas:
 - **Erp.QuoteHed**
 - **Erp.Customer**
9. Navigate to the **Display Fields > Column Select** sheet.
10. Move the following columns to the **Display Column(s)** list. If you press the first letter of the column name, you can step through the columns; then double-click the column:
 - **Customer_Name**
 - **QuoteHed_Company**
 - **QuoteHed_QuoteNum**
 - **QuoteHed_EntryDate**
11. For each of the above columns, select the **Group By** check box.
12. Click the **Calculator** icon.
The Calculated Field SQL Editor window displays.
13. Click **New** and enter these field values:

Field	Value
FieldName	QuoteName
Data Type	nvarchar
Label	Document Type
Editor pane	Enter 'Quotes'

14. Click **Save**.
15. Click **New** again to create another calculated field.
16. Enter these field values:

Field	Value
FieldName	QuoteSum
Data Type	decimal
Label	Total Value

17. In the Functions area, expand the Aggregate node and double-click **Sum(x)**.
18. In the Fields section, expand the Available tables > **QuoteHed** node and double-click **QuoteAmt**. Once you expand the table, you can press the Q key to step through the fields that start with Q.
19. Verify the **Editor** displays the following calculation:

- sum(QuoteHed.QuoteAmt)
18. Click **Save** and exit the Calculated Field SQL Editor.
 19. Move the **Calculated_QuoteName** column up and make it the first column on the list.
 20. Navigate to the **Analyze** sheet and click **Test**.
- Verify the query returns the list of quotes.

Create Order View SubQuery

Indicate the current query is the top level query. Then add a subquery that pulls in sales order information.

1. Navigate to the Query Builder > SubQuery Options sheet.
2. In the **Name** field, enter **QuoteHed**.
3. Verify the **Type** is set to **TopLevel**.
4. Click **Save**.
5. On the Active SubQuery toolbar, click the **New** button.
6. In the **Name** field, enter **OrderHed**.
7. In the **Type** field, select **Union**.
8. Navigate to the Query Builder > Phrase Build sheet.
9. Place the following tables on the designer canvas:
 - Erp.OrderHed
 - Erp.Customer
10. Since the Customer table is already used in this BAQ definition, the BAQ Designer needs to save this table using an alias name. The table name defaults to Customer1. Click OK.
11. Navigate to the Display Fields > Column Select sheet.
12. Move the following columns to the **Display Column(s)** list. Press the first letter of the field name to step through the columns, then double-click the column:
 - Customer1_Name
 - OrderHed_Company
 - OrderHed_OrderNum
 - OrderHed_OrderDate
13. For each of the above columns, select the **Group By** check box.
14. Click the **Calculator** icon.
The Calculated Field SQL Editor window displays.
15. Click **New** and enter these field values:

Field	Value
FieldName	OrderName
Data Type	nvarchar
Label	Document Type

Field	Value
Editor pane	Enter 'Orders'

16. Click Save.
17. Click New again to create another calculated field.
18. Enter these field values:

Field	Value
FieldName	OrderSum
Data Type	decimal
Label	Total Value

19. In the Functions area, expand the Aggregate node and double-click **Sum(x)**.
20. In the **Fields** section, expand the **Available tables > OrderHed** node and double-click **OrderAmt**.
21. Verify the **Editor** displays the following calculation:
 - sum(OrderHed.OrderAmt)
22. Click Save and exit the Calculated Field SQL Editor.

Move the **Calculated_OrderName** column up to make it the first column on the list.

Important! The number and column sequence must be the same as specified in the **TopLevel SubQuery**. Be sure these columns follow the same sequence; if they are different, you receive an error.

23. Click **Save**.

Create Invoice View SubQuery (If time allows, else skip to Create Query Parameters)

To complete this BAQ, add another subquery that displays AR invoice information.

1. Navigate to the Query Builder > SubQuery Options sheet.
2. On the Active SubQuery toolbar, click the **New** button.
3. In the **Name** field, enter **InvcHed**.
4. In the **Type** field, select **Union**.
5. Navigate to the Query Builder > Phrase Build sheet.
6. Place the following tables on the designer canvas:
 - Erp.InvcHead
 - Erp.Customer
7. When prompted, accept the Customer2 table alias.
8. Navigate to the Display Fields > Column Select sheet.
9. Move the following columns to the Display Column(s) list. Press the first letter of the field name to step through the columns, then double-click the column:
 - Customer2_Name
 - InvcHead_Company
 - InvcHead_InvoiceNum

- InvcHead_InvoiceDate

10. For each of the above columns, select the **Group By** check box.

11. Click the Calculator icon.

The Calculated Field SQL Editor window displays.

12. Click New and enter these field values:

Field	Value
FieldName	InvoiceName
Data Type	nvarchar
Label	Document Type
Editor pane	Enter 'Invoices'

13. Click Save.

14. Click New again to create another calculated field.

15. Enter these field values:

Field	Value
FieldName	InvoiceSum
Data Type	decimal
Label	Total Value

16. In the Functions area, expand the Aggregate node and double-click Sum(x).

17. In the **Fields** section, expand the **Available tables > InvcHead** node and double-click **InvoiceAmt**.

Verify the **Editor** displays the following calculation:

- sum(InvchHead.InvoiceAmt)

18. Click Save and exit the Calculated Field SQL Editor.

19. Move the **Calculated_InvoiceName** column up so it is the first column on the list.

20. Click **Save**.

Create Query Parameters

Create query parameters to filter the data with parameter values you define. In this example, you filter results by a date range. When you launch the BAQ, these parameter values display for input.

1. From the Actions menu, select Define Parameters.

The Query Parameters window displays.

2. Click New.

3. In the **Parameter Name** field, enter **BeginDate**.

4. In the **Date Type** field, select **date**.

5. Accept the default values and click Save.

6. Click New again.

7. In the **Parameter Name** field, enter **EndDate**.

8. In the **Date Type** field, select date.

9. Accept the default values and click **Save**.
10. Exit Query Parameters.

Add Subquery Criteria

Define which BAQ fields you want to filter by date range parameters.

1. Navigate to the Query Builder > Phrase Build sheet.
2. Click on the **Active SubQuery** drop-down list and select the **QuoteHed** subquery.
3. With QuoteHed SubQuery in focus, on the design canvas, click the Erp.QuoteHed table. At the bottom of the screen, verify the Table Criteria sheet displays.
4. On the toolbar, click the **Add Row** button.
5. From the **Field** list, select **EntryDate**. Press the E key to locate and select this field.
6. From the **Operation** list, select greater than or equal to (**>=**).
7. From the **Filter Value** list, select specified parameter.
8. Click the word specified to launch the Select Parameter window.
9. Highlight **BeginDate** and click **Select**.
10. Click Add Row again.
11. From the **Field** list, select **EntryDate**. Press the E key to locate and select this field.
12. From the **Operation** list, select less than or equal to (**<=**).
13. From the **Filter Value** list, select specified parameter.
14. Click the word specified to launch the Select Parameter window.
15. Highlight **EndDate** and click **Select**.
16. Repeat these steps to add similar criteria to the Orders and Invoices subqueries. Click the respective subquery and then enter the following table criteria:

Table	Field	Operator	Parameter Value
Erp.OrderHed	OrderDate	>=	@BeginDate
Erp.OrderHed	OrderDate	<=	@EndDate
Erp.InvcHead	InvoiceDate	>=	@BeginDate
Erp.InvcHead	InvoiceDate	<=	@EndDate

17. Once finished, click **Save**.

Test the BAQ

1. Navigate to the **Analyze** sheet.
2. Click the **Test** button.
The Parameters window displays.
3. Enter the **BeginDate** and **EndDate**.
These values define the date range you review.

4. Click OK.

The grid populates with records.

5. Right-click anywhere in the grid and select the **Show Group By** and **Show Summaries** options.

6. Drag the **Document Type** column to the pane above the grid.

The query results are now sorted by Quotes, Orders, and Invoices.

7. In the **Total Value** column header, click the Sigma (Σ) icon .

8. In the **Select Summaries** window, select **Sum**.

9. Scroll down to the bottom of each Group By section.

You now see the total value of the orders, quotes, and invoices for the selected date range.

Come Play Factory Floor Frenzy with Epicor University

In this session, take a peek behind the curtain and see what Epicor University is working on next! We're dabbling with a fun and flexible way that will allow new users to learn a basic process in the software – that's right, a game! If you're looking for a different way to onboard new employees, come try out Factory Floor Frenzy and give us some feedback on how it works. We will also be demonstrating how Simplified User Interface graphics can help new users focus on what they need to learn, providing a more streamlined learning experience.

This session is meant for all platforms. Participation in the feedback portion of the session will enter you in a drawing to win an Amazon Fire TV Stick with Alexa Voice Remote.

Feedback Form

Name: _____

Company: _____

Email: _____

Please answer the following questions about the material you viewed in the session:

1. Which Epicor software solution does your company run?
 - a. Epicor ERP
 - b. Prophet 21
 - c. Eclipse
 - d. I'm a prospect
2. What is your age group?
 - a. 18-25
 - b. 26-34
 - c. 35-44
 - d. 45-54
 - e. 55+
3. How long have you been using your Epicor software solution?
 - a. Less than 1 Year
 - b. 1–5 Years
 - c. 5–10 Years
 - d. 10+ Years
4. Do you provide training for new hires to teach how processes flow at your company? If so, what do you teach?

5. Factory Floor Frenzy is designed to be a fun way to introduce new employees to the Epicor application. On a scale of 1 to 5, how likely are you to assign a game like this one as a task to complete for your new employees?

Not Likely			Very Likely	
1	2	3	4	5

6. How would you choose to access a game like Factory Floor Frenzy?
- Through Epicor Learning Center
 - During a live training session
 - As a standalone executable
7. Would you prefer to play a game like Factory Floor Frenzy:
- Alone.
 - As a competition.
 - In a non-competing group.
8. Would you appreciate the opportunity to customize the videos in this game? If so, how would you change them?

• _____

9. Simplified User Interface Graphics are designed to remove distractions and help you focus on what you need to learn.
On a scale of 1 to 9, how helpful do you feel they are for learners who are new to an application or concept?

Not Helpful					Very Helpful			
1	2	3	4	5	6	7	8	9

10. Will Simplified User Interface graphics help you to follow instructions? Why or why not?

11. Do you customize the layout of your application?
- Yes
 - No
12. Please enter any additional comments you would like to make about Simplified User Interface graphics.

13. Would you be interested in continuing to provide feedback on Epicor University projects? If so, please fill out your contact information.

Creating an Updatable MRP Dashboard

In this lab, we will walk through using an updatable BAQ and placing that within an Updatable Dashboard for modifying MRP parts.

At the conclusion of this lab, you will be able to:

- Understand BAQ's consisting of main queries and sub queries
- Create a dashboard that uses multiple BAQ's
- Apply publish and subscribe functionality to link the grid data together
- Deploy the Dashboard to a menu item accessible by end-users

Note Some of the features reviewed in this course utilize the standard customization toolset. You do not need to have user customization security privileges for any of the features in this course; however, you must have the **Dashboard Developer** privilege enabled in **User Account Maintenance** to complete the workshops in this course.

The completion of this lab requires a custom BAQ that has already been created in our training environment. The steps to create this BAQ are included at the end of this Lab.

Log In

1. From the desktop, open **ERP10**.
2. In both the **User** and **Password** fields, enter **manager**.
3. In the left pane, verify that the **Epic06**, **Epicor Education** company, and the **Main** site are selected.

Create Updatable Dashboard

1. Navigate to the **Dashboard** program.
Menu Path: Executive Analysis > Business Activity Management > General Operations > Dashboard
2. If you do not see the Dashboard tree view, turn on **Developer Mode**. Navigate to **Tools > Developer**.
3. Click the **down arrow** next to the **New** button; select **New Dashboard**.
4. For the **Definition ID** and **Caption**, enter **LV19_MRPUpdate**.
5. In the **Description**, enter **LV19 MRP Update Dashboard**.

Add a Query

Use an updatable custom BAQ, that has already been created in our training environment, to create an updatable dashboard. The steps to create this BAQ are included at the end of this Lab.

1. From the **New** menu, select **New Query**.
2. The **Dashboard Query Properties** window displays. Click the **Query ID...** button.
3. In the **Query ID Starts With** field, enter **LV19** and click **Search**.
4. Select **LV19_MRPUpdate** and click **OK**.
The **Dashboard Query Properties** window displays.
5. Click on the **Publish** tab.

6. Select the **Part_PartNum** check box.
7. Select the **Publish to Title** check box; from the drop-down list, select **Part_PartNum**.
8. For the **Title** caption, enter the **Part Number:** (include a space after the colon).
9. Click **OK**.
10. Select the **Dashboard** tab and click **Refresh** to load in the part information. The grid should load in the MRP columns you defined on the updatable BAQ.

Make the Grid Updatable

Now that you have selected the query, you indicate which fields are updatable through the dashboard.

1. From the tree view, right-click the **LV19__MRPUpdate: Summary** grid and select **Properties**.
2. In the **Caption** and **Grid Caption** fields, enter **MRP Part Parameters**.
3. Select the **Updatable** check box.
4. Click **Clear All**.
5. Click **Select All**.
6. Click **Update All**.
You want to be able to update most of the available fields. Now both Visible and Prompt will be marked for everything that can be updated.
7. Clear the **Prompt** check box for **Process MRP**.
8. Click **OK**.
9. Click **Save**.

Test the Updatable Dashboard

1. From **Tools**, select **Deploy Dashboard**.
2. The **Deploy Dashboard** window displays. Click the **Test Application** button.
3. The **MRP Update Dashboard** displays. To load in the MRP parts, click **Refresh**.
4. Modify the following for part **DCD-200-ML** and note your changes:
 - a. **PartPlant_MinimumQTY** _____
 - b. **PartPlant_MaximumQty** _____
 - c. **PartPlant_MinMfgLotSize** _____
 - d. **PartPlant_MaxMfgLotSize** _____
 Notice the dashboard title bar displays the current part.
5. Click **Save**. Your MRP changes are saved on the part records.
6. Close the test dashboard.
7. Now select the **Deploy Smart Client Application** check box.

8. Click the **Deploy** button.
9. When progress field indicates that the smart client dashboard is finished click **OK**.

Add Dashboard to the Menu

Add your new dashboard to the Menu. Users can then launch this dashboard and update MRP part information.

1. Launch **Menu Maintenance**.
Menu Path: System Setup > Security Maintenance > Menu Maintenance
2. From the tree view, expand the **Production Management > Material Requirements Planning >General Operations** node.
3. From the **New** menu, select **New Menu**.
4. Enter the following values for the menu item:

Field	Value
Menu ID	UDMRP
Module	UD
Name	LV19 MRP Update Dashboard
Order Sequence	1
Program Type	Dashboard-Assembly
Icon	Tracker
Dashboard	LV19 MRP Update Dashboard

5. Click **Save**.
6. If you receive a security message, click **OK**.
7. Close Menu Maintenance.
8. Refresh the Menu by logging out and then back into the Epicor ERP application.
9. Click the **Menu** tile.
10. Navigate to **Production Management > Material Requirements Planning > General Operations > MRP Update Dashboard**.
11. Launch your new **LV19 MRP Update Dashboard** and review the updatable dashboard again.
12. Modify the following for part **DSS-1000** and note your changes:
 - a. PartPlant_MinimumQTY _____
 - b. PartPlant_MaximumQty _____
 - c. PartPlant_MinMfgLotSize _____
 - d. PartPlant_MaxMfgLotSize _____
13. Click **Save**.
14. Verify your changes. Navigate to **Production Management > Material Requirements Planning > Setup > Part**.
15. Search for and select the parts you modified and review the **Part > Sites > Detail** and **Planning > Detail** sheet.

Bonus Workshop: Create New Updatable Business Activity Query

Note: The following are the steps to create the custom BAQ used in this Lab. This BAQ has already been created in our training environment. These steps are not required in either the classrooms or the Learning Center.

MRP Updatable BAQ

In this workshop, you create an updatable BAQ that displays MRP parts and their parameters. You then embed this BAQ in an updatable dashboard; users then update MRP part parameters through a grid interface.

Create the Query

1. Navigate to the **Business Activity Query Designer**.
- Menu Path:** System Management > Business Activity Queries > Business Activity Query
2. Navigate to the **General** sheet and click the **New** button.
 3. In the **Query ID** field, enter **LV19_MRPUpdate**.
 4. In the **Description** field, enter **LV19 MRP Updatable Query**.
 5. Select the **Shared** check box.
 6. Click **Save**.

Select the Query Tables

You need to select two tables for this query – Part and PartPlant. These tables have a logical parent – child relationship; the Part table contains parent information that populates the child PartPlant table.

1. Navigate to the **Query Builder** sheet.
2. On the **Active SubQuery** toolbar, verify **SubQuery1** displays.
3. Navigate to the **Query Builder > Phrase Build** sheet.
4. **Filter** on the **Part** tables and add these tables to the query:

Erp.Part

Erp.PartPlant

Add Table Criteria

Create a criterion that only pulls in parts defined as Process MRP parts.

1. Select the **Erp.PartPlant** table.
 2. Navigate to the **Table Criteria** sheet.
 3. To add a criterion, click the **Add Row** button above this tab.
 4. From the **Field** list, select **ProcessMRP**.
 5. In the **Operation** field, leave **Equals (=)**.
 6. From the **Filter Value** list, select **Specified Constant**.
 7. Click **Specified**.
- The **Specify Value** window displays.

8. In the **Value** field, enter **True** (or **true** or **TRUE**) and click **OK**.
9. Click **Save**.

Selects Fields for Display

Next select the MRP part parameters you want to update.

1. Navigate to the **Display Fields > Column Select** sheet.
2. Click the **Alphabetize** button.
3. In the tree view, expand the **Part** table.
4. Double-click the following columns:
 - a. PartNum
 - b. ProdCode
5. Collapse the **Part** table and expand the **PartPlant** table. Select the following columns:
 - a. PartNum
Important! On an updatable BAQ, you need the ID value to complete the logical connection with the parent **Part** table and the child **PartPlant** table.
 - b. ProcessMRP
Use this field to verify only MRP parts are pulled into your query. You could remove this column later.
 - c. Plant
 - d. PersonID
 - e. MinimumQty
 - f. MaximumQty
 - g. SafetyQty
 - h. PlanTimeFence
 - i. ReschedOutDelta
 - j. ReschedInDelta
 - k. MfgLotMultiple
 - l. MinMfgLotSize
 - m. MaxMfgLotSize
 - n. DaysOfSupply
 - o. StartMinLotQty
 - p. MinLotLeadTime
 - q. MinStartQty
6. In the **PartPlant_PlanTimeFence** row, change the label to **Planning Time Fence**.
Changing the text in the **Label** column will rename the **Column Header** on the dashboard.
7. Navigate to the **General** sheet and select the **Updatable** check box.
You may receive an error message. Close it and continue.

8. Click **Save**.

You will receive an Analyze Message including problems. This is normal and expected.

9. Click **Close**.

Define Updatable Fields

Now that you selected the fields that display, indicate which fields you want to be updatable. You can allow or prevent data access for each field you selected.

1. Navigate to the **Update > General Properties** sheet.

2. Clear the **Allow New Record** check box.

You only want users to update existing part records. (You could also set up this query, so users can add new MRP parts; they would need to update the PartNum and Description columns.)

3. Select the **Allow Multiple Row Update** check box.

Users can then modify multiple parts at the same time before they need to click **Save**. If you do not select this check box, users need to save after they make changes to each part record.

4. In the heading of the **Updatable** column, select the **Updatable** check box.

All the fields are now selected for data entry.

5. In the heading of the **Updatable** column, clear the check boxes on the following fields:

- a. Part_PartNum

- b. Part_ProdCode

- c. PartPlant_PartNum

- d. PartPlant_Plant

Activate Update Processing

To activate the updatable BAQ, define the update method that makes the changes to the database. For this BAQ, you need to select the Part business object and the UpdateExt method.

1. Navigate to the **Update > Update Processing** sheet.

2. Select the **BPM Update** radio button option.

3. Click the **Business Object** button.

Indicate which business object this updatable BAQ updates.

4. Find and select **Erp.Part** and click **OK**.

5. The **Tables to update** field indicates which tables have columns that update when the data changes.

Notice the **Part** and **PartPlant** tables are selected; you selected these tables on your query.

6. Click **Save**.

The **UpdateMethod** displays the business object method that updates the database with the changes.

This method is always the **UpdateExt** method.

The **Query to Object Column Mapping** and **Object to Query Column Mapping** sheets display how the updated data is moved from the business object into the database.

The **Query to Object Column Mapping** sheet displays the first part of the database transaction, as the fields are saved to the **tt** (temporary table) columns.

The **Object to Query Column Mapping** sheet displays the second part of the database transaction. It illustrates which columns from the temporary **tt** tables update the database (Part and PartPlant) tables in the database.

Test the Updatable BAQ

1. Navigate to the **Analyze** sheet.
2. Click the **Analyze** button.
3. Verify **Syntax is OK** appears in the **Query Execution Messages**.
4. On the **Updatable Query** toolbar, click the **Get List** button.
5. To the **This operation may cause data update in the database. Continue?** message, click **Yes**.
The **Query Results** grid populates with the MRP parts in the database.
6. Locate the **Process MRP** column. All the check boxes on this column should be selected based on the table criteria.
7. Locate part **CA10** and double-click the row.
The **Fields** window displays.
8. Enter the following changes:

Field	Value
PartPlant_MinimumQTY	20
PartPlant_MaximumQty	200

9. Click **OK**.
10. Locate part **CA14** and double-click the row.
11. Enter the following changes:

Field	Value
PartPlant_MinMfgLotSize	100
PartPlant_MaxMfgLotSize	500

12. Click **OK**.
Notice two rows are highlighted, indicating they have new data.
13. Click **Update**.
14. To the **This operation may cause data update in the database. Continue?** message, click **Yes**.
Notice your changes now display in the **Query Results** table.
15. Verify your changes. Navigate to **Production Management > Material Requirements Planning > Setup > Part**.
16. Search for and select the parts you modified and review the **Part > Sites > Detail** and **Planning > Detail** sheet.
If Part Maintenance was open when you made the updates you will need to close the program and reopen it.

Creating Collapsible Reports with SSRS

During this workshop, you create a report that displays sales orders and lines for each customer through collapsible, drill down rows. By using drill down rows, you compress the information to a single summary line but then expand it to display details. Leverage this technique to make aggregated business data easy to read.

At the conclusion of this lab, you will be able to:

- Create a new server project within SQL Server Data Tools
- Design a query to pull targeted data out of the Epicor ERP database
- Design a report that displays collapsible rows

Create New Project

Build and design this report in Microsoft SQL Server Data Tools, a free report authoring environment.

1. On the desktop, double-click **ERP10 Tools**.
2. Right-click **SQL Server Data Tools for Visual Studio 2015**; from the context menu, select **More > Run as Administrator**.
3. Create a new project. Click **File > New > Project**.
4. In the **New Project** window, select the **Business Intelligence** template and select **Report Server Project**.
5. For the project's **Name**, enter **Collapsible**.
6. For **Location**, click **Browse** and navigate to **C:_CustomReports\Collapsible**.
7. Click **OK**.

Add New Shared Data Source

1. To add a new data source, right-click the **Shared Data Sources** node and select **Add New Data Source**.
2. In the **Shared Connection Properties** window, enter the following data:
 - Name – **E10**
 - Type – **Microsoft SQL Server**
3. In the Connection String, click **Edit**.
4. In the Connection Properties window, enter the following data:
 - Server Name – EPICORTI
 - Select or enter database name – **ERP10**
5. **Test** the connection.
6. Click **OK** twice.

You have created the shared data source.

Create New Query

Build the report query in SQL Server Management Studio, as its faster to construct queries in this tool. You later copy and paste this query into the SQL Server Data Tools environment.

1. Click ERP10 Tools and launch SQL Server 2016 Management Studio (SSMS 2016).
2. On the Connect to Server window, accept the defaults and click Connect. You log in as system administrator (sa).
3. Design the new query. In the Object Explorer, expand the Databases > ERP10 node.
4. Right-click the Views node and select New View.
5. In the Add Table window, verify the Tables sheet is selected.
6. Double click on each of the following tables:
 - Customer
 - OrderHed
 - OrderDtl
7. Close the Add Table window.
8. Press **F4** to display the **Properties** pane.
9. Make the query easier to read. Click on each table. In the **Properties** pane and specify its **Alias**:
 - Customer – **C**
 - OrderHed – **H**
 - OrderDtl – **D**
10. Remove the existing joins between the tables. Highlight the line and right-click; from the context menu, select **Remove**.
11. Now re-join these three tables using the **Customer > OrderHed > OrderDtl** structure. To do this, click on a column from the parent table and drag it to a corresponding column in the child table:
 - Customer (C) TO OrderHed (H)
C.Company = H.Company
C.CustNum = H.CustNum
 - OrderHed (H) TO OrderDtl (D)
H.Company = D.Company
H.OrderNum = D.OrderNum
12. Select the following display fields. Within each table, click the check box for each field:
 - Table C –
Company
CustID
Name
 - Table H –

- **OpenOrder** (Scroll up to find this check box)
 - Table D –
 - **OrderNum**
 - OrderLine**
 - PartNum**
 - LineDesc**
 - UnitPrice**
 - OrderQty**
13. Create a filter for the **Company** column. In the **Filter** field, enter **EPIC06** and press **Tab**.
14. Now for the Company row, clear (de-select) the **Output** check box. This removes the Company value from the report output. The SQL syntax looks like the following:
- ```
SELECT ,C.CustID ,C.NAME ,H.OpenOrder ,D.OrderNum ,D.OrderLine ,D.PartNum ,D.LineDesc ,D.DocUnitPrice,D.OrderQty

FROM Erp.Customer AS C INNER JOIN Erp.OrderHed AS H ON C.Company = H.Company
AND C.CustNum = H.CustNum
INNER JOIN Erp.OrderDtl AS D ON H.Company = D.Company
AND H.OrderNum = D.OrderNum

WHERE (C.Company = N'EPIC06')
```
15. Copy this query into your clipboard.
- ### Create Report
1. Return to SQL Server Data Tools for Visual Studio 2015.
  2. In the Solution Explorer, right-click Reports and select Add > New Item.
  3. Select **Report**.
  4. For its name, enter **Collapsible**.
  5. Click Add.
  6. Now that you have created the report, configure it. In the Report Data pane on the left side of the interface, right-click **Data Sources** and select **Add Data Source**.
  7. For its **Name**, enter **E10**.
  8. Select the Use shared datasource reference radio-button; from the list, select E10.
  9. Click OK.
  10. Right-click the new E10 Data Source; from the context menu select Add Dataset.
    - Name -- Select **MAIN**.
    - DataSource -- Select **E10**.
    - Query -- **Paste** the copied query.
  11. Click **OK**.

The queried columns now display under the dataset.

### Create Calculated Field

Build a calculated field to display the extended line price.

1. In the **Report Data** pane, right-click **MAIN**; from the context menu, select **Add Calculated Field**.
2. For **Name**, enter **ExtLinePrice**.
3. To build the expression, click **fx**.
4. Enter this expression directly or build it by clicking through the **Category** and **Operator** options:  
`=Fields!DocUnitPrice.Value * Fields!OrderQty.Value`
5. Click **OK** twice.

### Design the Report

1. In the **Design** pane, right-click anywhere outside the report and select **Report Properties**.
2. Now within the Report Properties window, increase the size of the report. Set all margins to **0.012**.
3. Right-click a blank space outside the report. From the context menu, activate the **Ruler**.
4. Extend the report width to **8 inches**.
5. Right-click an empty space around the report; from the context menu, select **Add Page Header**.
6. Right-click the header and select **Insert > TextBox**.
7. In the **Textbox**, enter **Collapsible**.
8. Make the font larger and resize the text box.
9. Add Image to the Header from **C:\Images\Epicor-Logo-Med-RGB.gif**

### Add a Table

1. Right-click the report and select **Insert > Table**.
2. Now add a column to the right side of this table. To do this, right-click the column; from the context menu, select **Insert > Column Right**.
3. Drag the following fields to the table header:
  - Part Num
  - Unit Price
  - Order Qty
  - Ext Line Price

**Tip:** You must always bind a Tablix Control to a dataset. Do this by either dragging the fields into the tablix or by setting this binding in the tablix properties.

## Sort the Data

While you want to see all the data per customer and per sales order, it will be too much data to look at all the time. Design the report to display summary values and drill down into line details.

1. At the bottom of the interface, right-click the **Details Group**; from the context menu, select **Group Properties**.
2. Now on the Group Properties window, click **Sorting**.
3. Now click **Add**.
4. In the **Sort By** column, select **[Cust ID]**.
5. Click **Add** again and now sort by **[OrderNum]**.
6. Click **Add** one more time and now sort by **[OrderLine]**.
7. Click **OK**.

## Add Groupings

Now create groups on the report. These groups set up collapsing and expanding rows.

1. Right-click the **Details Group**; from the context menu, select **Add Group > Parent Group**.
2. For **Group By** column, select **[OrderNum]**.
3. Select the **Add Group Header** check box.
4. Click **OK**.
5. Right-click the **OrderNum Group** and select **Add Group > Parent Group**.
6. For **Group By** column, select **[CustID]**.
7. Select the **Add Group Header** check box.
8. Click **OK**.

Notice the new parent groups display as columns on the left of the report.

The report has two parent groups. If you Preview the report, a Customer ID column goes across all orders for each customer. Several order numbers have multiple lines, and these order numbers go across all the lines.

## Add Collapse Levels

Now adjust the table and build a new hierarchy.

1. In the table, highlight both **Cust ID** and **Order Num** columns. Right-click them; from the context menu, select **Delete Columns**.
2. Insert three columns to the left of the **Part Num** column. Right-click the Part Num column, from the context menu, select **Insert Column > Left**.
3. To the left of the Part Num column on the very bottom row, add **Order Line**. Do this by clicking in the cell and, from the Field Chooser, select **OrderLine**.
4. To the left of the Order Line column and one row above it, place the OrderNum column. Do this by clicking in the cell and, from the Field Chooser, select **OrderNum**.

5. Notice the table automatically summarizes the Order Number values. You do not need this here. Highlight [OrderNum] and then right-click; from the context menu, select **Placeholder Properties**.
6. Click the **fx** button and edit the expression to display:  
=Fields!OrderNum.Value
7. To the left of the OrderNum column and one row above it, place the **CustID** column. This completes the collapsible report's hierarchy:

|  | Cust ID  | Order Num  | Order Line  | Part Num  | Doc Unit Price | Order Qty  | Ext Line Price   |
|--|----------|------------|-------------|-----------|----------------|------------|------------------|
|  | [CustID] |            |             |           |                |            | [Sum(ExtLinePr)] |
|  |          | [OrderNum] |             |           |                |            | [Sum(ExtLinePr)] |
|  |          |            | [OrderLine] | [PartNum] | [DocUnitPrice] | [OrderQty] | [ExtLinePrice]   |

Preview the report and notice the changes. Each order has detail lines that display below it.

### Configure Visibility Settings

1. Back in the Design mode, right-click the **Details** group; from the context menu, select **Group Properties**.
2. From the tree view, click **Visibility**.
3. Select **Hide**.
4. Click the **Display can be toggled by this report item** check box.
5. From the drop-down, select **OrderNum**.
6. Click **OK**.
7. Repeat these steps to modify OrderNum Group Properties. Right-click the **OrderNum** group; from the context menu, select **Group Properties**.
8. From the tree view, click **Visibility**.
9. Select **Hide**.
10. Click the **Display can be toggled by this report item** check box.
11. From the drop-down, select **OrderNum**.
12. Click **OK**.
13. Now on both parent levels, use the Field Chooser to add summaries for **Order Qty**.
14. Likewise, on both parent levels, use the Field Chooser to add summaries for **Ext Line Price** fields.

Preview the new report. You can now see the summaries by customer and sale order. You can also expand each sales order to see the order detail lines. You created a collapsible report!

Now let's make it look professional!

Collapsible.rdl [Design] X

Design Preview Find | Next

**EPICOR** **Collapsible**  
By Alex Averbukh

| Ord #                                         | Ln | Part # | Line Desc | Unit Price | Order Qty    | Ext Price |
|-----------------------------------------------|----|--------|-----------|------------|--------------|-----------|
| ⊕ ADDISON - Addison, INC                      |    |        |           | Ext Total: | 1,075,297.78 |           |
| ⊕ BARRISTON - Barriston Engineering           |    |        |           | Ext Total: | 144,430.91   |           |
| ⊕ BERLINMED - Berlin Medical Equipment        |    |        |           | Ext Total: | 2,513.75     |           |
| ⊕ BUCK310 - Buckstar Store 310                |    |        |           | Ext Total: | 3,025.00     |           |
| ⊕ BUCK424 - Buckstar Store 424                |    |        |           | Ext Total: | 2,520.00     |           |
| ⊕ CLARKE - Clarke Construction Co.            |    |        |           | Ext Total: | 63,024.00    |           |
|                                               |    |        |           | Ext Total: | 18,135.00    |           |
| ⊕ 5026                                        |    |        |           | Ext Total: | 18,135.00    |           |
| 1 DCD-200-ML Multi-Level Frame Assembly       |    |        |           | 175.00     | 50.00        | 8,750.00  |
| 2 NL-HZ-4942-A Support Bar                    |    |        |           | 12.00      | 100.00       | 1,200.00  |
| 3 ML-1698-A36 Bracket                         |    |        |           | 17.00      | 275.00       | 4,675.00  |
| 4 CAT-300-SCR-S Junction Plug                 |    |        |           | 5.85       | 600.00       | 3,510.00  |
| ⊕ 5027                                        |    |        |           | Ext Total: | 1,600.00     |           |
| 1 EAD-400-RED Engine Airflow Diverter Red     |    |        |           | 16.00      | 100.00       | 1,600.00  |
| ⊕ 5058                                        |    |        |           | Ext Total: | 419.00       |           |
| 1 DCD-100-SP Frame Rail                       |    |        |           | 23.00      | 3.00         | 69.00     |
| 2 DCD-200-ML Multi-Level Frame Assembly       |    |        |           | 175.00     | 2.00         | 350.00    |
| ⊕ 5096                                        |    |        |           | Ext Total: | 0.00         |           |
| 1 DCD-300-SCR-S Screw Machine Part-Chute Plug |    |        |           | 0.00       | 10,000.00    | 0.00      |
| ⊕ 5122                                        |    |        |           | Ext Total: | 0.00         |           |
| ⊕ 5198                                        |    |        |           | Ext Total: | 18,135.00    |           |

# Creating Customized and Actionable Views with BAQs and Dashboards

The dashboard functionality contains powerful tools you can use to display data in filtered views that help you monitor business activity. To do this, first create a business activity query (BAQ) that pulls in the data to review and then further evaluates this data through calculated fields. Then place this BAQ on a dashboard to add the grid views that communicate a better picture of the data. You can also create row rules to display feedback based on conditions you define.

During this lab, you will create a dashboard that only displays jobs that have actual costs greater than their estimated costs. This Job Cost Exceptions dashboard provides a big picture of jobs that exceed their labor, material, burden, or subcontract costs. Manage by exception rules that highlight the jobs outside of acceptable tolerance levels, so you can use this dashboard to identify these problem jobs.

At the conclusion of this lab, you will be able to:

- Create a JobCostsExceptions BAQ with criteria and calculated fields.
- Create a dashboard that uses the JobCostsExceptions BAQ.
- Add a GridView with row rules that highlight the specific cost exceptions.
- Add additional GridViews that filter exceptions for material, labor, burden, and subcontract costs.
- Deploy the Dashboard to a menu item accessible by end-users.

## System Requirements

| Modules/Licensing | Product Version |
|-------------------|-----------------|
| ERP 10 Ent        | 10.x            |
| ERP 10 Cloud      | 10.x            |

## Create the BAQ

To begin, create the business activity query that pulls in the data you want to display on the dashboard.

1. Login to ERP10 with user id **manager** and password **manager**.
2. Make sure that **EPIC06** (Epicor Education) is the current company.
3. Click the **Menu** tile and navigate to the **Business Activity Query Designer**.

**Menu Path:** Executive Analysis > Business Activity Management > Setup > Business Activity Query

4. Click **New**.
5. In the **Query ID** field, enter **XXXJobCosts** (where XXX are your initials).
6. In the **Description** field, enter **Job Cost Exceptions**.
7. Select the **Shared** check box.
8. Click **Save**.

9. Navigate to the **Query Builder > Phrase Build** sheet.
10. In the Filter field, enter Job.
11. Drag both the **Erp.JobHead** and **Erp.JobAsmbl** tables to place them onto the BAQ diagram. These tables share a logical link that displays automatically. Notice the button just under the Table Relations tab that says Dictionary(2). This indicates that there are 2 relationships defined in the data model between these 2 tables.
12. If not already selected, click the gray diamond (link) in the BAQ diagram.
13. Navigate to the **Table Relations** sheet and verify the tables are joined in this sequence:

| <b>Seq</b> | <b>(</b> | <b>Job Asmbl</b> | <b>=</b> | <b>Job Head</b> |
|------------|----------|------------------|----------|-----------------|
| 1          |          | Company          | =        | Company         |
| 2          | And      | JobNum           | =        | JobNum          |

14. Click **Save**.

### Define the BAQ Criteria

Add criteria to both tables to filter the BAQ results.

1. On the BAQ diagram, select the **Erp.JobAsmbl** table.
2. Navigate to the **Table Criteria** sheet.
3. Click **New**. A new row appears in the **Criteria** grid for the **JobAsmbl** table.
4. From the **Field Name** list, select **AssemblySeq**.
5. For the **Compare** operator, select **= (equals)**.
6. From the **Filter Value** list, select **Specified Constant**.
7. Click the blue **specified** link.
8. In the **Specify a Value** window, enter **0 (zero)** and click **OK**.
9. This filter causes the BAQ to only display data from the main assembly (ASM: 0) on each job; this assembly contains the total costs on each job.
10. Repeat steps 3-8 to add three more criteria to this table. You only want to display jobs that have labor, burden, and material costs placed against them. Because these jobs need values in all three cost buckets, use **And** (the default value) for each criterion line.  
To do this, enter criteria that cause the BAQ to display jobs that have actual material costs greater than 50 and labor and burden costs that do not equal zero. Enter the following criteria:

| <b>And Or</b> | <b>LeftP</b> | <b>Neg</b> | <b>Field Name</b> | <b>Compare</b> | <b>Filter Value</b> | <b>RightP</b> |
|---------------|--------------|------------|-------------------|----------------|---------------------|---------------|
| And           |              |            | TLAMaterialCost   | >              | 50 constant         |               |
| And           |              |            | TЛАLaborCost      | <>             | 0 constant          |               |
| And           |              |            | TLABurdenCost     | <>             | 0 constant          |               |

11. On the BAQ diagram, click the **JobHead** table.
12. Navigate to the **Criteria** sheet and enter the following criterion:

| <b>And Or</b> | <b>LeftP</b> | <b>Neg</b> | <b>Field Name</b> | <b>Compare</b> | <b>Filter Value</b> | <b>RightP</b> |
|---------------|--------------|------------|-------------------|----------------|---------------------|---------------|
|               |              |            | JobNum            | >              | 1000 constant       |               |

**Note:** this value defines a starting point for the jobs that display on this dashboard. You can enter different starting values to filter the current job records you wish to review.

14. Click **Save**.

### Select Columns to Display

Define what columns you want available for display on your dashboard.

1. Navigate to the Display Fields > Column Select sheet.
2. Expand the node for the **JobHead** table.
3. To add columns for display, hold down the **CTRL** key then select the columns listed by clicking on them in this order. Click the **Right Arrow** button.
  - JobHead\_JobNum
  - JobHead\_PartNum
  - JobHead\_DueDate
  - JobHead\_ProdQty
4. Click the **Alphabetize (A to Z)** button to sort the columns in alphabetical order.
5. From the tree view, expand the **JobAsmbl** node and select the following columns:
  - JobAsmbl\_TLEMaterialCost
  - JobAsmbl\_TLAMaterialCost
  - JobAsmbl\_TLELaborCost
  - JobAsmbl\_TLALaborCost
  - JobAsmbl\_TLEBurdenCost
  - JobAsmbl\_TLABurdenCost
  - JobAsmbl\_TLESubcontractCost
  - JobAsmbl\_TLASubcontractCost
6. In the **Display Column(s)** grid, notice the **Label** column. Remove the **This Level** text from each of the cost columns.
 

**Hint:** You cannot use the delete key. It is recommended to use the backspace key.  
Since you are filtering on Assembly 0, these columns are always the total cost for the job.
7. Click **Save**.

### Create Calculated Fields

Next create calculated columns to determine the **Total Estimated Cost** and the **Total Actual Cost**.

1. Click the **Calculate** button.  
The Calculated field editor displays.
2. Click **New**.
3. In the **Field Name** field, enter **TOTAL\_EST**.

4. From the **Data Type** list, select **Decimal**.  
Notice the Format value defaults to `>>,>>9.99`.
5. In the **Label** field, enter **Total Estimated**.
6. Click the **Alphabetize (A to Z)** button to sort the Fields list in alphabetical order.
7. In the Editor field, enter the following expression:

**JobAsmbl.TLEMaterialCost + JobAsmbl.TLELaborCost + JobAsmbl.TLEBurdenCost +  
JobAsmbl.TLESubcontractCost**

**Tip:** In the Calculated field editor, use the **Fields** view and navigate to **Database Fields**. Double-click on each field to bring it to the editor and enter the **+** signs using the keyboard.

8. Click the **Check Syntax** button to make sure the expression is valid.
9. Click **Save**.
10. Repeat these steps to create a calculated field that determines the **Total Actual Cost**. Click **New** and enter these values:
  - Field Name: **TOTAL\_ACT**
  - Data Type: **Decimal**
  - Format: `>>,>>9.99`
  - Label: **Total Actual**
  - Editor Expression:

**JobAsmbl.TLAMaterialCost + JobAsmbl.TLALaborCost + JobAsmbl.TLABurdenCost + JobAsmbl.TLASubcontractCost**

11. Click the **Check Syntax** button to make sure the expression is valid.
12. Click **Save** and close the Calculated field editor.

## Test the BAQ

To complete the BAQ, test it to make sure the syntax works and it pulls in data.

1. Click **Save** for the BAQ.
2. Navigate to the **Analyze** sheet.
3. Click the **Analyze** button.  
You should receive a Syntax is OK message.
4. Click the **Test** button.  
The Query Results grid should populate with data.
5. Close the Business Activity Query Designer.

## Create the Dashboard

Now that you have created the BAQ, you are ready to place it on a new dashboard.

1. Navigate to the **Dashboard** program.

**Menu Path:** Executive Analysis > Business Activity Management > General Operations > Dashboard

2. If not running in Developer mode, from the **Tools** menu, select **Developer** to activate the **Dashboard Developer** mode.
3. From the **New** menu, select **New Dashboard**.
4. In the **Definition ID** field, enter **XXXJobCostExceptions** (where 'XXX' represents your initials).
5. In the **Description** field, enter **Job Cost Exceptions**.

### Add Your Query

Place the query you created on the dashboard.

1. From the **New** menu, select **New Query**.  
The Dashboard Query Properties window displays.
2. Click the **Query ID...** button.
3. The **Query Search** window displays.
4. In the **Starting At** field, enter **XXX** (where XXX are your initials) and click **Search**.
5. Select the **XXXJobCosts** (where XXX are your initials) query and click **OK**.
6. In Dashboard Query Properties, verify the **Auto Refresh on Load** check box is selected and the **Refresh Interval** is set to **-1**. These values indicate the dashboard populates with current data when it first displays, but then does not refresh while the dashboard is open.  
**Tip:** You can set up a refresh rate by entering a higher value in seconds. However, you typically should keep the refresh interval at -1. If the dashboard constantly updates and the query pulls in a lot of data, it could slow application performance.
7. Still in DashboardQuery Properties, navigate to the **Publish** sheet. Use this sheet to define what values display on the dashboard title bar.
8. From the **Publish Columns** list, select **JobHead\_JobNum**.
9. In the **Titlebar Subscriber** group box, select the **Publish to Title** check box and select **JobHead\_JobNum** from the list.
10. In **Title Caption** enter **Job**:
11. Click **OK**.

### Define the Over Estimate Jobs Grid View

A grid view automatically displays under the Dashboard sheet. Identify the purpose for this grid and add a filter to only display jobs that have actual costs that exceed their estimated costs.

1. In the tree view, right-click the **Grid** icon and select **Properties**. The Dashboard Grid Properties window displays.
2. In the **Caption** field, enter **Over Estimate Jobs**.
3. On the **General** sheet, verify all the columns are selected.
4. In the **Grid Caption** field, enter **Over Estimate Jobs**.
5. Filter this grid to only display jobs with actual costs over their estimated costs. Navigate to the Filter sheet.

6. From the **ColumnName** list, select **Calculated\_TOTAL\_ACT**.
7. From the **Condition** list, select **> (GreaterThan)**.
8. From the **Value** list, select **Calculated\_TOTAL\_EST**.
9. Click **OK**.

### Add Row Rules

You are ready to add row rules to the Over Estimate Jobs grid that identify which costing buckets exceed the estimated costs on each job.

1. In the Dashboard Grid Properties window, navigate to the **View Rules** sheet.
2. Click the **New View Rule** button.
3. From the **Select Field** list, select **JobAsmbl\_TLALaborCost**.
4. From the **Rule Condition** list, select **GreaterThan**.
5. You need to evaluate this field against the Total Estimated Labor Cost. From the Rule Value list, select **JobAsmbl\_TLELaborCost**.
6. To add this rule condition, click the **Right Arrow** button. This activates the rule action fields.
7. Click the **New Rule Action** button.
8. From the **Select Field** list, select **JobAsmbl\_TLALaborCost** again.
9. From the **Setting Styles** list, select **Warning**.
10. To add this action to the condition, click the **Right Arrow** button next to it.

Now that a job's actual labor cost is greater than the job's estimated cost, the **JobAsmbl\_TLALaborCost** field displays the warning color. Notice you can add multiple actions to each condition.

11. Repeat steps 2-10 to add four more rules to the grid. Enter the following values:

| <b>Select Field (Condition)</b> | <b>Condition</b> | <b>Rule Value</b>           | <b>Select Field (Action)</b> | <b>Set Style</b> |
|---------------------------------|------------------|-----------------------------|------------------------------|------------------|
| JobAsmbl_TLABurdenCost          | Greater Than     | JobAsmbl_TLEBurdenCost      | JobAsmbl_TLABurdenCost       | Warning          |
| JobAsmbl_TLAMaterialCost        | Greater Than     | JobAsmbl_TLEMaterialCost    | JobAsmbl_TLAMaterialCost     | Warning          |
| JobAsmbl_TLASubcontractCost     | Greater Than     | JobAsmbl_TLESUBcontractCost | JobAsmbl_TLASubcontractCost  | Warning          |
| Calculated_TOTAL_ACT            | Greater Than     | Calculated_TOTAL_EST        | Calculated_TOTAL_ACT         | Error            |

12. Click **OK**.

### Add Overestimate Views

Add four more grid views to only display the jobs with actual costs that are over the estimated costs for Material, Burden, Labor, and Subcontracts.

1. In the tree view, right-click the **Query** icon and select **New Grid View**.  
The Dashboard Grid Properties window displays.

2. In the **Caption** and **Grid Caption** fields, enter **Over Estimate - Material**.
3. On the **General** sheet, click the **Clear All** button. This removes all the columns from view.
4. Select the **Visible** check box for the following columns:
  - JobHead\_JobNum
  - JobHead\_PartNum
  - JobHead\_DueDate
  - JobHead\_ProdQty
  - JobAsmb\_TLEMaterialCost
  - JobAsmb\_TLAMaterialCost
5. You need to filter the records that display on this grid. Navigate to the **Filter** sheet.
6. From the **ColumnName** list, select **JobAsmb\_TLAMaterialCost**.
7. From the **Condition** list, select **> (Greater Than)**.
8. From the **Value** list, select **JobAsmb\_TLEMaterialCost**.
9. Click **OK**.
10. Repeat these steps to create three more grid views.

| <b>Caption and Grid Cap-<br/>tion</b> | <b>JobHead<br/>Fields</b>               | <b>JobAsmb Fields</b>                    | <b>Filter</b>                                           |
|---------------------------------------|-----------------------------------------|------------------------------------------|---------------------------------------------------------|
| Over Estimate - Labor                 | JobNum<br>PartNum<br>DueDate<br>ProdQty | TLELaborCost<br>TLALaborCost             | JobAsmb_TLALaborCost > JobAsmb_TLELaborCost             |
| Over Estimate – Burden                | JobNum<br>PartNum<br>DueDate<br>ProdQty | TLEBurdenCost<br>TLABurdenCost           | JobAsmb_TLABurdenCost > JobAsmb_TLEBurdenCost           |
| Over Estimate – Sub-<br>contract      | JobNum<br>PartNum<br>DueDate<br>ProdQty | TLESUBcontractCost<br>TLASubcontractCost | JobAsmb_TLASubcontractCost > JobAsmb_TLESUBcontractCost |

11. Save your work.

**Tip:** Save all work before attempting to rearrange using drag/drop in case the results are unexpected.

12. Reposition the grids so that they display side by side. Click and drag them to efficiently display the 4 smaller grids underneath the wider **Over Estimate Jobs** grid.

**Tip:** Position mouse in the grid header bar near the left edge of the grid you wish to move up to position beside another grid. Drag right (almost off the form) until you see the transparent grid image box change to the proper width; then drag directly up until the transparent grid image changes to the proper height; then release the mouse.

13. After you finish positioning the grid views, click **Save**.

## Deploy the Dashboard

To complete the dashboard's development, generate the dashboard definition .dll file.

1. From the Tools menu, select **Deploy Dashboard**. The Deploy Dashboard window displays.
2. To see your new dashboard in action, click the **Test Application** button.
3. Select different rows in the grids.

Notice the title bar displays the selected job number. Also notice only jobs that have exceeded their labor, material, burden, or subcontract costs display in the **Over Estimate Jobs** grid.

4. Navigate to the other sheets. Only jobs that exceed their estimated costs for the specific costing bucket display in the Labor, Burden, Material, and Subcontract grids.
5. Close the dashboard.
6. To build the dashboard for the smart client, select the **Deploy Smart Client Application** check box.
7. Click **Deploy**.

Watch the progress as the dashboard generates. This turns the dashboard definition into a .dll file and deploys this file to the server.

8. When it finishes, click **OK**.
9. Exit the Dashboard.
10. Navigate to **Menu Maintenance** to add this dashboard to a location on the Menu.
11. **Menu Path:** System Setup > Security Maintenance > Menu Maintenance
12. From the tree view, expand the **Production Management > Job Management >General Operations** node and highlight **General Operations**.
13. From the **New** menu, select **New Menu**.
14. Enter the following values for the menu item:
  - **Menu ID:** UDJob
  - **Module:** UD
  - **Name:** Job Cost Exceptions
  - **Order Sequence:** 1
15. From the **Program Type** list, select **Dashboard-Assembly**.
16. From the **Icon** list, select **Tracker**.
17. From the **Dashboard** list, select **XXXJobCost Exceptions**.
18. Click Save.
19. Close Menu Maintenance.
20. Exit the application to ensure the menu is re-built.
21. Log into ERP10 with user id manager and password manager.
22. Click the Menu tile and navigate to Production Management > Job Management > General Operations > Job Cost Exceptions.

23. Launch your new **Job Cost Exceptions** tracker and review the dashboard again.

# Creating Parts and the Method of Manufacture (BOM/BOO), Part 1 and Part 2

The engineering process in the Epicor application is the creation of a part's method of manufacture (MOM), or method. It includes a bill of operations (BOO) and a bill of materials (BOM).

This lab outlines the creation of a new part, engineering of a method of manufacture (MOM), approval of a method, and creation of a method available for use. Methods can be used in the quoting process, job entry, or as the basis for a new method.

The engineering process occurs in any of the following locations within the Epicor application:

- Engineering Workbench
- Job Entry
- Quote Entry

At the conclusion of this lab, you will be able to:

- Describe where engineering can occur throughout the Epicor application.
- Identify configuration and setup requirements.
- Describe the engineering process flow.
- Use the Engineering Workbench to create and modify parts, revision and method of manufacturing.
- Create a Job to test results.

## System Requirements

| Modules/Licensing | Product Version |
|-------------------|-----------------|
| Engineering       | 10.2.300        |
| Job Management    | 10.2.300        |

## Log into the Epicor ERP Application

1. On the desktop, double-click the Epicor **ERP10** application icon.
2. In the **User name** field, enter **manager**.
3. In the **Password** field, enter **manager**.
4. Click the **OK** button.

## Set up Resource Group

Before you start the engineering process you must define resource groups and resources as they carry labor and labor burden cost estimates. Later in the course you will create a method of manufacturing for the storage shelf unit and its subassembly and use the resource group defined in this workshop.

1. Navigate to **Resource Group Maintenance**.  
**Menu Path:** Production Management > Engineering > Setup > Resource Group
2. From the **New** menu, select **New Resource Group**.

3. Enter the following values:

| Field           | Data                |
|-----------------|---------------------|
| Resource Group  | ASMG                |
| Description     | ASM Green Crew      |
| Department      | Assembly Department |
| Input Warehouse | Main                |
| In Bin          | 01-01-01            |

4. In the **Costing Burden Rates** section, in the **Production** field, enter **50.00**.

5. In the **Setup** field, enter **50.00**.

Verify **Flat** is selected.

6. In the **Costing Labor Rates** section, in the **Production** field, enter **15.00**.

7. In the **Setup** field, enter **15.00**.

8. Click **Save**.

9. In the **Quoting Burden Rates** section, in the **Production** field, enter **50.00**.

10. In the **Setup** field, enter **50.00**.

Verify **Flat** is selected.

11. In the **Quoting Labor Rates** section, in the **Production** field, enter **15.00**.

12. In the **Setup** field, enter **15.00**.

13. Click **Save**.

14. Remain in Resource Group Maintenance.

## Create Resource

Each resource group must have at least one resource. In this workshop, create a resource for the resource group entered in the Setup a Resource Group workshop.

1. From the **New** menu, select **New Resource**.

The **Resources > Detail** sheet displays.

2. Enter the following values:

| Field           | Data           |
|-----------------|----------------|
| Resource        | ASMG           |
| Description     | ASM Green Crew |
| Input Warehouse | Main           |
| In Bin          | 01-01-01       |

3. Notice the **Use Resource Group Values** checkbox is checked in multiple sections.

4. Accept all other defaults.

5. Click **Save**.

6. To the **Capacity changed** message, click **OK**.
7. Exit Resource Group Maintenance.

### Create New Operation

In the previous tasks you created a resource group with a resource. For the purpose of this lab create a new operation and assign the resource group to it.

1. Navigate to **Operation Maintenance**.

**Menu Path:** Production Management > Engineering > Setup > Operation

2. From the **New** menu, select **New Operation**.
3. Navigate to the **Detail** sheet.
4. Enter the following values:

| Field       | Data                   |
|-------------|------------------------|
| Operation   | APB                    |
| Description | Assemble Per Blueprint |
| Type        | Manufacturing          |

5. Navigate to the **Scheduling Requirements > Resource Groups** sheet.
  6. From the **New** menu, select **New Resource Group Requirement**.
  7. In the **Resource Group List** grid, right-click the **ResourceGrpID** field and select **Open With > Resource Group Search**.
- The **Resource Group Search** window displays.
8. Click the **Search** button and search for and select **ASM Green Crew**.
  9. Click **Save**.
  10. Exit Operation Maintenance.

### Create ECO Group

Your company has decided to manufacture a storage shelving unit. In the first step of the engineering process you must establish an ECO group to group part revisions, subassemblies, or members of a product group.

This workshop demonstrates how to create an ECO Group. In later workshops within this section, this ECO Group is used to engineer the storage shelf unit consisting of Level 0 multi-level stocked part, Level 1 non-stocked subassembly, and Level 2 stocked subassembly.

1. Navigate to **Engineering Workbench**.

**Menu Path:** Production Management > Engineering > General Operations > Engineering Workbench

2. Click **New**.
- The **Eco Group** sheet displays.
3. In the **Group ID** field, enter **SP**.
  4. In the **Description** field, enter **New Shelf Parts**.

5. In the **Workflow Group** field, select **Department of Defense**.
6. In the **Task Set** field, select **Internal ECO Change**.
7. Click **Save**.
8. Remain in the Engineering Workbench.

### Enter Master Part and Revision

The ECO group is established so you can now enter the storage shelf unit part and define its revision. In this workshop, create part **A-SHELF** and then create a revision for this part.

1. From the **Actions** menu, select **Add Part**.

**Part Maintenance** displays.

2. From the **New** menu, select **New Part**.
3. Enter the following values:

| Field          | Data           |
|----------------|----------------|
| Part           | A-SHELF        |
| Description    | Finished Shelf |
| Type           | Manufactured   |
| Group          | Fabricated     |
| Class          | FG-Fabricated  |
| Non-Stock Item | Clear          |

4. Click **Save**.
5. From the **New** menu, select **New Part Revision**.
6. Enter the following values:

| Field       | Data           |
|-------------|----------------|
| Rev         | A              |
| Description | Initial Design |
| Draw        | ABC-234        |

7. Click **Save**.
8. Remain in Part Maintenance.

### Enter Subassembly Part

The storage shelf unit consists of smaller parts (subassemblies) to assemble before the whole unit is built. After you enter the storage shelf unit part, create the subassembly that will be used in the method of manufacture for the storage shelf unit part later in the lab.

1. From the **New** menu, select **New Part**.
2. Enter the following values:

| Field | Data   |
|-------|--------|
| Part  | A-BASE |

| Field          | Data          |
|----------------|---------------|
| Description    | Shelf Base    |
| Type           | Manufactured  |
| Group          | Fabricated    |
| Class          | FG-Fabricated |
| Non-Stock Item | Select        |

3. Click **Save**.
4. From the **New** menu, select **New Part Revision**.
5. Enter the following values:

| Field       | Data           |
|-------------|----------------|
| Rev         | A              |
| Description | Initial Design |
| Draw        | ABC-456        |

6. Click **Save**.
7. Exit Part Maintenance and return to the Engineering Workbench.

### Check Out Parts

To create or maintain a method of manufacture (MOM), you must check it out to an ECO Group. At the beginning of this course you created an ECO group now that you have entered all the parts, check them out to the ECO group in order to create or change the MOM.

1. From the **Actions** menu, select **Check Out Part**.  
The **Part Revision Checkout** window displays.
2. In the **Part** field, search for and select part **A-SHELF**.
3. Verify the **Revision** and **ECO Group** default.
4. Click **OK**.
5. From the **Actions** menu, select **Check Out Part**.  
The **Part Revision Checkout** window displays.
6. In the **Part** field, search for and select part **A-BASE**.
7. Verify the **Revision** and **ECO Group** default.
8. Click **OK**.
9. Navigate to the **Revision > List** sheet to verify the two parts are now checked out.
10. Click **Save** and remain in the Engineering Workbench.

### Create Method for the Shelf Unit Subassembly (A-BASE)

Before you enter the method of manufacturing (MOM) for the storage shelf unit product you must define the MOM for its materials. This is an intermediate level assembly (A-BASE) used in the production of an upper level (A-SHELF).

In this workshop, define the MOM for the subassembly component.

### Verify Revision

1. Verify the **Revision > List** sheet displays.
2. In the **Revision Checked Out to ECO Group** grid, select **A-BASE**.

### Add Operation

1. In the tree view, right-click on the **Operations** node and select **Add Operation**.  
The **Method of Manufacturing > Operations > Detail** sheet displays.
2. In the **Operation** field, select **Mill Point to Point**.
3. Click **Save**.  
After the record saves, and default scheduling resources populate.
4. In the **Setup Per Scheduling Block** pane, in the **Hours** field, enter **1**.
5. In the **Production Per Scheduling Block** pane, in the **Prod Std** field, enter **5** (Pieces/Hour).
6. Click **Save**.
7. In the tree view, expand **Opr: 10 OP: MILL** to display its resources.

### Verify Labor and Burden Costs

1. In the tree view, right-click part **A-BASE** and select **View Costs**.
2. Review the labor and burden costs.
3. Close the window.

### Add Subcontract Operation

1. In the tree view, right-click on the **Operations** node and select **Add Subcontract Operation**.  
The **Method of Manufacturing > Operations > Subcontract** sheet displays.
2. In the **Operation** field, select **Outside Vendor Painting**.
3. In the **Supplier ID** field, verify **Rainforest Painting Inc.** displays.
4. In the **Unit Cost** field, enter **2.75**.
5. In the **Days Out** field, enter **5**.
6. Click **Save**.

### Verify Subcontract Costs

1. In the tree view, right-click part **A-BASE** and select **View Costs**.
2. Review the labor, burden, and subcontract costs.
3. Close the window.

## Add Another Operation

1. In the tree view, right-click on the word **Operations** and select **Add Operation**.  
The **Method of Manufacturing > Operations > Detail** sheet displays.
2. In the **Operation** field, select **Assemble Per Blueprint**.
3. Click **Save**.
4. In the **Setup Per Scheduling Block** pane, in the **Hours** field, enter **1**.
5. In the **Production Per Scheduling Block** pane, in the **Prod Std** field, enter **5 (Pieces/Hour)**.
6. Click **Save**.
7. In the tree view, expand **Opr: 30 OP: APB** to display its resources.

## Verify Labor, Burden, and Subcontract Costs

1. In the tree view, right-click part **A-BASE** and select **View Costs**.
2. Review the labor, burden, and subcontract costs.
3. Close the window.

## Add Materials

1. Navigate to the **Method of Manufacturing > Engineering > Parts** sheet.
2. From the **Actions** menu, select **Autoload Engineering Data > Load Parts**.
3. In the **Part** field, type the letter **a**.
4. In the **Parts** grid, click and hold part **AS-048** and drag-and-drop the part record on the **MILL** operation in the tree view.
5. In the **Part** field, type the number **1**.
6. In the **Parts** grid, select **1032FW**, then press and hold the **Ctrl key** while highlighting the following parts:
  - **1032KNUT**
  - **1032X100**
7. In the **Parts** grid, click and hold any of the highlighted parts and drag-and-drop the records on the **APB** operation in the tree view.
8. In the **Part** field, type the letter **i**.
9. In the **Parts** grid, click and hold part **IBM-200-D** and drag-and-drop the record on the **APB** in the tree view.
10. Click **Save**.

## Update Quantity per Parent

1. Navigate to the **Method of Manufacturing > Materials > Detail** sheet.
2. In the tree view, select each of the materials and update the **Qty/Parent** field as follows:  
**Note** Click **Save** for each part. (You can use the Detail or List sheet for these updates)

| <b>Material</b> | <b>Qty/Parent</b> |
|-----------------|-------------------|
| AS-048          | 0.25              |
| 1032FW          | 4                 |
| 1032KNUT        | 4                 |
| 1032X100        | 4                 |
| IBM-200-D       | 1                 |

### Verify Material, Labor, Burden, and Subcontract Costs

1. In the tree view, right-click part **A-BASE** and select **View Costs**.
2. Review the costs.
3. Close the window.
4. Remain in the Engineering Workbench.

### Create Method for the Finished Part (A-SHELF)

You have entered the new master part record for the storage shelf unit part and created the method of manufacture (MOM) for its material (subassembly). The next step is to create the MOM for the storage shelf unit product, the bill of operation (BOO) and the bill of material (BOM).

#### Add Operation

1. Navigate to the **Revision > List** sheet.
2. In the **Revisions Checked Out to ECO Group** grid, select **A-SHELF**.
3. In the tree view, right-click the **Operations** node and select **Add Operation**.  
The **Method of Manufacturing > Operations > Detail** sheet displays.
4. In the **Operation** field, select **Assemble Per Blueprint**.
5. Click **Save**.
6. In the **Setup Per Scheduling Block** pane, in the **Hours** field, enter **1**.
7. In the **Production Per Scheduling Block** pane, in the **Prod Std** field, enter **5 (Pieces/Hour)**.
8. Click **Save**.
9. In the tree view, expand **Opr: 10 OP: APB** to display its resources.

#### Add Materials

1. Navigate to the **Method of Manufacturing > Engineering > Parts** sheet.
2. In the **Part** field, type the number **3**.
3. In the **Parts** grid, click and hold part **38FW** and drag-and-drop the record on the **APB** operation in the tree view.
4. In the **Parts** grid, press the **Ctrl** key and select the **38LN** and **38X075B** parts.

5. Click and hold either highlighted part and drag-and-drop the records on the **APB** operation in the tree view.
6. In the **Part** field, type the letter **a**.
7. In the **Part** grid, click and hold part **A-BASE** and drag and drop the record on the **APB** operation in the tree view.

### **Update Quantity per Parent**

1. Navigate to the **Method of Manufacturing > Materials > Detail** sheet.
  2. In the tree view, select each of the materials and update the **Qty/Parent** field as follows:
- Note** Click **Save** for each part. (You can use either the List or Detail sheet for the entry)

| <b>Material</b> | <b>Qty/Parent</b> |
|-----------------|-------------------|
| 38FW            | 4                 |
| 38LN            | 4                 |
| 38X075B         | 4                 |
| A-BASE          | 1                 |

### **Verify Material, Labor, Burden, and Subcontract Costs**

1. In the tree view, right-click part **A-SHELF** and select **View Costs**.
2. Review the costs.
3. Close the window and remain in the Engineering Workbench for the next workshop.

### **Approve and Check in the Parts**

Up to this point in the Engineering process, you have entered master part records for the shelf unit parts, materials (subassemblies), defined methods of manufacture for both the parent parts and the subassembly. Once you define all the methods, you must approve and check in the parts.

### **Approve and Check in All**

1. From the **Actions** menu, select **Group > Approve and Check in All**.
2. To the **Are you sure?** message, click **Yes**.
3. In the **Description of Change** window, click **OK**.
4. To the **Check in All** message, click **OK**.
5. Exit the Engineering Workbench.

### **Use Method Tracker**

1. Navigate to the **Engineering > General Operations > Method Tracker**.
2. In the **Part Number** field, enter part **A-SHELF** and press **Tab**.

3. In the tree view, expand the **Materials** node.
4. Select any material and review its details.
5. The **Material > Detail** sheet displays.
6. Exit the Method Tracker.

### Use Method of Manufacturing at Job Entry

1. Navigate to **Job Entry**.
- Menu Path:** Production Management > Job Management > General Operations > Job Entry
2. From the **Actions** menu, select **Quick Job Entry** and click the **Next Job** button.
  3. In the **Part** number field, enter the part number **A-SHELF**.
  4. Enter quantity of **200**.
  5. In the **Date** field, enter the date **5 weeks from today**.
  6. Select the **Engineered**, **Scheduled**, and **Released** checkboxes.
  7. Click **Save** and record the job number \_\_\_\_\_.
  8. Remain in Job Entry.

### Review Job Schedule

1. Navigate to **Actions > Schedule> Job Scheduling Board** and select the **Schedule** sheet.
2. Right-click the **Job Number**, and then select **Start Time**.
3. In the left-hand column, double-click the job number to expand the job schedule.
4. In the left-hand column, double-click part **A-BASE** to further expand the job schedule.
5. Review the Job schedule detail.
6. Exit the Job Schedule board.
7. Exit Job Entry.

Congratulations! You have successfully completed the BOM and BOO Part 1 and Part 2 Lab.

### Extra Credit Exercise

#### Create Revised Method

Methods can be updated to reflect changes to any material or operation. These changes are saved as a revision, allowing the use of slightly different methods in the manufacture of the same part.

The Engineering Department determined that the material **AS-048** used in the manufacture of part **A-BASE** must be replaced because of warping. A revision method is created using part **AS-063** as the replacement part.

#### Create and Check Out Revision

1. Navigate to **Production Management > Engineering > General Operations > Engineering Workbench**.
2. Verify the **ECO Group** sheet displays.

3. In the **Group ID** field, search for and select the **ECO Group** you created earlier.
4. From the **Actions** menu, select **Revision > New Revision**.
5. In the **Part** field, enter **A-BASE** and press **Tab**.
6. In the **Rev** field, enter **B**.
7. In the **Description** field, enter **New Revision**.
8. Click **OK**.

Part **A-BASE Revision B** has been created and checked out.

### Get Manufacturing Details

1. From the **Actions** menu, select **Revision > Get Details > Get From Methods/Jobs/Quotes**.

The **Get Details** window displays.

2. In the **Revisions** grid, select **A**.
3. Click **OK**.

### Modify Material

1. In the tree view, right-click part **A-BASE** and select **Tree > Expand Tree**.
2. In the tree view, select part **Mtl: 10 AS-048**.
3. In the **Part** field, enter **AS-063** and press **Tab**.
4. Click **Save**.

### Approve and Check in Part

1. Navigate to the **Revision > Detail** sheet.
2. Select the **Not Approved** check box.  
The indicator changes to **Approved**.
3. From the **Actions** menu, select **Revision > Check In**.
4. In the **Description of Change** window, click **OK**.
5. To the **Check in Complete** message, click **OK**.
6. Exit the Engineering Workbench

### Compare Revisions

1. Navigate to **Revision Compare Process**.

**Menu Path:** Production Management > Engineering > General Operations > Revision Compare

2. In the **From Parameters** section, navigate to the **Part** sheet.
3. In the **Part/Rev** field, enter **A-BASE** and press **Tab**.
4. Select revision **A**.
5. In the **To Parameters** section, navigate to the **Part** sheet.

6. In the **Part/Rev** field, enter **A-BASE** and press **Tab**.
7. Select revision **B**.
8. Click the **Compare** button.
9. Navigate to the **Material** or **Routing** sheets to display changes between the two revisions.
10. Exit Revision Compare Process.

Congratulations! You have successfully completed the BOM and BOO Part 1 and Part 2 Lab Extra Credit exercise.

# Customer Led - Automating Shipments Using Barcode Scanning

This lab is a customer co-presentation reviewing one of their customizations built on the customer shipment entry process. The requirement is to allow the barcode scanning of inventory tags with a barcoded lot number printed on them to build pack lines for selected sales order line releases. Also, there is another requirement to add an alloy surcharge based on the part and quantity sold for specific parts when the pack is shipped.

This lab will review the following processes:

- Building requirements based on business rules.
- Use UserCodes to store and maintain customer and part specific alloy surcharge data.
- Use a UD table to store pack information that will be used to build the final pack and add the surcharges.
- Review the process flow when lots are scanned.
- Review the process flow when the Build Pack function is called.

**Note:** This customization does not support serialized parts.

## System Requirements

| Modules/Licensing | Product Version                     |
|-------------------|-------------------------------------|
| ERP 10 Ent        | 10.1.500.xx - 10.2.300.7 and higher |
| ERP 10 Cloud      | 10.2.300.xx                         |

## Defining the Requirements

- Surcharges are set based on the part, customer and effective dates. They are updated periodically market on market price fluctuation for the given materials.
- Inventory tags will have bar-coded lot numbers which will be scanned for selected release lines, added to pack lines and decrement the outstanding release quantity remaining.
- As pack lines are added, the part numbers, customer numbers and ship date will be checked against the surcharge control data and a miscellaneous charge will be added for qualifying shipments.
- When the pack is shipped, a final check will be made to update any miscellaneous charges if needed.

## Building the Design

### Trace Packout

Trace the processes involved with adding a line to a shipping pack.

There is a completed trace in this location: **C:\Insights19\Labs\Vernet AutoPack\ShipDtlTrace.xml**

1. **GetNewOrdeShipDtl:** Creates and new instance of a ShipDtl row on the CustShipDataSet.
2. **GetOrderInfo:** Pulls some default information into the new ShipDtl row from the sales order line.

3. **GetManifestInfo:** Gets more information regarding the sales order.
4. **BuildShipToList:** Passes in the order and customer number to retrieve shipping information.
5. **CheckPrePartInfo:** Passes in the order and line number to get the part number information.
6. **GetOrderLineInfo:** Passes in the order line and part number to get line information.
7. **GetOrderRelInfo:** Passes in the order release number to get release information.

### Trace Add Miscellaneous Line Charge



Trace the processes involved with add miscellaneous line charges.

There is a completed trace in this location: **C:\Insights19\Labs\Vernet AutoPack\ShipMisc.xml**

1. **GetNewShipMisc:** Creates a new instance of a **ShipMisc** row on the **CustShipDataSet**.
2. **GetShipMiscDefaults:** Pre-populates default data on the new **ShipMisc** row.
3. **CheckPCBinOutLocation:** Not needed.
4. **UpdateMaster:** Commits add/changes to pack and miscellaneous charge lines.
5. **POGetNew:** This call is needed in this release but don't seem to affect the data rows.
6. **POGetDtlList:** This call is needed in this release but don't seem to affect the data rows.

### Financial Setup

Miscellaneous charge codes need to be setup and pointed to the appropriate accounts with the **Shipping Access** option selected. The actual charges are held at the customer and part level.

**Menu Path:** Financial Management > Accounts Receivable > Setup > Miscellaneous Charge

The screenshot shows the 'Miscellaneous Charge Maintenance' window. On the left, a tree view shows 'Miscellaneous Charges' with 'Copper surcharge' selected. The main panel has tabs for 'Detail', 'Description', 'List', 'GL Control', and 'FSA'. The 'Detail' tab is active, displaying the following fields for the 'Copper surcharge' record:

- Code...**: COPR
- Description:** Copper surcharge
- Type:** Amount
- Percentage:** 0.00
- Amount:** 0.00
- Shipping Access:**  (This field is highlighted with a red oval)
- Sales Analysis:**
- Frequency:** (dropdown menu)
- Include in Terms Discount:**
- Tax Information** section:
  - Tax Category:** Raw Materials
  - Intrastat:** Exclude

### UD01 Surcharge Maintenance Screen

This will hold the surcharge parameters for part, customer and effective date combinations.

**Menu Path:** Sales Management > Order Management > Setup > Customer Surcharge Maintenance

There is a spreadsheet with some example surcharges that can be pasted into the maintenance grid located here:  
**C:\Insights19\Labs\Vernet AutoPack\Surcharges.xlsx**

- Key1 = PartNum
- Key2 = CustNum
- Key3=ChargeCode
- Key4 = string.Empty
- Key5 = System.Guid
- Date01 = Valid From
- Date02 Valid To
- Number01 = Surcharge per unit

### Test Building a Pack

There is already data setup to build a pack using the customization. Navigate to the **Auto Pack by Lot** menu.

**Menu Path:** Material Management > Shipping / Receiving > General Operations > Auto Pack by Lot

1. Click the **Order Search...** button and retrieve sales order **5387**.
2. Select a **Release** from the **Order Lines** grid and review the list the filtered list displayed in the **Lots** grid.

| Order Lines |      |     |       |
|-------------|------|-----|-------|
| PartNum     | Line | Rel | Qty   |
| H-4600      | 1    | 1   | 30.00 |
| H-4600      | 1    | 2   | 60.00 |
| H-4600      | 1    | 3   | 30.00 |

| Lots   |      |         |           |
|--------|------|---------|-----------|
| LotNum | Whse | Bin     | AvailQty  |
| 2423   | CHI  | 00-00-0 | 20,000.00 |

- In the **LotNum:** field, enter **2423** and press tab.

| Pack Details |      |     |          |         |          |         |           |          |
|--------------|------|-----|----------|---------|----------|---------|-----------|----------|
| LotNum       | Line | Rel | Quantity | PackNum | PackLine | PartNum | Warehouse | BinNum   |
| 2423         | 1    | 1   | 30       | 0       | 0        | H-4600  | CHI       | 00-00-00 |

| Order Lines |      |     |       |
|-------------|------|-----|-------|
| PartNum     | Line | Rel | Qty   |
| H-4600      | 1    | 1   | 0.00  |
| H-4600      | 1    | 2   | 60.00 |
| H-4600      | 1    | 3   | 30.00 |

| Lots   |      |         |           |
|--------|------|---------|-----------|
| LotNum | Whse | Bin     | AvailQty  |
| 2423   | CHI  | 00-00-0 | 19,970.00 |

- Continue selecting releases to the lot until all release demand has been fulfilled.
- Click the **Build Pack** button and observe the status bar messages in the lower left-hand corner of the form.
- When the pack is successfully built, you will get a confirmation message.

### Review the Pack

- Navigate to **Customer Shipment Entry**, pull up the pack you just created and print the **Packing Slip**.

| Pack Slip: 302<br>302                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Packing Slip</b>                                                                                                |             | Page: 1 of 2 |         |                         |             |             |      |         |       |  |  |  |  |  |                   |  |          |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |  |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|-------------|--------------|---------|-------------------------|-------------|-------------|------|---------|-------|--|--|--|--|--|-------------------|--|----------|--|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|
| <b>Ship To:</b><br><br>Addison, INC<br>215 Martin Luther King, Jr. Blvd<br>Door 2<br>Madison WI 53703<br>USA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Sold To:</b><br><br>Lonnie Smith<br>Addison, INC<br>211 Martin Luther King, Jr. Blvd<br>Madison WI 53703<br>USA |             |              |         |                         |             |             |      |         |       |  |  |  |  |  |                   |  |          |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |  |  |  |
| <b>Phone:</b> 608-555-5678<br><b>Fax:</b> 608-555-5666<br><b>Email:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Phone:</b> 608-555-5556 ext 305<br><b>Fax:</b> 608-555-5566<br><b>Email:</b> lsmith@wfo.epicor.com              |             |              |         |                         |             |             |      |         |       |  |  |  |  |  |                   |  |          |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |  |  |  |
| <p>Ship Date: 3/3/2019 F.O.B.: Factory</p> <p>Ship Via: Use Ctrk - Company Truck</p> <table border="1"> <thead> <tr> <th>PO Line</th> <th>Part Number/Description</th> <th>Planned Qty</th> <th>Shipped Qty</th> <th>Rev.</th> <th>PO Line</th> </tr> </thead> <tbody> <tr> <td>PCID:</td> <td colspan="5"></td> </tr> <tr> <td colspan="2">Sales Order: 5387</td> <td colspan="4">Your PO:</td> </tr> <tr> <td colspan="6">           Salesperson(s): Penny Lane<br/>           Line 1 Rel 1<br/>           1 H-4600 / Henwood Gear Case 30.00 EA 30.00 EA A<br/> <br/>           Line 1 Rel 2<br/>           2 H-4600 / Henwood Gear Case 60.00 EA 60.00 EA A<br/> <br/>           Line 1 Rel 3<br/>           3 H-4600 / Henwood Gear Case 30.00 EA 30.00 EA A<br/> <br/> <b>Our Part: H-4600</b><br/> <br/> <b>Miscellaneous Charge</b><br/>           Copper surcharge 3.60<br/>           Stainless Steel 2.40<br/> <b>Total Miscellaneous Charges:</b> 6.00 United States Dollar         </td> </tr> </tbody> </table> |                                                                                                                    |             |              | PO Line | Part Number/Description | Planned Qty | Shipped Qty | Rev. | PO Line | PCID: |  |  |  |  |  | Sales Order: 5387 |  | Your PO: |  |  |  | Salesperson(s): Penny Lane<br>Line 1 Rel 1<br>1 H-4600 / Henwood Gear Case 30.00 EA 30.00 EA A<br><br>Line 1 Rel 2<br>2 H-4600 / Henwood Gear Case 60.00 EA 60.00 EA A<br><br>Line 1 Rel 3<br>3 H-4600 / Henwood Gear Case 30.00 EA 30.00 EA A<br><br><b>Our Part: H-4600</b><br><br><b>Miscellaneous Charge</b><br>Copper surcharge 3.60<br>Stainless Steel 2.40<br><b>Total Miscellaneous Charges:</b> 6.00 United States Dollar |  |  |  |  |  |
| PO Line                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Part Number/Description                                                                                            | Planned Qty | Shipped Qty  | Rev.    | PO Line                 |             |             |      |         |       |  |  |  |  |  |                   |  |          |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |  |  |  |
| PCID:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                    |             |              |         |                         |             |             |      |         |       |  |  |  |  |  |                   |  |          |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |  |  |  |
| Sales Order: 5387                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                    | Your PO:    |              |         |                         |             |             |      |         |       |  |  |  |  |  |                   |  |          |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |  |  |  |
| Salesperson(s): Penny Lane<br>Line 1 Rel 1<br>1 H-4600 / Henwood Gear Case 30.00 EA 30.00 EA A<br><br>Line 1 Rel 2<br>2 H-4600 / Henwood Gear Case 60.00 EA 60.00 EA A<br><br>Line 1 Rel 3<br>3 H-4600 / Henwood Gear Case 30.00 EA 30.00 EA A<br><br><b>Our Part: H-4600</b><br><br><b>Miscellaneous Charge</b><br>Copper surcharge 3.60<br>Stainless Steel 2.40<br><b>Total Miscellaneous Charges:</b> 6.00 United States Dollar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                    |             |              |         |                         |             |             |      |         |       |  |  |  |  |  |                   |  |          |  |  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |  |  |  |  |

### Review Customization c# Code

There is also a completed Visual Studio solution in this location:

**C:\Insights19\Jobs\Vernet AutoPack\AutoPack\AutoPack.sln**

1. Turn on developer mode, launch the **Auto Pack by Lot** form, select the **AutoPackLots** customization and open the customization. You can also open the Visual Studio solution and review the custom code.
2. Collapse the following regions:
  - InitializeAndDestroy
  - SearchOrders
  - BuildPack
  - AddSurCharges
3. Expand the **SearchOrders** region and review.
4. Navigate to Business Activity Queries and review the BAQ that is being executed from the customization to retrieve available lots for the order being packed, **CTOrderLots**.

5. Expand the **BuildPack** region and review.
6. Expand the **AddSurCharges** region and review.

# Customer Led - Building Custom Executables to Perform Inventory Transactions

This lab is a customer co-presentation reviewing one of their custom integrations into Epicor to perform Inventory Transaction using a custom .NET program. The custom program connects to the Epicor business object implementations externally from Epicor and calls the required business object methods to perform inventory transaction inside Epicor without using the client interface.

This lab will review the following processes:

- Building requirements based on business rules.
- Identifying the required Epicor program assemblies needed for the processes.
- Building the .NET executable and exposing it for user access.
- Performing Inventory transfer tasks.
- Review the process flow when the function is called.

## System Requirements

| Modules/Licensing | Product Version                     |
|-------------------|-------------------------------------|
| ERP 10 Ent        | 10.1.500.xx - 10.2.300.7 and higher |
| ERP 10 Cloud      | 10.2.300.xx                         |

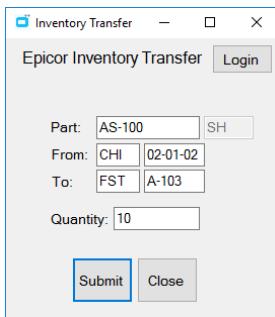
## Defining the Requirements

- Leverage existing hardware and infrastructure
- Use bar-code scanning to automate data entry
- Update Epicor ERP directly from hand held devices
- Add a Memo Entry

## Building the Design

There is a completed trace in this location: **C:\Insights19\Jobs\Nordicware\InvTrans.xml**

- Trace the Inventory Movement method calls and parameter signatures
- Build the prototype .NET c# application and test the method calls
- Design the UI components



## Review .NET c# Program Design and Requirements

There is a completed Visual Studio solution in this location:

C:\Insights19\Labs\Nordicware\EpicorInsights\InventoryTransfer.sln

- Added a custom method to resolve the location of referenced application extensions to Program.cs "MyResolveEventHandler"
  - Requires Using System.Reflection
  - Requires Setting EpicorDllPath set to "C:\Epicor\ERP10.1Client\Client\"
- Add RaiseEvent to Program.cs\Main prior to running Form
- Reference Core Required Epicor DLLs, and set "Copy Local" = false
  - Epicor.ServiceModel
  - Ice.Core.Session
  - Ice.Lib.ClientFunctions
  - Ice.Lib.EpiClientLib
- Add References to Transactional dlls for this project and set "Copy Local" = false
  - Erp.Contracts.BO.Part
  - Erp.Contracts.BO.InvTransfer
  - Ice.Contracts.BO.Memo

## Build the UI Components

- Setup Login Button to initialize Epicor
  - Uses Setting EPConfig set to "C:\Epicor\ERP10.1Client\Config\EPTest.sysconfig"
  - Using DataCollection License, may have to change for Insight's Test database?
- Setup Form to ask for important pieces of Information:
  - Part Number (Will get UOM from Part Transaction)
  - Uses Erp.Contracts.BO.Part
  - From and To Warehouse and Bin Numbers
  - Quantity

- Setup Submit button to create Inventory Transaction

- Validate Data before attempting Transaction

Quantity is a valid Decimal, UM Textbox has text, etc.

Check for Negative inventory

PreCommit Transfer and check for additional User input

- Commit Move
  - Add memo

### Test the Application

1. Open Epicor and navigate to **Part Tracker**.

**Menu Path:** Material Management > Inventory Management > General Operations > Part Tracker

2. Pull up Part **AS-100**, select the **Bins** tab and click the **Retrieve** button.

3. Minimize Part Tracker and navigate to the following folder location on your desktop:

C:\Insights19\Labs\Nordicware

4. Launch the Inventory Transfer shortcut.

5. Click the **Login** button then click the **Submit** button.

6. Maximize Part Tracker and click Refresh to view the updated bin information.

# Deep Dive into Advanced Material Management: Streamlining Material Movement Within Manufacturing Processes

Advanced Material Management (AMM) enables manufacturers to produce electronic requests for materials, dispatch those materials, and track inventory movements including raw materials and work in process (WIP). Manufacturers and distributors can track inventory in real-time. A manufacturer that uses the Epicor ERP application has complete control and visibility of raw materials and WIP as it travels throughout the application.

At the conclusion of this lab, you will be able to:

- Understand WIP transactions and the WIP flow during the Manufacturing process.
- Get visibility of the raw materials and WIP for your jobs.
- Use the MES, Office MES and Handheld interfaces.
- Use the Material Transaction Queue to process and assign transactions

## System Requirements

| Modules/Licensing            | Product Version |
|------------------------------|-----------------|
| Advanced Material Management | 8.03 or higher  |
| Inventory Management         | 8.03 or higher  |
| Job Management               | 8.03 or higher  |
| MES Data Collection          | 8.03 or higher  |
| Multiple Warehouse           | 8.03 or higher  |

## Workshop 1 – Log into the Epicor ERP Application

1. On the desktop, double-click the **Epicor ERP 10** icon.
2. In the **User Name** field, enter **manager**.
3. In the **Password** field, enter **manager**.
4. Click **OK**.
5. Once you are logged into **Epicor ERP 10**, double-check you are working in company **Epicor Education (EPIC06)** and the **Main** site.
6. Click on the **Menu** icon.

## Workshop 2 – Create a New Part Number and Review the Method of Manufacturing

In this workshop, create a new manufactured part and get familiar with the method of manufacturing.

1. Navigate to **Part Entry**.

**Menu Path:** Production Management > Job Management > Setup > Part

2. In the **Part** field, enter **AMM-100-S**.

3. From the **Actions** menu, select **Duplicate**.
4. In the **Duplicate Part** screen:
  - a. In the **Part** field, enter **XXX-AMM** (where XXX are your initials).
  - b. In the **Description** field, enter **XXX AMM Stocked Part 100**.
  - c. Click **OK**.
5. Navigate to the **Part > Revisions > Detail** sheet.
6. Right-click on the **Rev** field and select **Open With > Method Tracker**. The **Method Tracker** program displays.
7. Right-click on the **REV:A Part:XXX-AMM** node of the tree and select **Tree > Expand Tree**.
8. On the tree, select **Opr 10**, and note the **Production Labor Reporting Resource** and the **Materials required**.
9. Review the **Operation Description**, **Materials Required**, and **Prod Resource** and match against the columns in the table below.
10. Navigate to the **Operations > Scheduling Resources > Detail** sheet and, using the **Navigation VCR** control at the top, identify the **Scheduling Resource** that matches the **Production Labor Reporting Resource**.
11. Right-click on the **Resource Group** field and select **Open With > Resource Group Entry**. Note the **Department**, **Input and Output Warehouse/ Bin** and match to the appropriate column in the table below.
12. Repeat steps 8, 9 and 10 for **Opr 20** and **Opr 30**.
13. Exit Resource Group Maintenance and Method Tracker.
14. In **Part Entry**, select the **Not Approved** check box.
15. In the **Description** field of the change screen, enter **Initial revision** and click **OK**.

**Part:** \_\_\_\_\_.

#### Method of Manufacturing

| Opr | Operation Description | Materials / Qty Per                            | Prod Resource / Department                      | Input Whs/Bin          | Output Whs/Bin         |
|-----|-----------------------|------------------------------------------------|-------------------------------------------------|------------------------|------------------------|
| 10  | Saw                   | BS-CR-RD-200 0.25 FT /Parent                   | Saw / Machining Department                      | Production Floor / SAW | Production Floor / SAW |
| 20  | Milling Operation     | 8400S-053 2 EA /Parent                         | Horizontal Haas Machines / Machining Department | Production Floor / MCH | Production Floor / MCH |
| 30  | Assemble per print    | 1032x075 4 EA / Parent<br>1032FW 8 EA / Parent | Asm Bench / Assembly Department                 | Production Floor / ASM | Production Floor / ASM |

| Opr | Operation Description | Materials / Qty Per                              | Prod Resource / Department | Input Whs/Bin | Output Whs/Bin |
|-----|-----------------------|--------------------------------------------------|----------------------------|---------------|----------------|
|     |                       | Backflush<br>1032KNUT 4 EA / Parent<br>Backflush |                            |               |                |

### Workshop 3 – Create a New Job and Release the Job to the Shop Floor

In this workshop, create a new job and release it to the shop floor.

1. Navigate to **Job Entry**.

**Menu Path:** Production Management > Job Management > General Operations > Job Entry

2. Click the **New** icon.
3. In the **New Job Number** window, click **Next Job**, and then click **OK**.
4. Note of the **Job Number**: \_\_\_\_\_.
5. In the **Part** field, enter **XXX-AMM** (where XXX are your initials).
6. In the **Req by** field, select tomorrow's date.
7. From the **New** menu, select **New Demand Link > Make to Stock**.
8. In the **Make to Stock** sheet, in the **Quantity** field, enter **25**.
9. Right-click on the **ASM:0** node in the tree and select **Get Details**.
10. In the **Get Details** sheet, click **OK**.
11. Review the **Materials** and note the **Backflushed** materials.
12. Navigate to the **Job** sheet and select the **Released** check box.
13. In the **Schedule Job** window, click **OK**.
14. Review the details of your job.
15. Right-click the **Job** field and select **Open With > Job Tracker**.
16. In the **Job Tracker > Job** sheet, note the **Completed qty**.
17. In the **Job Tracker**, navigate to the **Part Locations** sheet.
18. Click **Retrieve** under the **WIP** and **Material** sheets, notice there is no **WIP** and no **Material**.
19. **Close** Job Tracker.
20. **Close** Job Entry.
21. Minimize the Epicor Main Menu.

### Workshop 4 – Log in to Epicor MES

1. On the computer desktop, double-click the **Epicor ERP 10 MES** icon.
2. Confirm you are logged into **Epicor MES**, check the status bar to confirm you are working in company **Epicor Education** and the **Main** site.
3. In the **MES** application, click the **Log In** button.

4. In order to start working as **James B. Carville**, in the **Employee ID** field, enter **100** and press **Tab** or **Log In**.
5. In the **Select Shift** window, click **OK**.

## Workshop 5 – Run a Job in the Shop Floor using Epicor MES

In this workshop, start to get familiar with the Epicor MES and the Work queue.

1. Click the **Work Queue** button. The **Work Queue** program displays.
2. In the **Start Date** field, enter today's date.
3. Click the **Binoculars** icon.
4. In the **Resource Group Search** screen, click **Search**.
5. Select the **Resource Group** assigned to work in **OP 10** of your job. Click **OK**.
6. Expand the **Current Work** node from the tree.
7. Click on your **Job** from the **Current Work** list.
8. Under the **Job Details** sheet, click **Get Request**.
9. Once the **Get Request** window displays, notice that the **Materials** required by the first operation are listed. Click **OK**.
10. Close **Get Request**.
11. Navigate back to **Work Queue > Job Details**, and click **Select for Work**.
12. In the **Resources** drop-down list, select one of the resources.
13. Click **Production**.
14. Notice that the **Job Operation** display now under the **Active Work** sheet.
15. Exit Work Queue.
16. Notice that the **Job Operations** display also as active in the **Production** grid on the main **MES Screen**.
17. Click **Log out** on the MES.

## Workshop 6 – Process Materials using the Material Queue

In this workshop, process a material transaction queue to fulfill raw material requested for a job.

1. In the **MES** application, click the **Log In** button.
2. In order to start working as **Charles L. Johnson**, in the **Employee ID** field, enter **105** and click **OK**.
3. Click **OK** in the **Select Shift** window.
4. Navigate to the **Material** sheet.
5. Click the **Material Queue** button.
6. In the **From Date** field, select today's date, click **Retrieve**.
7. Scroll the grid and look for the **Tran Type**, **Requested By**, **From/to** and **Whs/Bin**, and **Supply Job** columns to confirm that the **Material** shown on the screen is to supply to your job.

8. Highlight the record for your job material request and click the **Select** button at the bottom of the screen.
9. Navigate to the **My Selection** sheet, and click **Select** to select your material transaction.
10. Click the **Tags** button.
11. In the **Print Tags** window, click **Preview**.
12. Close the **Print Tags** window and wait until the **Tags** are displayed.
13. Close the Material Tags report.
14. Navigate back to the **Material Request Queue** and click the **Process** button.
15. Once the **Issue Material** window displays, review the info and click **OK**.
16. Exit Material Request Queue.
17. Navigate back to the main **MES** screen and click **Clock Out**.
18. Click **Yes** in the **Clock out** confirmation.

### **Workshop 7 – Report Labor and Review WIP / Materials for a Job**

In this workshop, report labor and understand how it is reflected in the WIP. Also learn how raw materials are consumed when an operation is executed.

1. In the **MES** application, click the **Log In** button.
2. In order to start working as **James B. Carville**, in the **Employee ID** field, enter **100** and press **Enter**.
3. In the **Production** sheet, identify your **Job Operation**, right-click on the **Job Number** column and select **Open With > Job Tracker**.
4. In the **Job Tracker**, navigate to the **Part Locations** sheet.
5. Under **Part Locations > Material** sheets, click **Retrieve**.
6. Ensure that there is some **Material** in your job. Note that the **Quantity = 6.25 FT**.
7. Minimize the **Job Tracker**.
8. Navigate back to the main **MES** menu.
9. In the **Production** grid, select your **Job Operation**.
10. Click the **Report Quantity** button.
11. In the **Report Quantity** window, in the **Current** field, enter **10**.
12. Notice the **Request Move** check box is clear. Do **NOT** select it.
13. Click **OK**.
14. Navigate to the **Job Tracker**.
15. In the **Part Locations > Materials** sheet, click **Retrieve**.
16. Notice the **Quantity** has been updated. Note the new **Quantity = 3.75**.

**EXPLANATION:** The Qty/Parent on the Job Material is 0.25 FT. So, producing 10 will consume a quantity of 2.5 FT of material. This leaves a **Remaining Qty of 3.75 = 6.25 (Issued Qty) – 2.5 (Consumed Qty)**.

17. In the **Part Locations > WIP** sheet, click **Retrieve**. Notice that there is some **WIP** in your job.

18. Note the following information:

| Asm | Seq | Operation | Quantity | Warehouse | Bin |
|-----|-----|-----------|----------|-----------|-----|
| 0   | 20  | Milling   | 10       | PRD       | MCH |

**EXPLANATION:** The Resource is configured as **Auto Move = True**. So, the completed quantity of 10 is automatically moved to the **Input Warehouse/Bin** of the next operation.

19. Minimize the **Job Tracker**.
20. Navigate back to the main **MES** menu.
21. From the **Production** grid, select your **Job Operation**.
22. Click the **Report Quantity** button. Notice that the Prior field shows the 10 that you previously completed.
23. In the **Report Quantity** window, in the **Current** field, enter **15**.
24. Notice the **Request Move** check box is clear by default.
25. Select the **Request Move** check box to override the default value.
26. Click **OK**.
27. Maximize the **Job Tracker**.
28. In the **Part Locations > Materials** sheet, click **Retrieve**.
29. Notice the **Quantity** has been updated. Note the result:

**EXPLANATION:** The full production quantity for the operation has been completed so all materials should now be consumed.

30. In the **Part Locations > WIP** sheet, click **Retrieve**. Notice this time there are two **WIP** records in your job.
31. Note the following information:

| Asm | Seq | Operation | Quantity | Warehouse | Bin |
|-----|-----|-----------|----------|-----------|-----|
| 0   | 20  | Milling   | 10       | PRD       | MCH |
| 0   | 20  | Milling   | 15       | PRD       | SAW |

**EXPLANATION:** You selected Request Move, which overrode the automatic move of the resource. So, the second completed quantity of 15 is ready for the next operation (#20) but is located at the Output Warehouse/Bin of the previous operation waiting to be moved by hand to the input location of the next operation.

32. In the **Part Locations > Location History** sheet, click **Retrieve**.
33. Review the information in the **Location History** sheet.
34. Navigate back to the main **MES** menu.
35. Navigate to the **Material** sheet.
36. Click the **Material Queue** button.
37. In the **From Date** field, select today's date and click **Retrieve**.
38. In the **Material Request Queue** window, scroll to the left and note the following information:

| Tran Type | Requested By     | From Warehouse | From Bin | To Warehouse | To Bin |
|-----------|------------------|----------------|----------|--------------|--------|
| MFG-OPR   | James B Carville | PRD            | SAW      | PRD          | MCH    |

39. Click the **Process** button at the bottom of the screen.
40. Once the **WIP / Material Movement** window displays, review the info and click **OK**.
41. Exit Material Request Queue.
42. Maximize the **Job Tracker**.
43. In the **Part Locations > WIP** sheet, click **Retrieve**. Notice this time the WIP record in your job.
44. Note the following information:

| Asm | Seq | Operation | Quantity | Warehouse | Bin |
|-----|-----|-----------|----------|-----------|-----|
| 0   | 20  | Milling   | 25       | PRD       | MCH |

**EXPLANATION:** Now all of the produced quantity is located at the input warehouse/ bin of the next operation.

45. In the **Part Locations > Location History** sheet, click **Retrieve**.
46. Review the information in the **Location History** sheet.
47. Navigate back to the main **MES** menu.
48. From the **Production** grid, select your **Job Operation**.
49. Click the **End Activity** button. Notice that the **Current** field contains the quantity previously reported as completed on Report Quantity.
50. In the **Current** field, note the quantity and click **OK**.
51. Maximize the **Job Tracker**.
52. Click **Refresh**.
53. In the **Part Locations > WIP** sheet, click **Retrieve**. Notice if there is any change.
54. Navigate to the **Job Details > Operations > Details** sheet and note the **Completed Qty** for the Op 10.
55. Exit the Job Tracker.
56. Navigate back to the main **MES** menu.
57. On the main **MES** menu, click **Clock Out**.
58. Click **Yes** in the clock out confirmation.
59. Exit MES.

### Workshop 8 – Log in to the Office MES Interface

In this workshop, review important settings in order to use the Office MES.

**Tip!** Catch up Job 2422.

1. Navigate to the Epicor Main menu.
2. Open **Clock In**.

**Menu Path:** Production Management > Data Collection > General Operations > Clock In

3. Notice that Office MES is trying to log in as employee **105 – Charles L. Johnson** and you need to work as employee **100 – James B. Carville**.
4. In the **Select Employee** window, click **Cancel**.
5. Navigate to **User Account Security Maintenance**.

**Menu Path:** System Setup > Security Maintenance > User Account Security Maintenance

6. In the **User ID** field, enter **manager** and press **Tab**.
7. Select the **Company>List** tab.
8. In the row for **Epicor Education**, set **ID = 100**.
9. Click **Save**.

10. Exit User Account Security Maintenance.

11. Navigate to **Clock In**.

**Menu Path:** Production Management > Data Collection > General Operations > Clock In

12. Notice the employee info displays **100 – James B. Carville**.

13. Click **OK**.

14. In the **Select Shift** window, click **OK**.

15. Navigate to **Office MES**.

**Menu Path:** Production Management > Data Collection > General Operations > Office MES

## Workshop 9 – Understand the Work Queue and Report Labor using Office MES

In this workshop, you will learn how the work queue categorizes the work for an employee.

1. In **Office MES**, from the **Actions** menu, select **Work Queue**. The **Work Queue** program displays.

Definitions :

- **Active Work:** Operations that have already been started for the current employee.
- **Current Work:** Operations that are scheduled for the selected resource group that are not yet started, but where previous operations for the job are complete.
- **Available Work:** Operations scheduled for the selected resource group where a completed quantity exists from a previous job operation, making it possible to start work on the operation.
- **Expected Work:** Operations scheduled for the selected resource group, but quantities have not yet been completed on previous operations.

2. In the **Start Date** field, enter today's date.
3. Click the **Binoculars** icon.
4. In the **Resource Group Search** window, change the **Department** to match the department of the resource group assigned to work on **OP 30** of your job.
5. Click **Search** and select the **Resource Group** assigned to work on **OP 30** of your job. Click **OK**.
6. Expand the **Current Work** and **Expected Work** nodes from the tree.
7. Look for **OP 30** of your job. Where is it displayed? \_\_\_\_\_ Why? \_\_\_\_\_ .

8. Click the **Binoculars** icon.
9. In the **Resource Group Search** window, click **Search** and select the **Resource Group** assigned to work on **OP 20** of your job. Click **OK**.
10. Expand the **Current Work** and **Expected Work** nodes from the tree.
11. Look for **OP 20** of your job. Where is it displayed? \_\_\_\_\_ Why? \_\_\_\_\_.
12. Select the tab where your job is displayed and Select the row showing your job
13. Click **Start Activity**.
14. Select one of the **Resources** from the list.
15. Click **Production**.
16. Navigate to the **Active Work** sheet.
17. Right-click on the **Job Number** column and select **Open With > Job Tracker**.
18. Navigate to the **Part Locations > WIP** sheet and click **Retrieve**. Review the WIP.

| Asm | Seq | Operation | Quantity | Warehouse | Bin |
|-----|-----|-----------|----------|-----------|-----|
| 0   | 20  | Milling   | 25       | PRD       | MCH |

19. Minimize the **Job Tracker**.
20. Select the **Work Queue** program and, in the **Active Work** grid, click **Select**.
21. Scroll to the right of the **Active Work** grid and in the **Labor Quantity** column, enter **7**.
22. Click **End Activity**. Notice how the **Operation** returns to **Current Work**.
23. Maximize the **Job Tracker**.
24. Navigate to the **Part Locations > WIP** sheet and review the WIP.

| Asm | Seq | Operation | Quantity | Warehouse | Bin |
|-----|-----|-----------|----------|-----------|-----|
| 0   | 30  | ASSEM     | 7        | PRD       | ASM |
| 0   | 20  | Milling   | 18       | PRD       | MCH |

**EXPLANATION:** The Qty 7 that was just produced at Operation 20 was Auto-Moved to the Input Bin of Operation 30. The material that is consumed by operation 20 is the WIP that was produced at operation 10. So the Quantity remaining at operation 20 is  $25 - 7 = 18$ .

25. Navigate back to **Work Queue** and, in the **Current Work** sheet, review the information of **OP 20**.
26. Select the **Job Details** tab.
27. Click **Select For Work**.
28. Select one of the **Resources** from the list.
29. Click **Production**.
30. Click the **Binoculars** icon.
31. In the **Resource Group Search** window, change the **Department** to match the department of the resource group assigned to work on **OP 30** of your job.
32. Click **Search** and select the **Resource Group** assigned to work on **OP 30** of your job. Click **OK**.
33. Expand the **Current Work**, **Available Work**, and **Expected Work** nodes from the tree.

34. What is the status of **OP 30?** \_\_\_\_\_ Why? \_\_\_\_\_.
35. Exit Work Queue.
36. Navigate back to **Office MES** and click **Refresh**.
37. From the **Actions** menu, select **End Activity**.
38. In the **Current** field, enter **10**.
39. Select the **Request Move** check box and click **OK**.
40. From the **Actions** menu, select **Clock Out**.
41. Click **OK** to the **Clock Out** confirmation.
42. Maximize the **Job Tracker**.
43. Navigate to the **Part Locations > WIP** sheet and click **Retrieve** and review the WIP.

| <b>Asm</b> | <b>Seq</b> | <b>Operation</b> | <b>Quantity</b> | <b>Warehouse</b> | <b>Bin</b> |
|------------|------------|------------------|-----------------|------------------|------------|
| 0          | 30         | ASSEM            | 7               | PRD              | ASM        |
| 0          | 30         | ASSEM            | 10              | PRD              | MCH        |
| 0          | 20         | Milling          | 8               | PRD              | MCH        |

**EXPLANATION:** Producing the Qty 10 at operation 20 consumed 10 of the WIP remaining in the Input bin of operation 20, leaving 8 WIP remaining for operation 20. Request Move was selected for the Qty 10 that was produced so it remains in the Output Whse/Bin of Operation 20 waiting to be manually moved to the Input Whse/Bin of Operation 30.

#### Workshop 10 – Use Time and Expense Entry to Report Labor - Move to Op 30?

In this workshop, report labor using **Time and Expense Entry** and understand how this process updates the WIP in a job.

1. Navigate to **Time and Expense Entry**.

**Menu Path:** Production Management > Job Management > General Operations > Time and Expense Entry

2. Note the default **Employee ID**, and ensure that the employee is **100 – James B. Carville**.
3. From the **New** menu, select **New Time Detail**.
4. In the **Job** field, enter your Job number.
5. In the **Operation** field, select **Op 20**.
6. In the **Labor Qty** field, enter **3**.
7. Click **Submit**.
8. Close Time and Expense Entry.
9. Maximize the **Job Tracker**.
10. Click **Refresh**.
11. Navigate to the **Job Details > Operations > Details** sheet and note the **Completed Qty** for the **Op 20:** \_\_\_\_\_.
12. Navigate to the **Part Locations > WIP** sheet and review the WIP.

| Asm | Seq | Operation | Quantity | Warehouse | Bin |
|-----|-----|-----------|----------|-----------|-----|
| 0   | 30  | ASSEM     | 7        | PRD       | ASM |
| 0   | 30  | ASSEM     | 10       | PRD       | MCH |
| 0   | 20  | Milling   | 8        | PRD       | MCH |

**EXPLANATION:** Time Entry is expected to occur after the fact and so does not update WIP.

13. Why is there a discrepancy between **Completed Qty** and **WIP**?
- 

**EXPLANATION:** you can use Move WIP to move WIP that got left behind.

14. Navigate to **Move WIP**. Still not working correctly. So just discuss

**Menu Path:** Material Management > Advanced Material Management > General Operations > Move WIP

15. In the **Job** field in the **From** pane, enter your Job number.

16. In the **Opr** field in the **From** pane, select **Op 20**.

17. In the **Opr** field in the **To** pane, select **Op 30**.

18. In the **Bin** field in the **From** pane, enter **MCH**

19. In the **Quantity** field, enter **3**.

20. Confirm that the **Warehouse** and **Bin** info in the **From** pane is correct.

21. Confirm that the **Warehouse** and **Bin** info in the **To** pane is correct.

22. Click **OK**.

23. Exit Move WIP.

24. Maximize the **Job Tracker**.

25. Click **Refresh**.

26. Navigate to the **Job Details > Operations > Details** sheet and note the **Completed Qty** for the **Op 20**: \_\_\_\_\_.

27. Navigate to the **Part Locations > WIP** sheet and review the WIP.

| Asm | Seq | Operation | Quantity | Warehouse | Bin |
|-----|-----|-----------|----------|-----------|-----|
| 0   | 30  | ASSEM     | 10       | PRD       | ASM |
| 0   | 30  | ASSEM     | 10       | PRD       | MCH |
| 0   | 20  | Milling   | 5        | PRD       | MCH |

## Workshop 11 – Use the Epicor Handheld Interface

In this workshop, get familiar with the Epicor Handheld interface.

1. Navigate back to the Epicor Main menu.

2. Navigate to **Demo Menu**.

**Menu Path:** Production Management > Data Collection > Handheld > Demo Menu

3. Once in the handheld menu, in the **Employee ID** field, enter **105**.

4. Press **F2**.

5. Confirm that **Charles L. Johnson** displays as the active employee.
6. Drill into the **Material Handling** submenu, and press **3**.
7. Press **4** to review the **Material Queue**.
8. If necessary, press **F4** to scroll to the transaction for your part.
9. Review the Transaction displayed on the **Material Queue**
10. Press **F2** to **Select the transaction**.
11. Press **ESC**.
12. Press **5** to review **My Material Queue**.
13. At the **My Material Queue** transaction, press **F2** to **Process** the transaction.
14. At the **Process Mtl Queue**, press **F2** to **Save** the process transaction.
15. Press **ESC**.
16. Click on the Second Icon from the right to log out.
17. Notice the **Employee** name is not displayed anymore.
18. Click on the Second Icon from the right to log in.
19. In the **Employee ID** field, enter **100**.
20. Press **F2**.
21. Confirm that **James B Carville** displays as the active employee.
22. In order to start Labor, Press **2**.
23. In order to start the **Clock In** process at the handheld **Labor** submenu, press **1**.
24. Press **F2** to clock in.
25. Press **3** to start production.
26. At the handheld **Start Production Activity**, enter your **Job number**, **Asm:0** and **Opr:20**.
27. Press **F2** to save.
28. Back in the handheld **Labor** submenu, press **6** to review the **Work Queue**.
29. Review the information on the **Work Queue** screen and press **F2** to **End Activity**.
30. In the **Current** field, enter **5**.
31. Press **F2** to save.
32. Press **F8** in **Work Queue** to clock out.
33. Click **Yes** to the **Clock Out Warning**.
34. At the **Handheld** menu, click the **Exit** button in the lower right corner and click **Yes** to the **Exit confirmation** message.
35. Maximize the **Job Tracker**.
36. Click **Refresh**.
37. Navigate to the **Part Locations > WIP** sheet and click **Retrieve** and review the WIP.

| Asm | Seq | Operation | Quantity | Warehouse | Bin |
|-----|-----|-----------|----------|-----------|-----|
| 0   | 30  | ASSEM     | 25       | PRD       | ASM |

38. Navigate to the **Job Details > Operations > Details** sheet and note the **Completed Qty** for the Op 20.

## Workshop 12 – Use the Material Queue Manager

In this workshop, use the Material Queue Manager to assign transactions to employees or warehouse teams.

**Tip!** Catch up job 2424.

1. Navigate to **Warehouse Team**.

**Menu Path:** Material Management > Inventory Management > Setup > Warehouse Team

2. Click **New**.
3. In the **Warehouse Team** field, enter **Team1**.
4. In the **Description** field, enter **Team 1**.
5. In the **Available Employees** list, highlight **Charles L. Johnson**.
6. Click the right arrow button to select **Charles L. Johnson**.
7. Click **Save**.
8. Exit Warehouse Team.
9. Navigate to **Get Request**.

**Menu Path:** Material Management > Advanced Material Management > General Operations > Get Request

10. In the **Job** field, enter your Job number.

11. In the **Seq** field, select **30**.

**EXPLANATION:** The entries in the grid represent the materials required for operation 30 and Request Qty will default to the Required Qty of the material. Two of the materials linked to operation do not appear because those materials are marked for backflushing.

12. Click **OK**.
13. Exit Get Request.
14. Navigate to **Material Queue Manager**.

**Menu Path:** Material Management > Advanced Material Management > General Operations > Material Queue Manager

15. Click **Retrieve**.
16. Highlight the material for job **OP 30 (Part 1032x075)**.
17. Click **Assign Employee** at the bottom of the screen.
18. In the **Employee Search**, click **Search**.
19. Select **100 James B Carville** and click **OK**.
20. In the **Material Queue Manager**, click **Save**.
21. Minimize Material Queue Manager.

22. Navigate to **Material Request Queue**.

**Menu Path:** Material Management > Advanced Material Management > General Operations > Material Request Queue

23. Click **Retrieve**.

24. Notice the material transaction is displayed on the **My Selections** sheet.

25. Minimize Material Request Queue.

26. Maximize **Material Queue Manager**.

27. Highlight the material for job **OP 30**.

28. Click **Clear Assignments**.

29. Click **Save**.

30. Maximize **Material Request Queue**.

31. Click **Retrieve**.

32. Notice the material transaction is displayed on the **Unselected** sheet.

33. Maximize **Material Queue Manager**.

34. Highlight the material for job **OP 30**.

35. Click **Assign Team** at the bottom of the screen.

36. In the **Warehouse Team Search**, click **Search**.

37. Select **Team1** and click **OK**.

38. In the **Material Queue Manager**, click **Save**.

39. Maximize **Material Request Queue**.

40. Click **Retrieve**.

41. Notice the material transaction is not displayed.

**EXPLANATION:** The clocked in Employee, James Carville, is not a member of the Warehouse Team that is assigned to the transaction.

42. Exit Material Request Queue.

43. Exit Material Queue Manager.

### Workshop 13 – Review the Material Queue using Employee on Warehouse Team

In this workshop, review details of the **Material Request Queue**.

1. On the computer desktop, double-click the **Epicor ERP 10 MES** icon.
2. In the **MES** application, click the **Log In** button.
3. In order to start working as **Charles L. Johnson**, in the **Employee ID** field, enter **105** and click **OK**.
4. In the **Select Shift** window, click **OK**.
5. Navigate to the **Materials** sheet.
6. Click the **Material Queue** button.
7. Click **Retrieve**

8. Notice the material transaction for **OP 30** is displayed on the **My Selections** sheet.
9. Highlight the material transaction for **OP 30**.
10. Click **Process**.
11. Review the information in the **Issue Material** screen and click **OK**.
12. Exit Material Request Queue.
13. In the **MES** menu, click **Log Out**.

### Workshop 14 – Review Employee Security for Epicor MES

In this workshop, learn how to add extra security to the Epicor MES.

1. In the **MES** application, click the **Log In** button.
  2. In order to start working as **Otto B. Walker**, in the **Employee ID** field, enter **OBWalker** ID and click **OK**.
  3. An Epicor Log on screen is displayed. Why?

---

  4. Click **Cancel**.
  5. In the Epicor ERP Main menu, navigate to **Employee Maintenance**.
- Menu Path:** Production Management > Job Management > Setup > Employee
6. In the **ID** field, enter **OBWalker** and press **Tab**.
  7. Navigate to the **Production Info** sheet, and note the value in the **User Name** field.
  8. In the **MES** application, click the **Log In** button.
  9. In the **Employee ID** field, enter **OBWalker** and click **OK**.
  10. In the **Log On** window, **password** field, enter **Insights**.
  11. Click **OK**.
  12. In the **Select Shift** window, click **OK**.

### Workshop 15 – Process Job Receipt to Stock using Epicor MES

In this workshop, process a job receipt to stock using the Epicor MES.

1. Ensure you are clocked in as **OBWalker** in the **MES**.
2. Click the **Start Production Activity** button.
3. In the **Job** field, enter your Job number.
4. In the **Operation** field, select **Op 30**.
5. Click **OK**.
6. On the **Production** sheet, identify your **Job Operation**, right-click on the **Job Number** column and select **Open With > Job Tracker**.
7. Navigate to the **Part Locations > WIP** sheet and review the WIP.

| Asm | Seq | Operation | Quantity | Warehouse | Bin |
|-----|-----|-----------|----------|-----------|-----|
| 0   | 30  | ASSEM     | 25       | PRD       | ASM |

8. Minimize the Job Tracker.
9. Navigate back to the **MES** and click **End Activity**.
10. In the **Current** field, enter **25**.
11. Select the **Request Move** check box if it is clear.
12. Click **OK**.
13. Maximize **Job Tracker**.
14. Click **Refresh**.
15. Navigate to the **Part Locations > WIP** sheet and review the WIP.

| Asm | Seq | Operation | Quantity | Warehouse | Bin |
|-----|-----|-----------|----------|-----------|-----|
| 0   | 0   |           | 25       | PRD       | ASM |

**EXPLANATION:** WIP that has been completed on the last operation of the job will display with Seq 0 of the assembly being worked. Since Request Move was selected, the completed quantity is sitting in the Output Bin of the last operation waiting to be moved into inventory.

16. Navigate back to the **MES** and click **Clock Out**.
17. Click the **Log In** button.
18. In order to start working as **Charles L. Johnson**, in the **Employee ID** field, enter **105** and click **OK**.
19. Navigate to the **Materials** sheet.
20. Click the **Material Queue** button.
21. In the **From Date** field, select today's date, click **Retrieve**.
22. In the **Material Request Queue** program, scroll to the left and note the following information:

| Tran Type | Requested By   | From Warehouse | From Bin | To Warehouse | To Bin   |
|-----------|----------------|----------------|----------|--------------|----------|
| MFG-STK   | Otto B. Walker | PRD            | ASM      | CHI          | 01-01-01 |

**EXPLANATION:** This is a Job Receipt to Stock transaction to receive the finished goods from the production area into inventory to the primary warehouse/bin for the part.

23. Click the **Process** button at the bottom of the screen.
24. Once the **Job Receipt to Inventory** window displays, review the info and click **OK**.
25. Exit Job Receipt to Inventory.
26. Exit Material Request Queue.
27. Maximize the **Job Tracker**.
28. Click **Refresh**.
29. Navigate to the **Job** sheet and note the **Completed** quantity.
30. Right-click on the **Part** field and select **Open With > Part Transaction History Tracker**.
31. Click **Retrieve**.
32. Exit Part Transaction History Tracker.
33. On Job Tracker Navigate to the **Job Details > Operations > Detail** sheet and note the **Completed** quantity for the **Op 30**.

34. On Job Tracker Navigate to the **Part Locations > WIP** sheet and review the WIP.
35. On Job Tracker Navigate to the **Part Locations > Location History** sheet and review the info.

# Deep Dive into the Scheduling Process

Scheduling is the activity that places the work load generated by jobs into the production calendar of the resources. In the following workshops, you will learn new techniques to monitor and distribute load within the organization, and so maximize productivity.

At the conclusion of this lab, you will be able to:

- Explain the key terms in Epicor Scheduling
- Explain the key responsibilities of the Planner
- Modify Company / Site level settings that impact scheduling
- Link Resource Groups or Resources to Operations.
- Use the Planning Workbench
- Review the Overload Informer and the Site / Resource Schedule Load Graphs.

## System Requirements

| Modules/Licensing                | Product Version |
|----------------------------------|-----------------|
| Production                       | 10.1            |
| Advanced Planning and Scheduling |                 |

## Business Flow Requirements

Before running Load Graphs you have to execute the **zScheduleLoadGraph** Process Set.

**Menu Path:** System Management > Process Sets > Schedule Process Set

The process has already been completed on the lab machines.

### Key Terms:

- Capacity
- Load
- Scheduling Blocks

## Scheduling Overview

The Epicor Scheduling Engine considers details from the job Method of Manufacture and translates that information into load on the resources required by the operations in the Method of Manufacturing. Major components of scheduling are:

- Operations
- Resources / Resource Groups
- Capacity
- Scheduling basis (Finite or Infinite)

The process of scheduling determines when each operation must be started and what resources will be needed in order to meet a target completion date. In order to do this, the Scheduling Engine requires:

- A list of operations to be completed and the order in which they must be completed, usually called a Routing or Bill of Operations
- Estimated times to set up machines and to perform the actual manufacturing operations
- A target start date or completion date

The scheduling process then assigns estimated start and completion dates for each operation. In Epicor ERP, this can be done using either forward or backward scheduling.

There are several examples of scheduling from everyday life from the planning of a holiday to the preparation of a meal that has to be ready by lunchtime.

### Scheduling Setup Advisor

Scheduling is the responsibility of the planner-, or planners of the company. In the course of this lab session we will first take a careful look at existing configuration of the Epicor Education Company trying to find the answers to the most relevant questions in the field:

- **Who is responsible for scheduling what?** Looking at the planner configuration (who?) and the Part Maintenance (what?)
- What are the **location-related settings** on the company-, and site level?
- Scheduling is the selection of people and machines also known as resources for job operations. **How can we group resources** to meet various reporting and daily processing requirements? **How do we connect them to operations** on the master data level even before we even start production?

### Who is Responsible for Scheduling?

Scheduling is the responsibility of the Planner that is set up as a Person in Epicor ERP. The planner can be selected on the Product Group, on the Part Entry, or **Sites > Planning** tab. You can also specify the planner on the Planning Contract.

Navigate to **Product Group Maintenance**.

**Menu Path:** Production Management > Job Management > Setup > Product Group

1. In the **Group** field, enter **HDW**.
2. In the **Planner**, select **Brian Howard**.

Navigate to **Part Maintenance**.

**Menu Path:** Production Management > Job Management > Setup > Part

1. In the **Part** field, enter **DCD-100-SP**.
2. Navigate to the **Sites > Planning** tab. From the **Planner** drop-down list, select **Brian Howard**.
3. Review the settings in the **Scheduling** pane.
4. Navigate to **Revisions > Detail** sheet. Right-click in the **Rev** field and select **Open With > Method tracker**.
5. In the tree view, expand the **Operations** drop-down list and select **Opr: 30 OP: FORM**. Review the Scheduling Factors, Setup and Production standards.
6. Navigate to the **Scheduling Resources > List** tab and review the scheduling requirements in a list form. More on these later.

Navigate to **Planning Contract Maintenance**

**Menu Path:** Production Management > Job Management > General Operations > Planning Contract

1. In the **Contract ID** field, enter **PC1**.
2. Review the **Planner** assigned to the contract.

### What are the Company-, and Site level Settings?

Scheduling of jobs takes place within a company, in a particular manufacturing plant of the company. There are parameters that can be defined on the company level, and there are some that can be different in each location.

### Workshop – Review Company Configuration

In this workshop, review the Company Configuration options that impact Scheduling.

Navigate to **Company Configuration**.

**Menu Path:** System Management > Company Maintenance > Company Configuration

1. Navigate to the **Modules > Production > Job sheet**.
2. Select or verify the **Global Reschedule Started Operations** check box is selected.
3. Select or verify the **Allow Scheduling Before Today** check box is cleared.
4. Review the settings assigned for the **Early Grace Period (Days)** and **Late Grace Period (Days)** fields.
5. In the **Load Relieved by** section, verify **Quantity** is selected.
6. Click **Save**.
7. Exit Company Configuration.

### Workshop – Review Site Level Modifiers

Navigate to **Site Maintenance**.

**Menu Path:** System Setup > Company/Site Maintenance > Site Maintenance

1. In the **Site** field, enter **MfgSys** and press **Tab**.
2. Navigate to the **Planning** sheet.
3. Verify the following settings display.

| Field                | Data  |
|----------------------|-------|
| Scheduling Ahead For | Setup |
| Finite Horizon       | 30    |
| Overload Horizon     | 60    |
| Rough Cut Horizon    | 270   |

4. Exit Site Maintenance.

### How can we Group Resources and link them to Operations?

You may quickly notice there is no such thing as Resource Maintenance. Resources may only exist in Groups.

Navigate to **Resource Group Maintenance**.

**Menu Path:** Production Management > Job Management > Setup > Resource Group Maintenance

1. Enter **ASMR** in the **Resource Group ID** field.
2. Review the fields in the **Scheduling** Pane.

Apart from the above, resources can be categorized by:

- Location (Department)
- Skill (Capability)
- Type
- Collection, a cross-functional category. One resource may belong to multiple collections.

Navigate to **Operation Maintenance**.

**Menu Path:** Production Management > Job Management > Setup > Operation

1. Click **New**.
2. In the **ID** and **Description** fields, enter **Insights**.
3. Review the **Scheduling Requirement Options**:
  - a. Capabilities
  - b. Resources
  - c. Resource Groups

### A Day in the Life of Brian Howard

To learn about scheduling and challenges of the field, we will follow Brian Howard, the master scheduler of the Epicor Education Company, Main Site as he completes some of his daily routine tasks in the Epicor ERP system.

### Planning Workbench

The Planning Workbench is an excellent tool to review actions items at the start of the day. It may only be used for Make-to-order items, or any item where MRP could not create jobs due to lack of valid revision.

Navigate to the **Planning Workbench**.

**Menu Path:** Production Management > Job Management > General Operations > Planning Workbench

1. Search and select **All Suggestions**.
2. Review the **Suggestion Type**.

You will only see Date-, and New Suggestions. The type could also be

- **Can**: The job should be cancelled
  - **Cfg**: Part revision on Sales Order has changed
  - **Chg**: Information on Order Release has changed
  - **Qty**: The quantity on the order release has changed and now different from the quantity on related job
1. Find the first **Date** suggestion for the part **DCD-200-ML**.
  2. Right-click the **Target Job ID** and select **Open With Job Entry**.
  3. From the Actions menu, select **Schedule > Job Scheduling**.

As an experienced scheduler you know the earliest date you can start is tomorrow, and in such a proximity you should use finite scheduling.

4. Select the **Forward** radio button.
5. As the **Start Date**, select tomorrow.
6. Click **OK**.

Review the Scheduling Results in the Job Scheduling Board.

7. Right-click in the **Job ID** field, then select **Open With > Job Scheduling Board**.

### **Overload Informer**

Another important task for Brian is to make sure no resource groups are overloaded in the next couple of days. Capacity may be increased in the more distant future by hiring more people or purchasing new machines, but it the shorter the distance in time, the more difficult it is to change production capacity. The problems have to be solved by scheduling out some of the jobs, even if it means a late delivery.

Navigate to the **Overload Informer**.

**Menu Path:** Production Management > Scheduling > General Operations > Overload Informer

1. Set the **Cutoff Date** to June 1, 2019 and the **Department** to the **Assembly Department**.
2. Review the **Actual** tab.
3. Right-click in the **Resource Group ID** field, then select **Open With > Resource Group Scheduling Board**.

This allows you to review all the jobs that are connected to the selected resource group. You can use the Resource Group Scheduling Board to re-schedule some of the jobs and hence optimize workload.

### **Global Scheduling**

Global Scheduling allows you to re-schedule all the open jobs at the same time. On some jobs you may want to opt out by selecting the Lock check box and in the Company configuration you may decide not to allow the re-scheduling of already started operations. This is a great way of making the most out of your capacities and allowing you to focus on handling exceptions.

As Brian executes Global Scheduling, he must run the following programs:

- Calculate Global Scheduling Order
- Adjust Global Scheduling Order
- Global Scheduling

### **Load Graphs**

Load Graphs provide a visual overview of capacity and scheduling load. They are flexible dashboards where you can select what you want to see the load by-, and the type of chart you prefer.

**Menu Path:** Production Management > Scheduling > General Operation

- Site Schedule Load Graph
- Resource Schedule Load Graph

### Further Reference

For further reference on scheduling review the **Scheduling Technical Reference Guide**, watch some of the **Knowledge On-Demand** videos or join a **Live Epicor University Training Session**.

# Deep Dive into the Scheduling Process

Scheduling is the activity that places the work load generated by jobs into the production calendar of the resources. In the following workshops, you will learn new techniques to monitor and distribute load within the organization, and so maximize productivity.

At the conclusion of this lab, you will be able to:

- Explain the key terms in Epicor Scheduling
- Explain the key responsibilities of the Planner
- Modify Company / Site level settings that impact scheduling
- Link Resource Groups or Resources to Operations.
- Use the Planning Workbench
- Review the Overload Informer and the Site / Resource Schedule Load Graphs.

## System Requirements

| Modules/Licensing                | Product Version |
|----------------------------------|-----------------|
| Production                       | 10.1            |
| Advanced Planning and Scheduling |                 |

## Business Flow Requirements

Before running Load Graphs you have to execute the **zScheduleLoadGraph** Process Set.

**Menu Path:** System Management > Process Sets > Schedule Process Set

The process has already been completed on the lab machines.

### Key Terms:

- Capacity
- Load
- Scheduling Blocks

## Scheduling Overview

The Epicor Scheduling Engine considers details from the job Method of Manufacture and translates that information into load on the resources required by the operations in the Method of Manufacturing. Major components of scheduling are:

- Operations
- Resources / Resource Groups
- Capacity
- Scheduling basis (Finite or Infinite)

The process of scheduling determines when each operation must be started and what resources will be needed in order to meet a target completion date. In order to do this, the Scheduling Engine requires:

- A list of operations to be completed and the order in which they must be completed, usually called a Routing or Bill of Operations
- Estimated times to set up machines and to perform the actual manufacturing operations
- A target start date or completion date

The scheduling process then assigns estimated start and completion dates for each operation. In Epicor ERP, this can be done using either forward or backward scheduling.

There are several examples of scheduling from everyday life from the planning of a holiday to the preparation of a meal that has to be ready by lunchtime.

### Scheduling Setup Advisor

Scheduling is the responsibility of the planner-, or planners of the company. In the course of this lab session we will first take a careful look at existing configuration of the Epicor Education Company trying to find the answers to the most relevant questions in the field:

- **Who is responsible for scheduling what?** Looking at the planner configuration (who?) and the Part Maintenance (what?)
- What are the **location-related settings** on the company-, and site level?
- Scheduling is the selection of people and machines also known as resources for job operations. **How can we group resources** to meet various reporting and daily processing requirements? **How do we connect them to operations** on the master data level even before we even start production?

### Who is Responsible for Scheduling?

Scheduling is the responsibility of the Planner that is set up as a Person in Epicor ERP. The planner can be selected on the Product Group, on the Part Entry, or **Sites > Planning** tab. You can also specify the planner on the Planning Contract.

Navigate to **Product Group Maintenance**.

**Menu Path:** Production Management > Job Management > Setup > Product Group

1. In the **Group** field, enter **HDW**.
2. In the **Planner**, select **Brian Howard**.

Navigate to **Part Maintenance**.

**Menu Path:** Production Management > Job Management > Setup > Part

1. In the **Part** field, enter **DCD-100-SP**.
2. Navigate to the **Sites > Planning** tab. From the **Planner** drop-down list, select **Brian Howard**.
3. Review the settings in the **Scheduling** pane.
4. Navigate to **Revisions > Detail** sheet. Right-click in the **Rev** field and select **Open With > Method tracker**.
5. In the tree view, expand the **Operations** drop-down list and select **Opr: 30 OP: FORM**. Review the Scheduling Factors, Setup and Production standards.
6. Navigate to the **Scheduling Resources > List** tab and review the scheduling requirements in a list form. More on these later.

Navigate to **Planning Contract Maintenance**

**Menu Path:** Production Management > Job Management > General Operations > Planning Contract

1. In the **Contract ID** field, enter **PC1**.
2. Review the **Planner** assigned to the contract.

### What are the Company-, and Site level Settings?

Scheduling of jobs takes place within a company, in a particular manufacturing plant of the company. There are parameters that can be defined on the company level, and there are some that can be different in each location.

### Workshop – Review Company Configuration

In this workshop, review the Company Configuration options that impact Scheduling.

Navigate to **Company Configuration**.

**Menu Path:** System Management > Company Maintenance > Company Configuration

1. Navigate to the **Modules > Production > Job sheet**.
2. Select or verify the **Global Reschedule Started Operations** check box is selected.
3. Select or verify the **Allow Scheduling Before Today** check box is cleared.
4. Review the settings assigned for the **Early Grace Period (Days)** and **Late Grace Period (Days)** fields.
5. In the **Load Relieved by** section, verify **Quantity** is selected.
6. Click **Save**.
7. Exit Company Configuration.

### Workshop – Review Site Level Modifiers

Navigate to **Site Maintenance**.

**Menu Path:** System Setup > Company/Site Maintenance > Site Maintenance

1. In the **Site** field, enter **MfgSys** and press **Tab**.
2. Navigate to the **Planning** sheet.
3. Verify the following settings display.

| Field                | Data  |
|----------------------|-------|
| Scheduling Ahead For | Setup |
| Finite Horizon       | 30    |
| Overload Horizon     | 60    |
| Rough Cut Horizon    | 270   |

4. Exit Site Maintenance.

### How can we Group Resources and link them to Operations?

You may quickly notice there is no such thing as Resource Maintenance. Resources may only exist in Groups.

Navigate to **Resource Group Maintenance**.

**Menu Path:** Production Management > Job Management > Setup > Resource Group Maintenance

1. Enter **ASMR** in the **Resource Group ID** field.
2. Review the fields in the **Scheduling** Pane.

Apart from the above, resources can be categorized by:

- Location (Department)
- Skill (Capability)
- Type
- Collection, a cross-functional category. One resource may belong to multiple collections.

Navigate to **Operation Maintenance**.

**Menu Path:** Production Management > Job Management > Setup > Operation

1. Click **New**.
2. In the **ID** and **Description** fields, enter **Insights**.
3. Review the **Scheduling Requirement Options**:
  - a. Capabilities
  - b. Resources
  - c. Resource Groups

### A Day in the Life of Brian Howard

To learn about scheduling and challenges of the field, we will follow Brian Howard, the master scheduler of the Epicor Education Company, Main Site as he completes some of his daily routine tasks in the Epicor ERP system.

### Planning Workbench

The Planning Workbench is an excellent tool to review actions items at the start of the day. It may only be used for Make-to-order items, or any item where MRP could not create jobs due to lack of valid revision.

Navigate to the **Planning Workbench**.

**Menu Path:** Production Management > Job Management > General Operations > Planning Workbench

1. Search and select **All Suggestions**.
2. Review the **Suggestion Type**.

You will only see Date-, and New Suggestions. The type could also be

- **Can**: The job should be cancelled
  - **Cfg**: Part revision on Sales Order has changed
  - **Chg**: Information on Order Release has changed
  - **Qty**: The quantity on the order release has changed and now different from the quantity on related job
1. Find the first **Date** suggestion for the part **DCD-200-ML**.
  2. Right-click the **Target Job ID** and select **Open With Job Entry**.
  3. From the Actions menu, select **Schedule > Job Scheduling**.

As an experienced scheduler you know the earliest date you can start is tomorrow, and in such a proximity you should use finite scheduling.

4. Select the **Forward** radio button.
5. As the **Start Date**, select tomorrow.
6. Click **OK**.

Review the Scheduling Results in the Job Scheduling Board.

7. Right-click in the **Job ID** field, then select **Open With > Job Scheduling Board**.

### **Overload Informer**

Another important task for Brian is to make sure no resource groups are overloaded in the next couple of days. Capacity may be increased in the more distant future by hiring more people or purchasing new machines, but it the shorter the distance in time, the more difficult it is to change production capacity. The problems have to be solved by scheduling out some of the jobs, even if it means a late delivery.

Navigate to the **Overload Informer**.

**Menu Path:** Production Management > Scheduling > General Operations > Overload Informer

1. Set the **Cutoff Date** to June 1, 2019 and the **Department** to the **Assembly Department**.
2. Review the **Actual** tab.
3. Right-click in the **Resource Group ID** field, then select **Open With > Resource Group Scheduling Board**.

This allows you to review all the jobs that are connected to the selected resource group. You can use the Resource Group Scheduling Board to re-schedule some of the jobs and hence optimize workload.

### **Global Scheduling**

Global Scheduling allows you to re-schedule all the open jobs at the same time. On some jobs you may want to opt out by selecting the Lock check box and in the Company configuration you may decide not to allow the re-scheduling of already started operations. This is a great way of making the most out of your capacities and allowing you to focus on handling exceptions.

As Brian executes Global Scheduling, he must run the following programs:

- Calculate Global Scheduling Order
- Adjust Global Scheduling Order
- Global Scheduling

### **Load Graphs**

Load Graphs provide a visual overview of capacity and scheduling load. They are flexible dashboards where you can select what you want to see the load by-, and the type of chart you prefer.

**Menu Path:** Production Management > Scheduling > General Operation

- Site Schedule Load Graph
- Resource Schedule Load Graph

### Further Reference

For further reference on scheduling review the **Scheduling Technical Reference Guide**, watch some of the **Knowledge On-Demand** videos or join a **Live Epicor University Training Session**.

# DocStar ECM-Building Workflow Applications-Part 1

We're going to focus on designing the Happy Path in this session. The Happy Path is how your process goes when everything is a success. The next session will discuss how to handle the various forms of exception states, but for this lab, we want to show you the principles of how to design and construct a workflow that will do this along with best practices and key tips about all of the tools included in the Workflow Designer.

This workflow serves the purpose of indexing a non-PO based invoice, routing it to the appropriate parties for approval, and entering it into the accounting system.

At the conclusion of this lab, you will be able to:

- Map a workflow and color code it
- Understand how approvals work in workflow
- Create branch routing rules

## System Requirements

|                          |                          |
|--------------------------|--------------------------|
| <b>Modules/Licensing</b> | <b>DocStar ECM v18.2</b> |
|                          | Advanced Workflow        |

## Workflow Requirements

If you implement this functionality, you will need to create groups, set assignment and owner details, and add more specifics to match or enhance your company's process. This lab is intended to help you with the more complicated pieces. Do not attempt to build a workflow without taking our Workflow Design training.

### Log in to DocStar ECM and open the Workflow Designer

The Workflow Designer allows you to create and modify business processes inside of DocStar ECM.

1. Open the **Epicor Tools** shortcut.
2. Double click "**DocStar ECM**".
3. Click the "**username**" field.
4. Type [admin@docstar.com](mailto:admin@docstar.com).
5. Click the "**password**" field.
6. Type "**docstar**".
7. Click **Login**.
8. Click **Admin**.
9. Under the "**Workflow**" column, click the [->] icon next to the words "**Workflow Designer**".

## Add Color Coding and Clear Approvals

Color coding makes maintenance and support of your workflow process much easier. Clearing Approvals is essential to ensuring the validity of the approvals at the appropriate times in your process.

1. Click the **—New—**dropdown and select **EAP Non PO Invoice 1A**.
    - a. Listen to the discussion on the **Workflow Designer File language**.
  2. Hover over the **Processing** step and click **Edit Step**.
  3. Click the **paint bucket** icon.
  4. Click the **yellow** color on the third row in the leftmost column.
  5. Click **Ok**.
  6. Click **Set Defaults**.
  7. Click **Edit**.
  8. Scroll down in the **Task Library** window until you see **Clear Approvals**.
  9. Click **Clear Approvals** and hold the mouse button down.
    - a. Drag the **Clear Approvals** task into the **Tasks** space directly above the **Replace: “Invoice”** task and release the mouse button.
  10. Click **Ok** to confirm changes in the Task Editor.
  11. Click **Ok** to confirm changes in the Action Editor.
  12. Click **Ok** to confirm changes in the Step Editor.
    - a. Listen to the discussion on setting defaults and clearing approvals
- The **Processing** step should now appear **yellow**.
13. Look at the “**EAP Non PO Invoice 1A**” dropdown at the top center of the page – Notice the italics? This indicates that you have unsaved changes.
  14. Click **Save**.

## Request Approval from the Assignee

We're going to add a Request Approval task to ask DocStar ECM to send an approval request to the Assignee at the time the invoice reaches this step in the workflow. The Request Approval may be configured to perform several key functions.

1. Hover over the yellow **Second Approval** step and click **Edit Step**
2. Click **Assign to Approver**
3. Click **Edit**
4. Scroll down in the **Task Library** window until you see **Request Approval**
5. Click **Request Approval** and hold the mouse button down.
  - b. Drag the **Request Approval** task into the **Tasks** space directly below the **Replace: Approver 2** task and release the mouse button.
  - c. In the **Input** box, type **\$Assignee**

Alternatively you can click on this value once you see it auto-filled.

- d. Listen to the discussion about the **Request Approval** task.
6. Click **Ok** to save your changes in the **Task Editor**.
7. Click **Ok** to confirm your changes in the **Action Editor**.
8. Click **Ok** to confirm your changes in the **Step Editor**.
9. Look at the “**EAP Non PO Invoice 1A**” dropdown at the top center of the page – notice the italics? This again indicates unsaved changes.
10. Click **Save**.

### Add the Department Manager to the user selection process

One way you can ensure your workflow works properly is by trusting your team to know where certain documents should be directed. This may also be automated if you have means by which your data can determine this.

1. Hover over the **Processing** step and click **Edit Step**.
2. Click **Index Invoice**.
3. Click **Edit**.
4. Scroll down in the **Task Library** window until you see **Prompt for User**.
5. Click **Prompt for User** and hold the mouse button down.
  - a. Drag the **Prompt for User** task into the **Tasks space** directly below the **Display Message** task and release the mouse button.
  - b. In the **Output** box, type **\$Field.DeptMgr**
- Alternatively you can click on this value once you see it auto-filled.
- c. In the **user prompt** box, type **Dept Mgr**:
- d. In the **Select Group** dropdown, choose **Approvers**.
- e. Click **ok**.
6. Click **Ok** to save your changes in the **Task Editor**.
7. Click **Ok** to confirm your changes in the **Action Editor**.
8. Click **Ok** to confirm your changes in the **Step Editor**.
9. Look at the “**EAP Non PO Invoice 1A**” dropdown at the top center of the page – notice the italics? This again indicates unsaved changes.
10. Click **Save**.
11. Click the **DocStar** tab.
12. Hover over the **DocStar** menu in the top right section of the screen.
13. Click **Logout**.

### Test the Workflow's Happy Path as the Processor

Now that we've configured the workflow to handle some of the key pieces, let's test it and make sure it's working as intended.

1. Click the **username** field.
2. Type [AccountsPayable@docstar.com](mailto:AccountsPayable@docstar.com).
3. Click the **password** field.
4. Type **abc123**.
5. Click **Login**.
6. Click the **Workflow** tab.
7. Click your browser's **refresh** button.
8. In the **Work Items** panel, click the checkbox for **Dell Invoice 5698231**.
9. Click the **Actions** button.
10. Click **View**.
11. Click **Actions**.
  - a. Hover over **Workflow** to expand the Workflow submenu.
  - b. Click **Assign Workflow**.
  - c. Select **EAP Non PO Invoice 1A**.
  - d. Click **Ok**.
12. In the **workflow** panel, click the **Dept Mgr** field and select any user name from the dropdown list.
13. Fill out the rest of the information in the **input boxes** of the Workflow panel based on the information on the document. Use the **mouse wheel** to **scroll your view** of the document to find the total.
14. Click the **Submit** button.
15. Click **Ready to Pay**.
16. Click the **Second Approver** dropdown and select [Training@docstar.com](mailto:Training@docstar.com).
17. Click **submit**.
18. Hover over the **DocStar** menu in the top right section of the screen.
19. Click **Logout**.

### Test the Workflow's Happy Path as the Approver

1. Click the **username** field and type [training@docstar.com](mailto:training@docstar.com).
2. Click the **password** field and type **abc123**.
3. Click **Login**.
4. Click **Workflow**.
5. In the **Work Items** panel, click the checkbox for **Dell Invoice 5698231**.
6. Click the **Actions** button.

7. Click **View**.
8. In the **workflow** panel, click **Approve**.
9. In the **Approved** box, enter some comments and click **Save**.
10. Click **Submit**.
11. Click **Final Processing**.
12. Scroll down in the **Content Fields** panel and click the **Is Paid** checkbox.
13. Click **Save**.
14. Scroll up and see that the **Workflow Status** reads as **Complete**.

# DocStar ECM-Building Workflow Applications-Part 2

We're going to focus on designing the Exception Path in this session. The Exception Path is how your process goes when everything isn't a success. A good workflow never leaves a user stranded, so it's important to understand how to handle the various forms of exception states. We'll also discuss best practices and key tips about all of the tools included in the Workflow Designer.

At the conclusion of this lab, you will be able to:

- Create stubs for exception states
- Configure automatic evaluation of data
- Create branch routing rules

## System Requirements

| Modules/Licensing | DocStar ECM v18.2 |
|-------------------|-------------------|
|                   | Advanced Workflow |

## Workflow Requirements

If you implement this functionality, you will need to create groups, set assignment and owner details, and add more specifics to duplicate or enhance your company's process. This lab is intended to help you with the more complicated pieces. Do not attempt to build a workflow without taking our Workflow Design training on CareCentral.

### Log in to DocStar ECM and open the Workflow Designer

The Workflow Designer allows you to create and modify business processes inside of DocStar ECM. We have an environment which builds on everything built in the previous lab. You'll need to log in and choose **Lab 2** as your company.

1. Open the **Epicor Tools** shortcut.
2. Double click **DocStar ECM**.
3. Click the **username** field and type [admin@docstar.com](mailto:admin@docstar.com).
4. Click the **password** field and type **docstar**.
5. Click **Login**.
6. Click **Admin**.
7. Under the **Default Company** dropdown, select **Lab 2**.
8. Under the **Workflow** column, click the [→] icon next to the words **Workflow Designer**.
9. Click the **-New**—dropdown and select **EAP Non PO Invoice 2A**.
  - a. Listen to the discussion about **stubs**.

## Add Color Coding and Stub an Exception

Color coding makes maintenance and support of your workflow process much easier. Any time you add an exception state, you'll want to pause the workflow at that step to ensure that the workflow reaches it – and doesn't automatically proceed past it! You'll remove the stub later, but it's important to test that your workflow logic brings the process to this step and action.

1. Hover over the **Invoice Issue Resolution** step and click **Edit Step**.
2. Click the paint bucket icon.
3. Click the red color on the first row in the leftmost column.
4. Click **Ok**.
5. Click the blue **Add** button below the Actions block.
6. In the **Action Name** field, enter **Resolve Denial**.
7. Scroll down in the **Task Library** window until you see **Display Message**.
8. Click **Display Message** and hold the mouse button down.
  - a. Drag the **Display Message** task into the **Tasks** space and release the mouse button.
9. Enter Stub for Invoice Issue Resolution in the User Prompt box.
  - a. Listen to the discussion about how the Workflow Designer saves or rejects changes.
10. Click **Ok** to confirm your changes in the **Task editor**.
11. Click **Ok** to confirm your changes in the **Action editor**.
12. Click **Ok** to confirm your changes in the **Step editor**.
13. Look at the **EAP Non PO Invoice 2A** dropdown at the top center of the page – notice the italics? This indicates unsaved changes.
14. Click **Save**.

## Re-enable PO-based indexing tasks

You can disable individual tasks and actions while developing your workflow. If it's easier to test something by interacting with the element in question by manually entering data, you can use a User Prompt task to collect keyed data from your users.

1. Hover over the **Processing** step and click **Edit Step**.
2. Click the **Index Invoice** Action.
  - a. Click **Edit**.
3. Scroll down in the **Tasks** window.
4. Click the gray **Display Message** task.
5. Click **Edit**.
6. Click the **Enable** check box.
7. Click **Ok** to save your changes in the **Task editor**.
8. Click the gray **User Prompt** task at the bottom of the window.
9. Click **Edit**.

10. Click the **Enable** check box.
11. Click **Ok** to close the **Task editor**.
12. Click **Ok** to close the **Action editor**.
13. Click **Ok** to close the **Step editor**.
14. Look at the **EAP Non PO Invoice 2A** dropdown at the top center of the page – notice the italics? This indicates unsaved changes.
15. Click **Save**.

### Create a Stub Workflow for PO-Based Invoices

If a PO number is detected, we want to direct the document to move to a workflow suited to the needs of that document and process. Branch condition evaluations and the Change Workflow task make this both possible and simple.

1. Click the **EAP Non PO Invoice 2** dropdown.
2. Click **—New—**.
3. Click **Save**.
4. Enter **EAP PO Invoice**.
5. Click **Ok**.
6. Hover over the blank **Step** step and click **Edit Step**.
7. In the **Step Name** box, type **Processing**.
8. Click the blue **Add** button.
9. In the **Action Name** box, enter **Index PO Based Invoice**.
10. Scroll down in the **Task Library** window until you see **Display Message**.
11. Click **Display Message** and hold the mouse button down.
  - a. Drag the **Display Message** task into the **Tasks** space and release the mouse button.
12. Enter **Stub** for PO-based Invoice in the **User Prompt** box.
13. Click **Ok** to commit your changes in the Task editor.
14. Click **Ok** to commit your changes in the Action editor.
15. Click **Ok** to commit your changes in the Step editor.
16. Hover over the green Start step and click edit.
17. In the **Description** box, enter the text: **Documents will be brought into this workflow when a PO number is found on an invoice**.
18. Under the **Security Class** dropdown, ensure **Accounting** is selected.
19. Under Trigger/Exception Assignee, select [Training@docstar.com](mailto:Training@docstar.com).
  - a. Listen to the discussion on **Trigger/Exception** Assignee.
20. Click **Ok**.

21. Look at the **EAP Non PO Invoice 2A** dropdown at the top center of the page – notice the italics? This indicates unsaved changes.
22. Click **Save**.

### **Enable Indexing of a PO**

Now that we've created a stub workflow for PO-Based invoices to be directed to, we'll need to ensure that our original workflow can route documents to the PO-Based invoice workflow. The first part of this is allowing the user to enter a PO number if one appears.

1. Click the **EAP PO Invoice** dropdown and select **EAP Non PO Invoice 2A**.
2. Hover over the **Processing** step and click **Edit Step**.
3. Click **Verify Unique**.
4. Click **Edit**.
5. In the **Action Name** box, rename this to **Check for Duplicates and PO**.
6. Scroll down in the **Task Library** window until you see **Is**.
7. Click **Display Message** and hold the mouse button down.
  - a. Drag the **Display Message** task into the **Tasks** space and release the mouse button.
8. Enter **\$Field.PONum** in the **Input** box. If you see the value appear below the box, click it to auto-fill the input field.
9. Click **Add** in the **Output** section.
10. Enter **zHasPONum**
  - a. Listen to the discussion on **Custom Parameters**.
11. Click **Ok** to confirm your changes to the **Task Editor**.
12. Click **Ok** to confirm your changes to the **Action Editor**.

### **Configure Branch Logic and Add the Step**

Now that users can enter a PO number, we'll need to ensure that our workflow can use that data to direct the workflow in the proper direction by creating **Branch Condition** rules.

1. Click **Branches** in the Step Editor.
  2. Click **Add**.
- A new branch condition is added.
3. In the **Condition** field, enter **zHasPONum**.
  4. In the **Description** field, add the text **A PO Number was found**.
  5. In the **Label** field, enter **Route to PO Invoice Workflow**.
  6. To the right of where this branch condition displays **Next Step: End**, click the **+** button.
  7. A box has appeared underneath the step Editor. Ensure that the **ZHasPONum** branch connects to **Step**.
  8. Click on the **branch** for **zHasPONum** and hold the mouse button down.
  9. **Drag the zHasPONum branch to the top** of the list.

- a. Listen to the discussion on Branch Condition Best Practices.
10. Ensure there is one **blank condition** leading to **Primary Branch Selection** and that it is the **final** branch.
11. Click **Ok** to confirm your changes to the **Step editor**.

### Arrange Steps and add the Change Workflow task

We're almost there! Let's add a task to connect to a different workflow if a PO number is found.

1. Click and Drag **Step** and move it. Ensure both **Notify of Duplicate** and **Step** have enough room for their labels to be visible and not overlap by dragging them to the lower left corner.
2. Hover over **Step** and click **Edit Step**.
3. In the **Step Name** box, enter **Route to PO-Based Invoice**.
4. Click the **paint bucket** icon.
5. Select the **blue** color in **row 8, column 1**.
6. Click **Ok** to commit your changes to the **Step Color editor**.
7. Click **Actions**.
8. Click **Add**.
9. In the **Action Name** box, enter the text **Change Workflow**.
10. Scroll through the **Task Library** window until you see **Change Workflow**.
11. Click **Change Workflow** and hold the mouse button down.
  - a. Drag the **Change Workflow** task into the **Tasks space** and release the mouse button.
12. Enter **EAP PO Invoice** in the **Input** box. If you see the value appear below the box, click it to auto-fill the input field.
13. Ensure the **Enable** box is **checked**.
14. Click **Ok** to commit your changes to the **Task Editor**.
15. Click **Ok** to commit your changes to the **Step Editor**.
16. Look at the **EAP Non PO Invoice 2A** dropdown at the top center of the page – notice the italics? This indicates unsaved changes.
17. Click **Save**
18. Click the **DocStar** tab.
19. Hover over the **DocStar** menu in the top right section of the screen.
20. Click **Logout**.

# DocStar ECM-Building Workflow Applications-Part

## 3

We're going to focus on the workflow test process in this session. Once you've built your happy path and stubbed out your exception path, the next crucial point is testing the workflow. We'll also discuss best practices and key tips about all of the tools included in the Workflow Designer.

At the conclusion of this lab, you will be able to:

- Learn how to test your workflow from the perspective of your users.
- Understand how the DocStar ECM Client interacts with DocStar ECM's workflow engine
- Enable and Disable actions

### System Requirements

| Modules/Licensing | DocStar ECM v18.2 |
|-------------------|-------------------|
|                   | Advanced Workflow |

### Workflow Requirements

If you implement this functionality, you will need to create groups, set assignment and owner details, and add more specifics to match or enhance your company's process. This lab is intended to help you with the more complicated pieces. Do not attempt to build a workflow without taking our Workflow Design training available on CareCentral.

### Log in to DocStar ECM and open the Workflow Designer

The Workflow Designer allows you to create and modify business processes inside of DocStar ECM. If you were in previous sessions, this will build on what you created.

1. Open the **Epicor Tools** shortcut.
2. Double click **DocStar ECM Client Service**.
3. If the **Client Service Window** opens, click the **close** button and choose **minimize to tray**. If you don't see it, it's already running.
4. Open the **Epicor Tools** shortcut.
5. Double click "**DocStar ECM**".
6. Click the "**username**" field.
7. Type [admin@docstar.com](mailto:admin@docstar.com).
8. Click the "**password**" field.
9. Type "**docstar**".
10. Click **Login**.
11. Hover over the **DocStar** menu and choose "**Lab 3a**" in the Company dropdown.
12. Click **Admin**.

13. Under the “**Workflow**” column, click the [->] icon next to the words “**Workflow Designer**”.

### Set Default Values and Add OCR

We want to ensure the PO Num field is blank, then we want to capture the value from the document using optical character recognition and the power of your workstation to process the image recognition data.

1. Click the –New—dropdown and select **EAP Non PO Invoice 3A**.
2. Hover over the **Processing** step and click **Edit Step**.
3. Click **Set Defaults**.
4. Click **Edit**.
5. Scroll down in the **Task Library** window until you see **Replace**.
6. Click **Replace** and hold the mouse button down.
  - a. Drag the **Replace** task into the **Tasks** space directly above the **Clear Approvals** task and release the mouse button.
7. In the **Input** field, type “” (two double quotes)
8. In the **Output** field, type **\$Field.PONum**.
  - a. Alternatively you can click on this value once you see it auto-filled.
  - b. Listen to the discussion on **clearing field values**.
9. Click **Ok** to confirm your changes to the **Replace** task.
10. Scroll down in the **Tasks** space on the right side of the **Action Editor**.
11. Scroll down in the **Task Library** window until you see **OCR**.
12. Click **OCR** and hold the mouse button down.
  - a. Drag the **OCR** task into the **Tasks** space at the end of the list after the “**Replace: “” -> \$DocumentStatus**” task and release the mouse button.
13. In the **Output** field, type **\$Field.PONum**.
14. Click “**Get Region**”.
15. In the **search** box, type \* and click search.
16. Click **ARIANABINDINGSINVOICE192837**.
17. Right click on the document in the document viewer panel.
18. Under the **Recognition** menu, select **Get Region**.
19. While hovering over the document, scroll your mouse wheel up or track pad up to zoom in on **the PO Number** which is the second column of the first table.
20. Click your mouse button and drag it around the text inside of the P.O. Number box.  
A blue box should appear around the desired area.
21. Click **Ok** to confirm your changes to the **Get Region** box and continue to click **Ok** on the **Task Editor**.
22. Ensure that the **OCR** task is the final task in this action and click **Ok** to confirm your changes to the **Action Editor**, and **Step Editor**.

23. Click **Save**.

### **Disable manual indexing**

We next want to disable manual indexing to help us test whether or not our OCR task is performing correctly. .

1. Hover over the **Processing** step and click **Edit Step**.
2. Hover over the **Processing** step and click **Edit Step**.
3. Click **Index Invoice**.
4. Click **Edit**.
5. Uncheck the **Enable** box.
6. Click **Ok** to confirm your changes to the **Action Editor**.
7. Click **Ok** to confirm your changes to the **Step Editor**.
8. Click **Save**.

### **Test the Workflow**

With OCR being added, we now should be able to see the effects of our work. We can now test the workflow. If a PO number is found on the document, we should automatically see that we have been directed to the **PO-based invoice workflow**. If the PO number is not found on the document, we should be directed to the **Primary Branch Selection** step.

1. Switch back to the **DocStar** browser tab.
2. Click the yellow **Workflow** tab.
3. Click the browser's **refresh** button.
4. **Check the boxes** for both items.
5. Click the **Actions** menu
6. Under the **Workflow** submenu, click **Restart Workflow**.
  - a. Listen to the discussion on setting values, comparing data, and branching
7. Click your browser's **refresh** button.

Observe the state of the two documents and their progress in workflow.

### **Re-enable manual indexing**

We next want to re-enable manual indexing to add further tests.

1. Hover over the **Processing** step and click **Edit Step**.
2. Hover over the **Processing** step and click **Edit Step**.
3. Click **Index Invoice**.
4. Click **Edit**.
5. Check the **Enable** box.
6. Click **Ok** to confirm your changes to the **Action Editor**.

7. Click **Ok** to confirm your changes to the **Step Editor**.
8. Click **Save**.

### **Build the Exception Path and Remove PO Indexing**

We're next going to discuss options for how to handle the denial state for the workflow's second approval.

1. Hover over the red **Invoice Issue Resolution (2<sup>nd</sup> Approval)** step and click **Edit Step**.
2. Click **Branches**.
  - a. Listen to the discussion on User Branch selection
3. Click **Actions**.
4. Click **Add**.
5. Scroll down in the **Task Library** window until you see **Display Message**.
6. Click **Display Message** and hold the mouse button down.
  - a. Drag the **Display Message** task into the **Tasks** space and release the mouse button.
7. In the **User Prompt** box, type "Place messaging to direct the user here and ask them to click the submit button."
8. Click **Ok**.
9. In the **Action Name** field, enter **Determine next path**.
10. Click **Ok** to confirm your changes to the **Action Editor**.
11. Click **Ok** to confirm your changes to the **Step Editor**.
12. Hover over the **Processing Step**.
13. Click **Edit Step**.
14. Click **Index Invoice**.
15. Click **Edit**.
16. Scroll down in the **Tasks** panel.
17. Click **Display Message: PO Number (if present)**.
18. Click **Delete** and click **Ok**.
19. Click **User Prompt: PO: -> \$Field.PONum**.
20. Click **Delete** and click **Ok**.
21. Click **Ok** to confirm your changes to the Index Invoice Action.
22. Click **Ok** to confirm your changes to the Processing Step.
23. Click **Save**.
24. Click the **Actions** button and click **Logout**.

### Test the 2nd Approver's Denial Exception Path: Part 1: as a Processor

We're next going to show how to test the denial path from multiple accounts. It's incredibly important to remember that we need to test based on the actual privileges and limitations of each user account and to test each possible scenario. It may be helpful to study up on quality assurance and document your findings with each step so that you can discuss the possibilities with stakeholders and decide how to proceed.

1. In the **Username** field, enter "USER ACCOUNT"
2. In the **Password** field, enter **abc123**.
3. Click **Login**.
4. Click **Workflow**
5. Check the box for **Invoice # ::**
6. Click **Actions**
7. Click **View**
8. Click **Actions**
9. Under the **Workflow** submenu, click **Restart Workflow**
  - a. Listen to the discussion on the **Distributed Queue**.
10. Refresh your browser window if necessary.
11. Enter all of the information as seen on the document and click **Submit**.
12. Click **Ready to Pay**
  - a. Listen to the discussion on **Owner** and **Assignee**
13. From the **2nd Approver** dropdown, select **Training@docstar.com**.
14. Click **Submit**.
15. Hover over the DocStar menu and click **Logout**.

### Test the 2nd Approver's Denial Exception Path: Part 2: as the Approver

Now that the processor has done their part, let's test this as the approver.

1. In the **Username** field, enter **training@docstar.com**.
2. In the **Password** field, enter **abc123**.
3. Click **Login**.
4. Click **Workflow**.
5. Check the box for **Invoice #5698231**.
6. Click **Actions**.
7. Click **View**.
8. Click **Deny**.
9. Enter some comments and click **Save**.
10. Observe the state of the workflow's Step and Action.
11. Click **Submit**.

12. Click **2nd Approval**.
13. Observe the state of the workflow's Step and Action.

# DocStar ECM - Streamlining Your Epicor ERP 10 AP Process With AP Automation

We're going to give you a high level understanding of the underlying processes supporting the DocStar ECM AP Automation module with Epicor ERP 10. We'll show you how to process an AP invoice using DocStar and ERP 10 as well as how exceptions are typically handled. If time permits, we may discuss the technology supporting two or three-way matching and other integration details. Understand that these solutions are developed by DocStar ECM's internal teams, and the basic installation and configuration is handled by DocStar's Professional Services team. This lab is intended to help you gain a deeper understanding of the technology supporting the solution, but is not intended to be complete training on the subject.

At the conclusion of this lab, you will be able to:

- Understand the key objectives of accounts payable automation
- Possess a high-level understanding of the typical pre-built workflow for the DocStar ECM and Epicor ERP AP Automation Solution
- Process an AP Invoice in DocStar and have the invoice complete in ERP.

## System Requirements

|                          |                                                                                         |
|--------------------------|-----------------------------------------------------------------------------------------|
| <b>Modules/Licensing</b> | <b>Epicor ERP 10.1.600 (or higher), DocStar Document Management license, APR module</b> |
|                          | DocStar ECM v17.52 (or higher)                                                          |
|                          | DocStar ECM Intelligent Data Capture, Advanced Workflow, and AP Modules                 |

## Lab Overview

Most of our documents have already been captured, so we're going to look at the state they've arrived in and take action on the ones which need action taken on them. As an example, we'll show you how to import documents.

### Log in to DocStar ECM and open the Capture screen

Now that the invoices have been captured and analyzed with Intelligent Data Capture, we're going to see how DocStar ECM has processed them.

1. Open the **Epicor Tools** shortcut.
2. Double click **DocStar ECM Client Service**.
3. If the **Client Service Window** opens, click the **close** button and choose **minimize to tray**. If you don't see it, it's already running.
4. Open the **Epicor Tools** shortcut.
5. Double click **DocStar ECM**.
6. Click the **username** field.
7. Type [admin@docstar.com](mailto:admin@docstar.com).
8. Click the **password** field.

9. Type **docstar**.
10. Click **Login**.
11. Hover over the **DocStar** menu.
12. Click the **Default Company** dropdown and select **Epic Lab**.
13. Click **Capture**.
14. Listen to the discussion on **Content Types**.

## Capture a Document

To put the system through its paces and to show you how to upload a document, we're going to upload a duplicate version of an AP Invoice we already have in the system.

1. In the Content Type dropdown, select APINV\_EPIC06.
2. Click **Browse**.
3. Navigate to C:\DOCSTAR ECM\AP Sample Docs and select the **Ariana Bindings** invoice.
4. In the Import Queue below, click the **Pencil** icon.
5. From the **Workflow** dropdown, select **PNP PO Invoice**.
6. Click **Upload**.
7. Listen to the discussion on The Workflow Queue and document storage.

## Open the Documents

We want to process all of our documents with this workflow and see how ERP and DocStar handle these invoices.

1. Click the **Workflow** tab.
2. Click your browser's Refresh button.
3. Click the check box for the Ariana Bindings document in the Work Items panel.
4. Click the **Actions** menu.
5. Click **View**.
6. Find the Content Fields panel.
7. Enter all of the information found on the invoice.
8. Click **Submit**.
9. Listen to the discussion on Duplicate Invoice Checks

## Modify the Threshold Check

We'll look at how to change the over threshold amount check in this workflow by using DocStar ECM's Workflow Designer and we'll discuss how the workflow responds to this.

1. Click **Admin**.
2. Under the "**Workflow**" column, click the [->] icon next to the words "Workflow Designer".
3. Click the –New—dropdown and select **IDC PO Invoice**.

4. Listen to the discussion on Steps.
5. Hover over the **Threshold Check** step and click **Edit Step**.
6. Click **Invoice Threshold Check**.
7. Click **Edit**.
8. Listen to the discussion on the Replace and End Action tasks.
9. Click **Compare Verify**.
10. Click **Edit**.
11. Click the second **Input** field and replace 10000 with **20000**.
12. Click Ok to commit your changes to the Step Editor.
13. Click Ok to commit your changes to the Action Editor.
14. Click Branches.
15. Scroll down to view the three branch choices.
16. Listen to the discussion on Branch Conditions.
17. Click Ok.
18. Click Save.

### Change the Approval Process

If the invoice is over the threshold amount, we'll seek an additional approval. We're going to show you how to modify this process.

1. Hover over the **Invoice Over-limit Approval** step.
2. Click **Edit Step**.
3. Click **Actions**.
4. Double-click **Assign to Approver**.
5. Listen to the discussion on Assignees and Approvers.
6. Double-click **Request Approval in the Tasks** space.
7. Listen to the discussion on the Request Approval task.
8. In the Input field, place the text [Admin@docstar.com](mailto:Admin@docstar.com).
9. Click **Ok** to commit your changes to the **Step Editor**.
10. Click **Ok** to commit your changes to the **Action Editor**.
11. Click **Ok** to commit your changes to the **Step Editor**.
12. Click **Save**.

### Examine and Change the Matching Process

We're going to show you how two and three way matching is performed in the Workflow Designer.

1. Hover over the **Match** step and click **Edit**.

2. Listen to the discussion on **Clearing Statuses**.
3. Double-click **3 Way Match**.
4. Double-click **Verify Field Group**.
5. Scroll down until you see + next to **SupplierUnInvcReceiptQty**.
6. Listen to the discussion on **Datalinks**.
7. Click +.
8. Click **Exact match is required (default)**.
9. Listen to the discussion on **Threshold Comparisons**.
10. Click **Ok** to commit your changes to the **Threshold Comparison** window.
11. Click **Ok** to commit your changes to the **Step Editor**.
12. Click **Ok** to commit your changes to the **Action Editor**.
13. Click **Ok** to commit your changes to the **Step Editor**.
14. Click **Save**.

# Easy ERP Data Integration with REST Services

Epicor ERP 10 has added a new way of exposing data – REST. This gives two new abilities. The first ability is to make ERP services easier to consume within modern web applications. The second is to provide a ‘SQL like’ ability to query services instead of the database.

At the conclusion of this lab, you will be able to:

- Understand REST, OData
- Browse the available REST Services in ERP 10
- Understand the differences between Core and Custom Methods
- Execute a query in Swagger, Excel

## REST Basics

Representational State Transfer (REST) or RESTful Web services are one way of providing interoperability between computer systems on the Internet. The web and browsers are built on URLs and standard methods to retrieve content and update data on web sites. These basic verbs are:

- GET – Retrieves a thing. What every browser does when entering an address.
- PUT – Creates a new thing.
- POST – Updates a whole thing.
- PATCH – Updates a part of a thing.
- DELETE – Removes a thing.

Most browsing on the Internet is doing a ‘GET’ to get a page or part of a page of HTML for example. ‘RESTful services’ leverage these to build easy to consume services no matter the technology or platform.

With a URL of:

/user/tom

- Doing a Get would retrieve details about tom.
- Doing a Delete would remove tom from whatever source that is exposing ‘/user’.

## OData Basics

OData (Open Data Protocol) is an OASIS standard that defines a set of best practices for building and consuming RESTful APIs. It uses special parameters on URLs to do querying via REST similar to using SQL to query a database.

For example, you can add some of the following options to the end of a URL to change the data returned:

### \$filter

Restricts results.

### \$select

Retrieves only certain columns in the results.

## Tour of the API Help Landing Page

Open Epicor REST folder on the desktop.

### Browsing

The root of the ERP 10 REST services is: <https://<YourServer>/<YourApp>/api>

1. Open **ERP REST Help** link (<https://EpicorTI/ERP10/api/help/>)
  - Enter **epicor / epicor** for the username and password.
  - Welcome to the Help Home page!

### Services vs BAQs

1. Toggle the **Service List** header to open the section.
2. Click in the **Search** field.
3. Enter **Vendor**.
  - Note the different services available.
- Note:** These mirror the existing services deployed to the Server. If you have had a custom-made service for your deployment, it would appear here.
4. Toggle the **Business Activity Queries** header to open the section.
5. In the **Query ID** field, enter **Customer**.
  - Note the different BAQs available.

**Note:** All BAQs on your system will appear here. If you have company specific BAQs, you may need to enter a Company ID.

### Service Help

1. Toggle the **Service List** header to open the section.
2. In the **Search** text box, enter **Vendor**.
3. Select **Erp.BO.VendorSvc**.

**Note:** The help page is built dynamically just like the ERP 10 services are built up and takes a moment to cache after a restart of IIS. Large services on a slow box can take a couple of tries.

### Swagger

To document an API, a protocol will have some means to do this to help their ecosystem. SOAP has this for example, with WSDL. That allows for a developer to add a Web Reference in Visual Studio and pointing at the SOAP service. Swagger (<http://swagger.io>) is an open source framework that similarly helps design, build, document and use REST APIs. For example, Azure uses the format to describe its abilities to control Azure.

The colorful help page gives metadata and a list of all the resources (e.g. Customers) available for the service. Note the different verbs for the different Entities – Get / Post / Delete / Patch on the different methods.

## OData List

OData as a standard has different abilities. The first is describing what is in the service.

1. Click **/\$metadata**.
2. Click **Try it out!**
  - Note the **Response Body**. All the meta about the service is displayed:
    - EntitySet (Table)
    - FunctionImport (Method)
    - AssociationSet (Table Relationships)
    - EntityType / Key / Property (Table / Keys / Fields)
3. Click **/Vendors**.
4. Click **Model**.
  - Note the CustomerRow description. All the **XML Comments** about the field are displayed. These are generated from entries in the SDK Tool – Service Designer.
5. Click **Model Schema**.
  - Note response. A JSON description of the fields. Useful for tools and displaying headers in programs
6. Click **Try it out!**
  - Note the sections
    - Request URL - What you could type in a browser and get back information.
    - Response Body - The data response from the URL.
    - Curl - A command line tool to execute URLs.
    - Response Code - Standard web responses codes. Hopefully 200 (success) and not 404 (page not found).
    - Response Headers - The Context Header response will contain any BPM (form) information.

**Important!** Do not close the tab.

## Custom

Custom methods do not support OData. These are all the ad hoc custom methods exposed by the service. These can only be used with the POST verb – in code.

1. Click the **GetByVendID**.
2. Click the **input params** on the right to set them as input values on the left.
3. Change the **input** to
 

```
{
 "vendorID": "GLOBE"
}
```
4. Click **Try it out!**
5. Note the **Response Body** results for Addison.

## OData Querying

The URL of a service support a couple of different patterns. You can enter a URL to identify a single Entity or a Collection of Entities. You can query for Parent / Child data by navigating the relations defined in the service. You can also apply one or more parameters to the query.

### Collections

Querying for a collection is as simple as not specifying any parameters.

1. Open **ERP REST Help** link (<https://EpicorTI/ERP10/api/help/>).
2. Enter **epicor / epicor** for the username and password.
3. In the **Search** text box, enter **Vendor**.
4. Select **Erp.BO.VendorSvc**.
5. Click **Get /Vendors** to expand the section.
6. Click **Try it out!**
  - Note the collection of results returned.

### \$Parameters Introduction

#### Syntax Rules

- Query Parameters are prefixed with a \$ character.
- Query Parameters can be appended on a URL with an &.
- Many Parameters take multiple values and are separated by a comma.

#### Using Vendor Service as a Test

1. Open **ERP REST Help** link (<https://EpicorTI/ERP10/api/help/>).
2. Enter **epicor / epicor** for the username and password.
3. In the **Search** text box, enter **Vendor**.
4. Select **Erp.BO.VendorSvc**.

#### \$select

Selects specific columns

1. Click **Get /Vendors** to expand the section.
2. Click **Try it out!**
  - Note all the columns returned.
3. In the **\$select** text box, enter **Company, VendorID, Name, State**.
4. Click **Try it out!**
  - Note the results just include the columns requested.

## \$filter

The equivalent of where clauses in SQL.

1. Keep the \$select entry from the previous step.
2. In the \$filter text box, enter **State eq 'MN'**.
3. Click **Try it out!**
  - Note the results just include records in the state of MN.

## BAQ

BAQs are exposed directly through the REST APIs.

1. Open **ERP REST Help** link (<https://EpicorTI/ERP10/api/help/>).
    - Enter **epicor / epicor** for the username and password if needed.
  2. Expand the **Business Activity Queries** section.
  3. In the **Query ID** text box, enter **COM-CustContacts**.
  4. Click **Get Help**.
  5. Click **/** to expand the section.
  6. Click **Try it out!**
    - Note the results of the BAQ are returned.
- BAQs also support all the \$parameters mentioned previously.
7. In the \$filter text box, enter **CustCnt\_Country eq 'USA'**.
  8. Click **Try it out!**
    - Note the results of the BAQ are specific to records for the country of USA.

## Excel

By natively supporting OData, Epicor ERP 10 services allow for easy consumption from tools that leverage the protocol. You can have an anytime refreshable spreadsheet against a live data source. Build pivot tables, charts against the feed for quick reports.

## Service Feeds

1. Open a blank worksheet in Excel.
2. Select **Data > From Other Sources > From OData Data Feed**.
3. Paste in the Address / Request URL from the Customer example above.
  - <https://EpicorTI/Erp10/api/v1/Erp.BO.VendorSvc/Vendors>
4. Select use this name and password.
  - Enter **epicor / epicor** for username and password.
5. Click **Next**.
6. Check the **Vendors** table.

7. Click **Finish**.
8. Click **OK** for **Import Data** into a **Table**.
9. Note the Vendor List retrieved in Excel.
10. Click **Data**.
11. Click **Refresh All**.

### BAQ Feeds

1. Open a blank worksheet in Excel.
2. Click **Data > From Other Sources > From OData Data Feed**.
3. Paste in the Address / Request URL from the Customer example above.
  - <https://EpicorTI/Erp10/api/v1/BaqSvc/COM-CustContacts/>
4. Select the name and password.
  - Enter **epicor / epicor** for username and password.
5. Click **Next**.
6. Check the **COM-CustContacts** table.
7. Click **Finish**.
8. Click **OK** for **Import Data** into a **Table**.
  - Note the Customer Contact List retrieved in Excel.
9. Click **Data**.
10. Click **Refresh All**.

# Epicor Data Analytics (EDA) for Epicor ERP

Data is the biggest “natural resource” of your business. In this lab, we will show you how Epicor Data Analytics can help you have a conversation with your data that will answer your business questions. We will show you tips and tricks from the experts, as well as best business practices that you can use to effectively mine your data for gold.

At the conclusion of this lab, you will be able to:

- Develop a query to be used in your dashboard
- Add visualizations to display your data
- Add filters to enable your dashboards to be dynamic
- Create KPI alerts
- Publish dashboards out to end-users

## System Requirements

|                   |                           |
|-------------------|---------------------------|
| <b>Epicor ERP</b> | <b>10.1.400 or higher</b> |
|-------------------|---------------------------|

### Create a sales scorecard for E10 supply company:

Sarah, the Sales manager from E10 Supply Company has asked you to build a sales score card that will allow her to get a quick look the state of the business. She would like to see her sales number by year to date and month to date for this year, and last, as well as top revenue producing customer and parts. Sarah would also like us to be able to break that data down by each sales representative for their monthly review. Let's get started!!

1. Browse to Epicor data analytics with the following URL: <http://epicorti/EDA/>
2. Login with the following credentials.
  - a. User: **Phocas**
  - b. Password: **Insights2019**
3. Once logged in click the **New Dashboard** button to begin.
4. Give your new dashboard a **name, description** and assign **folders**.
  - a. **Name** your dashboard “insights sales scorecard”.
  - b. Check off **standard dashboards** under folders.
  - c. Click **Save**.
5. Name your first line KPI.
  - a. You’ll see an outline of a rectangle box. Click **Edit** in the upper right-hand corner button to name the line. Call our example “KPI”.
  - b. Click **Save**.
6. Add the “Current Year to Date versus Previous Year to Date” comparison chart.

- a. In the upper right-hand corner click on the **widget** button.
  - b. Select the **Query** option.
  - c. In the upper right-hand side verify the database you would like to work in. In our case it should be set to “**Sales**”.
  - d. On the left-hand side of the screen set **Line** to KPI.
  - e. **Name** this widget “YTD vs PYTD”.
  - f. On the top bar select the **Chart** button. This should cause your view to change from a grid to a graphic visualization.
  - g. Next we want to select a **BAR Chat** for our graph type. This will be the first option.
  - h. Next select the sub option of **Combo**.
    - i. This should change the default visualization to a **Combo chart**.
    - j. Click the **save** button in the bottom right side. Your visualization should now appear on your dashboard.
7. Add a pie chart of top items sold.
    - a. In the upper right-hand corner click on the **Widget** button.
    - b. Select the **Query** option.
    - c. In the upper right-hand side verify the database you would like to work in. in our case it should still be set to “**Sales**”.
    - d. On the left-hand side of the screen set **LINE** to KPI.
    - e. Name this widget “Top parts sold by GM%”.
    - f. Select the **PartNumber** dimension from the list of dimensions to the left of the grid. This has now filtered your data by PartNumber.
    - g. From the **Measures** drop-down at the top select **GrossMargin %**, and unselect **Net Sales**.
    - h. Click to the right of dropdown to update the chart.
      - i. Click the **Chart** button at the top right.
      - j. Choose the **Pie** option and your data will be replaced by pie chart visualization.
    - k. On the far left under the widget options choose **limit rows** at the bottom. Let’s limit this to the top 10 Parts.
    - l. Finally let’s click **Save** at the bottom right.
  - You should now have two visualizations on our dashboard.
  8. Add a Gauge of Average GrossMargin % of items sold.
    - a. Click on the pie visualization you built in step 7 and select the **Clone** button. This should create a copy of your pie visualization on the KPI line.
    - b. Next click **Edit** on the copy.
    - c. Change the name to “Average GM% by part”.
    - d. Select the **Gauge** chart type and the Gauge sub option.
    - e. Set the Summary to Average.

- f. Set your Range from 0 to 40.
  - g. Set your **Red** tolerance from 0 to 10.
  - h. Set your **Yellow** tolerance from 10 to 20.
  - i. Set your **Green** tolerance from 20 to 40.
  - j. Set your suffix to %.
  - k. Click **Save**.
9. Add a bubble chart of Customer Profitability.
- a. In the upper right-hand corner click on the **Widget** button.
  - b. Select the **Query** option.
  - c. In the upper right-hand side verify the database you would like to work in. in our case it should still be set to “**Sales**”.
  - d. On the left-hand side of the screen set **Line** to KPI.
  - e. Set the **Name** of this widget “customer profitability”.
  - f. Select the **Customer** dimension.
  - g. Select the **Total Cost** and **Gross Margin** measures from the measures drop-down list.
  - h. Click to the right of dropdown to update the chart.
  - i. Click the **Chart** button in the upper right-hand corner.
  - j. Select the **Bubble Chart** option. It is fifth from the top.
  - k. Assign a **radius value** to gross margin dollars.
  - l. Click the **Save** button so this visualization can be added to dashboard.
10. Add summary numbers on a new line.
- a. In the upper right-hand corner click on the **Widget** button.
  - b. Select the **Query** option.
  - c. In the upper right-hand side verify the database you would like to work in. in our case it should still be set to “**Sales**”.
  - d. On the left-hand side of the screen ensure line is set to **New**.
  - e. Name this widget “**YTD**”.
  - f. Choose **Customer** from the list of dimensions.
  - g. Click on the **Chart** button.
  - h. Choose the **Gage** chart type forth from the top.
  - i. Choose the **Summary Sub** option.
  - j. Set the **Summary** to sum.
  - k. Set the **Summary type** to “Traffic Lights”.
  - l. Set your **Red** tolerance from 0 to 10,000,000.

- m. Set your **Yellow** tolerance from 10,000,000 to 20,000,000.
- n. Set your **Green** tolerance from 20,000,000 to 40,000,000.
- o. Set your **prefix** to \$.
- p. Click the **Save** button to create the visualization.

**Tip:** If you use the stop light and add red/yellow/green, not only do they become items on your dashboard, but they become alerts on your default home page screen.

11. Clone the Summery for PYTD, current and last month KPI's.
  - a. Click on the new visualization and select the **clone** button 3 times. This should create four copies of your new visualization on your new line.
  - b. Choose the second visualization and then click **edit**.
  - c. Change the **Name** to Last YTD.
  - d. Change the **Period** to Last YTD.
  - e. Set the **Summary type** to "Traffic Lights".
  - f. Set your Red tolerance from 0 to 10,000,000.
  - g. Set your Yellow tolerance from 10,000,000 to 20,000,000.
  - h. Set your Green tolerance from 20,000,000 to 40,000,000.
  - i. Set your prefix to \$.
  - j. Click **Save**.
  - k. Click **Edit** on the third one and rename it to **This Month**.
  - l. Set the **Period** to current month.
  - m. Set the **Summary type** to "Traffic Lights".
  - n. Set your **Red** tolerance from 0 to 250,000.
  - o. Set your **Yellow** tolerance from 250,000 to 700,000.
  - p. Set your **Green** tolerance from 700,000 to 1,500,000.
  - q. Set your **prefix** to \$.
  - r. Click **Save**.
  - s. Click **Edit** on the last copy and change the name to **Last month**.
  - t. Set its **Period** to previous month.
  - u. Set the **Summary type** to "Traffic Lights".
  - v. Set your **Red** tolerance from 0 to 250,000.
  - w. Set your **Yellow** tolerance from 250,000 to 700,000.
  - x. Set your **Green** tolerance from 700,000 to 1,500,000.
  - y. Set your **Prefix** to \$.
  - z. Click the **Save** button so this visualization can be added to dashboard.
12. Name your second line.

- a. You'll see an outline of a rectangle box. Click the **Edit** button in the upper right-hand corner to name the line. Call our second line example **Summary**.
  - b. Click **Save**.
13. Add sales rep filter to your dashboard.
    - a. In the upper right-hand corner click on the **Widget** button.
    - b. Select the **Query** option.
    - c. In the upper right-hand side verify the database you would like to work in. In our case it should still be set to "**Sales**".
    - d. On the left-hand side of the screen select **New** for line.
    - e. **Name** this widget Sales Rep Filter.
    - f. Set **Is Filterable** to yes.
    - g. Select the **Sales Territory** dimension
    - h. Select the **Properties** from the top bar.
    - i. Uncheck **Sales Territory** and check off **Sales Representative** then click off the list
    - j. Click **Save**.
    - k. Click on the number next to a sales rep and click the **Focus** button at the top left.
    - l. The whole dashboard will now filter to that sales rep.
  14. Explore Your Data via the Dashboard. Remember you **can't** break it!!!

# Epicor XL Connect for Finance – Review the Upgrade Steps from Version 5

Epicor XL Connect 7 is an updated business reporting and analytics solution that provides secure access to your Epicor data from Microsoft® Office Excel®.

This product is an upgrade from XL Connect which gave you access to your data but did not give you much flexibility when it came to the functions and tables that you were able to bring in.

At the conclusion of this lab, you will be able to:

- Navigate the Query Data tool of Epicor XL Connect 7
- Identify the necessary filters for your new functions
- Add filters to your already dynamic reports
- Understand the enhanced capabilities of Epicor XL Connect 7.

## Open Excel and XL Connect

1. From the Excel Top Menu bar, click **XL Connect**.
2. From the **XL Connect** menu, select **Load XL Connect** on the left-hand side.
3. The **Navigation Pane** will open on the left-hand side and will contain all the available data connections for your ERP data.

## Navigation Pane

The Navigation Pane allows you to easily access all available data to create tables and functions.

1. Click on the **Load XL Connect** button from the menu bar.  
The **Navigation** pane displays vertically along the left-hand side of your worksheet.
2. The **Navigation** pane is collapsed by default and can be expanded by clicking on the **chevron arrow** button in the upper right-hand side of the **Navigation** pane.
3. Click the arrows within the **Navigation** pane to expand each section to view the available tables and functions.
4. With the **Navigation** pane properly launched, you are ready to start querying your data.

## Identify the Parameters of Your Existing Functions

1. Open the file **V5 Sample Report**.
2. If not done already, load **XL Connect**.
3. Click on the function in the top-left corner of your report next to **Sales – Machined**.
4. Your filters will be in the following order: **Company, Book, Year, Period, Seg1, Seg2, Seg3**.
5. Since **Period** is hidden, **unhide row 5**.

## Create Your New Functions

1. Select **XL Connect > Query Data**.
2. To the **What would you like to create?** message, select **Function**.
3. To the **Where is your data?** message, select **Epicor ERP**.
4. To the **Which data set?** message, select **GL Period Balances**.
5. In the **Company** filter, use the **Cell Selection** button to select cell **\$F\$1**.
  - Make sure this cell is completely anchored since the **Company** cell will not change.
6. For the **FiscalYear** filter, use the **Cell Selection** button to select cell **\$I\$1**.
7. To the **What action would you like to take?** message, select **Sum**.
8. To the **What information would you like returned?** message select **MTDNet**.
9. Add your remaining filters:
  - Fiscal Period = F\$5
  - BookID LIKE \$F\$2
  - Seg1 IN \$A8:\$C8
10. Check the **Reverse sign** box.
11. Press **OK**.
12. Place function in cell **F8**.
13. Press **OK**.
14. Change a **Year or Period** Parameter to test the cell.

## Adding Data Validations

In V5, when users wanted to create drop down lists (referred to as Data Validations), they had to learn the Excel functionality for it and depend on a web of tables. Now you can create a drop down that is directly linked to your data. Simply follow the steps below:

1. Go to cells **L1** and **L2** and then press **Home > Clear > Clear All**.
2. Select **XL Connect > Query Data**.
3. To the **What would you like to create?** message, select **Data Validation**.
4. To the **Where is your data?** message, select **Epicor ERP**.
5. To the **Which data set?** message, select **GL Segment 2**.
6. In the **Company** filter, use the **Cell Selection** button to select cell **\$F\$1**.
7. Press the **Select a Column** button and select **Seg2Name**.
8. Press **OK**.
9. Place function in cell **M1**.
10. Press **OK**.
11. Repeat this process for **GL Segment 2** in cell **M2**.

Since this generates a name that overrides our existing cell values, we will now move them to cells **L1:L2**.

12. Use your mouse to select cells **M1:M2**.
13. Place your mouse on the green border of the cells so that the black crosshairs with outward arrows appears.
14. Press your mouse and move the selection to **L1:L2**.

### Add Filters to Your New Functions

Since we added new drop-down lists, we need to add them to our function so that they calculate properly.

1. Select cell **F8**.
2. Select **XL Connect > Query Data**.
3. Press **Add Filter** twice and follow the format below:
  - a. **Seg2Name LIKE \$L\$1**  
**Seg3Name LIKE \$L\$2**
4. Press **OK**.
5. Place function in cell **F8**.
6. Press **OK**.

**IMPORTANT!** Not every combination of **BookID**, **Department**, and **Location**, are valid. If there is an invalid combination, then the function will return a **0** value.

### Copy Your Functions

Since we added new drop-down lists, we need to add them to our function so that they calculate properly.

1. Select cell **8**.
2. Use the Excel handle to drag the function down and across the report.
  - a. The **Reverse Sign** feature is a “\*-1” at the end of the function. This should be removed for the **Cost of Sales** and **Expenses** sections of your report.

Now Your Report is complete! Adjust the different filter combinations, drill down on functions to gain more insights!

# Extreme BPM for Multi Stage Authorization Workflows

This lab demonstrates one approach for setting up work flow authorization control data for business processes using Epicor UD tables. We will then build BPM workflows that monitor documents moving through these authorization steps that enforce business rules. This will entail leveraging BPM data forms which we will apply UI customizations to enforce data integrity and provide a better user experience.

At the conclusion of this lab you will have reviewed:

- Trace data conditions through method and data directives to determine where to add BPM's and data directives to apply business logic.
- Using UD Tables and UserCodes to store and maintain data used for workflow configuration.
- Using BPM Data Forms to allow users to select alternate email recipients that belong to the required security groups.
- Review the needed BPM action items to build an authorization workflow.
- Define and use workflow variables leveraging the new object types available in 10.2.300 and higher.
- Use alert attachments to send email notification to pre-defined users based on assigned security groups and email addresses to automatically open Epicor forms with pre-defined records already selected.

## System Requirements

| Modules/Licensing | Product Version |
|-------------------|-----------------|
| ERP 10 Ent        | 10.2.300.7      |
| ERP 10 Cloud      | 10.2.300.7      |

## Developing the Technical Design

This set of workshops will cover using the client trace logging to identify the business processes being executed at the point the authorization workflow will need to be enforced.

### Workshop – Trace the Approve Change Event

This workshop will trace the processes triggered when the Approve checkbox is selected on the POHeader table:

- Trace the Approve processes using Client Trace logging
- Add Info messages to both pre and post processing BPM method directive action stages
- Add Info messages to both in-transaction and standard data directive action stages

### Perform the Trace

1. Open Epicor using the **ERP10** shortcut and login as:

User: manager

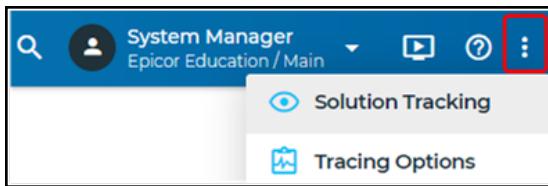
Password: manager

2. Navigate to Purchase Order Entry.

Menu Path: Material Management > Purchase Management > General Operations > Purchase Order Entry

3. Create a new PO for the following, save it and select Summary tab. Don't approve it yet, we will trace that process.
  - Supplier: **GUTH**
  - Part/Rev: **DSS-1012**
  - Our Qty: **20**
  - Unit Price: **189.00**

4. Right click on the **ERP10: System Monitor** icon in the system tray of your desktop and select **Exit**.
5. Open the **Trace Logging** from the vertical dot menu button in the upper right-hand corner of the active home page.



6. Select the **Enable Trace Logging** and **Track Changes Only** options, then click the **Clear Log** and **Apply** buttons.
7. Select the **Unapproved** check box and return to the trace logging dialog and turn off trace logging.
8. From the **Tracing Options** form, select the **File Picker** icon to the left of the **Create XML** button and select a file location to save your trace in, enter a name and click **Save**.
9. Click the **Create XML** button to generate the trace files.
10. Review the **Trace**.  
**Tip!**: There is a trace without any system method calls, that you can open with Internet Explorer, located in the following location: **C:\Insights19\Jobs\XTreemBPM\POApproveTrace.xml**
11. Return to **Purchase Order Entry** and unselect the **Approve** checkbox for the PO number you just traced. You will need this reset for the next step of the tracing process.

### Workshop – Debug the Directive Stages

The trace shows a method specific to setting the Approve flag named ChangeApproveSwitch and is followed by two other methods, CheckBeforeUpdate and Update. Also, the In-Transaction data directive will execute somewhere among these method directives. We will use informational messages to determine the order the directive stages execute as well as the data conditions at each of these stages.

12. Navigate to Method Directive Import
13. Menu Path: System Management > Business Process Management > Directive Import
14. Click the File Name button and navigate open this file - C:\Insights19\Jobs\XTreemBPM\Test.bpm and click Import.

15. Navigate to Method Directives Maintenance.

Menu Path: System Management > Business Process Management > Method Directives Maintenance

16. Click the Method Code button, select the Search by Directive option, select the Test group and click Search.

17. Click Select All and OK.

You should see 4 Method Directives with a pre and post processing BPM directive for each.

| Method Directives           |                                           |
|-----------------------------|-------------------------------------------|
|                             | Methods                                   |
| Erp.PO.ChangeApproveSwitch  | Pre-Processing (1)<br>Post-Processing (1) |
| Erp.PO.ChangedApproveSwitch | Pre-Processing (1)<br>Post-Processing (1) |
| Erp.PO.CheckBeforeUpdate    | Pre-Processing (1)<br>Post-Processing (1) |
| Erp.PO.Update               | Pre-Processing (1)<br>Post-Processing (1) |

18. Review each method and directive stage in the order they are shown in the trace.

- ChangeApproveSwitch
- CheckBeforeUpdate
- Update
- ChangedApproveSwitch

19. Navigate to Data Directives Maintenance.

Menu Path: System Management > Business Process Management > Data Directives Maintenance

20. Select the POHeader table and add an In-Transaction directive that displays an informational message showing that the In-Transaction directive stage has executed and the current value of the ttPOHeader.Approve. This is very similar to what you did for the method directives.

| Data Directives |                    |
|-----------------|--------------------|
|                 | Tables             |
| POHeader        | In-Transaction (1) |

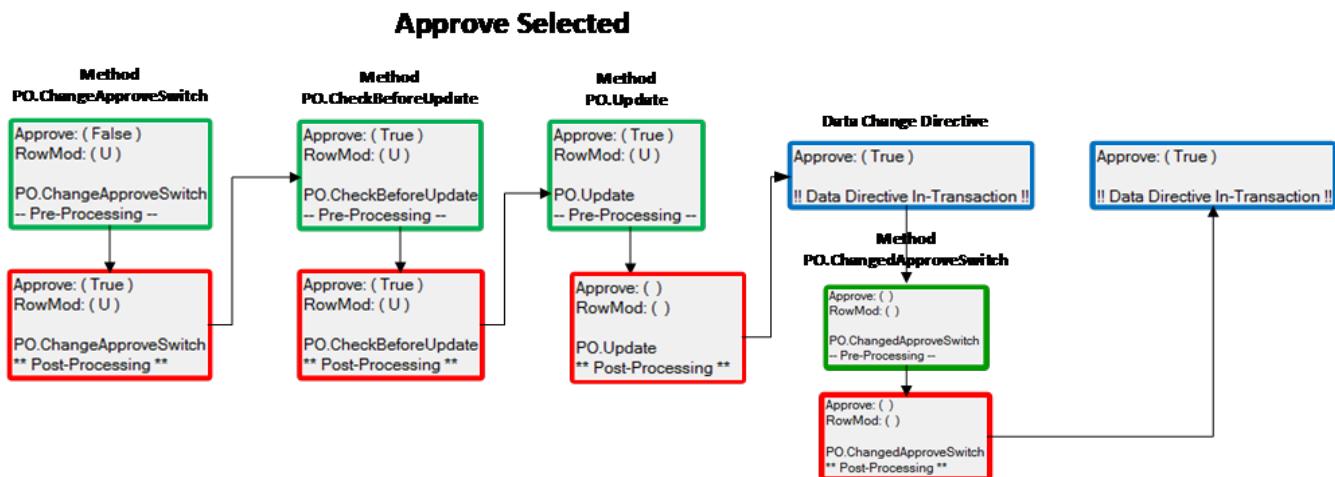
**Note:** There is no **ttPOHeader.RowMod** field in the **In-Transaction** stage. Also, there is no **Show Message** action available in the **Standard Directive** stage so there will be no need to add this stage.

## Workshop – Test the Processes and Review Results

1. Return to **Purchase Order Entry**, select the purchase order number that you traced and select the **Approve** check box.

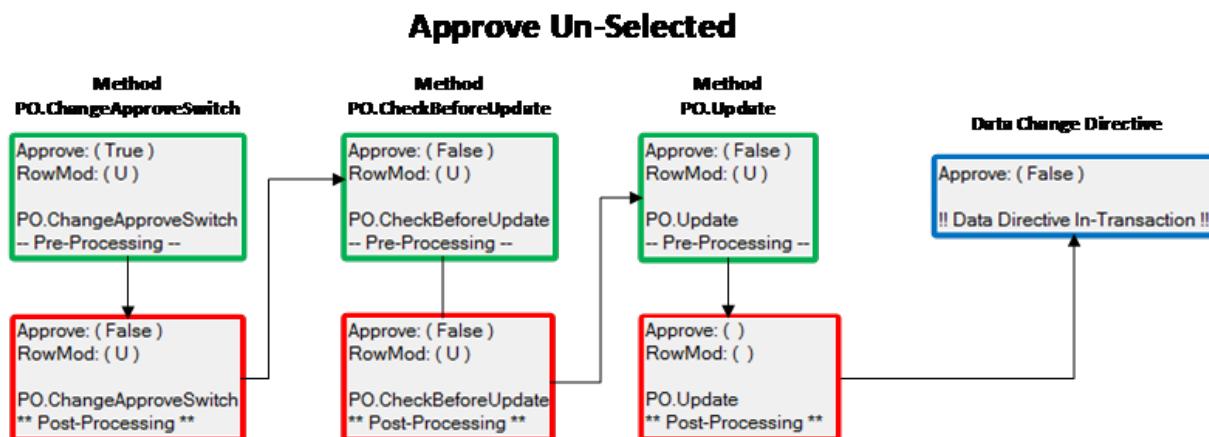
**Note:** Going into the ChangeApproveSwitch method pre-processing stage, the Approve flag is **False**, but coming out of the method in the post processing stage, it's now set to **True**.

The In-Transaction data directive fires after the Update method. This is a key consideration when designing your BPM flows. Trying to re-set the data column value prior to the In-Transaction data directive stage may not work. There may be business logic that will override your change prior to the data directive stages. Also note that the In-Transaction data directive fired twice. This would indicate some other data change activity has occurred during this process.



2. Now unselect the **Approve** checkbox and observe the reversal process.

**Note:** The same order of processing occurs with the reverse data conditions as expected. Also note that the In-Transaction data directive only executes once unselecting the Approve checkbox. This would indicate that selecting the Approve flag performs other data changes on the ttPOHeader table that unselecting does not.



3. Delete the **Method** and **Data Directives** in the **Test** group.

**Note:** Deleting the directives versus just disabling them will reduce confusion going forward in the advance workflow creation process. You can always re-import them from the export files noted at the beginning of the workshop.

## Using Shortcut Attachments

Alert attachment maintenance is used to configure attachment settings for tables associated with various Epicor processes. Some of the setting information required to build these shortcuts are:

- **Table:** The name of the table the Data Directive will be attached to.
- **Process ID:** The menu or process ID that will be called by the shortcut.
- **Shortcut Table:** This is a table name the shortcut will use to reference the search results. This is usually a combination of the table name followed by the word **List**. Example: **JobHeadList**
- **Data Source Type:** This is a dataset name the shortcut will use to reference the search results. This is usually a combination of the Shortcut Table name followed by the word **Dataset**. Example: **JobHeadListDataSet**
- **Template:** The template tab contains the XML contents of the client sysconfig used to access the desired Epicor client with an additional section for the Shortcut configuration. The Shortcut configuration section has place holders that will be populated by the data directive when the shortcut is built.

The XML data is stored in **Ice.XXXDef.Content** for Epicor 10.2.300 and in **Ice.XXXChunk.Chunk** for 10.2.200 and prior.

## Setup Alert Attachment

1. Navigate to Alert Attachments.
2. Menu Path: System Management > Business Process Management > Alert Attachments
3. Click the Table... button to do a table search for the POHeader table.  
**Important!**: Do not type the table name POHeader into the search textbox directly. The template may not populate and allow edits to it.
4. Click on the Template tab and review the Sysconfig template. You will need to copy the contents of the client .sysconfig file for the application server you will be attaching to and replace the text on the Template tab. You will need to add a <Shortcut> section to the bottom just above the closing tag </configuration>.

**Note:** There is a fully configured sample sysconfig file in the following location: **C:\Insight-s19\Jobs\XTreemBPM\Setup Data\sysconfig\_shortcut\_template.xml**

```
<Shortcut>
 <Company></Company>
 <Plant></Plant>
 <AppServerURL></AppServerURL>
 <DateTime></DateTime>
 <Originator></Originator>
<Process>
 <ProcessID></ProcessID>
 <Description></Description>
```

```
</Process>

<RecordIDS KeyFields="" KeyFieldsType="System.String" TableName="" DataSourceType="">
 <RecordID></RecordID>
</RecordIDS>

<Search>
 <NamedSearch>Search Name</NamedSearch>
 <SearchCriteria>Search Criteria</SearchCriteria>
</Search>

</Shortcut>
</configuration>
```

## Application Setup

### Workshop – Review Application Setup

#### UserCodes and UD Table Setup

The setup and maintenance screens use a combination of UserCodes for the type and stage details, UD109 and UD109A, to store the master workflow. The workflow detail associated with the PONum is stored in UD09.

1. Navigate to the PO workflow menu items and review the setup screens.

**Menu Path:** Material Management > Purchase Management > Setup

2. UserCode POAuthType:
3. **Exec** – Executive Approval Required
4. **Value** - Value Threshold
5. **Supplier** - Supplier Restrictions
6. **Part** - Part Restrictions
7. UserCode **POParts**: this will hold a list of parts with purchasing restrictions requiring authorization to purchase them.
8. UserCode **POSuppliers**: this will hold a list of suppliers with purchasing restrictions requiring authorization to purchase from them.
9. **UD109** and **109A** store the configurable workflows.

The screenshot shows the UD109 Maintenance interface. On the left, a tree view shows 'Auth Workflows' with 'Parent: PO' expanded, and 'Child (4)' selected, which further expands to show 'Exec', 'Parts', 'Supplier', and 'Value'. The main area has two tabs: 'UD109 Entry Detail' and 'UD109 Entry Child'. In 'UD109 Entry Detail', the 'Module' is set to 'PO', 'Override Group' is 'POOWNER', and the 'Description' is 'Owner can override all authorization stages'. In 'UD109 Entry Child', the 'Auth Type' is 'Parts', 'Value \$' is '0.00', 'Auth Group' is 'POPROD', and 'Def Email' is 'Jay.Makerman@epicorti.net'. The 'Description' is 'These parts are going obsolete, production must approve'. Below these fields is a table titled 'Authorization Sequence' with four rows:

Auth Type	Auth Group	Default EMail	Value \$
Exec	POEXEC	Alfred.Moneyman@epicorti.net	4,800.00
Parts	POPROD	Jay.Makerman@epicorti.net	0.00
Supplier	POMANAGER	Mike.Reasonot@epicorti.net	0.00
Value	POFINANCE	George.Wanabe@epicorti.net	1,800.00

#### 10. Columns added to POHeader:

- AuthRequired\_c – Indicates if the PO requires approval.
- AuthComplete\_c – Indicates the current workflow assigned has completed all authorization steps.
- AuthStage\_c – Holds the name of the current authorization stage pending approval. (UD09.Key2)
- AuthNotify\_c – Holds the email address approval was sent to. (UD09.Character01)
- AuthGroup\_c – Holds the Security Group allowed to authorize the current stage. (UD09.ShortChar01)

#### Security Group Setup

The following security groups were added.

Group Code	Description
POBUYER	PO Buyer Authorization
POEXEC	PO Executive Authorization
POFINANCE	PO Finance Authorization
POMANAGER	PO Manager Authorization
POOWNER	PO Owner Authorization
POPROD	PO Production Authorization

#### User Accounts

The following user accounts were setup with email addresses, company and security group access.

UserID	EMailAddress	GroupList
Jay.Makerman	Jay.Makerman@epicorti.net	POPROD
Rick.Prodman	Rick.Prodman@epicorti.net	POMANAGER
Fred.Fixerman	Fred.Fixerman@epicorti.net	POBUYER
Darrell.Needsalot	Darrell.Needsalot@epicorti.net	POFINANCE

User ID	E-Mail Address	Group List
George.Wanabe	George.Wanabe@epicorti.net	POFINANCE
Alfred.Moneyman	Alfred.Moneyman@epicorti.net	POFINANCE~POMANAGER~POEXEC
Julia.Owner	Julia.Owner@epicorti.net	POEXEC
Mike.Reasonot	Mike.Reasonot@epicorti.net	POFINANCE~POMANAGER~POBUYER
Mary.Buyer	Mary.Buyer@epicorti.net	POBUYER

## Review BPM Data Form Maintenance and Customization

To allow optional selection of email recipients, a BPM data form has been created and a customization has been added to it allowing users to select alternate authorized users to be notified about pending authorizations.

1. Open the **BPM DataForm Designer** and select **POAuth** Form ID.

**Menu Path:** System Management > Business Management > BPM Data Form Designer

2. Turn on **Developer** mode and from the **Actions** menu, select **Test BPM Data Form**.
3. From the **Select Customization** dialog, select **I18\_AuthNotify** customization.
4. From the **Tools** menu on the **BPM Data Form**, open the **Customization** and review the changes.
5. Close the BPM Data Form Designer.

## Import and Test the Process

### Workshop - Import the Multi Stage BPM's

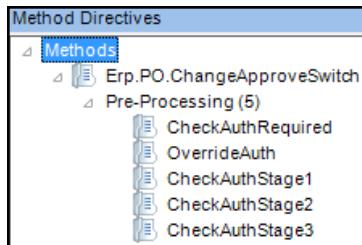
Next, you will import a finished version of the Multi Stage Authorization Workflow. This will consist of 6 Pre-Processing Method Directives for PO.ChangeApproveSwitch, 2 In-Transaction and 2 Standard Data Directives for POHeader.

1. Open the Directive Import form.

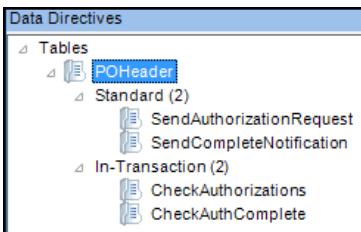
Menu Path: System Management > Business Management > Directive Import

2. Select the following file to import: C:\Insights19\Exports\XtreemBPM\exportXBPM.bpm
3. These will all be contained in the XtreemBPM directive group. Open Method and Data Directive maintenance and review all BPM's in the Insights18 group.

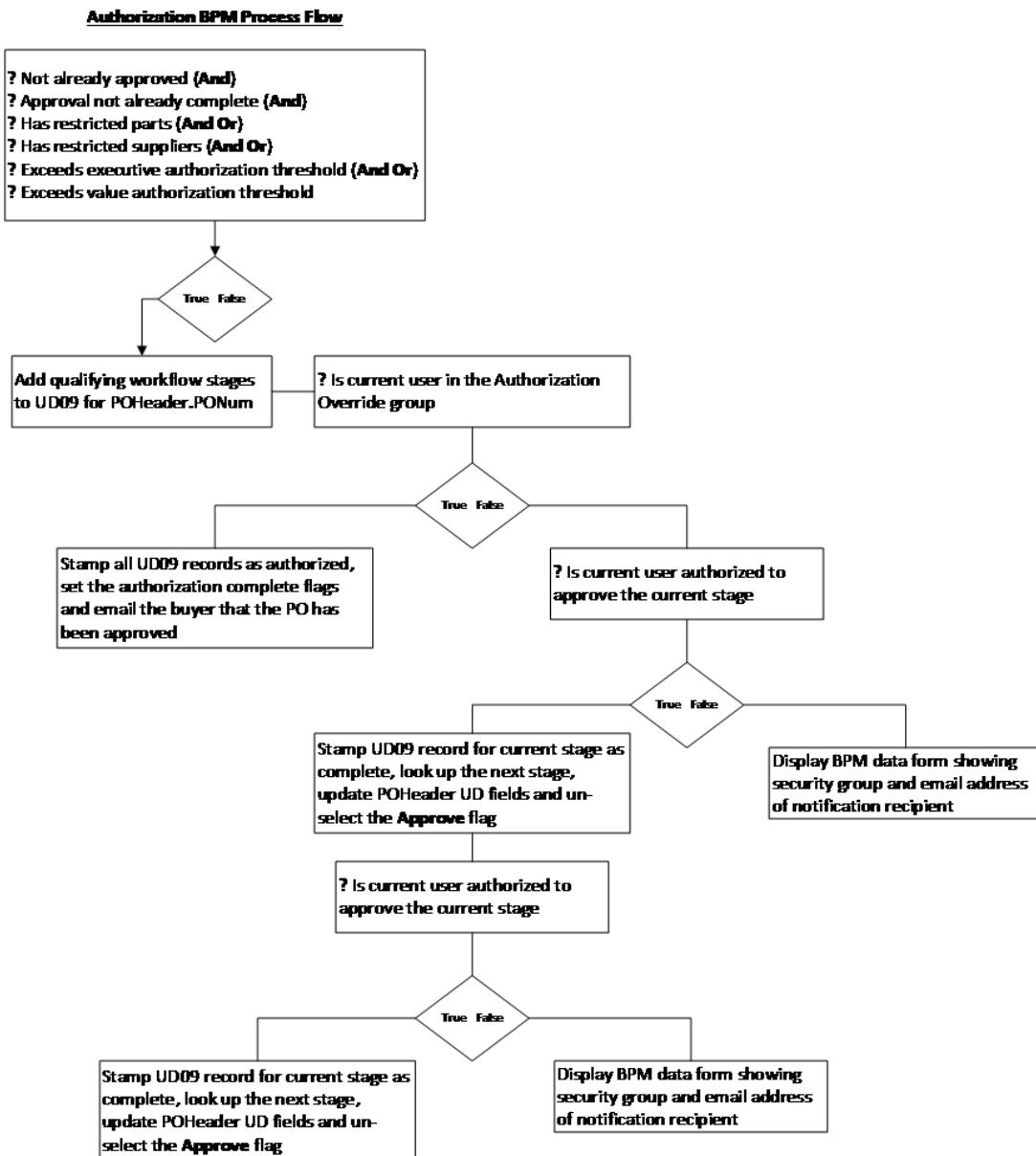
#### Method Directives:



#### Data Directives:



## The BPM Process Flow



The workflow is designed to check up to three process stages each time the Approve flag is set. The Approve flag will be unselected by the In-Transaction data directive as long as there are unapproved authorization stages for the PO.

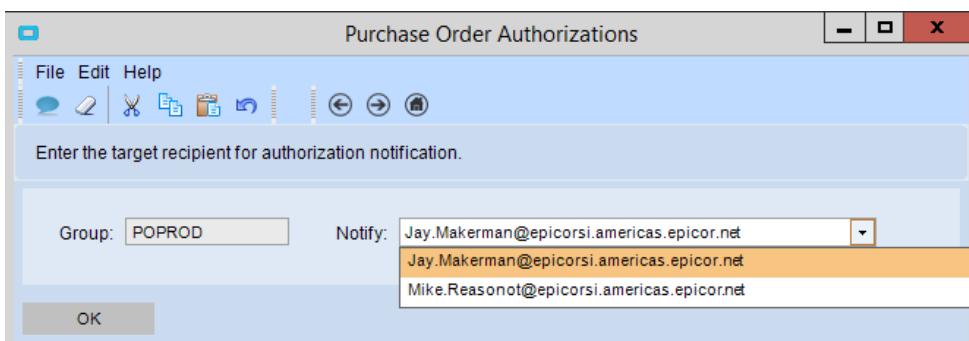
### Workshop - Test the Workflow

1. Open **Purchase Order Entry X-BPM** and retrieve the PO you created when tracing the Approve checkbox process.

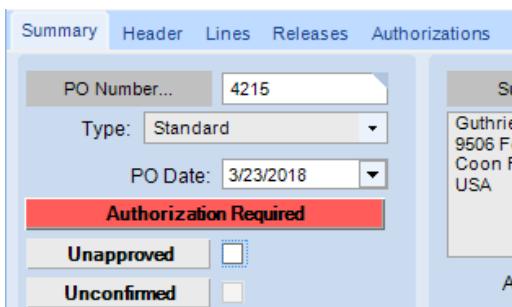
**Menu Path:** Material Management > Purchase Management > General Operations > PO Entry with Workflows

2. Select the **Unapprove** checkbox to trigger the authorization workflow BPM's.

**Note:** A BPM data form will display showing the security group authorized to approve the current stage. It will also default to the email address set as default for the stage in PO Authorization Workflow maintenance. There is a dropdown that will allow you to choose alternate email addresses for users that belong to this security group.



3. Select the desired email recipient and click **OK**. An EpiShape will display with the caption **Authorization Required**.



4. Navigate to the **Authorizations** tab and review the workflow details.

Stage	Auth Group	Authorized By	Auth Date	Email
Parts	POPROD			Jay.Makerman@epicorsi.americas.epicor.net
Supplier	POMANAGER			Mike.Reasonot@epicorsi.americas.epicor.net
Value	POFINANCE			George.Wanabe@epicorsi.americas.epicor.net

5. Log out of Epicor so you can log back in with credentials of a user that is in the POPROD security group.
6. Open **Outlook**, navigate to the **InBox** for the recipient to whom you sent the notification, and press **F9** or click the **Send/Receive All** button.
7. Open the email attachment sent to the email recipient that you picked when sending the notification, and log in as that user.

User: Jay.Makerman

Password: epicor

8. Approve the PO, leave the default email [Mike.Reasonot@epicorti.net](mailto:Mike.Reasonot@epicorti.net), click OK and exit Epicor.

9. Go to Mike's inbox, receive email, open his attachment and log into Epicor with his credentials.

User: Mike.Reasonot

Password: epicor

10. Go to the **Authorizations** tab and review the history.

**Note:** Mike belongs to all of the security groups associated with the remainder of the unauthorized stages, so his authorization completed the workflow and sent a notification to the Administrators inbox.

# Financial Reconciliation

This lab focuses on General Ledger reconciliation in AR, Tax and Banks currently supported by Epicor. Learn more about the detailed reconciliation process that will help you track, record, and review any variances between Ledger and Subledger.

At the conclusion of this lab, you will be able to:

- Understand the GL transactions that impact your GL reconciliations
- Complete a AR reconciliation
- Review and confirm your Bank Statement and do Bank Reconciliation
- Perform Tax Reconciliation

## Log In

1. From the desktop, launch Epicor ERP.
2. In both the **User** and **Password** fields enter manger.
3. In the left pane, verify that the **Epic06, Epicor Education company, and the Main site** are selected.

## Tax Reconciliation Report

### Create an AR Invoice and View in the Report

In this section we will create Miscellaneous Invoices.

1. Navigate to AR Invoice Entry.  
Menu Path: Financial Management > Accounts Receivable > General Operations > Invoice Entry
2. From the New menu, select New Group.
3. In the **Group** field, enter **XXX-T** (where XXX are your initials).
4. Accept the other defaults.
5. Click Save.
6. From the New menu, select New Miscellaneous Invoice.  
The Header > Detail sheet displays.
7. In the **Sold To Customer** field, enter **Addison** and press Tab.
8. From the New menu, select New Line.
9. In the **Part** field, enter **1032fw**.
10. In the **Quantity** field, enter **250**.
11. In the **Tax Liability** field, select **All Taxes**.
12. Click Save.
13. From the New menu, select New Miscellaneous Invoice.  
The Header > Detail sheet displays.

14. In the **Sold To Customer** field, enter **Clarke** and press Tab.
15. From the New menu, select New Line.
16. In the **Part** field, enter **1032fw**.
17. In the **Quantity** field, enter **350**.
18. In the **Tax Liability** field, select **Illinois**.
19. Click Save.
20. From the Actions menu, select Group > Edit List.
21. Click Print Preview.
22. Review tax amounts and accounts.
23. Close the edit list report and exit Group Edit List.
24. From the Actions menu, select Group > Post.  
The AR Invoice Post Process window displays.
25. Click Submit.
26. Close the AR Invoice Post Process window and exit AR Invoice Entry.

### **View the Results in the Tax Reconciliation Report**

After completing the previous lab steps, view your results in the Tax Reconciliation Report.

1. Navigate to the Tax Reconciliation Report.  
Menu Path: Financial Management > Accounts Payable > Reports > Tax Reconciliation
2. Verify that the current Fiscal Year displays.
3. In the Starting Period and Ending Period fields enter the current period.
4. Click the Print Preview icon.  
The Tax Reconciliation Report displays.
5. Review the tax transactions created from the previous steps.
6. Close the report window and minimize Tax Reconciliation Report.

### **Create an AP Invoice and View in the Report**

In this section, create a miscellaneous invoice in **AP Invoice Entry** and then review the transaction in the **Tax Reconciliation Report**.

#### **Create an AP Invoice**

1. Navigate to AP Invoice Entry.  
Menu Path: Financial Management > Accounts Payable > General Operations > Invoice Entry
2. From the New menu, select New Group.
3. In the **Group** field, enter **XXX-AP** (where XXX are your initials).

4. Accept the other defaults.
5. Click Save.
6. From the New menu, select New Invoice.

The Header > Detail sheet displays.
7. In the **Supplier** field, enter **ABE** and press Tab.
8. In the **Invoice** field, enter **XXXAP-1** (where XXX are your initials).
9. In the **Invoice Date** field, select today's date.
10. In the **Description** field, enter **TestAP**.
11. In the **Amount** field, enter **511.28**.
12. Navigate to the Header > Tax sheet.
13. Verify that the Tax Liability field displays All Taxes.
14. From the New menu, select New Misc Line.
15. In the **Description** field, verify or enter **TestAP**.
16. In the **Tax Category** field, select **Products**.
17. In the **Ext Amount** field, enter **500.00**.
18. Click Save.
19. From the Actions menu, select Group > Print Group Edit List.
20. Click Preview.
21. Review tax amounts and accounts.
22. From the Actions menu, select Group > Post.

The AP Invoice Post Process window displays.
23. Click Submit.
24. Close the AP Invoice Post Process window and Exit AP Invoice Entry.

### **View the Results in the Tax Reconciliation Report**

After completing the previous lab steps, view your results in the Tax Reconciliation Report.

1. Maximize Tax Reconciliation Report.
2. Verify that the current **Fiscal Year** displays.
3. In the **Starting Period** and **Ending Period** fields enter the current period.
4. Accept the report defaults that display.
5. Click the **Print Preview** icon.

The Tax Reconciliation Report displays.
6. Review the tax transactions created from the previous steps.
7. Close the report window and exit Tax Reconciliation Report.

## Create General Ledger to Tax Account

In this section, create a journal entry to tax account and then review the transaction in the **Tax Reconciliation Report**.

### Enter a GL Journal

Create a journal with taxable journal lines.

1. Navigate to GL Journal Entry.

Menu Path: Financial Management > General Ledger > General Operations > Journal Entry

2. From the New menu, select New Group.
3. In the **Group ID** field, enter **XXX-J** (where XXX are your initials).
4. From the New menu, select New Journal.

The Journal > Header sheet displays.

5. In the **Description** field, enter **XXX-J Header** (where XXX are your initials).

6. From the New menu, select New Journal Line.  
Fields enable on the Detail sheet below.

7. In the **G/L Account** field, enter **1100-00-00**.

8. Click in the **Debit** field, and enter **306.00**.

9. Click Save.

10. From the New menu, select New Journal Line.

11. In the **G/L Account** field, enter **4000-00-00**.

12. Click in the **Credit** field and enter **300.00**.

13. Click Save.

14. From the New menu, select New Journal Line.

15. In the **G/L Account** field, enter **2400-00-00** and press Tab.

16. Click in the **Credit** field and enter **6.00**.

17. Click Save.

18. From the Actions menu, select Post.

19. Answer Yes to the Are you Sure? message that displays.

20. Click OK.

A message displays saying the Transaction is posted to the GL.

21. Exit GL Journal Entry.

22. View the Tax Results in the Tax Reconciliation Report.

23. After completing the previous lab steps, view your results in the Tax Reconciliation Report.

24. Navigate to the Tax Reconciliation Report.

Menu Path: Financial Management > Accounts Payable > Reports > Tax Reconciliation

25. Verify that the current Fiscal Year displays.
26. In the **Starting Period** and **Ending Period** fields enter the current period.
27. Note the Start and End fields display the first day and last day of the period.
28. Accept the report defaults that display.
29. Click the Print Preview icon.  
The Tax Reconciliation Report displays.
30. Review the report and notice the manual journal to tax account displays in the Unlinked Journal section.
31. Close the report window and the Tax Reconciliation Report.

## AR Reconciliation Report

### Create a Cash Receipt Entry Group

1. Navigate to Cash Receipts Entry.  
Menu Path: Financial Management > Accounts Receivable > General Operations > Cash Receipt Entry
2. From the New menu, select New Group.
3. In the **Group** field, enter **XXX** (where XXX are your initials).
4. In the **Bank Account** field, select **Main Checking Account**.
5. Click Save.
6. In the Transaction **Apply Date** field, today's date defaults.

### Add an Invoice Payment

1. From the New menu, select New Invoice Payment.
2. In the **Check** field, enter **XXX-1** (where XXX are your initials).
3. In the **Receipt Amount** field, enter **8919.89**.
4. In the **Customer ID** field, enter **TWINCITIES** and press Tab.
5. Click Save.

### Select Invoices to Pay

1. Navigate to the A/R Receipt > Invoice Selection sheet.
2. In the Invoices grid, select the Selected check box for each invoice. Note Applying cancellation invoices from this window is the same as applying them from the Apply Document program.
3. Click the Apply button.
4. Click Save.

## View the AR Reconciliation Report

In this section, use the AR Reconciliation Report to view the AR invoices and credit memos you created in the previous steps.

1. Navigate to the AR Reconciliation Report.

Menu Path: Financial Management > Accounts Receivable > Reports > AR Reconciliation

2. In the Fiscal Year field, enter the current year.

3. In the **Starting Period** and **Ending Period** fields, enter the number of the current month.

The default is the prior period.

4. Accept the rest of the report defaults that display.

You can also run this report by selecting Document in the Group By drop-down list.

5. Click the Print Preview icon.

6. From the AR Reconciliation Report that displays, review the AR invoices and credit memos you created in the previous AR Invoice Entry steps.

7. Close the report window and exit AR Reconciliation Report.

## View Records in AR Reconciliation Tracker

In this section, retrieve and display the records you previously reviewed in the AR Reconciliation Report in the AR Reconciliation Tracker.

1. Navigate to the AR Reconciliation Tracker.

Menu Path: Financial Management > Accounts Receivable > General Operations > AR Reconciliation Tracker

2. Verify the Fiscal Year, Start Period, and End Period reflect the current month and year.

3. Accept the rest of the defaults that display.

4. From the Totals pane, click the Retrieve button.

Opening and closing balances, display for all GL accounts for the specified time period. These totals match the totals in the AR Reconciliation Report.

Note You can enter an account in the GL Account field to display totals for a single account.

5. Right-click on the Movement Variance field and select Drill Down.

Any transactions that cause a difference between the GL and subledger for the specified time period display in the Differences grid.

6. Review any records displayed in the Differences grid.

7. Navigate to the All Records sheet.

8. Click Retrieve.

All records display for the specified time period.

9. Review the records in the All Records grid.

10. Exit AR Reconciliation Tracker.

## Bank Reconciliation

### Create, Reconcile, and Post a Bank Statement

In this section, create a statement with a line, match an AP transaction to this line, and post the statement.

#### Create a Statement

Create a statement with one line (type - AP Payment, partner - AB Electronics, amount - 8000).

1. Navigate to Bank Statement Processing.

Menu Path: Financial Management > Accounts Payable > General Operations > Bank Statement Processing

2. In the **Bank ID** field, enter **BA01** and press Tab.
3. Click New on the Standard toolbar.
4. In the **Statement Description** field, enter **XXX** (where XXX are your initials).
5. In the **Opening Date** field, enter **10/01/2019**.
6. In the **Closing Date** field, enter the current date.
7. From the New menu, select New Statement Line.
8. Navigate to the Statement Lines sheet.
9. From the **Type** drop-down list, select **APPay**.
10. In the **Date** field, enter **11/05/2019**.
11. In the **Bank Amount** field, enter **- 8000.00**.
12. Right-click in the Partner Name field and select Open With > Supplier Search command.
13. Click Search, select AB Electronics as the supplier ID, and click OK.
14. Click Save and minimize Bank Statement Processing.

#### Reconcile a Statement

1. Maximize Bank Statement Processing.
2. Navigate to the Statement Lines sheet.
3. From the Actions menu, select Automatic Matching.

The application finds an unmatched transaction with similar partner name, date, and amount and matches it to the line.

4. Click Save and remain in Bank Statement Processing.

#### Post a Statement

1. Navigate to the Statement Header sheet.
2. Adjust the Closing Balance field value so that Variance is zero.

Variance is zero if the sum of opening balance and line total amounts is equal to the closing balance amount.

3. Click Save.
4. From the Actions menu, select Post Statement.
5. Click Yes in the confirmation window.
6. In the Bank Reconciliation Post Process window, click Submit and close the window.  
The statement is now submitted.
7. Exit Bank Statement Processing.

# Fun with Searches

Searching for data can be frustrating, as search results may display too much or too little data. Often you pull in row after row to find the records you want to review. This can hinder your efficient use of Epicor ERP.

The Epicor ERP application contains a number of search features that improve search results. Each feature creates targeted queries that return the specific data you want. You can even substitute an installed search program with a custom search program. If it typically takes a lot of time to locate the records you need, considering implementing these search features.

At the conclusion of this lab, you will be able to:

- Configure user account security to enable the different types of searches
- Explore search options available on each search window
- Build and deploy the following types of searches -- Named Searches, BAQ Searches, Predictive Searches, and BAQ Zone Searches

## System Requirements

Modules/Licensing	Product Version
Security Manager (To access Extended Property Maintenance and other system programs)	Named Searches – Epicor 6.x BAQ Searches – Epicor 8.x Predictive Searches – Epicor 9.x BAQ Zones – Epicor 9.x

## Business Flow Requirements

Searches that pull in large amounts of data can slow performance. Verify your modified search programs work effectively in your search environment before you add them to your live environment.

## Security Setup Review

Review security settings for the manager user.

1. Navigate to **User Account Security Maintenance**.  
**Menu Path:** System Setup > Security Maintenance > User Account Security Maintenance
2. Find and select the manager user account.
3. Click on the **Options** tab.
4. For these workshops, verify the following options are active.
  - Security Manager (Extended Props access for BAQ Zones)
  - Can Maintain Predictive Searches

## Primary Search Options

Each search program can filter and organize search results through record-specific criteria. You can launch search programs by clicking a button found next to a key field. On some programs there is also a Binocular icon on the Navigation toolbar at the top of the form.

1. Navigate to **Part Maintenance**.  
**Menu Path:** Sales Management > Order Management > Setup > Part
2. Click on the **Part...** button or the Binocular icon at the top of the form.
3. Each search form is unique for the data it searches. Each form has at least a **Sort By:** and **Starting At:** option.
4. All search forms have these standard search buttons:
  - **Search:** Executes the search with the current parameters and options
  - **New Search:** Clears parameters and options
  - **Clear Results:** Clears the results grid
  - **Options:** Controls the number of result rows returned to the grid
  - **Cancel:** Closes the search dialog
5. Click **Search**. Notice that the first 100 parts return in the Search Results grid.
6. Click the **Clear Results** button.
7. Click **Options**.
8. In the **Maximum Rows Returned** field, enter **200** and click **OK**.
9. Click **Search**. Notice that the first 200 parts return in the Search Results grid.
10. Click **New Search** and then **Search**. Notice the **Search Results** grid displays the first 100 parts again. New Search reverts each search window to its default search options.

## Hot Key Launch

You can also assign Hot Keys to launch searches.

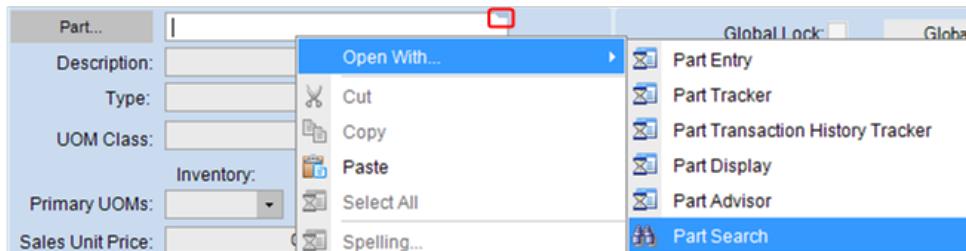
1. Within Part Maintenance, click **Tools > Options**. The Options window displays.
2. Click the **Hot Keys** tab.
3. From the **Command** drop-down list, select the **Search** option. If you click the **S** key, you can drop to the "S" command options.
4. Now define the hot key combination you want to use. Click the **Short Cut** drop-down list to select an option combination. For this example, select **F12**.
5. Click **OK**.
6. Press **F12** or **<Fn> + F12** on your keyboard to test the search.

The Part Search program displays.

## Context Menu Launch

You can also use context menus to launch search programs. Do this on any field that has a search button.

Notice the **Part...** field has a triangle icon in its upper right corner. This indicates the field has a context menu; right-click this field. A context menu displays.



## BAQ Searches

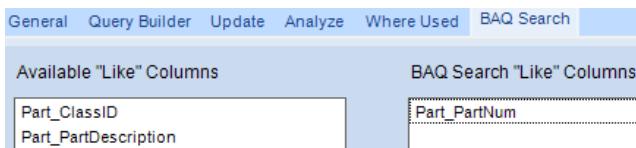
Business Activity Queries (BAQ) Searches use BAQs to search for data related to the current search program.

You create BAQ Searches in the Business Activity Query Designer. After you select the fields that display in your query, select specific fields as “Like” Columns. When this same field is used for queries in various search programs, the BAQ is an option on the BAQ Search tab. When users search for related data, many search programs contain a BAQ sheet that contains your query.

1. Open the **BAQ Designer**, search for and select **aa\_PartList BAQ**.

**Menu Path:** System Management > Business Activity Queries > Business Activity Query

2. Navigate to the **BAQ Search** tab and review the **BAQ Search “Like” Columns**.



3. From the Available “Like” columns list, double-click the **Part\_PartNum** column.

This column now displays in the BAQ Search “Like” Columns. Any search program that looks for the PartNum column will now include this search in their BAQ search options.

4. Click **Save**.

5. Close the BAQ designer and navigate back to Part Maintenance.

6. Click the **Part...** button, Binoculars, use the context menu, or press your shortcut key to launch the Part Search dialog.

7. Click the **BAQ** tab, select your BAQ, and then click **Search**.

The **Search Results** grid displays the query results.

## Named Searches

Use a Named Search to create a series of pre-set search options.

You use named searches in several ways. You can launch these searches manually from the Named Search drop-down list within each search program. Select a Named Search option as the default for the search program; each time you launch the search, the Named Search options appear. You can also set up Named Searches to automatically populate data within either the search program or its parent program.

1. Navigate to **Part Maintenance**.

**Menu Path:** Sales Management > Order Management > Setup > Part

2. Click the **Part...** button.
3. Click the **Named Search** button. The **Named Search Options** window displays.
4. Click **New**.
5. For the **Named Search ID**, enter **RailSearch**.
6. For the **Description**, enter **Rail Parts Search**.

The Application field displays the program for which you are creating the named search. In this example, **Erp.UI.PartEntry.dll** appears.

7. The **Search Form** field displays the name of the search program.
8. Select a **Search Type** for this named search. Available options:

- **Basic Search** – Use this search type to modify the default values on the search program's Basic sheet.
- **BAQ Search** – Use this search type to select a Business Activity Query to populate the named search. If you select this option, the **Search Using** drop-down list displays. This list displays BAQs available for this search program; select a search option from the list.

For this example, you define basic search values. Select the **Basic Search** type.

9. Enter the default values you want. Click the **Sort By** field and select **Part Number**.
10. From the **Part Type** drop-down menu, select the **Manufactured** option.
11. In the **Where Part Description Contains** section, enter the word **Rail**.
12. Click **Save**.

When you use this named search, the results display manufactured parts with the word 'Rail' in the Description.

## Named Search Details

Define additional options. These options affect how the named search runs:

1. Navigate to the **Detail > Options** sheet.
2. Select the **Default** check box. This named search will be the default for the search program.
3. When the Default check box is selected, the **Auto Execute** check box activates. Select this check box. The search program will now automatically run when you launch Part Search. The search query also populates the Search Results grid.
4. Now select the **Unpin Criteria Sheet** check box. This causes the main search sheet to automatically hide; only the populated Search Results grid displays.
5. When the **Return All Rows** check box is selected, the Search Results grid displays all records that match the named search options. However for this example, you want to restrict how many rows return, so clear (de-select) this check box.
6. Enter the highest number of rows you want to display within the Search Results grid. For this example, enter 100. Now this named search displays a maximum of 100 records (rows).
7. Select the **Single Value Auto Select** check box to indicate that if the search program only locates one record, this record automatically populates within the maintenance or entry program.
8. Click **Save**.
9. Close the **Named Search Options** window.

The search runs, showing you how this search program will appear. However to see the named search pull in the filtered results, refresh the search window.

### Display Default Named Search

1. Close the **Part Search** window.
2. The named search now refresh with your filter options. Click the **Part...** button.  
The Part Search window appears, using the named search options you selected.
3. Notice the search program automatically populates the Search Results grid with parts matching the filter criteria you set as default sorting by Part Number.
4. To reset the search window, click **New Search**.

### Auto Populate Data

You can also use the named search to automatically populate a maintenance or entry program with the search results. To see this feature, you first disable the Default Search option.

1. Within the **Part Search**, click the **Search** button.
2. Click the **Named Search** button.  
The **Named Search Options** window displays.
3. Navigate to the **Detail > Options** sheet.
4. Clear (de-select) the **Default** check box.  
The Auto Execute and Unpin Criteria Sheet check boxes automatically clear as well.
5. Click **Save**.
6. Close the **Named Search Options** and **Part Search** windows.  
You return to Part Maintenance.
7. From the **Tools** menu, select **Options**. The Options window displays.
8. Select the **Auto Populate Data** radio button.
9. The drop-down list below the Auto Populate Data radio button activates. The named searches created for this program display; select the **RailSearch** option.
10. Click **OK**.
11. Refresh the program. Close and re-launch Part Maintenance.  
Part Maintenance populates with the parts matching the filter criteria in your Named Search.
12. Use the **Navigation** toolbar to select the rail parts. To display a different part, either click the **Left Arrow** and **Right Arrow** buttons or the click the drop-down list.

Each time you launch Part Maintenance, the filtered part numbers automatically populate within the program. Use the **Navigation** toolbar to find and select the part you need.

### Auto Load Search

Similar to Auto Populate Data, you can also cause a search window to automatically display using default or Named Search options. Do this by activating the Auto Load Search option.

1. Click **Tools > Options**.

The Options window displays.

2. Select the **Auto Load Search** radio button. This indicates you want the search program to automatically display each time you launch the program.
  3. The drop-down list below the **Auto Populate Search** radio button activates. The named searches created for this program display; select the **RailSearch** option.
  4. Click **OK**.
  5. Close and re-launch Part Maintenance.
- The Part Search window displays with the default Sort By and other filtering options you defined on the named search.
6. Click the **Search** button. The named search results appear.
  7. To reset the search, click **New Search**.
  8. Before you move on to the next workshop, reset Part Maintenance to its default options. Click **Tools > Options** and select the **No Action** radio button. Then click **OK**.

## Predictive Search

The Predictive Search feature reduces time spent searching for a particular record. When you configure a key field with the predictive search, as you start typing in the field, the suggested results display in a floating tooltip. The search results change dynamically as you type, returning targeted search results.

A business activity query (BAQ) provides the data source for your predictive search results. You can use either system BAQs or custom BAQs to populate the data. During this workshop, you will use the **aa\_PartList** query.

## Create Predictive Search

Create a predictive search on the Part Description field and return the PartNum field.

1. Navigate to Part Maintenance.

**Menu Path:** Sales Management > Order Management > Setup > Part

2. In the **Part** field, right-click and from the context menu, select **Predictive Search Entry**. Predictive Search Maintenance displays.
3. Click **New**.
4. In the **Predictive Search ID** field, enter **aa\_PartListPS**.
5. In the **Description** field, enter **List of Parts**.
6. Click **BAQ**, search for and select the **aa\_PartList** BAQ.
7. In the **Return Column**, select **Part\_PartNum**.

This field defines the column that binds the PartNum field when a user selects an option in the predictive search tooltip window.

8. In the **Starts With** Column, select **Part\_PartDescription**.

This column is used to filter the BAQ records. When you activate a predictive search and start typing in the field, BAQ results filter by Part Description.

9. Select the **Shared** check box.

The predictive search is now available to all users within the company.

10. Likewise, select the **All Occurrences** check box.

The predictive search displays in all instances of the part description column in other programs.

11. You can also enter a value in the **Top X Rows** field.

This limits the predictive search to only return the number of rows you define in this field. For this example, do not enter a value here.

12. Click **Save** and close Predictive Search Entry.

### Test Predictive Search

1. Exit Epicor, re-launch and open Part Maintenance.
2. Click in the **PartNum** field and type **Ra** then select a rail part that displays in the Search Results grid.
3. Close Part Maintenance.

### BAQ Zone Search

A business activity query (BAQ) zone is an embedded query you link to a specific field. When you activate a BAQ zone, it displays as a linked tool tip. The data that populates this window depends on both the business activity query and the current value, if any, within the linked field.

### Extended Property Maintenance

Once you define the query, link it to a field as a BAQ zone. Do this through Extended Property Maintenance. Launch this program and then link a BAQ zone to a specific field as an extended property.

1. Navigate to **Extended Property Maintenance**.

**Menu Path:** System Setup > System Maintenance > Extended Properties

2. Click the **DataSetTable ID** button to find and select the **Part** table. Because you know the name of the table, you can also enter Part and press **<Tab>**.

Part table information displays on the Detail sheet.

3. In the Tree View, expand the table and select the **PartNum** field.

4. Navigate to the Fields > Detail sheet.

5. Click the **Zone BAQ** drop-down list to select the **aa\_PartList** query.

6. You want this BAQ zone to function as a search program. Select the **Zone Search On Empty** check box.

7. Click **Save**.

### Test the Zone Search

1. Close Epicor, re-launch and open **Part Maintenance**.

You will notice a sideways triangle at the end of the **PartNum** entry field.



2. Hover over the triangle and a grid with a list of parts will display.
3. To filter the results, enter a value in the **Part ID** field.
4. To change the color of the indicator triangle, click Tools > Options.
5. Locate the **Zone** Indicator check box. Use the drop-down list to select a color you want.
6. Click **OK**.

The zone indicator triangle now displays with your selected color.

# Getting the Most Out of the Buyer Workbench

The Buyer Workbench is a tool that monitors RFQs, supplier responses to RFQs, and aids in RFQ award decision-making. Supplier RFQ responses automatically build or add to existing part price-break tables. They contain current effectivity dates that are used in other areas of the application.

Requests for quotes can be entered in one of the following ways:

- **Manually** - In RFQ Entry
- **Pushed** - Into the Buyer Workbench from:
  - A material requirement on a quote
  - A material requirement on a job
  - A line on the browse window of Purchasing Suggestions
  - A material sequence line on a method
- **Pulled** - Into the Buyer Workbench from:
  - Job-related material
  - Quoted material

This lab is designed to introduce topics related to the Buyer Workbench process. Hands-on workshops will guide you through the setup and processes.

At the conclusion of this lab, you will be able to:

- Review ratings assigned to a supplier.
- Assign attributes to a supplier.
- Create requests for quote (RFQs) for job-related and quoted material.
- Identify reports and trackers.

## System Requirements

Modules/Licensing	Product Version
Epicor ERP	10.2.300
Job Management	
Purchase Management	
Supplier Relationship Management	

## Business Flow Requirements

For the successful completion of this Lab, the following application setup was performed:

- Setup of Users, Buyers, and Suppliers
- Creation of Supplier Ratings and Attributes

## Log into the Epicor ERP Application

1. On the desktop, double-click the Epicor **ERP10** application icon.
2. In the **User name** field, enter **manager**.
3. In the **Password** field, enter **manager**.
4. Click **OK**.
5. Navigate to the **Main Menu**, and in the left pane, verify that the **Epic06**, **Epicor Education company**, and **the Main Site** are selected.

## Supplier Rating and Attributes

Use **Attribute Maintenance** to set up attributes you can link to suppliers. You can consider attributes as qualities that belong to a supplier. A supplier can have as many attributes as necessary. Examples of attributes include **ISO Certified** and **UL Approved**. Attributes are used by the **Decision Wizard** in the **Buyer Workbench**.

**Menu Path:** Material Management > Supplier Relationship Management > Setup > Attribute

Use **Rating Maintenance** to set up rating codes. Rating codes are valuable when you want to compare records and express precedence of one record over another. Ratings normally consist of letters and numbers, for example, A1, A2, B1, and B2. An A rating means the parameter with this rating is the most important to the buyer. The number shows the priority among suppliers with the same letter.

Supplier ratings are set up to assist the **RFQ Decision Wizard**, which filters and sorts RFQs to find the best supplier match.

**Menu Path:** Material Management > Supplier Relationship Management > Setup > Rating

Use the **Supplier Relationship Management (SRM)** sheet in Supplier Maintenance to establish ratings information for a supplier. This information assists in the decision to purchase goods or services from this supplier.

The following steps demonstrate how to assign ratings to a supplier record:

Navigate to **Supplier Maintenance**.

**Menu Path:** Material Management > Supplier Relationship Management > Setup > Supplier

**Important** Assigned ratings for suppliers can be changed; however, only one set of assigned ratings can be established for each supplier.

1. In the **Supplier** field, search for and select **A-Z Metals**.
2. Navigate to the **Attributes** sheet.
3. In the **Available Attributes** pane, using the **Ctrl** key, select **ISO Certified** and **UL Approved**.
4. Click the **right arrow** button to move the selected attributes to the **Selected Attributes** pane.
5. Click **Save**.
6. Navigate to the **SRM** sheet.
7. Assign the following ratings:

Field	Rating
On Time Rating	A2
Price Rating	A2

Field	Rating
Quality Rating	B1
Service Rating	B1

These ratings indicate that the supplier does not have the best on-time rating or price rating, which are the most important parameters to the buyer. Their quality and service carry the best ratings.

8. Click **Save**.
9. Exit Supplier Maintenance.

## Buyer Workbench

Use **Buyer Workbench** to generate and manage Requests for Quotes (RFQs) and purchase orders (POs) from a central location within the Epicor application.

Buyers use the Buyer Workbench to review a summary of the Requests for Quotes (RFQs) and purchase orders assigned to them. The information includes the number of RFQ and purchase order records that are open, overdue, scheduled for today, scheduled for this week, and scheduled for beyond this week (future). It also displays the number of RFQs that have received responses from suppliers and are ready for processing, as well as the number of purchase orders that require the buyer's approval. The Tree View and Actions menu provide access to additional programs such as:

- New PO Suggestions
- Change PO Suggestions
- Supplier Maintenance

The workbench provides the following:

- Ability to review of all open and overdue RFQs - This allows you to view RFQs and provides access to RFQ Entry and Supplier Responses.
- Ability to review of all open and overdue purchase orders - This allows you to view purchase orders and provides access to Purchase Order Entry.

**Note** To determine if specific PO records should be included in the count totals displayed in the **Overdue**, **Today** and **Future** fields in the **General** sheet, the Epicor application compares the current system date to the promise date on each associated PO release line. If no promise date exists for the PO release line, it uses the assigned due date for the comparison.

- A listing of all new RFQ suggestions that can be generated from jobs, new quotes, or methods of manufacturing (MOM).
- Ability to review new and changed purchase suggestions - The **Approval** sheet enables you to approve purchase orders that exceed a buyer's authority (**POs > Approvals** sheet). This allows you to view purchase suggestions and provides access to Change PO Suggestions and New PO Suggestions.
- The **Decision Wizard** filters and sorts RFQs to find the best supplier match. The sorting criteria include lead time, quality rating, price, and user-defined attributes such as ISO certification.

The Buyer Workbench contains the following sheets and functions:

### General Sheet

Use the **General** sheet to review a summary of RFQs and purchase orders assigned to a specific buyer.

- For RFQ records, it displays count totals for those RFQs that are open, for which supplier responses are overdue, for which supplier responses are due today, for this week, and are due beyond this week (future). It also displays the number of RFQs that have received responses from suppliers and are ready for processing. You can use the **RFQ's** sheet and its accompanying **Open RFQ's**, **Suggestions** and **Ready** sheets to review the underlying detail information and take the appropriate actions.
- To determine if a specific RFQ should be included in the count totals displayed in these fields, the Epicor application compares the current system date to the due date on each RFQ record.
- For PO records, it displays count totals for those POs that are open, overdue for receipt, with release lines due to be received today, this week, and due beyond this week (future). It also displays the number of purchase orders that require the buyer's approval. You can use the **PO's** sheet and its accompanying **Open PO's** and **Approval** sheets to review the underlying detail information and take the appropriate actions.

To determine if a specific PO should be included in the count totals displayed in these fields, the Epicor application compares the current system date to the promise date on each associated PO release line. If no promise date exists, it uses the assigned due date for the comparison.

### **RFQ's Sheet**

Use the **RFQ's** sheet to review open Requests for Quotes (RFQs) and the suggestions that you want to turn into RFQs. From this sheet, you access the **RFQ Entry**, the **Supplier Response**, the **Supplier Wizard**, and the **Decision Wizard**.

- To enter RFQs manually, access RFQ Entry from the **RFQ's > Open RFQ's** sheet or
- Click the **Generate** button on the **RFQ's > Suggestions > List** sheet.

### **PO's Sheet**

Use the **PO's** sheet to review purchase orders assigned to a specific buyer.

You can use the **Approval** sheet as needed to access the **Approve Purchase Order** program to approve or reject pending purchase orders.

- Pending purchase orders are those that could not be approved in **Purchase Order Entry** because their extended total exceeded the designated PO limit for the associated buyer (as defined in Buyer Maintenance).
- Pending purchase orders appear in this sheet, and under the Approval node in the Buyer Workbench Tree, for the designated person who approves purchases for this buyer when the purchasing limit has been exceeded.

### **Web Sheet**

Use the **Web** sheet to review PO and RFQ details posted to and received from the web.

### **Menu Path**

Navigate to this program from the Main Menu:

- Material Management > Supplier Relationship Management > General Operations > Buyer Workbench

## Create an RFQ and Receive a Supplier Response

Your company manufactures conveyor systems and you have been asked to purchase missing material which is necessary to satisfy job 2117 (conveyor system CV-8400). As a Purchase Manager, you create a request for quote for material CVB-TEF, print it and send it to Global Supply. Once you receive the supplier response you enter new price breaks for part CVB-TEF and create a purchase order for this item.

### Update Job Material

Navigate to **Job Entry**.

**Menu Path:** Production Management > Job Management > General Operations > Job Entry

1. In the **Job** field, search for and select job number **2117**.
2. In the tree view, navigate to and select **2117 > ASM: 0 CV-8400 > Materials > Mtl: 190 CVB-TEF**.
3. The **Job Details > Materials > Detail** sheet displays.
4. Right click in the **Part/Rev** field and select **Open With > Part Entry**.
5. **Part Maintenance** displays.
6. In the **Default Site Parameters** pane, notice this part is a **Non-Stock Item** which requires a purchase direct or request for RFQ action to stock.
7. Exit Part Maintenance and return to Job Entry.
8. In the **Purchasing** pane, select the **RFQ Needed** check box.
9. In the **Quotes Required** field, enter **2**.
10. In the **Supplier ID** field, search for **GLOBE**.
11. Click **Save** and exit Job Entry.

### Generate an RFQ

Navigate to the **Buyer Workbench**.

**Menu Path:** Material Management > Supplier Relationship Management > General Operations > Buyer Workbench

1. In the **Buyer** field, verify **Brian Howard** defaults.
2. In the tree view, navigate to and select **RFQ's > Brian Howard > Suggestions > CVB-TEF**.  
The RFQ's > Suggestions > List sheet displays.
3. In the **Req Suppliers** column, note the number for RFQ's needed.
4. Navigate to the **RFQ's > Suggestions > Suppliers** sheet.
5. Click the **Add...** button to search for and select **A-Z Metals**.
6. If the **Supplier(s) not approved for the selected RFQ, Continue?** message displays, click **Yes**. Using an approved supplier on an RFQ is not a requirement.
7. Click the **Supplier Wizard** button to select suppliers.  
The **Supplier Wizard** window displays.

9. Use the Supplier Wizard to pull in suppliers who previously received an RFQ on the selected part, sold the company this part in the past, or provided price break information. You can also pull in suppliers based on Attributes and/or Compliance.
10. Click the **Attributes...** button and from the **Available Attributes** list select **ISO Certified**, click the **right arrow** button to move the Attribute to the **Include** list.
11. Click **OK**.
12. In the **Supplier Wizard** window, click **OK**.
13. If the **At least one of the suppliers returned are not approved.** message displays, click **OK**.  
The application looks for approved suppliers requesting quotes on this part, but it is not a requirement.
14. Notice the three suppliers display in the **RFQ's > Suggestions > Suppliers** grid.
15. Navigate to the **RFQ's > Suggestions > Detail** sheet.
16. Select the **RFQ** check box.
17. If the **Supplier(s) not approved for the selected RFQ, Continue?** message displays, click **Yes**. Using an approved supplier on an RFQ is not a requirement.
18. In the **Due Date** field, enter today's date.  
This is the date by which supplier responses to the RFQ are due.
19. In the **Decision** field, enter tomorrow's date.
20. This is the date, by which you would like to make the decision about the supplier from whom you will make the purchase.
21. In the **Response** field, enter tomorrow's date.  
This specifies the date by which all suppliers should submit their quotes for the RFQ to you.
22. Click **Generate**.
23. In the tree view, expand the **RFQ's > Brian Howard > Today** node and verify the new RFQ displays.

## Review and Print the RFQ

1. Navigate to the **RFQ's > Open RFQ's > Today** sheet.
2. In the tree view, select the RFQ created in the previous steps.
3. Click the **RFQ Entry** button.  
RFQ Entry opens and automatically displays the RFQ you generated.
4. From the Actions menu, select **RFQ > Print Form**.  
The **RFQ Print Form** window displays.
5. Click **Print Preview**.  
The **Print RFQ** report displays.
6. Review and close the **Print RFQ** report.
7. Close the **RFQ Print Form** window.
8. Exit **RFQ Entry** and return to the **Buyer Workbench**.

## Create a Price Break for Global Supply

1. In the tree view, select or verify the new RFQ is selected.

2. Click **Supplier Response**.

The **Supplier Responses** window displays.

3. In the **RFQ Listing** grid, in the **Response** field, the response status for your RFQ displays as **Waiting**.

4. From the tree view, select **Supplier: Global Supply**.

5. Click the **Add Supplier Responses** button.

Supplier Price List opens.

6. Verify the **Supplier** field displays **GLOBE**.

7. In the **Days** field, enter **90**.

8. In the **Base Unit Price** field, verify **105** displays.

This value defaults from the Unit Cost assigned to the Job Material and can be modified.

9. From the **New** menu, select **New Price Break**.

10. Navigate to the **Parts > Price Breaks > Detail** sheet.

11. In the **Minimum Qty** field, enter **1**.

12. Click **Save**.

## Create Another Price Break

1. From the **New** menu, select **New Price Break**.

2. In the **Minimum Qty** field, enter **10**.

3. In the **Price Modifier** field, enter **-10.00**.

4. Click **Save**.

5. Navigate to the **Parts > Price Breaks > List** sheet and compare the two price breaks.

6. From the **New** menu, select **New Price Break**.

7. In the **Minimum Qty** field, enter **20**.

8. In the **Price Modifier** field, enter **-15.00**.

9. Click **Save**.

10. Navigate to the **Parts > Price Breaks > List** sheet and compare the price breaks.

Minimum Qty	Price
1	\$105
10	\$95
20	\$90

11. Exit Supplier Price List.

12. In the **RFQ Listing** grid, in the **Response** field, the response status for your RFQ displays **Received**.

13. Remain in the Supplier Responses.

## Create a Price Break for A-Z Metals

1. From the tree view, select **Supplier: A-Z Metals**.
  2. Click the **Add Supplier Responses** button.
- The Supplier Price List displays.
3. Verify the **Supplier** field displays **A-ZM**.
  4. In the **Days** field, enter **80**.
  5. In the **Base Unit Price** field, enter **120**.
  6. From the **New** menu, select **New Price Break**.
  7. Navigate to the **Parts > Price Breaks > Detail** sheet.
  8. In the **Minimum Qty** field, enter **15**.
  9. In the **Price Modifier** field, enter **-5.00**.
  10. Click **Save**.
  11. Navigate to the **Parts > Price Breaks > List** sheet and compare the two price breaks.

Minimum Qty	Price
1	\$120
15	\$115

12. Exit Supplier Price List.
13. In the **RFQ Listing** grid, in the **Response** field, the response status for your RFQ displays **Received**.
14. Exit Supplier Responses and return to the Buyer Workbench.

## Create a Purchase Order from an RFQ

1. Navigate to the **RFQs > Ready** sheet.
  2. Click the **Decision Wizard** button.
- The **RFQ Decision Wizard** window displays.
3. In the **Quantity** field, verify one displays.
  4. Part **CVB-TEF** is a non-stock part; therefore, only the quantity required to satisfy job 2117 is purchased.
  5. From the grid view, select **Global Supply** and click the **Accept** button.
- This updates the job or quote with the RFQ response information.
6. Click **Yes** to the **Min Needed Responses 2 Rcvd Responses 2 Not all responses have been received. Do you want to continue?** message.
  7. Click the **Create PO** button.
- The Purchase Order XXXX has been successfully created. (where XXXX is your PO number) message displays.
8. Record the purchase order number \_\_\_\_\_.
  9. To the message, click **OK**.
  10. Close the RFQ Decision Wizard window, return to the Buyer Workbench, and click **Refresh**.

In the tree view, the RFQ no longer displays.

11. In the tree view, navigate to and select **Buyer Workbench > PO's > Brian Howard > Today > XXXX/1/1** (where XXXX is your purchase order number).

The PO's > Open PO's > Today sheet displays.

12. Click the **PO Entry** button.

13. **Purchase Order Entry** displays.

14. Navigate to the **Lines > Detail** sheet.

15. Click the **Price Breaks** button.

Supplier Price List displays.

16. Navigate to the **Parts > Price Breaks > List** sheet and review the price breaks.

17. Exit Supplier Price List.

18. From Purchase Order Entry, navigate to the **Summary** sheet and clear the **Approved** check box.

19. Navigate to the **Lines > Detail** sheet.

20. In the **Our Qty** field, enter **20** and press **Tab**.

21. The **Unit Price** field value changes from 105.00 to 90.00. This is due to the price breaks defined previously.

22. Navigate to the **Summary** sheet.

23. Select the **Unapproved** check box to approve the purchase order.

24. Click **Save**.

25. From the **Actions** menu, select **Print** and click **Print Preview**.

The **Purchase Order** displays.

26. Close the Purchase Order and the Purchase Order print preview window.

27. Exit Purchase Order Entry and the Buyer Workbench.

## Reports

Reports that relate to the Buyer Workbench and its processes are:

### Part Price Report

Use the **Part Price Report** to review pricing information for your parts. This report prints in order by part.

**Menu Path:** Material Management > Supplier Relationship Management > Reports > Part Price Report

### Review the Part Price Report

Navigate to the **Part Price Report**.

**Menu Path:** Material Management > Supplier Relationship Management > Reports > Part Price Report

1. From the Report Options pane, select the **Most Recent Prices Only** check box.

2. Navigate to the **Filter > Part** sheet.

3. Click the **Part...** button to search for and select part **CVB-TEF**.
  4. Click the **Print Preview** button.
- The Part Price Report displays.
5. Close the Part Price Report and exit Part Price History.

## **Supplier Price Report**

Use the **Supplier Price Report** to review the prices of various items from your suppliers. This report prints in order by supplier.

**Menu Path:** Material Management > Supplier Relationship Management > Reports > Supplier Price Report

### **Review the Supplier Price Report**

Navigate to the **Supplier Price Report**.

**Menu Path:** Material Management > Supplier Relationship Management > Reports > Supplier Price Report

1. From the Report Options pane, select the **Most Recent Prices Only** check box.
  2. Navigate to the **Filter > Supplier** sheet.
  3. Click the **Supplier...** button to search for and select **Global Supply**.
  4. Click the **Print Preview** button.
- The Supplier Price Report displays.

5. Close the Supplier Price Report and exit Supplier Price History.

## **Supplier Tracker**

Use the **Supplier Tracker** to view supplier activity within your database. It displays information about each supplier record and all the requests for quote, purchase orders, payments, parts, and other records linked to each supplier.

**Menu Path:** Material Management > Supplier Relationship Management > General Operations > Supplier Tracker

### **Review the Supplier Tracker**

Navigate to the **Supplier Tracker**.

**Menu Path:** Material Management > Supplier Relationship Management > General Operations > Supplier Tracker

1. Navigate to the **Supplier > Detail** sheet.
2. In the **Supplier** field, enter **GLOBE**, then press the **Tab** key.
3. Navigate to the **Links > RFQ > Closed** sheet.
4. Click **Retrieve**.
5. Notice the **RFQ** created in the previous workshop for part **CVB-TEF**.
6. Navigate to the **Links > Purchase Orders > Open** sheet.
7. Click **Retrieve**.

8. Identify the purchase order you created in the previous workshop for part **CVB-TEF**.
9. Exit the Supplier Tracker.

**Congratulations!** You have completed the Getting the Most Out of the Buyer Workbench lab.

# Hands-on with CADLink and MBOM: Manufacturing BOM Made Easy

Time is money, and streamlining bill of material (BOM) processes can save you time! In this lab we will walk through the unique CADLink-enabled MBOM creation process. We will show you tips and tricks to turn your Engineering BOM (EBOM) on your CAD into a Manufacturing BOM (MBOM) in your Epicor ERP and ready for the shop floor!

In this lab, you will play two different roles, a **design engineer** responsible for creating EBOM in CAD and a **manufacturing engineer** responsible for creating MBOM inside Epicor.

At the conclusion of this lab, you will be able to:

- Use CADLink to import EBOM from CAD model into MBOM Tool
- Use MBOM Tool to manipulate and review MBOM
- Push MBOM into Epicor
- Use CADLink and MBOM Tool to rev up your Epicor Revisions and Methods

## System Requirements

Modules/Licensing	Product Version
Epicor ERP	Epicor ERP 10 or newer
CADLink	n/a
CADLink MBOM Module	n/a

## In Preparation for the Lab

1. From the desktop, open **ERP10**.
2. Make sure you are in **Company=Epicor USA** and **Site=Chicago**.

If you are not in the right Company or Site, use the drop-down option to change them now.



3. From the desktop, open Class & Lab Content > Labs > MBOM.

## Extract CAD BOM with CADLink and Save the EBOM to MBOM Tool

You are a **design engineer** who just completed designing a brand new product line for your company using a CAD system. Your job now is to send EBOM to manufacturing engineers so they can manipulate it to create an MBOM.

## Launch CADLink from CAD Model

CADLink launches directly from the CAD model.

CADLink is real-time, bidirectional link to synchronize EBOM between your CAD and Epicor.

1. From the MBOM folder, open **CADLink**.
  2. When the Windows browser screen opens, select **4 Digit Print Head.SLDAM**.
    - You should already be in the correct folder, however if you cannot find this file, you may need to navigate to **C: > CADLinkDemo > Print Head Long** folder manually.
  3. Once the correct file is selected, click **Open**.
  4. When Epicor login screen opens, enter **User name=epicor** and **Password=epicor**, then click **OK**.
- CADLink launches and opens CADLink UI.

## Understanding the CADLink BOM Grid

The CADLink BOM grid is color-coded to highlight the differences between the CAD and Epicor Item Master data. The CADLink also highlights the differences between CAD EBOM structure and MBOM Tool's EBOM structure.

- Green row - represents new parts that will be created in the Epicor Part Master.
- All BOM lines (rows) are highlighted in green right now because this is a brand new BOM and none of items exists in Epicor Part Master yet.

## Use CADLink Interface to Change Part Type

The CADLink BOM grid lets design engineers set Epicor part related properties such as Part Type.

1. Find the BOM item rows with part number, **QB000041** and **TAYQB-LS-623841**.
2. Scroll right and find **Part Type** column in the grid.
3. Use drop-down option to set **Part Type=Manufactured** for two items, **QB000041** and **TAYQB-LS-623841**.

## Save EBOM into MBOM Tool

1. Click the Down Arrow button under the Save button.
2. Click Save MBOM.
3. Once the save is complete, click OK.
4. Then click Close.
5. Exit CADLink.

You have successfully saved EBOM from your CAD model into MBOM Tool.

You then let manufacturing engineers know that there's a brand new EBOM waiting for them inside MBOM Tool and they must update Epicor with an MBOM.

## Manipulate and modify the EBOM into an MBOM using MBOM Tool and update Epicor ERP

You are a **manufacturing engineer** who just received a message from a design engineer notifying you that there's a new BOM. Here you will use MBOM Tool to turn a design engineer's EBOM into a shop-floor ready MBOM which you will save into Epicor ERP.

### Opening the new EBOM inside the MBOM Tool

1. From the MBOM folder, open **MBOM**.

A screen opens where you can search the BOM in your MBOM database.

2. Leave the search field empty, click **Search**.

3. From the search result list below, select the only row which is the new BOM design engineer pushed earlier.

4. Click **Accept**.

5. When Epicor login screen opens, enter **User name=epicor** and **Password=epicor**, then click **OK**.

MBOM Tool launches and opens MBOM Tool UI.

6. You may need to adjust column width and panel width inside MBOM Tool UI depending on your computer screen resolution.

Use your mouse to drag and change the **Properties panel** size.

Use your mouse to drag and change the column width so you can see the **Qty column** on the far right side of the screen.

### Understanding the Manufacturing BOM Tree

The MBOM Tool's Manufacturing BOM tree is color-coded to highlight the differences between your MBOM and Epicor data.

- Green Qty = New BOM item to be added to the Epicor BOM
- All Qty fields are highlighted in green right now because this is a brand new BOM and none of items exists on the Epicor BOM (i.e. They need to be added to the Epicor BOM).
- The MBOM tree is exact copy of the EBOM you saw in CADLink because this is a brand new BOM and has not been manipulated in MBOM Tool before.

### Move BOM Items Around

1. You can use your mouse to drag BOM items to different assemblies.

Use **Ctrl** or **Shift** key on your keyboard to select multiple BOM line items at the same time.

\*Note\* You can only select multiple BOM items that are on the same parent assembly.

2. If you make a wrong move inside MBOM Tool, click UNDO and REDO in the menu.

3. Move all component parts with part number starting with a prefix **QB** to a sub-assembly, **QB000081**.

4. Select item(s) then drag your mouse on to the target assembly, **QB000081**, so it's highlighted and release your mouse.

5. Move all component parts with part number not starting with a prefix **QB** to the top level assembly, **MC-00129ASM1**. Select item(s) then drag your mouse on to the target assembly, **MC-00129ASM1**, so it's highlighted and release your mouse.

### Delete Unnecessary Subassemblies

1. Right-click on the subassemblies that are now empty because you moved all items to different assemblies, and click **Delete Part**.
2. Delete **NW-17382ASM1**, **QB000011**, **QB000021**, **QB000031**, and **QB000071**.

You removed unnecessary sub-assembly structures you do not want in your MBOM successfully.

### Add Material to Manufactured Parts

1. Right-click on **QB000041** which you set **Part Type=Manufactured** in CADLink, and click **Add material to part**.

The Search screen opens where you can do a live search into your Epicor Part Master to find the raw material you need to add to this part.

2. In the **Description containing** search field, enter **round**.
3. Hit **Enter**.
4. Select the row, Part=**BS-15000-A**, in the search result.
5. Click **Accept**.

The material you chose is added as a child of QB000041 and you can see it in the tree. And it's highlighted in light blue color which is a highlighting used to show items you manually added to your MBOM using MBOM Tool.

Notice that QB000041 now has a Revision=A which was auto assigned by MBOM Tool since Epicor requires a Revision value to create a BOM. And the Revision is highlighted in green here to let you know that you will create a new Revision on this part in Epicor when you save.

6. Use the right hand **Properties panel** while the material you added is selected in the tree, to enter **Unit Qty** value manually. This is the qty of material needed to create this manufactured part. Make sure you enter a numeric value.
7. Repeat these steps on **TAYQB-LS-623841**, the second part you set Part Type=Manufactured in CADLink, to add stock round bar, **BS-15000-A**, as its material and set a Unit Qty.

### Add Components not included in the EBOM Manually to MBOM

1. Right-click on the top-level assembly, **MC-00129ASM1**, and click **Add new part to assembly**.

The Search screen opens where you can do a live search into your Epicor Part Master to find the raw material you need to add to this part.

2. In the **Description containing** search field, enter **screw**.
3. Hit **Enter**.
4. Select the row, Part=**1032X075**, in the search result.
5. Click **Accept**.

The part you chose is added to the top-level assembly and you can see it in the tree.

6. Use the right hand **Properties panel** while the part you added is selected in the tree, to enter **Unit Qty** value manually. Make sure you enter a numeric value.

### Define Method of Manufacture

1. Right-click on the top-level assembly, **MC-00129ASM1**, and click **Add new operation**.

The Operation is added to the BOM tree differentiated from other BOM items using a **wrench icon**.

2. Use the right hand **Properties** panel while the Operation you added is selected in the tree, to enter **Operation Code**, **Labor Entry Method**, **Prod Standard**, **Prod Standard Format**, and **Setup Hours** manually.
3. Repeat the above two steps to add a second Operation to the top-level assembly.  
You can drag and drop BOM items to different Operation to change their Related Operation.  
Drag one of the items under the top-level assembly to the second Operation you just added.
4. Repeat the first two steps in this section to add Operations to each sub-assembly and manufactured part, QB000081, QB000041, and TAYQB-LS-623841.

### Save Progress and Come Back Later

Your hunger level has reached the critical point! You must take a lunch break to feed yourself! But you have not saved this MBOM into Epicor. You want to save the progress and complete the work later...

1. Click the **Save** button.
2. Click **Save Progress**.
3. Once the save is complete, click **OK**.
4. Then click **Close**.
5. Exit MBOM.
6. Take your imaginary lunch break.
7. From the MBOM folder, open **MBOM**.  
A screen opens where you can search the BOM in your MBOM database.
8. Leave the search field empty, click **Search**.
9. From the search result list below, select the only row which is the BOM you were working on earlier.
10. Click **Accept**.
11. When Epicor login screen opens, enter **User name=epicor** and **Password=epicor**, then click **OK**.  
MBOM Tool launches and opens MBOM Tool UI.
12. Once it launches, notice how the MBOM structure is exactly where you left off.

### Review What Changes You Made

1. Click **HISTORY**.

You can see all the edits you have made to your MBOM so far in this screen.

2. Click **BOM**, to go back to BOM tree screen.

## Save Manufacturing BOM into Epicor

Now that you used MBOM Tool to create a shop-floor ready Manufacturing BOM, it's time to save the BOM into Epicor!

1. Click the **Save** button.
2. Click **Save to ERP**.
3. Once the save is complete, click **OK**.
4. Then click **Close**.
5. Exit MBOM.

## Check the BOM in Epicor

1. Open the **Epicor ERP 10 client** you opened in the preparation steps.
  2. Using the left hand icons, click **Menu**.
  3. Open **Part Entry** from **Production Management > Engineering > Setup > Part**
  4. In Part field, type **MC-00129ASM1** and hit **Tab**.  
The top-level part you created is now open.
  5. Click on **Revisions** tab.
  6. Right-click on **Rev** field, click **Open with... > Method Tracker**.  
Method Tracker screen will open.
  7. Expand all Operations and Materials in the tree.
  8. Confirm the Manufacturing BOM structure you created in MBOM Tool is now inside Epicor ready for production.
- You have successfully saved MBOM into Epicor. You can now use this MBOM data in your Epicor for purchasing, production scheduling, creating Jobs, etc.

## Rev Up your BOM

You are a **design engineer** again. You just completed changing the design on the assembly we were using earlier. This is Revision=B, a rev up from that last EBOM. Your job now is to send this Rev=B EBOM to manufacturing engineers so they can manipulate it to update Epicor with the new Revision.

## Launch CADLink from Rev=B CAD Model

1. From the MBOM folder, open **CADLink**.
2. When the Windows browser screen opens, select **4 Digit Print Head.SLDAM**.  
You should already be in the correct folder, however if you cannot find this file, you may need to navigate to **C: > CADLinkDemo > Print Head Long** folder manually.
3. Once the correct file is selected, click **Open**.
4. When Epicor login screen opens, enter **User name=epicor** and **Password=epicor**, then click **OK**.  
CADLink launches and opens CADLink UI.

## Understanding the Rev=B CADLink BOM Grid

- Green row - represents new parts that will be created in the Epicor Part Master.
- White row – represents parts that already exists in the Epicor Part Master
- Yellow field – represents field level discrepancies
- Grey row – represents items that had been removed from the design
- The design engineer has changed the design by 1) designing and adding a new part highlighted in green, 2) removed an item highlighted in grey, 3) Changed Unit Qty of one of the BOM items, and 4) several Revision values were rev'ed up.

## Save Rev=B EBOM into MBOM Tool

1. Click the **Down Arrow** button under the **Save** button.
2. Click **Save MBOM**.
3. Once the save is complete, click **OK**.
4. Then click **Close**.
5. Exit CADLink.

You have successfully saved Rev=B EBOM from your CAD model into MBOM Tool.

You then let manufacturing engineers know that **there's a new Revision of an EBOM** waiting for them inside MBOM Tool and they must update Epicor with an MBOM.

## Manipulate and modify the Rev=B EBOM into an Rev=B MBOM using MBOM Tool and update Epicor ERP

You are a **manufacturing engineer** now. You just received a message from a design engineer notifying you that they rev'ed up an existing BOM. Here you will use MBOM Tool again to turn a design engineer's Rev=B EBOM into a shop-floor ready Rev=B MBOM which you will save into Epicor ERP.

## Opening the new EBOM inside the MBOM Tool

1. From the MBOM folder, open **MBOM**.  
A screen opens where you can search the BOM in your MBOM database.
2. Leave the search field empty, click **Search**.
3. From the search result list below, select the new row with Revision=B which is the new Rev design engineer pushed earlier.
4. Click **Accept**.
5. When Epicor login screen opens, enter **User name=epicor** and **Password=epicor**, then click **OK**.  
MBOM Tool launches and opens MBOM Tool UI.

## Understanding What Changed on EBOM from the last Revision to this Revision

Before you know what to change, you need to understand what changed on the designer's EBOM since the last Revision to this Revision.

1. Click **ENG BOM** from the menu bar.

Now you see two BOM tree windows inside the MBOM Tool. Engineering BOM on the left and Manufacturing BOM on the right.

2. You may need to adjust column width and panel width inside MBOM Tool UI depending on your computer screen resolution.
  - Use your mouse to drag and change the **Properties panel** size.
  - Use your mouse to drag and change the column width so you can see both **Qty column** on each BOM tree window.
3. Focusing on the **EBOM (left hand BOM tree)**, you notice colors.
  - Green Qty = New BOM item added to this Revision.
  - Yellow Qty = Existing BOM item but the Qty has changed for this Revision.
4. Right-click on this yellow field and MBOM Tool will show the old value and the new value.  
Grey item = BOM item that was removed for this Revision.
5. Now you know how the EBOM has changed from the last Revision to this latest Revision by the design engineers.
6. Focusing on the **MBOM (right hand BOM tree)** now, you notice it retained the MBOM structure you created earlier in this lab. Great! I don't need to repeat all the work I already did on the previous Revision. But you noticed the top-level assembly Revision is automatically updated to B to match the new EBOM. And also the item whose Qty was green on EBOM tree, **QB000171**, is automatically added to your MBOM tree under the top-level assembly.

#### Move Newly Added BOM Item Around

1. Using the MBOM tree (right hand side), you can use your mouse to drag the newly added BOM item, **QB000171**, to different assemblies.
2. Move this item to the sub-assembly **QB000081** where all the other component parts with part number starting with a prefix **QB** are.

#### Delete BOM Item No Longer Needed Due to Design Change

1. Using the MBOM tree (right hand side), right-click on the item, **QB000151**, which is no longer a part of the BOM in this new Revision based on the color you observed on the EBOM tree, and click **Delete part**.
2. You removed unnecessary sub-assembly structures you do not want in your MBOM successfully.

#### Update BOM Item Whose Qty Changed Due to Design Change

1. Using the MBOM tree (right hand side), select the item whose Qty changed in this new Revision, **CH-02192001**.
2. Use the right hand **Properties panel** while the part is selected in the tree, to modify **Unit Qty** value manually based on the new Qty you see on the EBOM tree.

## Update Revision Manually

1. Using the MBOM tree (right hand side), select the assembly, **QB000041**, whose BOM has changed due to a rev up.
2. Use the right hand **Properties panel** while the part is selected in the tree, to modify **Revision** value manually to **B**.

## Save Manufacturing BOM into Epicor

Now that you used MBOM Tool to create a Rev=B of shop-floor ready Manufacturing BOM, it's time to save the Rev=B BOM into Epicor!

1. Click the **Save** button.
2. Click **Save to ERP**.
3. Once the save is complete, click **OK**.
4. Then click **Close**.
5. Exit MBOM.

## Check the BOM in Epicor

1. Open the **Epicor ERP 10 client** you opened in the preparation steps.
2. Using the left hand icons, click **Menu**.
3. Open **Part Entry** from **Production Management > Engineering > Setup > Part**
4. In Part field, type **MC-00129ASM1** and hit **Tab**.  
The top-level part you created is now open.
5. Click on **Revisions** tab.
6. Click on **List** tab within the **Revisions** tab.
7. Notice you created a new Revision = B in Epicor.
8. Select **Revision = B** in the list.
9. Click on **Detail** tab.
10. Right-click on **Rev** field, click **Open with... > Method Tracker**.  
Method Tracker screen will open.
11. Expand all **Operations** and **Materials** in the tree.
12. Confirm the Rev=B Manufacturing BOM structure you created in MBOM Tool is now inside Epicor ready for production.  
You have successfully Rev'd up your Manufacturing BOM inside Epicor based on the change design engineers made to their CAD design.  
You can now use this MBOM data in your Epicor for purchasing, production scheduling, creating Jobs, etc.

# Increase Inventory Accuracy with Cycle Counts

## System Requirements

Modules/Licensing	Product Version
<Inventory Management>	<10.2.300>

This lab focuses on the Cycle Counting and Physical Counting functions to manage inventory counting conducted on a cyclical basis that allows for inventory error identification, analysis, and resolution. Learn more about the detailed audit control over the selection of items to be counted, controlling the frequency by which items are counted and the tracking, recording, and review of variances for the items counted.

At the conclusion of this lab, you will be able to:

- Understand and calculate ABC Codes
- Complete Cycle Count setup steps
- Perform periodic Cycle Count tasks
- Review and confirm Cycle Counting results

## Log In

1. From the desktop, open **ERP10**.
2. In both the **User** and **Password** fields enter **manager**.
3. In the left pane, verify that the **Epic06, Epicor Education company, and the Main site** are selected.

## Calculate ABC Codes

Navigate to **Calculate ABC Codes**.

**Menu Path:** Material Management > Inventory Management > General Operations > Calculate ABC Codes

1. Navigate to the **Filter** sheet.
2. Click the **Sites** button.
3. The **Site Search** window displays.
4. Click the Search button and Select **Main**.
5. Navigate to the **Selection** sheet.
6. In the **Historical Usage From** field, enter the first day of the current year.

This date is for the historical usage period used in stock valuation calculations.

7. Verify the **Include Projected Usage** check box is selected.
8. In the **Projected Usage Through** field, verify today's date defaults.  
This date is for the projected usage period used in stock valuation calculations.
9. Select the **Include Current On-hand** check box.

**Important:** Don't check the **Update ABC Codes** check box.

**Note:** This check box denotes if part records should be updated with the calculated ABC codes. We are

skipping the update because the specific parts that you will be cycle counting have already been ABC coded; in your operations, you most often select this check box.

10. From the **File** menu, click **Print Preview** to examine the generated report.  
The **Calculate ABC Codes Report** is displayed.
11. Review the calculations and the **Old ABC vs New ABC** codes.
12. Close the report and exit Calculate ABC Codes.

### **Review Discrepancy Reason Code**

Navigate to **Reason Code Maintenance**.

**Menu Path:** Material Management > Inventory Management > Setup > Reason Code

1. In the **Reason Type** field, select **Inv. Adjustment**.
2. In the **Reason Code** field, search for and select **Cycle Count Variance**.
3. In the **Inventory Adjustment** pane, verify the **Count Discrepancy Reason** check box is selected.
4. Click **Save**.
5. Exit Reason Code Maintenance.

### **Define a Cycle Period**

Navigate to **Cycle Count Period Definition Maintenance**.

**Menu Path:** Material Management > Inventory Management > Setup > Cycle Count Period Definition

1. Click **New**.
2. In the **Year** field, verify the current year defaults.
3. In the **Description** field, enter **XXX-Period** (where XXX are your initials).
4. In the **Period Start** field, select the date for the Monday next week.
5. In the **Period End** field, select the date for the Monday next week.  
The period range is user-defined; in our workshop, we are defining a single-day period so all parts in the training warehouse are selected for counting. In normal operations, this will usually represent a longer period, such as a month.
6. Click **Save**.
7. Record the period number.
8. Exit Cycle Count Period Definition Maintenance.

### **Define a Cycle Schedule and Select Parts for Counting**

Navigate to **Cycle Count Schedule Maintenance**.

**Menu Path:** Material Management > Inventory Management > General Operations > Cycle Count Schedule Maintenance

1. From the **New** menu, select **New Schedule**.
2. In the **Warehouse** field, select **Cycle Count Warehouse**.

3. In the **Year** field, verify the current year defaults.
4. In the **Cycle Period** field, select **XXX-Period** (where XXX are your initials).
5. Click **Save**.
6. From the **Actions** menu, select **Perform Part Selection**.  
The **Parts Selected** indicator displays.
7. Select the **Cycles** and **ABC Qtys** sheets to see the total number of parts assigned to each cycle per day.
8. Exit Cycle Count Schedule Maintenance.

### Generate Count Tags

**Menu Path:** Material Management > Inventory Management > General Operations > Count Cycle Maintenance

1. Click the **Cycle** button.  
The **Count Cycle Search** window displays.
2. In the **Filters** pane, in the **Cycle Period** field, select **XXX-Period** (where XXX are your initials) and click **Search**.
3. In the **Search Results** grid, select the cycle period created in **Define Cycle Period** and click **OK**.
4. In the **Cycle Period** field, verify **XXX-Period** (where XXX are your initials) displays.
5. From the **Actions** menu, select **Generate Tags**.  
The **Generate Count Tags** window displays.
6. Select the **By Part/Bin ID/UOM/Lot Number** sort sequence.
7. Click the **Generate Tags** button.
8. Click **OK** to confirm the first and last tags generated.
9. From the **Actions** menu, select **Print Tags**.  
The **Print Tags** window displays.
10. In the **Sheets or Tags** field, verify **Tags** displays.
11. Click **Print Preview** and review the tags.
12. Close the Print Cycle Count Tags report and Print Tags windows.
13. Remain in Count Cycle Maintenance.

### Start Count Sequence

1. From the **Actions** menu, select **Start Count Sequence**.
2. In the **Count Status** field, note that the status is now set to **Count Started**.
3. Minimize Count Cycle Maintenance.

### Count Tag Entry

**Menu Path:** Material Management > Inventory Management > General Operations > Count Tag Entry

1. Click the **Cycle** button, and search for and select the cycle period created in **Define Cycle Period**.

2. Click the **Tag** button, and click **Search**. The **Count Tag Search** window displays.
3. In the **Search Results** grid, click **Select All** and then click **OK**.
4. Navigate to the **List** sheet.
5. In the **Count Tag List** grid enter the following data for all selected parts (where XXX are your initials):

<b>Part</b>	<b>Counted Qty</b>	<b>Counted By</b>	<b>Date Counted</b>
DRPLT48125	10	XXX	Today's Date
DRPLT48250	50	XXX	Today's Date
DRPLT59125	95	XXX	Today's Date
DRPLT59250	94	XXX	Today's Date

6. Click **Save**.
7. Exit Count Tag Entry.

### Print Post-Count Reports

1. Maximize **Count Cycle Maintenance**.
2. Select or verify the period you previously created in the **Define a Cycle Period** is displayed.
3. Click the **Refresh Icon**.
4. In the Cycle Status field, verify Counts Entered displays.
5. From the **Actions** menu, select **Count Variance Calculation/Report**.  
The **Count Variance Report** window displays.
6. In the Part Detail field, verify **All Parts** defaults.
7. Verify the **Print Tag Detail** check box is selected.
8. Click **Print Preview**.

The **Count Variance Report** displays.

9. Review and close the Count Variance Report.
10. Close the Count Variance Report window.
11. Minimize Count Cycle Maintenance.

### Enter Discrepancy Reason Codes

Navigate to **Count Discrepancy Reason**.

**Menu Path:** Material Management > Inventory Management > General Operations > Count Discrepancy Reason

1. Click the **Cycle** button.  
The **Count Cycle Search** window displays.

2. In the **Search Results** pane, select the cycle count for which you previously entered count quantities using **Count Tag Entry**, and then click **OK**.
3. Click **OK**.
4. In the **Parts Selected** grid, in the **Reason Code** column, select the appropriate reason code that specifies why the quantity is out of balance for each of the out-of-tolerance parts. Select **Cycle Count Variance**.
5. The **Reason Code** columns that are out of balance are for the parts selected in the **Count Tag Entry** and display in white.
6. Click **Save**.
7. Exit Count Discrepancy Reason.

### Post Counts

1. Maximize **Count Cycle Maintenance**.
2. Select or verify the period created in **Define Cycle Period** displays.
3. From the **Actions** menu, select **Post Counts**.  
The **Post Count Inventory Adjustments** window displays.
4. In the **Post Count Inventory Adjustments** window, click the **Post** button.  
The **Post Count Results** window displays.
5. In the **Post Count Results** window, accept the default date, and click **OK**.  
When the **Post Count Results** dialog displays, review the message and click **OK**.
6. Exit Count Cycle Maintenance.

### Review Part Transactions

**Menu Path:** Material Management > Inventory Management > General Operations > Part Transaction History Tracker.

1. Click **Part** to search.
2. In **Sort By**, select **Part Number**.
3. In **Starting At**, enter **DRPLT**, and then click **Search**.
4. Select the first four rows and click **OK**.  
One of the four part numbers will populate in Part Transaction History Tracker. The other three parts are available from the dropdown in the menu.
5. Selecting each part, in turn, click **Retrieve** button.

No adjustment to inventory was made for today's date, as expected, for the two parts that did not have a discrepancy.

An ADJ-QTY transaction of -5 was made for DRPLT59125, as expected.

An ADJ-QTY transaction of -6 was made for DRPLT59250, as expected.

6. Exit Part Transaction History Tracker.

Congratulations! You have completed the **Increase Inventory Accuracy with Cycle Counts** lab.

# Lean Kanban Pull-Based Systems: Purchase and Stock Kanban Logic

**Kanban** is a system to control the logistical chain from a production point of view and is an inventory control system. You can use Kanban to monitor the manufacturing system so that it does not run out of critical supplies.

This session examines the concept of Kanban, provides an overview of the required setup, and identifies how Kanban is applied within the Epicor application. We will concentrate on Purchase Kanban and Stock Kanban requests where a new release generates on the purchase order to which the replenishment is linked.

At the conclusion of this lab, you will be able to:

- Define Kanban setup at the part level
- Create purchase and stock replenishment at a warehouse and bin level
- Understand how to use the Kanban and Kanban Bin Monitors

## System Requirements

Modules/Licensing	Product Version
Inventory Management	8.03 or higher
Advanced Material Management	8.03 or higher
Purchase Management	8.03 or higher
Shipping Receiving	8.03 or higher

## Kanban Requests

The type of Kanban request that the Epicor application generates (Production, Purchase or Stock) is dependent on the Kanban type assigned to part records at the warehouse (or warehouse bin) levels in the **Replenishment Type** field located in one of the following locations in **Part Maintenance**

- Part > Sites > Warehouse > Detail
- Part > Sites > Warehouse > Bin Information > Detail

The Kanban request types are as follows:

1. **Purchase Kanban** - Designates that a new release is generated on the purchase order to which the replenishment is linked. The Epicor application compares the purchase order and the detail line against the warehouse or bin information specified in the part warehouse (or part warehouse bin record). When more quantity is needed, the Kanban functionality removes the approval from the purchase order. It then creates a new release by using the next open release number on the purchase order detail line.
2. **Stock Kanban** - Designates that stock move requests are generated for the part to which this Kanban type is assigned. To determine if there is adequate supply stock available for generation of a Kanban request, the Epicor application uses the parameters defined in the part warehouse or part warehouse bin records.
3. **Production Kanban** - Designates that production Kanban requests are generated for the part to which this Kanban type is assigned. The Epicor application uses the Site field as specified in the part warehouse

or part warehouse bin record to select the source site that manufactures the replenishment inventory for the part.

### Before we begin

Verify you are logged in as manager/manager (the bottom bar on the main application screen says “User: Manager”).

Verify you are in Company: EPIC06 – Epicor Education

### Workshop 1: Review Kanban Type

In this task, you will review the Kanban types that will be used in the following workshops and verify they are setup to trigger automated requests.

Navigate to **Kanban Type**

**Menu Path:** Material Management > Inventory Management > Setup > Kanban Type

1. Click **Type** button.
2. Click **Search** button.
3. **Select All** and **Click OK**.
4. In the tree click on **Purchase Kanban**.
5. **Verify** the **Update PO Release Schedule** check box is **Selected**.

This is part of the trigger to getting a new purchase release automatically added to a linked PO line associated to the Part.

6. In the tree click on **Transport to Stock**.
7. **Select** the **Add New Material Record to Queue** check box.
  - This is the trigger to generate a queue record that will process a move that adds quantity to the bin location from the warehouse location.
8. **Save** and **Exit** Kanban Type.

### Workshop 2: Create a Part

In this task, you will use **Part Maintenance** to create a new purchased stock part that will be setup with a Purchase Kanban at the warehouse level and a Stock Kanban at the bin level. You will also define the Kanban Quantity, Minimum Quantity, and Maximum Quantity values on a part.

Navigate to **Part Maintenance**

**Menu Path:** Material Management > Inventory Management > Setup > Part

1. From the **New** menu, select **New Part**.
2. In the **Part** field, enter **KanbanXXX** (where XXX are your initials).
3. In the **Description** field, enter **XXX Kanban Request** (where XXX are your initials).
4. In the **Type** field, verify **Purchased** defaults.
5. On the **Standard** toolbar, click **Save**.

6. Navigate to the **Part > Sites > Warehouses > Detail sheet**.
7. In the **Warehouse** field, verify **Main** defaults.
8. In the **Replenishment Type** field, select **Purchase Kanban**.
9. In the **Initial/Minimum Qty** field, enter **500**.
  - This value indicates the initial or minimum quantity that must be on-hand in this warehouse. When the quantity for this part drops below the specified Minimum Quantity a Kanban Request will be generated.
10. Set **Threshold/Safety Qty** to **300**.
  - This value indicates the safety quantity needed in stock to cover requirements until a shipment arrives from the supplier.
11. In the **Maximum Qty** field, enter **1000**.
  - This value indicates the maximum quantity that should be on-hand in this warehouse.
12. In the **Replenish/Kanban Qty** field, enter **500**.
  - This value indicates the Kanban batch or quantity multiples for this warehouse. If you replenish the warehouse in batches of 500 units at a time, enter 500 into this field. When the Epicor application generates a Kanban request because the on hand quantity has fallen below the designated minimum, it calculates the move quantity in increments/multiples of the value you enter in this field.
13. On the standard toolbar, click **Save**.
14. Navigate to the **Part > Sites > Warehouses > Primary Bin** sheet.
15. In the **Bin** field, enter **01-01-01** and press **Tab**.
16. On the **Standard** toolbar, click **Save**.
17. From the **New** menu, select **New Warehouse**.
  - The Part > Sites > Warehouses > Detail sheet displays.
18. In the **Warehouse** field, select **Floor Stock-Main**.
19. Navigate to the Part > Sites > Warehouses > Primary Bin sheet.
20. In the **Bin** field, enter **A-101** and press Tab.
21. On the Standard toolbar, click Save.
22. In the tree view, select the **Floor Stock -Main**.
23. From the New menu, select New Warehouse Bin.
  - The Part > Sites > Warehouses > Bin Information > Detail sheet displays.
24. In the **Bin** field, enter **A-101** and press **Tab**.
25. On the **Standard** toolbar, click **Save**.
26. In the **Replenishment Type** field, select **Transport to Stock**.
27. In the **Initial/Minimum Qty** field, enter **100**.
28. Set the **Threshold/Safety** quantity to **20**.
29. In the **Maximum Qty** field, enter **300**.
30. In the **Replenish/Kanban Qty** field, enter **50**.

31. In the **Supply** pane, in the **Warehouse** field, select **Main**.

**Note:** This is the warehouse location that will contain the on-hand supply quantity from which inventory is being withdrawn, to replenish the part in the designated destination warehouse bin. In this case, when the bin A-101 drops below the minimum quantity of 100 a stock Kanban request will be generated to move quantity from the supply location of warehouse Main.

32. In the **Supply** pane, in the **Bin** field, enter **01-01-01** and press **Tab**.
33. On the **Standard** toolbar, click **Save** and minimize Part Maintenance.

### Workshop 3: Create a Purchase Order

In this task, you will create a purchase order for the part you created above. This purchase order will be linked to the part and updated with a new release when the purchase Kanban is triggered.

#### Navigate to Purchase Order Entry

**Menu Path:** Material Management > Purchase Management > General Operations > Purchase Order Entry

1. From the **New** menu, select **New PO**.
2. In the **Supplier** field, enter **A-ZM** and press **Tab**.
3. On the Standard toolbar, click **Save**.
4. From the **New** menu, select **New Line**.
5. Navigate to the **Lines > Detail** sheet.
6. In the **Part/Rev** field, enter **KanbanXXX** and press **Tab**.
7. In the **Buy For** pane, verify the **Inventory** radio button is selected.
8. In the **Our Qty** field, enter **1105** and press **Tab**.
9. In the **Unit Price** field, enter **0.48**.
10. On the **Standard** toolbar, click **Save**.
11. Navigate to the **Summary** sheet.
12. Select the **Unapproved** check box.  
The **Approved** indicator displays.
13. On the **Standard** toolbar, click **Save**.
14. Record the purchase order and line numbers \_\_\_\_\_.
15. **Exit** Purchase Order Entry.

### Workshop 4: Link the Purchase Order and Part

In this task, you will link the previously entered purchase order to the default warehouse for part **KanbanXXX**.

#### Navigate to Part Maintenance

**Menu Path:** Material Management > Purchase Management > Setup > Part

1. In the **Part** field, enter **KanbanXXX** and press **Tab**.
2. Navigate to the **Part > Sites > Warehouses > Detail** sheet.

3. In the **Warehouse** field, verify the **Main** warehouse defaults.
4. In the **PO/Line** field, enter the previously recorded purchase order number and press **Tab**.
5. In the second **PO/Line** field, enter **1** and press **Tab**.
6. On the **Standard** toolbar, click **Save** and **Exit** Part Maintenance.

### **Workshop 5: Review the Kanban Warehouse Monitor**

The Kanban Warehouse Monitor displays information about current Kanban records at the warehouse level in a dashboard format. This includes information such as the requested part quantities, analysis of the Kanban records, and request details for the current day.

In this task, review the Kanban Warehouse Monitor to see the status of part **KanbanXXX** and the supplier request setup as a result of linking the Part and Purchase Order in the previous tasks.

Navigate to **Kanban Monitor**

**Menu Path:** Material Management > Inventory Management > General Operations > Kanban Monitor

1. Verify the Kanban Controlled Items > By Item sheet displays.
  2. In the **By Item** grid, in the **Part Number** field, select the line with the **KanbanXXX** part.
  3. In the **Qty On Hand** field, verify **0.00** displays.
- Note:** The line displays in red as you currently do not carry any on hand quantity for this part.
4. In the Minimum Quantity (Replenish Level) field, verify 500 displays.
    - The 500 units' value displays as a result of the previously defined Minimum On Hand quantity.
  5. In the **Maximum Quantity** (Request Level) field, verify **1000** displays.
    - The 1000 units' value displays as a result of the previously defined Maximum On Hand quantity. The Epicor application will suggest to fill the specified warehouse to the quantity designated in the Maximum Qty field without going over.

**Fill %** is calculated as  $(\text{On Hand Quantity} - \text{Minimum}) / (\text{Maximum} - \text{Minimum}) * 100$

6. In the **Kanban Requests** section, select the **Supplier Requests** sheet.
7. In the **Supplier Requests** grid, in the **Part** field, select the line with the **KanbanXXX** part.
8. In the **Number of Kanbans** field, verify **2** displays.
9. In the **Kanban Qty** field, verify 500 displays.
  - The Epicor application attempts to fill to Max in multiples of the Kanban quantity. Previously, you defined the Kanban quantity value of 500 units and a Max of 1000 units. Therefore,  $2 \times 500 = 1000$  units.
10. In the **Qty to Complete** and **Qty Required** fields, verify **1000** displays.
11. Select the **Purchase Releases** sheet below.
12. In the **Purchase Releases** grid, the previously entered purchase order displays.
13. **Exit** the Kanban Warehouse Monitor.

## Workshop 6: Review the Kanban Bin Monitor

The Kanban Bin Monitor displays information about current Kanban records at the bin level in a dashboard format.

In this task, review the Kanban Bin Monitor to see the status of part **KanbanXXX** at the bin level.

Navigate to **Kanban Bin Monitor**

**Menu Path:** Material Management > Inventory Management > General Operations > Kanban Bin Monitor

1. Verify the Kanban Controlled Items > By Item sheet displays.
2. In the **By Item** grid, in the **Part Number** field, select the line with the **KanbanXXX** part.
3. In the **Qty On Hand** field, verify **0.00** displays.  
**Note:** The line displays in red as you currently do not carry any on hand quantity for this part.
4. In the **Kanban Requests** section, select the **Stock Requests** sheet.
5. In the **Stock Requests** grid, in the **Part** field, select the line with the **KanbanXXX** part.
6. In the **Number of Kanbans** field, verify **6** displays.
7. In the **Kanban Qty** field, verify **50** displays.
  - Previously at the warehouse bin level, you defined the Kanban quantity of 50 units, so the Epicor application replenishes the warehouse in batches of 50. Therefore,  $6 \times 50 = 300$  units.
8. In the **Qty to Complete** and **Qty Required** fields, verify **300** displays.
  - This is the total required amount to fill up the warehouse bin up to the maximum quantity limit of 300 units. The current on hand quantity for the **KanbanXXX** part is 0.
9. **Exit** the Kanban Bin Monitor.

## Workshop 7: Receive the Purchase Order

In this task, you will receive the previously entered purchase order entered for part **KanbanXXX**.

Navigate to **Receipt Entry**

**Menu Path:** Material Management > Shipping/Receiving > General Operations > Receipt Entry

1. From the **New** menu, select **New Receipt**.
2. In the **PO** field, enter the previously recorded purchase order number and press **Tab**.
3. In the **Packing Slip** field, enter the same purchase order number and press **Tab**.
4. Click on the **Line > Detail** sheet and click **New** button.
5. Enter **1** in **Line** and **1** in **Rel**, TAB.
6. Change **Our Quantity** to **1000**.
7. Click the **To Location** button.
8. In the **Warehouse** field, verify **Main** displays.
9. In the **Bin** field, verify bin **01-01-01** displays.
10. Select **Receive** flag.
11. Click **New > New Receipt Line**.

12. Enter **1** in **Line** and **1** in **Rel**, TAB
13. Verify **Our Quantity** is **105**.
14. In the **Warehouse** field, select **Floor Stock - Main**.
15. In the **Bin** field, verify bin **A-101** displays.
16. Select the **Received** check box and click **Save**.
17. Navigate to the **Summary** sheet.
18. Verify the **Received All** check box is selected.
19. **Exit** Receipt Entry.

### **Workshop 8: Review the Kanban Warehouse Monitor**

Navigate to **Kanban Monitor**

**Menu Path:** Material Management > Inventory Management > General Operations > Kanban Monitor

1. Verify the Kanban Controlled Items > By Item sheet displays.
2. In the **By Item** grid, in the **Part Number** field, select the line with the **KanbanXXX** part.  
**Note:** The line no longer displays in red.
3. In the **Qty On Hand** field, verify **1000** displays.
4. Exit the Kanban Warehouse Monitor.

### **Workshop 9: Review the Kanban Bin Monitor**

Navigate to **Kanban Bin Monitor**

**Menu Path:** Material Management > Inventory Management > General Operations > Kanban Bin Monitor

1. Verify the Kanban Controlled Items > By Item sheet displays.
2. In the **By Item** grid, in the **Part Number** field, select the line with the **KanbanXXX** part.  
**Note:** The line no longer displays in red.
3. In the **Qty On Hand** field, verify **105** displays.
4. Exit the Kanban Bin Monitor.

### **Workshop 10: Issue Miscellaneous Material**

In this task, you will reduce the warehouse bin stock quantities for part **KanbanXXX** which will trigger a material move that takes quantity from the Supply location setup on the part.

Navigate to **Issue Miscellaneous Material**

**Menu Path:** Material Management > Inventory Management > General Operations > Issue Miscellaneous Material

1. In the **Part** field, enter **KanbanXXX** and press **Tab**.
2. In the **Warehouse** field, select **Floor Stock -Main**.
3. Note: On hand displays as 105.

4. In the **Quantity** field, enter **80**.
5. In the **Reason** field, select **Corrosion/Rust**.
6. Click the **Issue** button.
7. Verify in the grid above, the **On Hand** field, displays **25**.
8. **Exit** Issue Miscellaneous Material.

### Workshop 11: Review the Kanban Bin Monitor

In this task, review the Kanban stock request generated by the Epicor application.

**Menu Path:** Material Management > Inventory Management > General Operations > Kanban Bin Monitor

1. Verify the Kanban Controlled Items > By Item sheet displays.
2. In the By Item grid, in the Part Number field, select the line with the **KanbanXXX** part.
3. In the Qty On Hand field, verify **25** displays.
  - This is below the minimum quantity of 100 units set on warehouse bin
4. In the **Kanban Requests** section, select the **Stock Requests** sheet.
5. In the **Stock Requests** grid, in the **Part** field, select the line with the **KanbanXXX** part.
6. In the **Number of Kanbans**, verify **5** displays.
7. In the **Kanban Qty**, verify **50** displays.
8. In the **Qty to Complete**, verify **250** displays.
  - This is the quantity required to complete the transaction of filling the bin to the maximum quantity in multiples of **50** without going over the maximum quantity limit. Kanban qty of  $50 \times 5$  Kanbans = **250**.
9. In the **Qty Required** field, verify **275** displays.
  - This is the total required amount to fill up the warehouse bin to the maximum quantity limit of **300** units.
10. **Exit** the Kanban Bin Monitor.

### Workshop 12: Material Request Queue

The next workshop we will process the move request created to move quantity from the Supply location of Main warehouse into the Floor Stock Main bin location.

Navigate to **Material Request Queue**

**Menu Path:** Material Management > Advanced Material Management > General Operations > Material Request Queue

1. In the **To Warehouse** drop down list, select **Floor Stock – Main**.
2. Click **Retrieve**.
3. In the **Unselected** tab, locate part **KanbanXXX**.
4. Click **Process** button.
5. Review the WIP/Material Movement Transaction pop-up.

The Quantity is set to 250.

6. Moving From Warehouse Main.
7. Moving To Warehouse Floor Stock – Main.
8. Click OK.
9. Exit Material Request Queue.

### **Workshop 13: Review the Kanban Bin Monitor**

In this task, review the Kanban stock request generated by the Epicor application.

**Menu Path:** Material Management > Inventory Management > General Operations > Kanban Bin Monitor

1. Verify the Kanban Controlled Items > By Item sheet displays.
2. In the **By Item** grid, in the **Part Number** field, select the line with the **KanbanXXX** part.
3. In the **Qty On Hand** field, verify **275** displays.
4. Exit the Kanban Bin Monitor.

### **Workshop 14: Review the Kanban Warehouse Monitor**

In this task, review the Kanban supplier request generated by the Epicor application as a result of transferring an additional 250 units from the **Main** to the **Floor Stock – Main** warehouse.

**Menu Path:** Material Management > Inventory Management > General Operations > Kanban Monitor

1. Verify the Kanban Controlled Items > By Item sheet displays.
2. In the By Item grid, in the Part Number field, select the line with the KanbanXXX part.
3. In the Qty On Hand field, verify 750 displays.
  - This is the remaining on hand quantity in the Main warehouse
4. **Exit** Kanban Monitor.

### **Workshop 15: Issue Miscellaneous Material**

In this task, you will reduce the stock quantity at the warehouse level for **KanbanXXX** to a level below the specific minimum quantity.

**Menu Path:** Material Management > Inventory Management > General Operations > Issue Miscellaneous Material

- In the **Part** field, enter **KanbanXXX** and press **Tab**.
  - In the **Warehouse** field, verify **Main** is selected.
- Note:** On hand quantity is 750.
- In the **Quantity** field, enter **400**.
    - This will drive the Main Warehouse below the Minimum of 500
  - In the **Reason** field, select **Corrosion/Rust**.
  - Click the **Issue** button.

- Verify in the grid above that **On Hand** quantity is **350**.
- **Exit** Issue Miscellaneous Material.

### Workshop 16: Review the Kanban Warehouse Monitor

In this task, you will review the Kanban Supplier request generate by the application and see the related purchase order linked to **KanbanXXX** in Workshop 4 will have a new release created.

**Menu Path:** Material Management > Inventory Management > General Operations > Kanban Monitor

1. Verify the Kanban Controlled Items > By Item sheet displays.
2. In the By Item grid, in the Part Number field, select the line with the **KanbanXXX** part.
  - The quantity on hand is **350**, below the specified minimum of **500**
3. In the **Kanban Requests** section, select the **Supplier Requests** sheet.
4. In the **Supplier Requests** grid, in the **Part** field, select the line with the **KanbanXXX** part.
5. In the **Number of Kanbans** field, verify **1** displays.
6. In the **Kanban Qty** field, verify **500** displays.
7. In the **Qty to Complete** field, verify **500** displays.
  - This is the quantity required to complete the transaction of filling the warehouse to the maximum quantity in multiples of **500** without going over the maximum quantity limit. Kanban qty of  $1 \times 500$  Kanbans = **500**.
8. In the **Qty Required** field, verify **650** displays.
9. Select the **Purchase Releases** sheet.
10. In the **Purchase Releases** grid, the previously entered purchase order displays.
11. Verify the **Release** column has been updated to **2**.
  - The purchase order now has a second release that was created
12. Right-click in the **PO** field and select **Open with > PO Tracker**.
13. In the **Purchase Order Tracker**, navigate to the **Releases > List** sheet and review the release details.
  - Release 2 was generated with **Our Qty of 500** to fill the Main warehouse.
14. **Exit** the Purchase Order Tracker.
15. **Exit** the Kanban Warehouse Monitor.

# Learn How To Leverage the Performance Diagnostic Tool for Better System Performance

The Performance Diagnostic Tool helps you troubleshoot performance issues with the Epicor ERP application. It contains tools that perform tests and analyze logs. The Performance and Diagnostic Tool (PDT) is the primary application Epicor Technical Support uses to help diagnose and resolve your issues.

The PDT is a standalone application you can run from any computer. Epicor ERP does not need to be installed to launch this program. Link it to any Epicor ERP application server to evaluate performance.

Most of the PDT can be used if you have the Epicor ERP Cloud version, so please give it a try.

At the conclusion of this lab, you will be able to:

- Find application help entries that further documents the tool
- Locate and Launch the Performance Diagnostic Tool
- Review Technical Support Resources
- Configure the Performance and Diagnostic Tool
- Perform a client trace log analysis
- Perform a server trace log analysis
- Run the Configuration Check and review the results

## System Requirements

None

## Performance Tuning Resources

### Launch the Performance and Diagnostic Tool

Access the Performance and Diagnostic Tool (PDT) from the following locations:

1. **Install Directory** – The Performance and Diagnostic Tool installs with Epicor ERP. Typically it installs in the **C:\Program Files (x86)\Epicor Software\Performance and Diagnostics Tool\x64** folder.

Within this training environment, launch the PDT from the desktop. Open the **ERP10 Tools** shortcuts folder. Double-click the **Epicor PDT 64bit** icon. Minimize the PDT; you will use this program later.

2. **Epicor Administration Console** -- You launch the 32bit version from the Epicor Administration Console (EAC). Due to a limitation within the EAC, you can only launch the 32-bit version.

From **ERP10 Tools**, launch the **Epicor Administration Console**. Navigate to the application server. Once the application server information displays, click the Performance and Diagnostic Tool button. Minimize the Epicor Administration Console. You will use this program again later.

## Performance Tuning Technical Reference Guide

The Performance Tuning Technical Reference Guide documents the Performance and Diagnostic Tool, common patterns of slow performance, tuning tips, and the Epicor Support Checklist.

1. You can review the Performance Technical Reference Guide within the PDT. Click **Help > Contents**.
2. This guide is also available within the Epicor ERP application help. Log into Epicor ERP using **manager**. Launch the help window, and navigate to **System Management > Working with System Management > Performance Tuning Guide**. On the main help page, click the **Print Version** link display the PDF file in your browser. Minimize Epicor ERP. You will use this program again later.
3. You can also download the PDF file from **EPICWeb** within the **Documentation** page. The PDF files on this page are organized by Epicor ERP version; select the document appropriate for your version.

## Download Diagnostic Resources

The Performance and Diagnostic Tool has links to templates and tools that analyze server environments. To access these resources, click **Help > Download Diagnostic Resources**.

### Download the PDT on your own devices

1. **From EpicWeb** - you can always navigate to it and download an up to date version of the PDT via one of these links: <https://s.epcr.me/22> or <https://epicweb.epicor.com/Support/EpicorERP/Downloads/Performance%20Diagnostic%20Tool%20PDT/Performance%20and%20Diagnostic%20Tool.aspx>
2. **Via direct download** from our Azure resources: <https://s.epcr.me/23> or <https://epcrme.blob.core.windows.net/public/Performance%2520and%2520Diagnostic%2520Tool.exe?From=Insights2019>
3. **From the E10 ISO**, after installing E10 you can run the PDT from the Deployment Directory of E10\Utilities\Performance Diagnostic Tool.exe

### PDT Temp Items and Templates Location

This file folder contains configuration templates Epicor Technical Support may ask you to use. They can help you correct setup and configuration issues. To see these files, navigate to **Help > About**. Now click the **Open PDT Temporary Items Location** button.

### Performance and Diagnostic Tool Setup

When you launch the Performance and Diagnostic Tool for the first time, configure it to monitor your system.

1. Return to the PDT. From the **Options** menu, select **Settings**. Verify the **Application Setup** sheet displays. To connect the PDT to your system, define these application server settings.
2. Click the **Read configuration from sysconfig file** button to import these settings from a sysconfig file. Navigate to the client config directory and select the sysconfig file you need. Settings from the <AppServer> node within this file populate the Application Setup sheet.

3. The **Application Server URL** defines the location of the application server on your system.
4. Use the **Connection Method** drop-down list to indicate how this application server checks for authentication certificates through Internet Information Services (IIS). When a user logs into Epicor ERP, this method determines whether the user can access the application. Options include `HttpsBinaryUsernameChannel`, `UsernameWindowsChannel`, and `HttpsBinaryWindowsChannel`.
5. Enter the **User Id** and **Password** for the Epicor user account that accesses the application server. If the User Id and Password are not defined in the sysconfig file, enter the login credentials.
6. The **Client Directory** determines the location of the Epicor client .exe file.
7. If you use the **UsernameSslChannel** connection method, enter the **Dns Identity** name. This Domain Name Server value specifies the expected identity of the server.
8. The **Operation Timeout** determines how long the PDT waits until it aborts an incomplete operation. The default value is 300 seconds.

The Performance and Diagnostic Tool is now set up for your environment.

## Client Trace Analysis

You evaluate how a client installation performs through a client (UI Trace) log. System administrators can activate client logs through user accounts, and individual users can also manually activate these logs.

### Configure Client Trace

To begin, set up the PDT's Client Trace options.

1. From **Settings** window, navigate to the **Client Trace** sheet.
2. When a client trace file is analyzed, the timer settings control which rows highlight in red on the **Results** grid. Review the following timer settings:
  - **Server Execution Time** – Server processes that exceeds this value highlight in red.
  - **Client Execution Time** – Client processes that exceeds this value highlight in red.
  - **Network Transfer**: Network processes that exceed this value highlight in red.
3. When you select the **Auto Save Grid Layouts** check box, the PDT saves your customized sequence of the Results grid columns.
4. Click **OK** and exit **Settings**.

### Enable Client Trace Logging

You can activate client trace logs within user accounts and directly from the Home Page. When you activate the trace log on a user account, it generates each time the user logs into Epicor ERP.

1. Maximize **Epicor ERP**.
2. Launch **User Account Security Maintenance**.  
**Menu Path:** System Setup > Security Maintenance > User Account Security Maintenance
3. On the **Detail** sheet, click the **User ID...** button to find and select the **Manager** user account.
4. Click on the **Tracing** sheet.

5. Select the **Enable Trace Logging** check box.
6. Select the logging options. For example, select the **Track Changes Only** check box to only record changes to the dataset. For more information on each option, review the Performance Tuning Guide.
7. Click **Save** and close **User Account Security Maintenance**.
8. To activate the client log manually during the current session:
  - Within the **Modern Shell**, click the bottom pop-up menu. Select the **Magnifying Glass** icon.
  - Likewise in the Modern Shell, click **Home > Settings Tile > Tracing Options**.
  - In the **Classic** interface, activate the log from the Main Menu. Click **Options > Tracing Options**.

## Perform Client Trace Analysis

1. Return to the Performance and Diagnostics Tool.
2. In the **Plugins** tree view, select **Client Trace Analysis**.
3. Click the **Add Files...** button and navigate to the directory that stores the client trace files. For this example, navigate to the **C:\Insights19\Labs\PDT\Demo Material\Client Trace** folder. Select the **TraceData6676.txt** file.
4. If you wish, select the **Exclude System Calls** and **Exclude System Monitor Calls** check boxes. This prevents these calls from displaying in the Results grid. If you are tracking an issue with your overall system, do not select these check boxes, as you want to see this data. However, if you are tracking a performance issue caused by application data, select these check boxes to exclude this data.
5. Click the **Generate Diagnostics** button. The PDT processes the client trace log results.

The **Results** grid displays the main details gathered from each trace packet. If any row displays in red, it indicates that the Server Execution Time, the Client Execution Time, and/or the Network Transfer values are equal to or greater than the threshold values you defined.

## Filter Client Log Results

Use the features on the Performance and Diagnostic Tool to evaluate the client log results.

1. Filter the log results based on values that populate each column. To do this, click on the filter (Funnel) icon that displays with each column header. For this workshop, locate the **BO.Method** column and select the **Funnel** icon.  
A filter window displays. What options appear depends on the field type and the column data.
2. By default, you filter on **(All)** the records in each column; this indicates every record displays. Clear this check box.
3. Filter this column on a specific BO.Method value. Select the **GetNewOrderDtl** check box. Click **OK**. Only the GetNewOrderDtl method entries display on this grid.
4. Notice the Funnel has a blue color, which indicates you currently filter results through this column. Click the **BO.Methods funnel** icon again. Clear the **GetNewOrderDtl** check box.

## Custom Filters

Set up custom filters on the Results grid.

1. Each filter window has a <FieldType> **Filters** sub-menu which contains options that limit results based on field type. Click on the **BO.Method Funnel** icon again. In this example, you have **Text Filters** options like Equals..., Does Not Equal..., Ends With..., and so on. Select the **Equals** option.  
The **Custom Filter** window displays.
2. From the right drop-down list, select **GetList**.
3. Click **OK**. Now only the GetList method entries appear in the Results grid.
4. On the **BO.Method** column, click the **Funnel** icon; select the **Clear Filter** option.
5. You can also use **Custom Filter...** option to filter on values you define. Locate the **ServerExecutionTime** column header and click the **Funnel** icon.
6. Select the **Number Filters > Custom Filter > Greater Than...** option.  
The **Custom Filter** window displays. Notice the **Greater Than** option is automatically selected.
7. For the value, enter 40.
8. To create more custom filters, click **Add**.  
A new filter line displays.
9. From the middle drop-down list, select the **Less Than** option.
10. Now for the value, enter **100**.
11. From the **Filter based on** drop-down list, select the **All** option. This indicates that the grid will filter the results using both criteria; if you select **Any**, it pulls in results using each criterion.
12. Click **OK**.  
Only values that match your custom filter range now display on this list.
13. Next to the **ServerExecutionTime (ms)** column, click the **Funnel** icon again.
14. Select the **Number Filters > Custom Filter...** option again. The Custom Filter window displays.
15. Highlight each filter to activate the **Delete** button; delete both custom filters.
16. Click the **No filters** button.  
The grid results are no longer filtered by the **ServerExecutionTime (ms)** column.

## Group By

To organize the results, use the Group By grid feature.

1. Click and drag the **Object Name** to the **Drag a column header here to group by that column** area.
2. You can drag multiple column headers to further organize the results. Click and drag the **BO.Method** column to the Group By area.
3. The results sort by **Object name** and **BO.Method**.
4. Close and then launch the PDT.

Return to Client Trace Analysis. Because you selected the **Auto Save Grid Layouts** check box, the Group By options remain on the grid.

## Server Diagnostics

Just like you trace transaction activity on client installations, you can also track transaction activity on the server. You evaluate how the server performs as it interacts with the client installations on your network.

### Enable Server Trace Logging

1. Maximize the **Epicor Administration Console**.
2. Select the ERP10 application server and click **Application Server Settings**.
3. Now in the **Tracing Settings** pane, select the **Trace Log Enabled** check box.
4. Activate the log file options. The following options are production friendly and do not affect Epicor ERP performance:
  - **Verbose Logging** – The default option, you typically select this check box. The log records all calls, triggers, and exception messages sent to the application server. If you wish to see business logic exceptions, select this check box.
  - **Detailed Exceptions** – Indicates you want to record complete details of each exception message, so the full stack trace of the exception is included in the server log. This check box is selected by default. You then see which processes and records were affected by the exception.
  - **BPM Logging** – Select this check box to record Business Process Management (BPM) method calls. Each time user activity activates a BPM directive, the server log records the business object method that was called and how long this call took to complete.
  - **BAQ Logging** – Select this check box to record Business Activity Query (BAQ) database calls. Each time user activity activates a BAQ, the application server log records which query was called and how long it took this BAQ to gather the queried data.
5. Once you finish setting up the server log, click **OK**.
6. Close the Epicor Administration Console.

### Configure Server Diagnostics

Before you run server log analysis, define options for the Results grid.

1. Return to the **Performance and Diagnostic Tool**.
2. Click **Options > Settings**.  
The **Options** window displays.
3. Now click the **Server Diagnostics** tab.
4. You want to generate a chart using the **GetRowsKeepIdleTime** method. Select the **Should Generate Chart** check box.
5. Accept the default **Time Interval to Chart (minutes)** value. The default value is 1 minute; it defines the time interval buckets on the chart. For this workshop, enter 0.5 in this field.
6. Like the Client Trace option, the **Auto Save Layout and Filters** saves the current sequence of the grid columns, as well as the filters you defined. For this workshop, do not select this check box.
7. Click the **UTC column Time Zone** drop-down list to select the time zone in which this server log file was created. Select the **Central Time** zone option from this list.  
When you generate the server log results, the UTC column converts date/time values to use the selected

time zone, and these values display in the **Results** grid. The selected time zone displays in the **UTC Column** on this grid.

8. Click **OK**.

These options are now the default settings for the server log results. Each time you generate results for a server log, the Results grid displays data using these options.

## Perform Server Trace Analysis

1. In the **Plugins** tree view, select **Server Diagnostics**.
2. Click the **Add Files...** button and navigate to the directory that contains the server logs to analyze. For this workshop, navigate to the **C:\Insights19\Labs\PDT\Demo Material\ServerLogs** folder. Select the **ServerLog** and **Interactive2017-04-04T16-51-43, Interactive2017-04-04T17-45-07.txt** files.
3. If you need, enter a different value in the **Millisecond Threshold** field. When a call took longer than this threshold to run, its **Exceeds Threshold** check box is selected. For this example, use the default 3,000 millisecond value.
4. Clear the **Ignore GetRowsKeepIdleTime** check box. You want to see how long it takes the client to send and receive calls from the server. You can then review the **GetRowsKeepIdleTime** Chart.
5. Click the **Generate Diagnostics** button. The server log processes.

## Review the Results

Review the results recorded on the selected server logs.

1. The **Results** tab displays the server calls; the **Exceeds MS Threshold** check box is selected for any calls larger than the **Millisecond Threshold**.
2. Notice the **Funnel** icons on this grid; you filter the Results grid using the same features available on the **Client Trace Analysis** plugin.
3. Locate the **Exceeds MS Threshold** grid and click its Funnel icon. Clear the options and select **True**. Now only the server calls that exceeded the threshold value appear in the grid.
4. Right-click the grid; from the context menu, select **Show Summaries**. Notice the **Epsilon** button displays on each column.
5. On the **Execution Time** column, click the **Epsilon** button. The **Show Summaries** window displays.
6. Use this window to summarize data on the column through the **Average, Maximum, Count** and other options. Select the **Average** check box and click **OK**.
7. Scroll to the bottom of the grid to view the **Grand Summaries** row. You see the total **Average** execution time for each method call that exceeded the Millisecond Threshold.

## GetRowsKeepIdleTime Chart

Click the **GetRowsKeepIdleTime Chart** to see the time period when network traffic is highest.

This method is used by the smart client. The client checks the application server to find out if the report or process has finished its run. If the run is finished, the data is sent back to the client as output for this method call.

Because this method is a system check regularly sent to the server that typically does not return data, you can also use this method to measure network traffic that may impact performance.

You use the Performance and Diagnostic Tool to display the GetRowsKeepIdleTime chart that shows you the performance time of each method call in the server log. You can then pinpoint specific times of the day when increased server activity affected performance.

## Configuration Check

The Performance and Diagnostic Tool contains a utility that checks the configuration of the application server. Use this Config Check option to see what potential issues you may have with the configuration.

1. In the **Plugins** tree view, select **Config Check**.
2. Click the **Check Configuration** button to run the diagnostics.  
The summary grid displays results for each test. The **RuleID** corresponds to the message details displayed on the ConfigCheck Details sheet.
3. Click **ConfigCheck Details**. On this grid, you see what caused the rule to succeed or fail.
4. Locate **RuleID G007**; expand the + next to the summary row.
5. Now locate the **RuleDetails** column and select the **Funnel**; click on **Text Filter > Contains**. Replace the DBNull value with **Fail**. The grid results for the RuleID G007 now only displays rows that contain the word 'Fail' in the RuleDetails column.
6. Locate **RuleID SQL003**; expand the + next to the summary row.
7. Repeat the filter on the **RuleDetails** column. Select the **Funnel**; click on **Text Filter > Contains**. Replace the DBNull value with **Fail**. Now only the Fail entries display.
8. To review these results in a spreadsheet, click the **Export to Excel** button to export the data to Excel.
9. Save the .xlsx file to the **Desktop** and call it XXXPerformReport (where XXX are your initials).
10. The configuration check displays in the spreadsheet. Launch **Microsoft Excel** and then open this file from your desktop. To see the errors, click the **Details** sheet.
11. Right-click the **Action Required** (Column D) header and select **Format Cells**. In the **Alignment sheet**, select the **Wrap Text** check box. Click **OK**.
12. Repeat the process for **RuleDetails** (Column E), so this column wraps text as well. Click **OK**.
13. Expand the nodes for G007 and SQL003. Only the failed rows you selected in the PDT display.

# Learn to Manage Your 1099 Processing with Epicor ERP

Streamline your 1099-Miscellaneous Income reporting to IRS with US CSF module. In this lab we will walk through 1099 configuration and processing showing you different ways you can fulfill IRS regulations.

The Internal Revenue Service (IRS) requires businesses to file a list of 1099 forms to report certain payments made to individuals and/or organizations. Epicor provides three predefined 1099 forms: 1099-MISC (Miscellaneous Income), 1099-DIV (Dividends Income), and 1099-INT (Interest Income). This course describes the 1099 functions for 1099-Misc form. Whether a payment is reportable on Form 1099-Misc depends upon the payment amount, payment type and the supplier's business entity type. In order to facilitate the tax reporting process and provide a way to fulfill IRS regulations, 1099 functionality is available in the Epicor ERP application with a United States CSF license. This functionality includes 1099-Misc form setup, processing, and reporting.

## System Requirements

Modules/Licensing	Product Version
<Accounts Payable>	<10.2.300>
<United States CSF>	<10.3.300>

## Business Flow Requirements

If you implement this functionality, you will now have to install the United States CSF license and run the 1099 Conversion US program in addition to the steps we show here to make this work.

At the conclusion of this lab, you will be able to:

- Understand 1099 Setup, including:
  - Company – Localization and Payee's Information
  - 1099 Conversion Program
  - Electronic Interface for US 1099 Forms Export
  - 1099 Form Type Maintenance
  - 1099 Box Number Maintenance
  - 1099 Code Maintenance
  - 1099 Supplier Maintenance
- Run 1099 Processing:
  - Create invoices and assign 1099 codes to invoice lines
  - Pay 1099 supplier invoices
  - Generate the 1099 report
  - Create any adjustments and rerun
  - Print 1099 forms or export electronically

## Log into the Epicor ERP Application

1. On the desktop, double-click the Epicor **ERP10** application icon.
2. In the **user name** field, enter **manager**.
3. In the **password** field, enter **manager**.
4. Click the **OK** button.
5. From the Main Menu, navigate to **Epicor USA > Chicago**.

## 1099 Company Settings

Use **Company Configuration** to set up company tax information required for 1099 forms.

**Note:** In the Epicor Administration Console, enable **United\_States\_of\_America CSF** for the corresponding company to allow access to the 1099 menu items in your application. Completing the default settings on the **1099 Reporting** sheet, such as the payer's federal tax reporting registration number (TIN) and address, saves time when processing 1099 forms.

### Workshop - Review Company Settings

In this workshop, review the setup of the United States CSF license for 1099 functionality for **Company EPICOR USA (EPIC03)** and the company tax information required for 1099 and 1096 forms.

Navigate to **Company Configuration**.

**Menu Path:** System Setup > Company/Site Maintenance > Company Configuration

1. Navigate to the Modules > All Modules > Localization > Detail sheet.
2. Verify that the **Localization** field displays **UNITED STATES**.
3. This allows access to the 1099 menus and functionality.
4. Navigate to the Modules > All Modules > Taxes > 1099 Reporting sheet.  
Epicor USA or the company designated for this training should display as the current company.
5. Verify that a number displays in the **TIN** field and that the current year displays in the **Year** field.
6. Notice the following information in the fields required for electronic submission:

Field	Value
Name Control	EPIC
Office Code	LVS
Transmitter	1234

7. For generation of 1096 form, review the entries in the following fields:

Field	Value
Contact Person	XXX Name
E-mail	XXX@epicor.com
Fax	956-999-9999

8. Exit Company Configuration.

## 1099 Conversion US

Use the **1099 Conversion US** process to run the 1099 conversion required for appropriate United States CSF setup.

Run this conversion process while you are setting up your 1099 functionality, prior to creating any new box numbers or using any 1099 functionality. The conversion process creates system 1099 form types: 1099-MISC, 1099-DIV, 1099-INT, and boxes and codes for these forms. The process can be run in two modes: **Report Only** (creates a log file with actions that will be performed) or **Report and Update** (creates a log file, updates entities, and lists actions that were performed). In both cases, a log file is created and stored in <Server Data Directory>\Companies\<Company ID>\Log\<User ID>.

## 1099-MISC

The conversion process creates boxes and codes for the 1099-Misc form and sets the **System** flag for the boxes and codes it creates, so automatic updates of the 1099-Misc form can be received. After the conversion, the 1099-MISC form type is set as default.

The Tax Payer ID (TIN) and Company name, address and phone are copied over from the Company Federal ID and Company information.

### Box 7

The 1099 code for Box 7 (Nonemployee Compensation) is created by the conversion and is then linked to the Supplier records that have the 1099 option set. Supplier TIN is copied over from Supplier Tax ID. TIN Type is set based on TIN/Supplier Tax ID format:

- EIN if TIN matches XX-XXXXXXX format
- SSNs, ITINs, and ATINs if TIN matches XXX-XX-XXXX format
- Unknown if it does not match these above

AP invoices are updated with the 1099-MISC form type and the Box07 code only for suppliers with the 1099 option set and a blank Code1099. So, as a result of conversion, they get the Box07 code and the 1099-MISC code type.

For the tax year you input, the conversion will update all invoice lines and positive Misc. Payments for 1099 Suppliers with a 1099 code for Box 7. This allows an easy switch to new 1099 functionality, if you already had some payments or invoices created for your current tax year.

**Note** You can run the conversion in the Report Only mode to preview the results for Box 7.

### Box 3

In order to facilitate FATCA reporting, the conversion also automatically creates the 1099 code for Box 3 (Other Income).

## 1099-DIV

The 1099-DIV form reports the ordinary dividends, total capital gains, qualified dividends, non-taxable distributions, federal income tax withheld, foreign tax paid, and foreign source income from each investment

account held by a fund company.

The conversion process creates the boxes for the 1099-DIV form and sets the **System** flag for the boxes it creates.

## **1099-INT**

The conversion process creates boxes for the 1099-INT form and sets the **System** flag for the boxes it creates, so automatic updates of the 1099-Misc form can be received.

**Menu Path:** System Management > Rebuild Processes > Finance > 1099 Conversion US

## **1099 Form Type Maintenance**

Use **1099 Form Type Maintenance** to create and maintain 1099 form types that you use for setting up 1099 boxes and codes.

For the purpose of this course, you do not need to create a new form type, as the conversion program has already added the required form types.

**Menu Path:** Financial Management > Accounts Payable > Setup > 1099 Form Type Entry US

### **Workshop - Review 1099 Form Types**

Navigate to **1099 Form Type Maintenance**.

**Menu Path:** Financial Management > Accounts Payable > Setup > 1099 Form Type Entry US

1. Click the **1099 Form Type** button.
2. In the **1099 Form Type Search** window that displays, click **Search** and select all values.
3. Click **OK**.
4. Navigate to the **List** sheet and review all records.
5. Note that **1099-MISC** is marked as **Default**.
6. Exit 1099 Form Type Maintenance.

## **1099 Box Number Maintenance**

You can define the 1099 boxes for each 1099 form that your company sends to the IRS. Use 1099 Box Number Maintenance to define a number, description, and electronic code. You can also add a comment that appears on the 1099 form for that box number.

For the purpose of this course, you do not need to create new box numbers, as the conversion program has already added the required box numbers.

**Menu Path:** Financial Management > Accounts Payable > Setup > 1099 Box Number US

### **Workshop - Review 1099 Boxes**

In this workshop, review 1099 box numbers, which **1099 Conversion US** process created for the 1099 form.

**Note:** A system flag is set for 1099 boxes. They cannot be deleted, but can be updated.

Navigate to **1099 Box Maintenance**.

**Menu Path:** Financial Management > Accounts Payable > Setup > 1099 Box Number US

1. Verify that **Miscellaneous Income** displays in the **1099 Form Type** field.
2. Click the **1099 Box Number** button and search and select all items.  
Review the 1099 boxes, created by the conversion program, including **Box 03 - Other Income** and **Box 07 - Nonemployee Compensation**.
3. Click the **Clear** button and click **Yes**.
4. Repeat steps 1 through 4 to review boxes for the **Dividends and Distributions** and **Interest Income** form types.
5. Exit 1099 Box Number Maintenance.

**1099 Code Maintenance**

Use 1099 Code Maintenance to create 1099 codes to allow the tracking and reporting of amounts paid per box. 1099 codes can be assigned to invoice lines or can be used as a default to 1099 reportable suppliers.

For the purpose of this course, you do not need to create new codes, as the conversion program has already added the required codes.

**Menu Path:** Financial Management > Accounts Payable > Setup > 1099 Code US**Workshop - Review 1099 Codes**

In this workshop, review 1099 codes added by the conversion program for the Miscellaneous Income, Dividends and Distributions, and Interest Income form types.

Navigate to **1099 Code Maintenance**.

**Menu Path:** Financial Management > Accounts Payable > Setup > 1099 Code US

1. Verify that **Miscellaneous Income** displays in the **1099 Form Type** field.
2. Click the **1099 Code** button and in the **1099 Code Search** window that displays, click **Search**.
3. Click **Select All** and click **OK**.
4. Review the codes for the **Miscellaneous Income** form type.
5. Click the **Clear** button and click **Yes**.
6. Repeat steps 1 through 4 to review the codes added by the conversion program for the **Dividends and Distributions** and **Interest Income** form types.
7. Exit 1099 Code Maintenance.

**Electronic Interface Maintenance**

Use Electronic Interface Maintenance to set up interfaces for the electronic export of 1099 report files. This program is not available in Epicor Web Access. **For this lab we will use INS-1099 electronic interface.**

Navigate to **Electronic Interface Maintenance**.

**Menu Path:** Financial Management > Accounts Payable > Setup > Electronic Interface

## 1099 Supplier

Use Supplier Maintenance to set up a supplier for 1099 processing. From the **Supplier > USA** sheet in **Supplier Maintenance**, you can set up a default 1099 code and federal tax reporting registration number (TIN).

The same TIN can be used for multiple suppliers. 1099 amounts are summarized for suppliers with the same TIN.

Use the Supplier > USA sheet of Supplier Maintenance to specify Foreign Account Tax Compliance Act (FATCA) reporting by selecting the **FATCA** check box. The **Account Number** defaults from the Supplier ID, but you can change it if necessary (for example, to specify a United States or foreign financial institution (FFI) account). This information defaults to various forms during 1099 processing.

The 1099 Code and FATCA related fields are also displayed on the **Supplier > USA** sheet in **Supplier Tracker** and **Supplier Display**.

### Workshop - Set Up a 1099 Supplier (Optional)

In this workshop, define a supplier's 1099 information. Set up a default 1099 code and federal tax reporting registration number (TIN). Also, set up this supplier for Foreign Account Tax Compliance Act (FATCA) reporting.

Navigate to **Supplier Maintenance**.

**Menu Path:** Financial Management > Accounts Payable > Setup > Supplier

1. From the **New** button select **New Supplier**.
2. In the **Supplier** field enter **XXX** (where **XXX** are your initials).
3. In the **Name** field, enter **XXX Supplier** (where **XXX** are your initials).
4. In the **Terms** field, select **Net 30**.
5. Navigate to **Supplier > Address** and enter address information for your supplier.
6. Navigate to the **Supplier > USA** sheet.
7. Select the **1099's Supplier** check box.

**Note:** If different than the supplier name, change the Payee's Name field to the supplier 1099 reporting name.

8. Click the **1099 Code** button then search and select **Box07**.  
This is now the default.
9. From the **Type** drop-down list, select **EIN**.
10. From the **TIN** field, enter **12-3456789**.
11. In the **Name Control** field, enter any four digit value, for example **ELEC**.
12. In the **Account Number** field, enter any account number. This will be the account number used in FATCA reporting.
13. Select the **FATCA** check box to designate the supplier for FATCA reporting.
14. FATCA stands for Foreign Account Tax Compliance Act reporting, which is a US federal law that requires non-U.S. financial institutions to report asset and information related to U.S. persons.
15. Click **Save**.
16. Exit Supplier Maintenance.

## Workshop – Review and Post AP Invoice Group then create Payment

In this workshop, post an invoice for an existing **1099 supplier**. Then, pay this invoice.

### Review and Post a Supplier Invoice

Navigate to **AP Invoice Entry**.

**Menu Path:** Financial Management > Accounts Payable > General Operations > Invoice Entry

1. In the **Group** field, enter **INS-1099** and Press Tab.
2. Navigate to the **Lines>List** sheet (or **Lines>USA**) to review the four lines and **1099 Code** for each.
3. Click **Save**.

### Post the Supplier Invoice

1. From the **Actions** menu, select **Group > Post**.
2. The **AP Invoice Post Process** window displays.
3. Click **Submit**.
4. Close the AP Invoice Post Process window and exit AP Invoice Entry.

**Tip:** You can adjust 1099 codes for posted invoices using the **Posted Invoice Update** form.

### Create a Supplier Payment

Navigate to **Payment Entry**.

**Menu Path:** Financial Management > Accounts Payable > General Operations > Payment Entry

1. From the **New** menu, select **New Group**.
2. In the **Group** field, enter **XXX-P** (where **XXX** are your initials).
3. From the **Bank Account** field, select **Main Checking Account**.
4. In the **Payment Method** field, select **AP Physical Check**.
5. Click **Save**.
6. From the **New** menu, select **New Payment**.
7. Enter **1099** in the **Supplier** field and enter a payment number in the **Payment** field, for example **123**.
8. From the **New** menu, select **New Invoice Payment**.
9. Navigate to **Payment > Invoice Detail** sheet.
10. Click the **Invoice** button to search for and select the invoice you just posted in an earlier workshop (INS-2).
11. Pay the full amount without a discount.
12. From the **Actions** menu, select **Post**.
13. To the message that displays, click **Yes**.
14. Click **Submit**.
15. Close the AP Payment Post Process window and exit AP Payment Entry.

## 1099 Processing

Use the 1099 Processing program to review detailed 1099 information for current and previous years, generate 1099 forms, print 1099 reports, and for electronic file generation.

**Note:** For suppliers set for 1099 Foreign Account Tax Compliance Act (FATCA) reporting, FATCA results will be reflected during 1099 processing.

Use the Actions menu of the 1099 Processing program to access the following applications.

### 1099 Report

The 1099 report includes a FATCA column and displays a **Y** when a supplier is set up for Foreign Account Tax Compliance Act (FATCA) reporting and an **N** when the supplier is not set up for FATCA reporting.

**Tip:** If FATCA payments made during the corresponding year do not reach the minimum threshold amount or if no payments were made, the 1099-Misc form will show 0.00 for Box 3 on the report.

The Report Mode options are:

- **Already Generated Forms** - Prints out information from existing 1099 forms.
- **Simulate New Forms** - Simulates and prints new 1099 forms only. It works as a preview of the New Forms 1099 Generation process, where forms will be calculated for display, but will not be submitted into the database.
- **Simulate Corrected Form** - Simulates and prints new corrected 1099 forms only. It works as a preview of
- the Corrected Forms 1099 Generation process, where corrected forms are calculated for display, but will not be submitted into the database. When a supplier has the 1099 option selected, the Account Number is automatically populated with the Supplier ID.
- **Display Recalculated Forms** - Simulates and prints forms, which needed recalculations. It works as a preview of the Recalculate Existing Forms 1099 Generation process for forms which haven't been submitted yet. Forms are recalculated for display purpose and will not be submitted into the database.

### 1099 Generation

Use the 1099 Generation for 1099 form generation. Miscellaneous Payments with a 1099 code defined are included in the calculations of the reportable amounts.

**Tip:** If payments made to Suppliers indicated for FATCA reporting during the corresponding year do not reach the minimum threshold amount or if no payments were made, the 1099-Misc form will show 0.00 for Box 3 on the report.

For 1099 Generation, you can select one of the following generation modes:

- **New Forms** - Generates 1099's for suppliers who do not have them.
- **Corrected Forms** - Generates corrected 1099 forms when newly calculated amounts do not match original submitted form.
- **Regenerate All Forms** - Generates all new 1099 forms for the year by deleting existing forms and regenerating them from scratch.
- **Recalculate Existing Forms** - Calculates box totals without affecting other adjustments made to supplier information.

## 1099 Export File

Generates an export file for electronic submission to the IRS.

**Menu Path:** Financial Management > Accounts Payable > General Operations > 1099 Processing US

### Workshop - Generate a New Form

In this workshop, generate a new 1099 form

Navigate to **1099 Processing**.

**Menu Path:** Financial Management > Accounts Payable > General Operations > 1099 Processing US

1. Verify the current year displays in the **Tax Year** field.
2. From the **Actions** menu, select **1099 Report**.
3. The **1099 Report** window displays.
4. From the **Report Mode** field, select **Simulate New Forms**.
5. Select the **Details** check box.
6. Click **Print Preview**.
7. View the 1099 report and review the transactions for **1099 Supplier**.
8. Close the report and exit 1099 Report.
9. From the **Actions** menu, select **1099 Generation**.
10. The **1099 Generation** window displays.
11. Verify **New Forms** is selected in the **Generation Mode** field.
12. Click **Generate**.
13. Exit 1099 Generation.
14. From the **Actions** menu, select **1099 Report**.
15. The **1099 Report** window displays.
16. From the **Report Mode** field, verify **Already Generated Forms** displays.
17. Select the **Details** and **Include All Records** check boxes.
- Note:** The **Include All Invoices** check box includes paid invoices for 1099 suppliers without linked 1099 codes in report results. Use this option to verify that no payments are missing for IRS reporting.
18. Click **Print Preview**.
19. View the 1099 report and review the transactions for 1099 Supplier.
20. Close the 1099 Report window and exit 1099 Report.
21. Remain in 1099 Processing US for the next workshop.

### Workshop - Submit 1099 Form Electronically

In this workshop, use 1099 export to generate export file for electronic submission to IRS.

Maximize **1099 Processing**.

**Menu Path:** Financial Management > Accounts Payable > General Operations > 1099 Processing US

1. Verify the current year displays in the **Tax Year** field.
2. From the **Actions** menu, select **1099 Export**.
3. The **1099 Export** window displays.
4. Click on **Export File** button, select a different path if needed and enter any file name.
5. Click **Save**.
6. In the **Contact Name** field, enter your name.
7. In the **Contact Email Address** field, enter your email address.
8. Click **Submit**.
9. Exit 1099 Export.
10. Minimize 1099 Processing.
11. Search for the Export file in <C:\EpicorData\Users\MANAGER>
12. Review the file and exit.

**Workshop - Review the Generated Form and Mark Submitted**

In this workshop, review the generated form in 1099 Form Maintenance.

Navigate to **1099 Form Maintenance**.

**Menu Path:** Financial Management > Accounts Payable > General Operations > 1099 Form Entry US

1. Verify that **Miscellaneous Income** displays in the **1099 Form Type** field.
2. Click the **Form ID** search button, click **Search** and then click **OK**.
3. Review the 1099 form generated for **1099 Supply Company**.
4. Select the **Submitted** check box.
5. **Note:** The Submitted check box indicates that the form was submitted to the IRS.
6. Click **Save**.
7. Exit 1099 Form Maintenance.

**Print 1099-Misc Forms**

Use Print 1099 Forms to print 1099-Misc, 1099-DIV, and 1099-INT forms using a preprinted format.

The following report styles are available:

- Standard US - 1099-MISC 2015-SSRS
- Standard US - 1099-DIV 2017-SSRS
- Standard US - 1099-INT 2017-SSRS

You can use the **New Forms and Corrections only** option to only print new and corrected forms. Only one 1099 Form Type can be printed at a time.

Filtering by supplier is provided as well as sorting by either supplier code or supplier name. You can also print forms according to their status. For example, you can print only forms which have not been printed yet, only forms previously printed, or all forms.

**Menu Path:** Financial Management > Accounts Payable > Reports > Print 1099 Forms US

### Workshop - Print the 1099-Misc Form

The 1099 report is usually printed on preprinted forms. In this workshop, preview the report.

Navigate to **Print 1099 Forms**.

**Menu Path:** Financial Management > Accounts Payable > Reports > Print 1099 Forms US

1. In the **Tax Year** field, verify the current year displays.
2. From the **1099 Form Type** field, verify that **Miscellaneous Income** displays.
3. Select **Mark as Submitted**.
4. Click **Print Preview**.
5. The **Report - Print 1099 Forms US** window displays.
6. In the **Report Style** field, verify **Standard US - 1099-MISC 2015-SSRS** is selected.
7. Click **Print Preview**.
8. View the 1099 report.
9. Close the report window and exit Print 1099 Forms US.

### Print 1096 Form

Using the United States CSF, you can prepare 1099 Information Returns for the U.S. Internal Revenue Service. These forms can be submitted electronically or on paper. When submitted on paper, the 1099 forms must be accompanied by a 1096 Form Annual Summary and Transmittal of U.S. Information Returns. It summarizes the type and number of forms being submitted, the amount of federal tax withholding, and the total amount of the payments being reported on the included forms.

Use the Print 1096 Form report program to print a 1096 form in a pre-printed format. A separate 1096 form is required with the submission of each type of 1099 form (1099-MISC, 1099-DIV, 1099-INT, or any user-defined form).

**Menu Path:** Financial Management > Accounts Payable > Reports > Print 1096 Form US

### Workshop - Print the 1096 Form

Navigate to **Print 1096 Form**.

**Menu Path:** Financial Management > Accounts Payable > Reports > Print 1096 Form US

1. In the **Tax Year** field, verify that the current tax year displays.
2. In the **1099 Form Type** field, select **Miscellaneous Income**.
3. Click the **Print Preview** button.
4. The **Report-USPrint1096Form** window displays.
5. In the **Report Style** field, verify that the **Standard US 1096 2017-SSRS** report style displays.

6. Specify other report options.
7. On the Main toolbar, click the **Print Preview** button to preview the report on your screen.

**Congratulations!** You have completed the **Managing Your 1099 Processing with Epicor ERP** lab.

# Migrating Your XL Connect Reports to XL Connect

## 7

Epicor XL Connect 7 is an updated business reporting and analytics solution that provides secure access to your Epicor data from Microsoft® Office Excel®.

This product is an upgrade from XL Connect which gave you access to your data but did not give you much flexibility when it came to the functions and tables that you were able to bring in.

At the conclusion of this lab, you will be able to:

- Navigate the Query Data tool of Epicor XL Connect 7
- Identify the necessary filters for your new functions
- Add filters to your already dynamic reports
- Understand the enhanced capabilities of Epicor XL Connect 7.

### Open Excel and XL Connect

1. From the Excel Top Menu bar, click **XL Connect**.
2. From the **XL Connect** menu, select **Load XL Connect** on the left-hand side.
3. The **Navigation Pane** will open on the left-hand side and will contain all the available data connections for your ERP data.

### Navigation Pane

The Navigation Pane allows you to easily access all available data to create tables and functions.

1. Click on the **Load XL Connect** button from the menu bar.  
The **Navigation** pane displays vertically along the left-hand side of your worksheet.
2. The **Navigation** pane is collapsed by default and can be expanded by clicking on the **chevron arrow** button in the upper right-hand side of the **Navigation** pane.
3. Click the arrows within the **Navigation** pane to expand each section to view the available tables and functions.
4. With the **Navigation** pane properly launched, you are ready to start querying your data.

### Identify the Parameters of Your Existing Functions

1. Open the file **V5 Sample Report**.
2. If not done already, load **XL Connect**.
3. Click on the function in the top-left corner of your report next to **Sales – Machined**.
4. Your filters will be in the following order: **Company, Book, Year, Period, Seg1, Seg2, Seg3**.
5. Since **Period** is hidden, **unhide row 5**.

## Create Your New Functions

1. Select **XL Connect > Query Data**.
2. To the **What would you like to create?** message, select **Function**.
3. To the **Where is your data?** message, select **Epicor ERP**.
4. To the **Which data set?** message, select **GL Period Balances**.
5. In the **Company** filter, use the **Cell Selection** button to select cell **\$F\$1**.
  - Make sure this cell is completely anchored since the **Company** cell will not change.
6. For the **FiscalYear** filter, use the **Cell Selection** button to select cell **\$I\$1**.
7. To the **What action would you like to take?** message, select **Sum**.
8. To the **What information would you like returned?** message select **MTDNet**.
9. Add your remaining filters:
  - Fiscal Period = F\$5
  - BookID LIKE \$F\$2
  - Seg1 IN \$A8:\$C8
10. Check the **Reverse sign** box.
11. Press **OK**.
12. Place function in cell **F8**.
13. Press **OK**.
14. Change a **Year or Period** Parameter to test the cell.

## Adding Data Validations

In V5, when users wanted to create drop down lists (referred to as Data Validations), they had to learn the Excel functionality for it and depend on a web of tables. Now you can create a drop down that is directly linked to your data. Simply follow the steps below:

1. Go to cells **L1** and **L2** and then press **Home > Clear > Clear All**.
2. Select **XL Connect > Query Data**.
3. To the **What would you like to create?** message, select **Data Validation**.
4. To the **Where is your data?** message, select **Epicor ERP**.
5. To the **Which data set?** message, select **GL Segment 2**.
6. In the **Company** filter, use the **Cell Selection** button to select cell **\$F\$1**.
7. Press the **Select a Column** button and select **Seg2Name**.
8. Press **OK**.
9. Place function in cell **M1**.
10. Press **OK**.
11. Repeat this process for **GL Segment 2** in cell **M2**.

Since this generates a name that overrides our existing cell values, we will now move them to cells **L1:L2**.

12. Use your mouse to select cells **M1:M2**.
13. Place your mouse on the green border of the cells so that the black crosshairs with outward arrows appears.
14. Press your mouse and move the selection to **L1:L2**.

### Add Filters to Your New Functions

Since we added new drop-down lists, we need to add them to our function so that they calculate properly.

1. Select cell **F8**.
2. Select **XL Connect > Query Data**.
3. Press **Add Filter** twice and follow the format below:
  - Seg2Name LIKE \$L\$1
  - Seg3Name LIKE \$L\$2
4. Press **OK**.
5. Place function in cell **F8**.
6. Press **OK**.

**IMPORTANT!** Not every combination of **BookID**, **Department**, and **Location**, are valid. If there is an invalid combination, then the function will return a **0** value.

### Copy Your Functions

Since we added new drop-down lists, we need to add them to our function so that they calculate properly.

1. Select cell **8**.
2. Use the Excel handle to drag the function down and across the report.
  - The **Reverse Sign** feature is a “\*-1” at the end of the function. This should be removed for the **Cost of Sales** and **Expenses** sections of your report.

Now Your Report is complete! Adjust the different filter combinations, drill down on functions to gain more insights!

# Optimize Your Stock Levels with the Automatic Update of Minimum, Maximum and Safety Values

The Min Max Safety Mass Update process helps you determine an optimal level for the minimum, maximum and safety level part fields, which therefore helps you optimize stock levels.

At the conclusion of this lab, you will be able to:

- Explain the significance and use of the safety, minimum and maximum fields in the part master
- Set up parameters for the automatic update at the part class and part levels
- Run an update in both manual and automatic modes
- Understand how re-ordering to max affects MRP/Generate Suggestions process

## Basic Concepts

- **Min On-Hand** - Specifies the minimum amount of inventory that should be on hand for a part in a designated site and warehouse.
- **Safety On-Hand** - Specifies the minimum amount of inventory that should be on hand for a part in a designated site. It is a "**purchasing cushion**" limit; the amount you would need to have to cover your requirements until a shipment arrives from the supplier. If your on-hand quantity falls below this limit, it means that there is a good chance that you may run out of material before the next shipment arrives.
- **Max On-Hand** - Specifies the maximum quantity of inventory that should be on hand for this part in this site. This value is used to alert you that the inventory quantity is too high.

## Log In

1. From the desktop, select the **ERP10** icon.
2. In both the **Username** and **Password** fields, enter **manager/manager**.
3. Select the **Menu** tile.

## Set Up Part Class

**Menu Path:** Material Management > Inventory Management > Setup > Part Class

On the part class we can define the default values that will be used for calculations performed by the Min Max Safety Mass Update process. These settings can later be overridden.

1. Make sure you are in **Part Class Maintenance**.
2. Click the **[Part Class...]** button.
3. Search for and select **Aluminum (ALUM)**.
4. In the **Calculate Min/Max/Safety Values** section:
  - a. Select the **Include in Calculation** check box.
  - b. Select **Include Sales History** check box.
  - c. Leave **Include Job Materials** check box unselected.

- d. Enter the following values:

Field	Data
History Window	35
Safety Factor	40
Max Factor	3
Default Part Lead Time	5

5. Click **Save**.
6. Exit Part Class Maintenance.

### Create New Part

**Menu Path:** Material Management > Inventory Management > Setup > Part

MRP makes sure that the quantity of your stocked items never falls below the safety plus the minimum quantity. In the past you had to update these values manually for each part. Now, in Epicor 10.1, there is a way to get suggestions for these values, and mass update your inventory master data files.

1. Make sure you are in **Part Maintenance**.
2. Click **New > New Part** from the icon bar.
3. In the **Part** field, enter **XXX-MinMax**, where XXX are your initials.
4. In the **Description** field, enter **XXX Min Max Safety**, where XXX are your initials.
5. In the **Class** field, use the drop-down to select **Aluminum**.
6. In the **Default Site Parameter** section, ensure that:
  - a. The **Non Stock** check box is cleared.
  - b. The **Quantity Bearing** check box is selected.
7. For all other fields in the **Part > Detail** sheet, accept the default values.
8. Click the **Save** icon on top.
9. Navigate to the **Part > Sites > Detail** sheet.
10. In the **Calculate Min/Max/Safety Values** section, in the bottom left corner, enter the following values:

Field	Data
History Window	10
Safety Factor	80
Max Factor	4
Exclude Calculation	clear
Include Sales History	select
Include Job Materials	select

Note that in this section we are overriding the values set up on the Part Class above.

11. In the **Purchasing** section on the right, in the **Lead Time** field, enter **6**.
12. Navigate to the **Part > Sites > Warehouses > Primary Bin** sheet.
13. In the **Bin** field, Enter **00-00-00**.

14. Click **Save** and minimize Part Maintenance.

### Create Sales Order

**Menu Path:** Sales Management > Order Management > General Operations > Order Entry

1. Make sure you are in the **Sales Order Entry** screen.
2. From the **New** menu, select **New Order**.
3. In the **Customer** field, enter **NORTHERN** (Northern Machine).
4. In the **PO** field, enter **XXX2019**, where XXX are your initials.
5. In the **Order Date** field, enter **04/9/2019**.
6. In the **Need By** field, enter **04/16/2019**.
7. In the **Ship By** field, enter **04/12/2019**.
8. In the **Ship Via** field, select **Company Truck**.
9. Click **Save** and note the **Sales Order** number. Order #: \_\_\_\_\_
10. Navigate to the **Lines > Detail** sheet.
11. From the **New** menu, select **New Line**.
12. In the **Part** field, enter your **XXX-MinMax** part created above.
13. In the **Order Quantity** field, enter **100**.
14. In the field to the right of Order Quantity select **EA**.
15. In the **Unit Price** field, enter **10**.
16. Click **Save** and exit **Sales Order Entry**.

### Ship Sales Order

**Menu Path:** Shipping/Receiving > General Operations > Customer Shipment Entry

1. Navigate to **Customer Shipment Entry**.
2. From the **New** menu, select **New Pack**.
3. In the **Order Number** field, enter the order number from the previous steps.
4. In the **Ship Date** field, enter **04/12/2019**.  
**Important!** The shipment should happen in the past; otherwise the quantity will not be included the history.
5. In the **Ship Via** field, enter **Company Truck**.
6. In the lower section of the **Summary** sheet, click **Mass Shipment**.
7. Click **Ship All**.
8. Click **Update**.
9. Toward the top right of the **Summary** sheet, select the **Shipped** check box.
10. Click **Save** and exit Customer Shipment Entry.

## Calculate Min Max Safety Values

**Menu Path:** Material Management > Inventory Management > General Operations > Min Max Safety Mass Update.

1. Navigate to **Min Max Safety Mass Update**.

2. On the **Standard** toolbar, click the **Binoculars** button.

The **Part Class Search** window displays.

3. Click **Search**, then select **ALUM** (Aluminum) and click **OK**.

All of the parts in the ALUM Part Class display in the **Parts** grid.

4. Click **Select All**, and then click **Calculate Selected**.

The message **This process may update existing values for Proposed Min/Max/Safety. Do you want to continue?** displays.

5. In the window with the warning, click **Yes**.

6. Click **Refresh**.

## Review Calculations for New Part

1. In the grid, on the **Parts** sheet, locate and select your part **XXX-MinMax**.

As you scroll to the right note that the **Minimum**, **Maximum**, and **Safety** columns display **0**.

Further to the right, the **Proposed** columns display as follows:

Field	Data
Proposed Minimum	60
Proposed Maximum	288
Proposed Safety	48
Lead	6

2. With the part **MinMax** still selected, navigate to the **Part Detail** sheet.

**Calculated Usage** is the amount of inventory that was used within the **History Window**. It will include Sales History and/or Job Materials depending on your previous settings. In this case, **100** from the sales order created above.

Then, it will calculate the average **Daily Usage** using the Calculated Usage and dividing it by the Days of Part History. In this case,  $100/10 = 10$

After that it will calculate the **New Min** quantity using the Daily Usage multiplied by the Lead Time. We have previously set up Lead Time as 6, so it will calculate  $10 \times 6 = 60$ .

Both New Safety and New Max quantities are calculated using the New Min value:

$$\text{New Safety} = \text{New Min} \times \text{Safety Factor \%} = 60 \times .80 = 48$$

$$\text{New Max} = (\text{New Min} \times \text{Max Factor}) + \text{Safety} = (60 \times 4) + 48 = 240 + 48 = 288$$

3. Navigate to the **Parts** sheet and click **Clear All**.

4. In the **Select** column, in the **MinMax** row, click the **check box**.

5. Click **Copy All Proposed**.

The Minimum, Maximum, and Safety columns are populated with the proposed values.

6. Click **Save**.

This updates Part Maintenance with the new values. You will verify the change momentarily.

### Review Calculations for Existing Part

1. In the grid, on the **Parts** sheet, locate and select part **MinMaxSafety-Class**.
2. Navigate to the **Part Detail** sheet.

**Calculated Usage = 130**

3. Right click on the **Part** field and select **Open With > Part Transaction History Tracker**.
4. Click on **Retrieve** button.

Date	Type	Quantity	UOM	Running Total	UOM
4/12/2019	STK-CUS	35	EA	19	EA
4/8/2019	STK-CUS	18	EA	54	EA
4/3/2019	STK-CUS	59	EA	72	EA
3/25/2019	STK-CUS	18	EA	131	EA
3/18/2019	STK-MTL	15	EA	149	EA
3/11/2019	STK-CUS	18	EA	164	EA
2/25/2019	STK-CUS	18	EA	182	EA
1/1/2019	ADJ-QTY	200	EA	200	EA

Note that the total usage sums up to **181 EA**. However, Calculated Usage is only **130**.

Why? Because only the STK-CUS transaction since **03/14** are being considered, as on our Part Class we only selected **Include Sales History** and entered a History Window of **35 days**.

5. Close Part Transaction History Tracker.

**Daily Usage** = Calculated Usage ÷ Days of Part History =  $130 \div 35 = 3.71428 \approx 3.71$

**New Min** = Daily Usage × Lead Time =  $3.71 \times 5 = 18.55 \approx 19$

**New Safety** = New Min × Safety Factor % =  $19 \times .40 = 7.6 \approx 8$

**New Max** = (New Min × Max Factor) + Safety =  $(19 \times 3) + 8 = 57 + 8 = 65$

6. In the **Current Part Settings** section,

- a. Set **Minimum** to **20**
- b. Set **Maximum** to **70**
- c. Set **Safety** to **8**
- d. Set **Part Lead Time** to **5**
- e. Select **Re-Order** check box

7. Click **Save**.

This updates Part Maintenance with the new values. You will verify the change momentarily.

## Review Part Maintenance

In a previous workshop you should have left Part Maintenance open. If not, then open it again.

1. Make sure you are in **Part Maintenance**.
2. Make sure your part **XXX-MinMax** is selected.
3. Click **Refresh**.
4. Navigate to **Part > Sites > Detail**.
5. Verify the changes applied via Min Max Safety Mass Update screen:
  - a. Min On-Hand = 60
  - b. Max On-Hand = 48
  - c. Safety Stock = 288
6. Navigate to **Part > Detail**.
7. In the **Part** field, enter **MinMaxSafety-Class**.
8. Navigate to the **Part > Sites > Detail** sheet.
9. Verify the changes applied via Min Max Safety Mass Update screen:
  - a. Min On Hand = 20
  - b. Max On Hand = 70
  - c. Safety Stock = 8
  - d. Lead Time = 5
  - e. Re-Order to Max = True
10. Exit Part Maintenance.

## Review Part Demand

When a part is projected to go below minimum inventory or below safety stock quantity, we can review this information using the Time Phase Inquiry Tracker screen.

**Menu Path:** Material Management > Inventory Management > General Operations > Time Phased Inquiry.

1. Navigate to **Time Phased Inquiry**.
2. Click the **Part** button.
3. In the **Starting At** field, enter **MinMax**.
4. Click **Search**.
5. From the **Search Results** section, select Part **MinMaxSafety-Class**.
6. Click **OK**.

Notice the results on the grid:

Due	Receipts	RequiredQty	Balance	UOM	Source	Exception
	19	0	19	EA	On-Hand Quantity	Below Minimum
4/22/2019	0	18	1	EA	SO: 5399/1/5	Below Safety

<b>Due</b>	<b>Receipts</b>	<b>RequiredQty</b>	<b>Balance</b>	<b>UOM</b>	<b>Source</b>	<b>Exception</b>
5/3/2019	0	35	-34	EA	SO: 5401/1/2	Below Zero
5/6/2019	0	18	-52	EA	SO: 5399/1/6	Below Zero
5/20/2019	0	18	-70	EA	SO: 5399/1/7	Below Zero
5/31/2019	0	35	-105	EA	SO: 5401/1/3	Below Zero
6/3/2019	0	18	-123	EA	SO: 5399/1/8	Below Zero
6/17/2019	0	18	-141	EA	SO: 5399/1/9	Below Zero

- Minimize the **Time Phased Inquiry** screen.

#### Run Generate PO Suggestions (Optional)

**Menu Path:** Material Management > Purchase Management > General Operations > Generate Suggestions.

- On the **Processing Options**, select the **Net Change** radio button.
- Leave **Cutoff date** as empty.
- Select the **Allow Historical Dates** check box.
- Navigate to the **Filter > Part Class** tab.
- Click the **Part Class** button.
- Click **Search**.
- From the **Search Results** section, select Part Class **ALUM (Aluminum)**.
- Click **OK** at the bottom.
- Click the **Submit** icon on the top.
- Wait for the process to finish.

#### Review Purchasing Suggestions (Optional)

- Maximize the **Time Phase Inquiry** screen.
- Click the **Refresh** icon on the top.

Notice the suggestions were created to re-order.

<b>Due</b>	<b>Receipts</b>	<b>RequiredQty</b>	<b>Balance</b>	<b>UOM</b>	<b>Source</b>	<b>Exception</b>
	19	0	19	EA	On-Hand Quantity	Below Minimum
4/18/2019	51	0	70	EA	Suggestion For Warehouse: CHI	
4/22/2019	0	18	52	EA	SO: 5399/1/5	
5/3/2019	53	0	105	EA	Suggestion For Warehouse: CHI	
5/3/2019	0	35	70	EA	SO: 5401/1/2	
5/6/2019	0	18	52	EA	SO: 5399/1/6	
5/20/2019	0	18	34	EA	SO: 5399/1/7	
5/31/2019	71	0	105	EA	Suggestion For Warehouse: CHI	
5/31/2019	0	35	70	EA	SO: 5401/1/3	
6/3/2019	0	18	52	EA	SO: 5399/1/8	
6/17/2019	0	18	34	EA	SO: 5399/1/9	

3. Close the **Time Phase Inquiry** screen.

# Personalizing Your Epicor Data Analytics (EDA) Solution

Data is the biggest “natural resource” of your business but not all your data is in Epicor. In this lab, we will show you how Epicor Data Analytics can help you have a conversation with not just your Epicor data but also data from external sources. We will show you how you can answer your business questions regardless of the source of the data. Our experts will give you tips and tricks, as well as best business practices that you can use to effectively mine all your data for gold.

At the conclusion of this lab, you will be able to:

- Load budget data for any dimensions in EDA
- Load external data from CSV, TXT, XLS and XLSX formats
- Add budget and external data to your database
- Use that data to publish dashboards out to end-users

Sarah, the sales manager from E10 Supply Company has asked you to build a budget to actuals report that will allow her to get a quick look the state of the business compared to the budget. She would like to see the sales variance by customer over the last 12 months. Sarah would also like us to be able to break that data down by each customers ABC code for their monthly customer review. Let's get started!

## System Requirements

Epicor ERP	10.1.400 or higher
------------	--------------------

## Log into EDA:

1. Browse to Epicor data analytics with the following URL: <http://epicorti/EDA/>
2. Login with the following credentials.
  - a. User: **Phocas**
  - b. Password: **Insights2019**

**Tip!** In the upper right-hand corner, you will see a small question mark. When clicked, it will engage the help tooltips on items with which you may not be familiar. This makes EDA very user friendly.

## Build the Customer Budget Files

1. Once logged in you will be on the Home Page.  
**Tip!** To get back to the Home Page from anywhere, click the Epicor logo.
2. On the **home page**, expand **Favorites**.
  - a. You will see favorites you have saved, and any that have been shared with you. Select the favorite **Customer Budget Prep** and click on it.
3. **Export** data as Excel file.
  - a. Select the **Export**  button to export the data currently displayed on your screen.

- b. In this case you will select Excel but you can **export** data as an email, PDF or other file type.
4. Personalize your Budget data in Excel
    - a. Open the **Excel** version of the view.
    - b. Delete the **Total** row.
    - c. Delete the **Customer ID** columns.
    - d. Delete the **Total** columns.
    - e. Edit the values to show your budget numbers that you want to use.
    - f. Edit the **Date** headers in the to be in the following date format: YYYY-MM-DD example would be 2017-10-27.
    - g. Save the file to your desktop as **Customer Budget**.

### **Build Customer ABC Ranking File**

1. To get back to the Home Page from anywhere, select the **Epicor logo**.
2. On the **Home Page**, expand **Favorites**.
  - a. You will see favorites you have saved, and any that have been shared with you. Select the favorite **Customer ABC Prep** and click on it.
3. **Export** data as Excel file.
  - a. Select the **Export**  button to export the data currently displayed on your screen.
  - b. In this case you will select **Excel** but you can **export** data as an email, PDF or other file type.
4. Personalize your data in Excel
  - a. Open the **Excel** version of the view.
  - b. Delete the customer ID column.
  - c. Delete the total column.
  - d. Add an ABC code column.
  - e. Fill that column with A, B, C value for each customer.
  - f. Save the file to your desktop as **Customer ABC**.

### **Load Customer ABC Data**

1. To get back to the **Home Page** from anywhere, select the **Epicor logo**.
2. On the **Home Page**, expand **Databases**.
3. Choose the **Sales Database** and click it.
4. With the **database** open select **Actions >★ menu then Design**.
5. Expand the data sources panel from the arrow at the right of the screen.
6. You will see an **Upload** button.

**Tip!** File types accepted are CSV, TXT, XLS and XLSX.

7. Select **Upload**.
8. Choose the **Customer ABC** file to upload.
  - a. Name the file.
  - b. Select **File has header row**. Then click **Upload**.

### Load Customer Budget Data

1. Click the **Upload** button again.
2. Choose a file the **Customer Budget** to upload,
  - a. Name the file.
  - b. Select **File has header row**. Then click **Upload**.

### Add Customer Budget Stream

1. Select **New Stream** and name it **Budget**.
2. Locate your **Customer Budget** data from the **data items panel** on the right, and drag it on top of the **Drag Here** field.
3. Select **Yes**, if asked whether to use this data as a budget item.
4. Each column of unmapped data is marked by a **red dot**.
5. Map the **Customer** columns in your budget data over the top of existing **Customer Dimensions**.
6. Map the **Values** columns in your budget data over the top of existing **Value Measure**.
7. Map the **Date** columns in your budget data over the top of existing **Date Driver**.

### Map ABC Codes as a Dimension Group

A group is just a way of arranging your dimensions. For example, your customers might be grouped into regions, or types, or even by which sales rep looks after them. Products might be grouped by category and sub category. A group can be anything that works for your business, as long as the data exists.

1. Click on the **Customer Dimension**. You are now in **Dimension Mapping Mode**.
2. Locate your **Customer ABC** file from the **Data Items** panel on the right, and drag it on top of the **drag here** field.  
Your raw data will appear in the box.
3. Each column of unmapped data is marked by a **red dot**.
4. You'll see a data box to the left of the raw data with the **Customer Name** in red. This represents the data that is already mapped.
5. Locate the column that has the matching **Customer ID**, and drag it across. The column heading will turn green.
6. To create the **ABC Customer Dimension Group**, drag the raw data column on top of the **Customer Dimension**.
7. Build the database.

## Build Favorite to Compare Customer Sales Against Budget

We want to compare sales performance against budget for our customers and parts.

1. Click on the **Customer Dimension**.
2. Select the **Mode > Stream**.
3. An additional button (**Variance Stream**) will now appear to the right of **Stream**.
4. You can use the **Stream** and **Variance Stream** buttons to control which data streams you would like to see in your columns.
5. For the first example, select the **Budget Stream**.  
The columns in your grid will update accordingly.
6. We can now compare each customer's performance against budget for the selected period (in this case it's rolling 12 months).
7. You'll see a column for each stream, plus variance columns (actual and percentage) under the heading **Δ Budget** (the **delta** symbol means the change or difference).
8. Select **Actions ★ > Save Favorite**.
  - a. Configure the favorite.
    - **Favorite:** Select **New** from the drop-down.
    - **Name and description:** You must give your favorite a name. Description is optional.
    - **Period:** Select a period now or adjust the period later.
    - **Folders:** To place a new favorite in a [folder](#) for others to access, select one or more folders.
    - **Users:** You are automatically selected as a user when saving a new favorite. Select one or more users with whom you want to share your favorite.

### Filter our Favorite by Customer ABC Code:

We want to compare sales performance against budget for our C customers only.

1. Click on the **ABC** group under the **Customer Dimension**.
2. Select **C** and click the **Focus** button.
3. Now select the **Customer Dimension** again.
4. Select **Mode > Stream**.  
An additional button (**Variance Stream**) will now appear to the right of **Stream**. You can use the **Stream** and **Variance Stream** buttons to control which data streams you would like to see in your columns.
5. Select the **Budget Stream**.  
The columns in your grid will update accordingly.
6. We can now compare each customer's performance against budget for the selected period (in this case it's rolling 12 months).
7. You will see a column for each stream, plus variance columns (actual and percentage) under the heading **Δ Budget** (the **delta** symbol means change or difference).

8. Select Actions ★ > Save Favorite.

- a. Configure the favorite.
  - **Favorite:** Select New from the drop-down.
  - **Name and description:** You must give your favorite a name. Description is optional.
  - **Period:** Select a period now or adjust the period later.
  - **Folders:** To place a new favorite in a [folder](#) for others to access, select one or more folders.
  - **Users:** You are automatically selected as a user when saving a new favorite. Select one or more users with whom you want to share your favorite.

In conclusion you should now have an understanding how to load data for any dimensions in EDA from CSV, TXT, XLS and XLSX formats. You should also be more familiar with how to load budget data based on the existing dimensions in the EDA system and use that data to publish dashboards out to end-users.

# Planning Your Material Requirements and Firming Up Jobs for Production

The Material Requirements Planning (MRP) in Epicor ERP lab is designed to introduce the primary functions of the Material Requirements Planning (MRP) module. This session also covers the use of MRP tools that both estimate potential demand and propose the supply to answer this demand.

Upon successful completion of this lab, you will be able to:

- Identify factors that affect material requirements planning
- Describe setup requirements
- Describe Part Maintenance setup details that affect MRP
- Create a forecast for a part
- Run the Process MRP
- Review the results of a corresponding MRP run
- Use Job Status Maintenance and turn PO suggestions into orders

## System Requirements

Modules/Licensing	Product Version
Engineering, Inventory Management	10.1 and above
Job Management, MRP, Order Management	

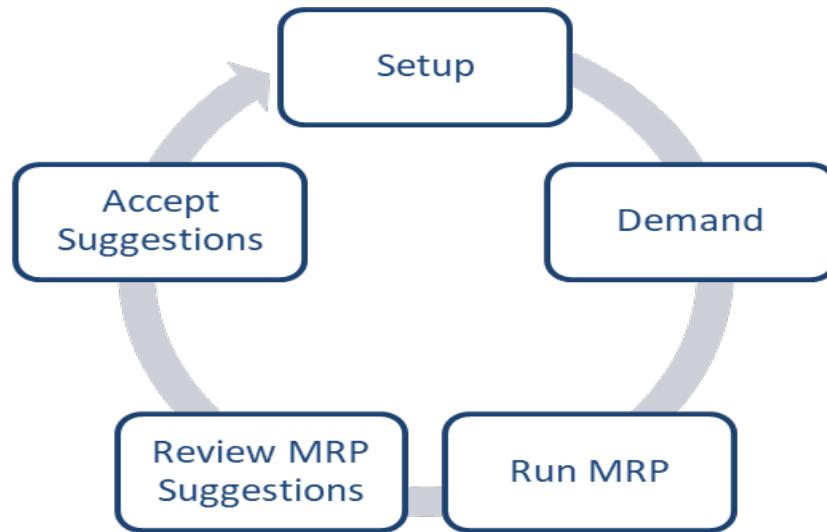
## Business Flow Requirements

<If you implement this functionality, you will now have to perform X, Y and Z in addition to the steps we show here to make this work.>

The goal of MRP is to make sure that the internal and external requirements for products and materials are met on time. It generates supply suggestions to meet demand. Let's take a closer look at the components of each.

Demand – What requirements do we know of?	Supply – What shall we do to satisfy them?
Sales Order release	Unfirm Job
Forecast	Firm Job
Master Production Schedule (MPS)	Purchase Order Suggestion
Warehouse quantity below required quantity	Purchase Order Change Suggestion
Jobs (firm/unfirm)	Transfer Order Suggestion
Planning Contract	Job (change) Suggestion

## MRP Processing



Working with MRP is a cyclical, iterative process. It means we can run MRP multiple times with different settings and evaluate the results – without having to manufacture anything. In this sense it is different from the creation of a Sales Order where a strict, correct procedure can be followed.

The above processes are there in every ERP system, but Epicor offers a unique set of programs and tools to help planners meet everyday challenges of MRP.

### Setup

- Company Configuration > Modules > Production > MRP
- Site Configuration > Modules > Production Management > General
- Site Maintenance > Planning
- Part > Sites > Planning

### Programs and Features Covered in this Lab

- Part Maintenance - MRP relevant sheets
- Engineering Workbench
- Forecast Entry
- Process MRP
- System Monitor
- MRP Log
- Time Phase Inquiry
- New PO Suggestions

- Multi-Level Pegging Display
- Job Status Maintenance

### Create Demand

Navigate to **Forecast Entry**.

**Menu Path:** Production Management > Material Requirements Planning > General Operations > Forecast Entry

1. In the **Part** field, enter **Mfg3** and press **Tab**.
2. From the **Standard** toolbar, click **New**.
3. In the **Forecast Date** field, enter **June 1st, 2019**.
4. In the **Forecast Quantity** field, enter **10**.
5. Save and **Minimize** Forecast Entry .

### Review Demand in Time Phase Inquiry

Navigate to **Time Phase Inquiry**.

**Menu Path:** Production Management > Material Requirements Planning > General Operations > Time Phased Inquiry

1. In the **Part** field, enter **Mfg3** and press **Tab**.
2. The **Exception column** displays **Below Zero**.

This indicates that when the MRP process runs, it needs to generate something to fulfill the demand.

3. Leave **Time Phase Inquiry** open till the end of the Lab session.

### System Monitor

The successful execution of the MRP process is critical for the success of this lab. System Monitor can be used to track it real time and ensure a desirable outcome.

To open the **System Monitor**:

1. Click the small triangle in the toolbar at the bottom right of the page.
2. Click the **Epicor** icon. When you hover your mouse over it, a **System Monitor** label displays.
3. Click **Actions > Retrieval Properties**. Make sure it **pops up on errors and successful processes**.

**Hint!** You can also navigate to the System Monitor from within the Epicor ERP application. To navigate to the System monitor, use the Menu path System Setup > System Maintenance > System Monitor

### Process MRP

In this workshop, run the MRP process to generate supply for the Mfg3.

Navigate to **Process MRP**.

**Menu Path:** Production Management > Material Requirements Planning > General Operations > Process MRP

1. In the **Log File** field, enter **INS2019**

2. From the **Logging level** drop-down, select **MRP and Scheduling**.
3. Clear the **Run the Multi-Level Pegging Process** check box for now.
4. Navigate to the **Filter > Part** sheet.
5. Click the **Part** button, search for and select the **Mfg3**.
6. From the **Standard** toolbar, press the **Process** button.

### Review MRP Suggestions

1. Maximize **Time Phase** for part Mfg3.
2. You should see a **new line** with the forecast quantity in the Receipts. Source is a **job that's number starts with MRP**. This is the unfirm job prefix specified on the Main site.

### Second Forecast

1. Maximize the Forecast Entry program.
2. In the **Part** field, enter **Mfg3** and press **Tab**.
3. From the **Standard** toolbar, click **New**.
4. In the **Forecast Date** field, enter **July 1st, 2019**.
5. In the **Forecast Quantity** field, enter **10**.
6. Save and **Minimize** Forecast Entry .
7. **Maximize the Time Phase** and review the new Forecast requirement.

### Process MRP and review Result

1. Maximize the Process MRP program.
2. There's no need to re-enter anything. If you accidentally closed it after the previous run, refer to the previous page for parameters. Make sure you **always run the process with part filter** during this lab session.
3. Maximize **Time Phase** for part Mfg3.
4. You should see in total two lines with **job numbers starting MRP**.

### Merging MRP Jobs

The Days of Supply parameter aggregates unfirm jobs if the underlying demand falls within the time interval specified. To see it in action we'll need to adjust our Forecast.

1. Maximize **Forecast Entry**.
2. Delete the second forecast line for 1st July.
3. Create a **new forecast for 5th June, 2019**. This falls within 10 days from the first one.
4. In the **Forecast Quantity** field, enter **10**.
5. Save and **Minimize** Forecast Entry .
6. **Maximize the Time Phase** and review the new Forecast requirement

## Process MRP and review Result

1. Maximize the Process MRP program.
2. **Submit the process** without changing filters or parameters.
3. Maximize **Time Phase** for part Mfg3.
4. You should see one MRP unfirm job with a total quantity of 20 EA.

## Deleting Forecasts

Unfirm Jobs are entirely under the "control" of the MRP process - if demand vanishes, jobs will vanish too! Let's try that!

1. Maximize **Forecast Entry**.
2. Delete both forecast lines.
3. Save and **Minimize Forecast Entry**.
4. **Maximize the Time Phase** and review the now oversized suggestion.
5. Maximize the Process MRP program.
6. **Submit the process** without changing filters or parameters.
7. Maximize **Time Phase** for part Mfg3.
8. The Time Phase now **has no supply or demand**.

## MPS Demand

MPS stands for Master Production Schedule. While Forecast Entry is a sales tool, the MPS program is typically for planners. The MPS overrides forecast quantity if they both exist for the same date.

Navigate to the MPS Entry program

**Menu Path:** Production Management / Material Requirements Planning / General Operations / MPS Entry

1. Enter Mfg3 in the **Part Number** field.
2. Hit the **New** button.
3. Specify **1st July as Due Date**.
4. Enter **20 EA as Production Quantity**.
5. Maximize the **Process MRP program**.
6. Select the Checkbox for **Multi-Level Pegging**
7. In the **Logging Level** field Select MRP and Scheduling.
8. Verify the **Log file name** is INS2019
9. Maximize **Time Phase** for part Mfg3.

## Log

The Log file is the most important record of processes, and potentially process errors. It is essential to be able to find it and interpret those logs. If you need support regarding MRP, this will be the first thing any engineer would ask for. It is saved in your server data folder. Note that the location may change with every installation. To find your log location, you need to use the System Agent.

Navigate to the **System Agent**.

**Menu Path:** System Setup > System Maintenance > System Agent

The MRP log is created and stored in the **Log > UserID** subfolder, in the **Server** data directory. On the training image, the MRP log is located in **C:\\\EpicorData\Companies\EPIC06\Log\MRP\**. The process you ran creates three logs:

- INS2019.log - Provides general information on the process, including the processing duration and parameters used.
- INS2019Sched101.log
- INS2019001.log

For specific details regarding the process, you open and review the Mfg3001.log; it gives you the most accurate record of MRP processing:

1. Select **Mfg3001.log**.
2. Right-click on **Open With > Notepad**.

## Purchase Order Suggestion Processing

Navigate to **New PO Suggestions**.

**Menu Path:** Material Management > Purchase Management > General Operations > New PO Suggestions

1. From the **Standard** toolbar, click the **Search** (binoculars) button.
2. From the **Buyer** drop-down list, select **Brian Howard**.
3. Click the **Search** (Binoculars) icon.
4. Select any suggestion.
5. On the **Suggestion > Detail** sheet, in the **Supplier** field, enter **ABCM** if it is empty, and press **Tab**.
6. Make sure the Quantity and Unit Price fields are populated.
7. Select the **Buy** check box.
8. Navigate to **Actions > Generate Purchase Orders**.
9. In the window that displays, click **OK**.

## Multi-Level Pegging Display

Navigate to **Multi Level Pegging Display**.

**Menu Path:** Production Management > Material Requirements Planning > General Operations > Multi Level Pegging Display

1. Navigate to the **Select > Part** sheet.

2. Enter **Mfg3** and hit the Process button.

The Supply and Demand information is retrieved for part Mfg3.

### Job Status Maintenance

Navigate to **Job Status Maintenance**.

**Menu Path:** Production Management > Job Management > General Operations > Job Status Maintenance

1. From the **Standard** toolbar, click the **Search** (binoculars) button.
2. Sort By Part
3. Starting at Mfg3.
4. Click **Search**.
5. Select the job created to satisfy MPS demand.
6. On the **List** sheet, select the **To Firm** check box.
7. Click the **Process** button.
8. Notice the job is now firm.

# Project Management

This lab reviews the project management flow in the Epicor application. Topics include WBS phase and milestone entry, costs and performance analysis, and progress monitoring of a project.

At the conclusion of this lab, you will be able to:

- Define basic project details.
- Create Work Breakdown Structure (WBS) phases.
- Assign related job and sales order to a project.
- Use the Build Project Analysis process to analyze project costs.

## System License Requirements

Modules/Licensing	Product Version
Project Management	10.2.300
Project Billing	10.2.300
Job Management	10.2.300
Order Management	10.2.300
Shipping/Receiving	10.2.300
Accounts Receivable	10.2.300

## Business Scenario

Your company designs and manufactures Titanium Brackets used in the car industry. You have received a request from Dalton Manufacturing to build a new Titanium Bracket for their gear boxes. As a result of this request you create a project to design and manufacture a prototype of this product.

## Set up Company Configuration

Use **Company Configuration** to configure project management processing.

Navigate to **Company Configuration**.

**Menu Path:** System Setup > Company/Site Maintenance > Company Configuration

1. Navigate to the **Modules > Sales > Order** sheet.
2. Select or verify the **Allow Project/WBS Phase to Be Defined** check box is selected.
3. Navigate to the **Modules > Services > Project Billing** sheet.
4. In the **Sales Order Line** pane, select or verify the **Allow Sales Order to Be Defined on Project/WBS Phase** check box is selected.
5. Click **Save**.
6. Navigate to the **Modules > Production > Job** sheet.
7. In the **Scheduling** pane, select the **Allow Scheduling Before Today** check box.
8. Click **Save**.

9. Exit Company Configuration.

## Create Sales Order

You have received an order from Dalton Manufacturing to build Titanium Bracket used in car industry.

Navigate to **Sales Order Entry**.

**Menu Path:** Sales Management > Order Management > General Operations > Order Entry

1. From the **New** menu, select **New Order**.
2. In the **Customer** field, enter **Dalton** and press **Tab**.
3. In the **PO** field, enter the last four digits of your phone number.
4. In the **Need By** field, select today's date.
5. Click **Save**.
6. Navigate to the **Lines > Detail** sheet.
7. From the **New** menu, select **New Line**.
8. In the **Part/Rev** field, enter part **Titanium Bracket** and press **Tab**.
9. In the **Order Quantity** field, enter **1**.
10. In the **Unit Price** field, enter **11,970.00**.

The unit price is calculated as follows:

**Burden Cost + Labor Cost + Material Cost + Markup = Unit Price**

Burden Cost	Labor Cost	Material Cost	Markup	Unit Price
4,000.00	4,000.00	1,500.00	26% (2,470.00)	11,970.00

- **Burden Cost Calculation** - 80 hours (Operation Production Standard) x **50.00** (Burden Rate) = **4,000.00**
- **Labor Cost Calculation** - 80 hours (Operation Production Standard) x **50.00** (Labor Rate) = **4,000.00**
- **Material Cost Calculation** - **1,500.00** (Material Unit Cost) x **1** (Qty/Parent) = **1,500.00**
- **Markup Percentage** - This is the percentage amount added to the calculated **Burden**, **Labor**, and

11. In the **Discount %** field, enter **0** and press **Tab**.
12. Click **Save**.
13. Navigate to the **Summary** sheet.
14. Record the sales order number \_\_\_\_\_.
15. Remain in Sales Order Entry.

## Create Job

A primary job is required on the project to allow the linked labor, burden, and material costs to roll into the total cost of the project. To use the WBS Phase Job feature, a primary job must be created on the project as a reference. The WBS Phase job then becomes a child of the primary job on the project itself.

In this task, use the **Order Job Wizard** to create and link a job to the previously entered sales order.

1. From the **Actions** menu, select **Order Job Wizard**.

The **Order Job Wizard** allows you to quickly create jobs for a sales order. The Order Job Wizard is only available on sales orders that have at least one line selected to be made direct.

2. In the **Order Lines** grid, select the following check boxes:

- Create Job
  - Get Details
  - Schedule Job
  - Release Job
3. Click the **Create Jobs** button.
  4. Record the job number \_\_\_\_\_.
  5. Exit the Order Job Wizard.
  6. Click **Save** and exit Sales Order Entry.

## Create Project

Use Project Entry to:

- Create Work Breakdown Structure (WBS) Phases.
- Create Checklist tasks and milestones.
- Assign related jobs, sales orders, purchase orders, and quotes to projects as needed.
- Use the Build Project Analysis process to analyze project costs and performance.

Navigate to **Project Entry**.

**Menu Path:** Service Management > Project Management > General Operations > Project Entry

1. From the **New** menu, select **New Project**.
2. In the **Project ID** field, enter **TitaniumBracket**.
3. In the **Description** field, enter **Titanium Bracket**.
4. In the **Start Date** field, select the date two weeks ago.

This is the date when the WBS phase begins. The project's duration is two weeks and it consists of one WBS phase. For the purpose of this lab, the project starts in the past and finishes today.

5. In the **Warehouse** field, select **Main**.
6. In the **Bin** field, enter **01-01-01** and press **Tab**.

The warehouse and bin combination are used as a stage point for the project. It is one way to separate the project's requirements from the inventory requirements. No entry is required for these fields; however, if a warehouse is selected, it becomes the receiving warehouse for project-related materials.

7. In the **End Date** field, select today's date.
8. In the **Sales Category** field, select **eCommerce**.
9. Click **Save**.

## Enter Project Contract

Select an Invoicing Method and define contract information.

1. Navigate to the **Contract > Detail** sheet.
2. In the **Customer** field, enter **Dalton** and press **Tab**.
3. In the **Project Level Invoicing Method** field, verify **Customer Shipment** displays.  
This is the default invoicing method used for this project. The Customer Shipment invoicing method indicates that the customer will be invoiced only once the Titanium Bracket is shipped.
4. In the **Total Contract Value** field, enter **11,970.00**.
5. In the **Contract Start Date** field, select the date two weeks ago.
6. Click **Save**.

## Add Job to Project

1. From the **Actions** menu, select **Add Job to Project**.
2. Search for and select the job created in the **Create Job** task.
3. Navigate to the **Related > Jobs** sheet.
4. In the **Jobs** grid, verify the project job displays.
5. Click **Save**.

## Create WBS Phase

1. Navigate to the **WBS Phases > Detail** sheet.
2. From the **New** menu, select **New WBS Phase**.
3. In the **WBS Phase ID** field, enter **TechDesign**.
4. In the **Description** field, enter **Technical Bracket Design**.
5. In the **Start Date** field, select the date two weeks ago.
6. In the **Due Date** field, select today's date.
7. In the **Duration** field, enter **80.00** and verify **Hours** displays.
8. Click **Save**.
9. Navigate to the **WBS Phases > WBS Phases Costs** sheet.

Costs for a WBS Phase are accumulated and rolled up to the main project job. Linked items, such as purchase orders and jobs that have costs, are included in the project roll-up for the WBS Phase costs.

10. In the **Budget** column, enter the following values:

Field	Data
Labor Hours	80.00
Burden Hours	80.00
Labor	4,000.00
Burden	4,000.00

Field	Data
Material	1,500.00

11. Click **Save**.
12. In the **Totals** field, verify **9,500.00** displays.
13. Navigate to the **WBS Phases > Invoice and Recognition** sheet.
14. In the **Invoicing Method** field, select **Customer Shipment**.  
The **Revenue Recognition** is not applicable in this course as no revenue will be recognized for this project.
15. Click **Save**.
16. In the **Order Number** field, enter the order created previously and press **Tab**.
17. In the **Line** field, enter **1** and press **Tab**.
18. To the **You are about to assign the Order Line to the Project. Continue?** message, click **Yes**.
19. Click **Save**.
20. Navigate to the **Related > Orders** sheet and verify the order displays in the **Orders** grid.

### Define Project Costs

Previously, you defined costs at the WBS phase level. Once you define costs for WBS phase(s) and link a job and a sales order to the project, you can view the project costs using the **Project Costs** sheet.

1. Navigate to the **Project Costs** sheet.
2. Select the **Roll Project Phase Budgets Costs to Project** check box.
3. Select the **Roll Project Phase Manual Estimate to Complete Values to Project** check box.
4. From the **Actions** menu, select **Project > Build Project Analysis**.  
The **Build Project Analysis** process displays.
5. On the **Standard** toolbar, click **Submit** and close the Build Project Analysis.
6. Verify the following values display:

Field	Budget Column	Estimated Column	Calculated CTC Column
Labor Hours	80.00	80.00	80.00
Burden Hours	80.00	80.00	80.00
Labor	4,000.00	4,000.00	4,000.00
Burden	4,000.00	4,000.00	4,000.00
Material	1,500.00	1,500.00	1,500.00
Totals	9,500.00	9,500.00	9,500.00

7. Click **Save**.

## Enter Project Milestone

Milestones are specific points within a project that help to measure the progress on the WBS Phases. In some cases, milestones can indicate a payment is due for a specific aspect of the project. For example, as each milestone is successfully reached, the customer is billed either a percentage of the entire project cost or simply a pre-defined amount agreed upon prior to the project.

1. Navigate to the **Milestones > Detail > Milestone** sheet.
2. From the **New** menu, select the **New Milestone**.
3. In the **Milestone ID** field, enter **Design**.
4. In the **Description** field, enter **Complete Design**.
5. Click **Save**.

In the tree view, under the **Milestones** node, the new milestone displays.

6. Minimize Project Entry.

## Issue Material (Project Processing)

Issue material to the job used to design and manufacture the Titanium Bracket.

Navigate to **Issue Material**.

**Menu Path:** Material Management > Inventory Management > General Operations > Issue Material

1. In the **Job** field, enter the job number created in the **Create Job** task and press **Tab**.
2. In the **Mtl** field, select **10**.
3. In the **From** pane, in the **Quantity** field, enter **1** and press **Tab**.
4. Click **OK**.
5. Exit Issue Material.

## Report Labor

Report labor against the job used to design and manufacture the Titanium Bracket.

Navigate to **Time and Expense Entry**.

**Menu Path:** Service Management > Project Management > General Operations > Time and Expense Entry

1. In the **Employee ID** field, enter **197** (John J Lewis) and press **Tab**.
  2. In the **Calendar**, select the date one week ago.
  3. From the **New** menu, select **New Time Detail**.
- The **Time > Daily Time > Detail > Detail** sheet displays.
4. In the **Job** field, enter the job created in **Create Job** task and press **Tab**.
  5. In the **Operation** field, select **10**.
  6. In the **Labor** pane, in the **Labor Hrs** and **Burden Hrs** fields, enter **40.00**.

Normally, a worker would report labor on daily basis. For the purpose of the course, report the first two weeks on the project (40 hours in total) at once.

7. Click **Save**.
8. Click the **Submit** button.
9. In the **Status** field, verify **Approved** displays.
10. Minimize Time and Expense Entry.

### Review Project Cost

Review project costs after you reported labor against the Titanium Bracket project job.

1. Maximize **Project Entry**.
2. Navigate to the **Project Costs** sheet.
3. From the **Actions** menu, select **Project > Build Project Analysis**.
4. Select the **Re-Generate Project Analysis** check box.
5. Click **Submit** and close the Build Project Analysis.
6. Review the **Actual** and **Calculated CTC** column values:

**Actual Costs** - These are costs based on what has been posted against the project's primary job.

Field	Data
Labor Hours	40.00 (this is the total of reported hours)
Burden Hours	40.00 (this is the total of reported hours)
Labor	2,000.00 (based on the employee payroll rate of \$50.00 (40h x \$50 = \$2,000.00))
Burden	2,000.00 (based on the burden rate of \$50.00 defined at the resource level (40h x \$50 = \$2,000.00))
Materials	1,500.00 (previously issued material at the unit cost of \$1,500.00)
Total	5,500.00

**Calculated CTC Costs** - The fields in this column display zero values because all the Budget/Estimated labor has been reported and the material consumed.

Field	Data
Labor Hours	40.00
Burden Hours	40.00
Labor	2,000.00
Burden	2,000.00
Materials	0.00 (the material has been consumed)
Total	4,000.00

7. Minimize Project Entry.

### Report Additional Labor

Report additional forty hours against the job used to build the Titanium Bracket.

Navigate to **Time and Expense Entry**.

**Menu Path:** Service Management > Project Management > General Operations > Time and Expense Entry

1. Maximize **Time and Expense Entry**.

2. In the **Calendar**, select today's date.
  3. From the **New** menu, select **New Time Detail**.
- The **Time > Daily Time > Detail > Detail** sheet displays.
4. In the **Job** field, enter the job created in the **Create Job** task and press **Tab**.
  5. In the **Operation** field, select **10**.
  6. In the **Labor Qty** field, enter **1**.
  7. In the Labor pane, in the **Labor Hrs** and **Burden Hrs** fields, enter **40.00**.
  8. Click **Save**.
  9. Click the **Submit** button.
  10. In the **Status** field, verify **Approved** displays.
  11. Exit Time and Expense Entry.

## Review Project Costs

Review the project costs after you reported additional forty hours of labor against the Titanium Bracket project job.

Navigate to **Project Entry**.

**Menu Path:** Service Management > Project Management > General Operations > Project Entry

1. Maximize **Project Entry**.
2. Navigate to the **Project Costs** sheet.
3. From the **Actions** menu, select **Project > Build Project Analysis**.
4. Select the **Re-Generate Project Analysis** check box.
5. Click **Submit** and close the Build Project Analysis.
6. Review the **Actual** and **Calculated CTC** column values:

### Actual Costs

Field	Data
Labor Hours	80.00 (this is the total of reported hours)
Burden Hours	80.00 (this is the total of reported hours)
Labor	4,000.00 (based on the employee payroll rate of \$50.00 (80h x \$50 = \$4,000.00))
Burden	4,000.00 (based on the burden rate of \$50.00 defined at the resource level (80h x \$50 = \$4,000.00))
Materials	1,500.00 (previously issued material)
Total	9,500.00

**Calculated CTC Costs** - The fields in this column display zero values because all the Budget/Estimated labor has been reported and the material consumed.

Field	Data
Labor Hours	0.00
Burden Hours	0.00
Labor	0.00

Field	Data
Burden	0.00
Materials	0.00
Total	0.00

7. Remain in Project Entry.

### Complete Milestone

You have just held the Technical Design meeting and can now complete the Complete Tech Design milestone and Design Meeting task. In this workshop, mark the milestone and task complete.

1. In the tree view, select the **Complete Design** milestone.
2. Navigate to the **Milestones > Detail > Milestone** sheet.
3. Select the **Complete** check box.
4. Click **Save**.
5. Minimize Project Entry.

### Ship Designed Part

You have now manufactured the Titanium Bracket. The next step is to ship the product to the customer.

Navigate to **Customer Shipment Entry**.

**Menu Path:** Material Management > Shipping / Receiving > General Operations > Customer Shipment Entry

1. From the **New** menu, select **New Pack**.
2. In the **Order Number** field, enter the previously recorded order number.
3. Click **Save**.
4. From the **New** menu, select **New Line**.  
The **Lines > Customer Shipment Entry > Detail** sheet displays.
5. In the **Order Number** field, enter the order number created in the **Create Order** task and press **Tab**.
6. In the **Line** field, enter **1** and press **Tab**.
7. In the **Rel** field, enter **1** and press **Tab**.
8. In the **From Manufacturing** pane, in the **Our Job Ship Qty** field, verify the value of **1** display.
9. In the **From Manufacturing** pane, in the **Job** field, verify the previously created job displays.
10. Navigate to the **Summary** sheet.
11. Select the **Shipped** check box.
12. In the **Status** field, verify the **SHIPPED** status displays.
13. Record the Pack ID number \_\_\_\_\_.
14. Click **Save** and exit Customer Shipment Entry.

## Invoice Customer

Previously, you defined the Customer Shipment invoicing method for the Technical Bracket Design WBS phase. This invoicing method indicates that once the Titanium Bracket is shipped, the next step is to invoice the customer.

Navigate to **AR Invoice Entry**.

**Menu Path:** Financial Management > Accounts Receivable > General Operations > Invoice Entry

1. From the **New** menu, select **New Group**.
2. In the **Group** field, enter **Dal**.
3. Click **Save**.
4. From the **Actions** menu, select **Get > Shipments**.  
The **Get Shipments** window displays.
5. Click the **Manual Selection** button.  
The **Packing Slip Browse** window displays.
6. In the **Packing Slip Browse** window, select the previously recorded Pack ID and click **OK**.
7. To the **Are you sure?** message, click **Yes**.
8. To the **1 Invoices created** message, click **OK**.
9. Navigate to the **Line > Detail** sheet.
10. Verify the following values display:

Field	Data
Line	1
Order Quantity	1
Total	11,970.00

Tax may be added to the Total value. If this is the case, the total value may increase. The tax value displays in the **Tax** field.

11. Navigate to the **Summary** sheet.
12. In the **Subtotal** field, verify **11,970.00** displays.
13. In the **Invoice Amount** field, verify **11,970.00** displays.
14. From the **Actions** menu, select **Group > Print Invoices**.
15. The **Print Group** window displays.
16. Click **Print Preview** and review the invoice.
17. Close the AR Invoice Form and exit the Print Group window.
18. From the **Actions** menu, select **Group > Post**.  
The AR Invoice Post Process window displays.
19. Click **Submit** and exit AR Invoice Post Process window.
20. Exit AR Invoice Entry.

## Complete Project

You have manufactured the Titanium Bracket, shipped the product, and invoiced the customer. The last step in the process is to mark the Technical Bracket Design WBS phase complete and close the project.

Navigate to **Project Entry**.

**Menu Path:** Service Management > Project Management > General Operations > Project Entry

1. Maximize **Project Entry**.
2. Navigate to the **WBS Phases > Detail** sheet.
3. In the **Status** field, verify the **Completed** status displays.
4. In the **Date Complete** field, verify today's date displays.
5. Click **Save**.

In the tree view, under the **Phases** node, a red checkmark displays.

6. From the **Actions** menu, select **Project > Close Project**.

The **Do you want to close the Project?** message displays.

7. To the message, click **Yes**.

The **Project is Closed** message displays.

8. To the message, click **OK**.

9. Exit Project Entry.

Congratulations! You have successfully completed the **Project Management** lab.

# Prototyping UI Customizations and Building Integrations for ERP Using Visual Studio

This session will review leveraging Visual Studio tools to prototype and test Epicor 10 UI customizations. It will cover adding the required assembly references to a Visual Studio solution needed to build customization prototypes and move code from Visual Studio to the customization layer.

At the conclusion of this lab, you will be able to:

- Identify the required assembly references needed to prototype Epicor Customizations using Visual Studio
- Initialize an Epicor Session from within a Visual Studio solution
- Initialize a Form Transaction for an Epicor UI Form
- Use the Customization wizard to create a customization template
- Use Visual Studio code snippets to add pre-defined, reusable code blocks into program
- Step through code blocks using the Visual Studio debugger
- Move code snippets from Epicor UI customizations into Visual Studio solutions
- Work directly with the business object implementation
- Work with REST

## Review the Visual Studio EpiForm Template

There is a Visual Studio template installed on the Insights image with all the required assembly references and configurations needed to create an instance of the Sales Order Form transaction. Although the actual Sales Order Form can't be rendered without the SDK and an Infragistics license, you can still interact with the UI adapters and prototype your custom code using Visual Studio. The workshop that follows this one will demonstrate that.

## Build a Sales Order Entry Test Harness



1. Open the **ERP 10 Tools** folder  on the desktop, then open **Visual Studio 2015**.
2. From **File > New > Project**, select the **Epicor** node under **Visual C#**, select the **Epicor Form Template**.
3. Set a break point on line **74** and press **F5** to run the program.
4. Use **F10** to step through the lines of code and observe the contents of the return dataset **svc.QueryResults**.

## Review Customization to Country Maintenance

We will review a customization made to Country maintenance that allows the setup and maintenance of state codes by country. This data will be used to add drop downs to the forms using a pre-defined list of state codes based on the country code selected.

## Open the Country Maintenance Customization

1. Enable Developer Mode. Click the up arrow at the bottom of the application window. The application bar expands.
2. Click the Developer Mode icon.
3. Navigate to Country Maintenance.

**Menu Path:** Sales Management > Order Management > Setup > Country

4. Import the **StateCodes** customization from:  
C:\Insights19\Extended Ed\CMZ\_BPM\_Procs\StateCodes then select the **StateCodes** customization.
5. Click the **Country...** button. The **Country Search** window displays. Click **Search**. In the search results, click **Select All** and click **OK**.
6. Select one of the countries from the tree view and navigate to the **State Codes** sheet.
7. Navigate to the **State Codes** sheet.
8. Open the StateCodes spreadsheet located here:
9. **C:\Insights19\Extended Ed\CMZ\_BPM\_Procs\StateCodes\StateCode List.xlsx**
10. Find the **State Codes** data for the selected country in the spread sheet, **copy the two columns** of data and Paste Insert into the **State Codes** grid in Country Maintenance.
11. Repeat this for a few countries you wish to test with.
12. Save and close Country Maintenance

These are the Country numbers that are setup in Epicor for Company EPIC06.

CountryNum	Description
11	Australia
4	Canada
6	China
12	France
8	Germany
9	Japan
3	Mexico
10	New Zealand
7	Scotland
2	Switzerland
5	United Kingdom
1	USA

## Sales Order Entry OTS Customization

We will review the client trace and pre-built customization related to adding a new State Codes dropdown to the OTS tab of Sales Order Entry.

## Trace Adding a New Sales Order and Setting OTS

1. Open the trace file in the following location:  
C:\Insights19\Extended Ed\CMZ\_BPM\_Procs\OTSStateCodes\TraceOTS.xml
2. Review the method calls and associated parameters.

## Test the GetStateCodes Method Using Visual Studio

This will demonstrate using Visual Studio to build out the method code and test it outside of the Epicor UI.

1. Open the OTSStateCodes Visual Studio solution located here:  
C:\Insights19\Extended Ed\CMZ\_BPM\_Procs\OTSStateCodes\Visual Studio\OTSStateCodes.sln
2. From the **Solution Explorer** tree view, right click on the **EpiForm.cs** file and select **View Code**.
3. In the form constructor, on line **74**, type in the following method call:  
`GetStateCodes(1);`
4. Inside the **GetStateCodes** method, add a break point to line **132**.
5. Press **F5** and when the breakpoint activates, use **F10** to step through the method call and observe the variable values and results from the adapter search.

## Prepare the Customization Copy and Paste from Visual Studio

1. Open the **Sales Order Entry** form in developer mode and import the customization located here:  
C:\Insights19\Extended Ed\CMZ\_BPM\_Procs\OTSStateCodes\Visual Studio
2. Select the **OTSStateCodes** customization and launch the **Sales Order Entry** form.
3. Open the customization layer.

```
{
 #region Script
 // ** Wizard Insert Location - Do Not Remove 'Begin/End Wizard Added Module
```

4. There is a **#region** Script statement following the first curly brace for the Script class declaration.

```
}
```

```
#endregion
```

```
}
```

There is a corresponding **#endregion** statement above the last curly brace in the script editor.

5. Collapse the Script Code region and delete it.
6. Return to Visual Studio, collapse the region and copy the collapsed line.
7. Return to the customization and paste the code from Visual Studio into custom code script editor.
8. **Test** the code, **Save**, relaunch and test the customization.

## Work with the BPM Template

There is a Visual Studio template installed on the Insights image with all the required assembly references and configurations needed to create an instance of Db context that will allow you to proto type LINQ code using Visual Studio that can then be pasted into the c# expression editor inside of BPM's.

## Build a BPM Test Harness

1. From File > New > Project, select the Epicor node under Visual C#, select the Epi BPM Template 10.2.300.
2. From the Solution Explorer, right click on the Program.cs node and select View Code.
3. Set a break point on line 80 and press F5 to run the program.
4. Execute lines 80 and 84 by pressing F10 and review the value returned to the EmialAddress variable from each LINQ statement.
5. Hover over the Db variable and notice it holds all the tables sets for the ERP10 database.

## Work with the Business Object Implementation

This section reviews how to work directly with the Epicor business object implementations in a Visual Studio solution. This will read data from an external website database, create sales orders and update the order information from Epicor back to the external website database.

## Review the Weborders Visual Studio Console Application

1. Navigate to the following location and double click on the .sql script file to open it in SSMS. **C:\Insights19\Lab\CMZ Using VS\WebOrders\WebOrdersQuery.sql**
2. Execute the script and review the data. This will be the data we will be reading into our new console application.
3. Minimize **SSMS**.
4. Open the **WebOrders** solution located here:  
**C:\Insights19\Lab\CMZ Using VS\WebOrders\WebOrders.sln**
5. Review the **CreateEpiOrder** method.

## Work with REST Instead of BO Implementations

1. Open the **WebOrders** solution located here: **C:\Insights19\Lab\CMZ Using VS\WebOrders\_REST\WebOrders.sln**
2. There is a breakpoint set inside the **Program** class constructor. Press **F5** to start the program, then **F10** to step through the **EpicorRestHelper.EpicorConnectionInfo** method and review the **conInfo** variable. Press **F5** to continue.
3. There is already a breakpoint set inside the **CreateEpiOrder** method. Press **F11** to step into the **CreateOrderHed** method then **F10** to step through the **\_myEpicorRestHelper.GenericRequest** method and review the contents of the **resultSt** variable.
4. Press **F5** to execute the remaining code, return to SSMS and execute the SQL query and review the updated data.

# Scheduling Tips, Tricks and Expert Advice

As a scheduler, you juggle time, tasks, and resources on a daily basis. In this lab you will learn to interpret the various scheduling logs to evaluate what is happening behind the scenes during scheduling processes, the same way we share some tips and tricks from the experts on how to get the best results from the scheduling boards.

At the conclusion of this lab, you will be able to:

- Create jobs with operations and resources.
- Execute scheduling in multiple ways
- Utilize the Minimize WIP feature
- Use and customize the scheduling boards.
- Use scheduling logs for troubleshooting purposes

## System Requirements

Modules/Licensing	Product Version
Production, Advanced Scheduling	10.1

## Business Flow Requirements

Resource Groups, Resources and Operations have been created for your convenience. The Generate Shop Capacity Process has been executed to update Shop Capacity after adding resources.

**User name / password: manager/manager**

## Workshop – Gaps, Minimize WIP and Board Features

### Resource Groups

Resource groups contain one or more related resources. Use resource groups to define specific work areas within your manufacturing center. A resource group can contain the machines used for a specific function, any tools used to measure parts manufactured from these machines, and the operators who run both the machines and tools.

Navigate to **Resource Group**.

**Menu Path:** Production Management > Job Management > Setup > Resource Group

1. Review or Create the below resource groups and resources:

Field	DATA
Resource Group	RG1-Sch
Description	Resource Group #1
Department	Assembly Department
Input Warehouse	Main
In Bin	00-00-00
Output Warehouse	Main
Out Bin	00-00-00

<b>Field</b>	<b>DATA</b>
Resource	R1-Sch
Description	Resource #1
Calendar	D5H8
Finite Capacity	Checked
Input Warehouse	Main
In Bin	00-00-00
Output Warehouse	Main
Out Bin	00-00-00

<b>Field</b>	<b>DATA</b>
Resource Group	RG2-Sch
Description	Resource Group #2
Department	Assembly Department
Input Warehouse	Main
In Bin	00-00-00
Output Warehouse	Main
Out Bin	00-00-00

<b>Field</b>	<b>DATA</b>
Resource	R2-Sch
Description	Resource #2
Calendar	D5H8
Finite Capacity	Checked
Input Warehouse	Main
In Bin	00-00-00
Output Warehouse	Main
Out Bin	00-00-00

## Operations

Operations define the processes your company uses to manufacture product. They are manufacturing tasks like Welding, Painting, Cutting, Stamping, Bending, and so on.

Navigate to **Operation Maintenance**.

**Menu Path:** Production Management > Job Management > Setup > Operation

Review or create the following operations and resource group requirements:

<b>Field</b>	<b>DATA</b>
Operation	OP1-Sch

Field	DATA
Description	Operation #1
Resource Group Requirement	RG1-Sch

Field	DATA
Operation	OP2-Sch
Description	Operation #2
Resource Group Requirement	RG2-Sch

### Creating and Scheduling Jobs

Job heading information, material, operations, and assembly information are linked to each job. Once you are satisfied with a job's manufacturing process, you can schedule the job, so it is placed in the manufacturing queue at once.

Navigate to **Job Entry**.

**Menu Path:** Production Management > Job Management > General Operations > Job Entry

1. Click the **File / New / New Job** menu.
2. Enter **SCH1** in the **Job Number**.
3. Use the following data:

Field	DATA
Part	001MP
Req by	05/24/2019

4. Click **Save**.
5. Click the **File / New / New Demand Link / Make To Stock** menu.
6. Type **100** in Quantity field.
7. Click **Save**.
8. On the tree, right-click **Operations** and click **Add Operation**.
9. Select **Operation #1 (OP1-Sch)** from the drop-down box.
10. For **Production Standard**, enter **1 Pieces / Hour**.
11. Click **Save**.
12. Go to the Job sheet and click the **Released** check box.
13. Schedule **Forward, Finite Capacity**.
14. Click **OK**.
15. Click the **File / New / New Job** menu.
16. Enter **SCH2** in the **Job Number** Field
17. Use the following data:

Field	DATA
Part	001MP
Req by	05/24/2019

18. Click **Save**.
19. Click the **File / New / New Demand Link / Make To Stock** menu.
20. In the **Quantity** field, enter **50**.
21. Click **Save**.
22. On the tree, right-click **Operations** and click **Add Operation**.
23. Select **Operation #2 (OP2-Sch)** from the drop-down box.
24. For **Production Standard**, enter **1 Pieces / Hour**.
25. Click **Save**.
26. On the tree, right-click at **Operations** and click **Add Operation**.
27. Select **Operation #1 (OP1-Sch)** from the drop-down box.
28. For **Production Standard**, enter **1 Pieces / Hour**.
29. Click **Save**.
30. Go to the Job sheet and click the **Released** check box.
31. Schedule **Forward, Finite Capacity**.
32. Click **OK**.

### Review Job Scheduling Board

This board is to review and modify the schedule for one or more jobs but most of the features and functions found in this board can be found in every scheduling board.

Navigate to **Job Scheduling Board**.

**Menu Path:** Production Management > Scheduling > General Operations > Job Scheduling Board

1. In the **Job** text box, **enter SCH1 and then SCH2**, the job numbers you created in the previous workshop.
2. Click the Schedule sheet.  
You will see a Gap in the second job due to the **OP1-Sch** operation being Finite.
3. **Do not close**, just minimize the Scheduling Board for the next workshop.

### Minimize WIP

To eliminate or minimize this gap we can use **Minimize WIP** option.

1. Navigate .back to Job Entry to Job SCH2
2. Actions > Schedule > Job Scheduling
3. Schedule: Forward
4. Finite Capacity: Yes

5. Minimize WIP: Yes
6. Maximize the Job Scheduling Board and notice the changes.
7. Re-Schedule the Job SCH2 a couple of times to familiarize yourself with the various scheduling options.

### Workshop – Scheduling Debug Log

This log is for troubleshooting scheduling issues. The log shows information such as the parameters sent to the scheduling engine, the version of the program, the processing and times of each operation that is scheduled, resources, resource groups, and capabilities. You can use the information in this log to diagnose scheduling problems.

Navigate to **Company Configuration**.

**Menu Path:** System Setup > Company/Site Maintenance > Company Configuration

1. Go to **Modules / Production / Job** sheet.
2. Review the **Enable Scheduling Debug Log and Include Extra Details** check boxes are set to true.
3. Click **Save**.
4. Go to **C:/EpicorData/Companies/EPIC06/Log/MANGER** folder.

**Note:** You can review which path the ERP uses on System Agent Maintenance.

5. Find a log for **Job SCH2** and open it.
6. Look for **Version of the Scheduling Engine**, which is very important when running it or testing a Hot Fix.
7. Review parameters used like **Ignore Material Constraints, Finite, Scheduling in the Past, Backward or Forward**, and so on.

# Simplifying Complex Order Items with the Product Configurator

This course provides an overview of the Epicor ERP Version 10.1 Product Configurator.

Upon successful completion of this lab, you will be able to:

- Enter a configured sales order
- Process a change order
- Update a Lookup Table
- Create jobs from the sales order
- Find and examine the MTO Jobs

## Training Environment

The correct environment for this training at Insights 2019 is:

- Insights 2019 image
- Company: EPIC06, Epicor Education
- SITE: Main

## Flow for THIS Lab

This lab is based on a configurator that was built during an Extended Education class presented earlier in the week. In order to complete this Lab, you will duplicate a configured part, which you will then use for the rest of this lab.

### Classroom Prep – Copy a Configured Part

To prepare for the rest of this lab, we all need to the next two mini-labs This will create a copy for us to use.

#### Workshop 1: Duplicate a Part:

1. Menu Path: Sales Management > Order Management > Setup > Part
2. Load the part:  
Part: **SUB-Restart5** then press **<tab key>**.
3. Duplicate the part:
  - a. Description: Submarine Sandwich Configurator
  - b. Choose Menu: Actions > Duplicate...
  - c. In the Part field enter: "Sandwich"
  - d. In the Description field, enter "Configurable Sandwich"
  - e. Configurator Mode: "Create New Configurator"
  - f. Configurator ID: "Sandwich"

- g. Configurator Type: "Product Configurator"
  - h. Description: "New Sandwich Configurator"
  - i. Press OK button.
4. **OBSERVE** the following (make no changes):
- a. Type is Manufactured.
  - b. This is a NON-STOCK, Quantity Bearing part.
  - c. Click on the "Revisions" tab.
    - It is marked as Configurable with a Configurator ID.
    - It is NOT APPROVED.
5. Close Part Maintenance.
6. Choose File/Exit.

### **Workshop 2: Approve the Configurator:**

1. Menu Path: Sales Management > Configurator Management > General Operations > Configurator Entry
2. Load the part:
  - a. Configurator ID: **Sandwich** then press **<Tab>**.
  - b. Make sure the "**Synchronize Revision Approval**" checkbox is checked.
  - c. Click the **Approved** checkbox.
  - d. Enter the "**Description of changes**": "**Approving new configurator**".
  - e. Press **OK** button.
  - f. Choose **File > Exit**.
3. End of workshop 1.

At this point, we have a fully approved product configurator which we will be able to use for the balance of the lab.

### **Overview**

Basic overview of Product Configurator creation:

- Product Configurator Creation
- Product Configurator Design
- Product Configurator User Define Methods (UDMethods)
- Lookup Tables
- Product Configurator Document Rules
- Product Configurator Method Rules
- Configurator Testing

## What is the purpose of the Product Configurator

The purpose of the Product Configurator is to provide a series of Questions and possible answers which can then be presented to a user when placing an order for a configured product. These questions and answers are then further used to define the manufacturing method (BOM and Routing). The result will be a priced sales order, and manufacturing job to manufacture a product that can be delivered to the customer.

With our sample product configurator, we offer over **100,000 variations** of configurations, yet we only must build one BOM/Configurator to process these variations. This is how we can “Simplify” the order entry process without creating 100,000 different BOMs and Part Numbers.

## Why are there multiple Product Configurator programs?

As of Epicor 10, the programs were separated into SIX separate and distinct processes in order to make development of a new configuration easier. The configurator programs help you define and design a Q&A session which will ask a series of questions.

The answers to these questions will then be used to define the BOM & Routing,

These answers can also modify the Quote/Sales order presentation on the customer acknowledgement, as well as defining the unit price on the order.

The six programs include:

- **Configurator Entry** – This program maintains multiple features:
  - Create a new configurator.
  - Define where & how the configurator can be utilized.
  - Define if and how part numbers are generated with the configurator.
  - Define the Document rules (how the source document will be modified) including defining part Description and sales price.
- **Configurator Designer** – This program designs the configurator session:
  - How many pages the configurator session will have.
  - What the questions are that need to be answered.
  - How the questions will be displayed to the user.

## Configurator Method Rules

- This is where you tie the Configurator Questions and Answers to each individual BOM Material or BOO Operation inside the MFG method.

## User Defined Methods

- UDMMethods are small reusable mini-programs that can be called from Configurator Entry, Configurator Designer, or Configurator Method Rules.
- These mini-programs can be as simple as one line of code or can be complex calculations and data extraction from the database.

## Lookup Tables

- Lookup Tables can be used to store many types of source data for your configurator including listings of options, prices, descriptions, validations, and so on.

- **Image Table**

- Images can be imported and stored within the Epicor ERP application, and then easily displayed within the Configurator.

Other programs needed include: There are additional programs needed to complete a product configurator. These base programs include:

- **Part Entry** – Where you create a new configured part and a new revision. This is also where you tie the configurator to the part revision.
- **Engineering Workbench** – Where you create the BOM for the configured part.

Additional programs that will be used for TESTING the configurator include:

- **Order Entry** – For testing the Document rules.
- **Job Entry** – For testing the Method rules.

### **What are the Typical steps to create a new product configurator?**

There is not “one answer” to this question. In fact, development of a configurator tends to loop back through these programs as edits and corrections are made. The “General” steps are:

1. Configurator Entry: Create a new configurator
2. Configurator Designer: Design the screen Q&A
3. Part Entry:
  - a. Define a Part Number.
  - b. Define a revision – Assign to Configurator created in step 1.
  - c. Check-out revision to the Engineering Workbench.
4. Engineering Workbench:
  - a. Define BOO/BOM for the configured part.
  - b. Approve and check in revision.
5. Configurator Method Rules
  - a. Apply Keep When rules.
  - b. Apply additional configurator rules to modify materials, quantities, etc.
6. Configurator Entry:
  - a. Define Part Creation rules.
  - b. Define Method Rules.
7. **As needed** - The following will be defined as needed above. This becomes an iterative process in creating these:
  - Configurator Lookup Tables
  - Configurator UDMETHODS
  - Images

**Tip!** Some of the steps above can be done out of sequence... while others must be done in order. For example, you MUST create the configurator first before any of the following steps. But sometimes the Part/Part Revision and BOM may already be created before the configurator.

### Classroom Example – Marina’s Sub-Shack

For the balance of this education, we will be using a previously built product configurator. This configurator will be a Submarine Sandwich configurator.

Our company is Marina’s Sub Shack. We sell Submarine Sandwiches by the inch and we have a long tunnel oven where we can make really (really unrealistic) long sandwiches.

Our sales engineers at **Marina’s Sub-Shack** designed the product configurator to do the following:

1. Ask questions about the customer’s desired **Submarine Sandwich**.
2. We will allow the customers to purchase:
  - Up to TWO main ingredients.
  - Select one type of cheese.
  - Select the type of bread.
  - Specify the serving size (in inches).
  - Specify the number of servings.
3. The configurator outputs include:
  - A Description of what the customer ordered:
    - Description of all options chosen.
    - Number of calories per serving.
  - A purchase price for the entire sandwich.
4. The configurator will also:
  - Define the BOM and ROUTING in the JOB.
  - In our example, we will did not build this to support QUOTES, but it could have done this as well, making fully designed BOM/Routing inside the quote.

### To SIMPLIFY our world, we do crazy inventory control:

1. Sell by the inch.
2. All ingredients are ALWAYS One Ounce per inch (Unless doubled).
3. Bread is stocked by the inch.

### For OPERATIONS:

1. We calculate our time using “Operations per Minute”.
2. An “operation” will either be “Inches” or “Cuts”.
3. Example:
  - Our Assembly operation is 20 ops (inches) per minute.

- Our baking operation is 60 ops (inches) per minute.
- Our “Cutting” operation is set for 13 cuts per minute.
- All we need to specify is the number of inches, or number of cuts in the operation, and the system will calculate the total time need.

## Configurator Data – Edit the Source Data

### Workshop 3: Lookup Table Maintenance

To save time (and eliminate lots of data entry) we have already created a baseline lookup table for our example. BUT, as stated in the requirements, we need to provide a CALORIE calculation in our configurator. Our previous lookup table had no this information.

In this workshop, we will OPEN the lookup table, ADD a new column, and then fill in the values needed. This should give adequate experience for future tables.

**Instructions:** Click on each field listed below, and populate the Input Parameters specified:

1. **Menu Path:** Sales Management > Configurator maintenance > Setup > Configurator Lookup Table
2. Search for and open the lookup table called **MSS\_Options**.
3. **Click on the Details tab** to examine the current content. You should find a table that looks like this the following table. Note how it has a price for each possible option, but there is no column to hold Calories.

Lookup Table Maintenance				
		Lookup Table	List	Details
		PartNumber	PricePerInch	
▶	MSS-Beef		0.34	
	MSS-Chicken		0.40	
	MSS-Pastrami		0.50	
	MSS-Turkey		0.25	
	MSS-Ham		0.25	
	MSS-Cheddar		0.30	
	MSS-SwissChees		0.28	
	MSS-American		0.22	
	MSS-WhiteBread		0.35	
	MSS-WWBBread		0.35	
	MSS-SDBBread		0.38	
	MSS-GlutenFree		0.50	
	MSS-Olives		0.20	
	MSS-Lettice		0.10	
	MSS-Peppers		0.15	
	MSS-Tomato		0.18	

4. Choose the **File/New/New Column** option in the menu so that we can add a new column. This will take you back to the Lookup Table tab automatically.
  - a. Column Label: **CaloriesPerInch**
  - b. Value Type: **Decimal**
  - c. Display Format: **3,0** (three comma zero)
5. Press **Save**.
6. Click on the Details tab.

7. Fill in the **Calories** using the following table:

<b>Part Number</b>	<b>PricePerInch</b>	<b>CaloriesPerInch</b>
MSS-Beef	0.34	<b>36</b>
MSS-Chicken	0.4	<b>24</b>
MSS-Pastrami	0.5	<b>48</b>
MSS-Turkey	0.25	<b>14</b>
MSS-Ham	0.25	<b>15</b>
MSS-Cheddar	0.3	<b>56</b>
MSS-SwissCheese	0.28	<b>53</b>
MSS-American	0.22	<b>52</b>
MSS-WhiteBread	0.35	<b>20</b>
MSS-WWBread	0.35	<b>18</b>
MSS-SDBread	0.38	<b>14</b>
MSS-GlutenFree	0.5	<b>22</b>
MSS-Olives	0.2	<b>20</b>
MSS-Lettice	0.1	<b>2</b>
MSS-Peppers	0.15	<b>3</b>
MSS-Tomato	0.18	<b>2</b>

8. Press Save.
9. Choose File > Exist.
10. End of workshop 3.

### Configured Part in Action

To fully demonstrate the usefulness of the product configurator, we will now create several sales order lines. We will then create jobs for each sales order line and examine the JOB to see the individual BOMs that were created.

As described earlier, the product configurator should do several tasks:

1. For **SALES**:
  - Allow the easy entry of a configured item.
  - Create a customer friendly sales order description.
  - Define the price.
2. For **PRODUCTION**:
  - Build a BOM & BOO Routing.

### Workshop 4: Sales Order Demonstration

**Scenario:** Our customer Addison has just ordered a special Sandwich. They want to have 3-inch servings of a Toasted Beef and Cheddar sandwich on White bread, large enough to feed 13 people. They gave us **PO # 2301**.

1. Menu Path: Sales Management > Order Management > General Operations > Order Entry
2. Create a new order:
  - a. Choose menu File > New > New Order.

- b. Customer: "ADDISON".
  - c. PO: 2301
  - d. Need By: Enter today's date.
  - e. Ship by: Enter today's date.
  - f. Press <Save>.
3. Add a line item to the order:
- a. Click on **Lines** tab at the top of the screen.
  - b. Choose Menu **File > New > New Line**.
  - c. Enter **Part/Rev... Sandwich** then press <TAB>.
  - d. Order Quantity **1** (one) into the **Quantity** field.
  - e. Press **Save**.

We are only selling ONE sandwich that will feed 13 people... the SIZE of the sandwich will come during the configuration session.

4. Press the **Configure** button (to the right of the **Part Number** field).

**Note:** The FIRST time we run the configurator, it will take longer than any other time. This is because it is compiling the new screen. After the first time, the wait will not be if you see here.

5. Enter the Configuration Data:
- a. Submarine Name: Beef & Cheese
  - b. Type of Bread: White
  - c. Number of Servings: 13
  - d. Serving Size: 3 inch
  - e. Toasted: Select the checkbox
  - f. Ingredient 1: Sliced Beef
  - g. Ingredient 2: (leave blank)
  - h. Cheese: Choose Cheddar Cheese
  - i. Special Instructions: (leave blank)
  - j. Click the "Calculate Totals" at the top.
  - k. OBSERVE:
    - The full description that is created.
    - The total price.
    - The total length.
    - The number of calories per serving.
  - l. Press **Save**.
6. **OBSERVE** the sales order:
- a. Our sales order now has now been changed:

- The Part Number says: “Beef & Cheese”.
  - The Description contains the details of the order.
  - The price has been updated.
7. End of workshop 4.

## Workshop 5: CHANGE ORDER REQUEST

**Scenario:** Addison has called back and asked for a change to their previous order. They would like to decrease the previous version but add a new vegetarian sandwich. Since we have not yet created the job for the order, we can change this configuration.

**Note:** If we already had a job created, we would need to make sure that the kitchen knows about the change.

For their original order, they want to reduce the number of servings to 11, but they want double meat. The second line will be 5 additional 4-inch servings on Gluten free bread, NOT toasted.

1. **Menu Path:** Sales Management > Order Management > General Operations > Order Entry
2. Edit Line 1:
  - a. Go to line 1.
  - b. Click on “**Configure**” button.
  - c. Change the number of servings to **11**.
  - d. Click “**Double Qty**” next to ingredient 1.
  - e. Click “**Calculate Totals**” button.
  - f. Press **Save**.
3. Add line 2:
  - a. Choose File > New > New Line.
  - b. Enter Part/Rev... Sandwich then press <TAB>.
  - c. Order Quantity 1 (one) into the Quantity field.
  - d. Press Save.
4. Enter the Configuration Data:
  - a. Press the **Configure** button.
  - b. Submarine Name: **Vegi**
  - c. Type of Bread: **Gluten Free**
  - d. Number of Servings: **5**
  - e. Serving Size: **4 inch**
  - f. Ingredient 1: **Tomatoes, Sliced**
  - g. Ingredient 2: **Lettuce**
  - h. Cheese: Choose **No Cheese**
  - i. Special Instructions: **Double Secret Sauce**
  - j. Click the “**Calculate Totals**” at the top.

- k. Press **Save**.
5. End of workshop 5.

### **Job Creation & Examination**

It is finally time to manufacture (assemble) the order. To do this, we will create JOBS. Each job will specify the amount of ingredients, as well as the amount of labor required to finish the product.

In some environments, companies have MRP, and if we waited for MRP to run, the system would automatically create the jobs for us. But since we have an immediate request, we will create the jobs manually using the Order Job Wizard.

### **Workshop 6: Creation of Job**

1. (Continued from above).
2. In **Sales Order Entry**, choose **Actions > Order Job Wizard**.
3. Select the following check boxes:
  - a. Select All
  - b. Get All Details
  - c. Schedule All
  - d. Release All
4. Press Create Jobs button.
5. Close the Order Job Wizard.
6. End of workshop 6.

There are now TWO make to order (MTO) jobs. Both are scheduled and ready to be made... but to see the results, we need to find those jobs. To do this we will find the job link inside the sales order release.

### **Workshop 7: Examine the jobs**

1. (Continued from above).
2. In **Sales Order Entry**, click on the **Releases** tab, then the **Job** tab.
3. Make sure you are on **line 1**.
4. Press the **Retrieve** button.
5. Right-click on the **Job** number that is shown in the list and select **Open With > Job Tracker**.
6. Examine the **Operations & Materials**:
  - a. Operations should include the **Assy**, **Bake**, and **Cut** operations.
  - b. Materials should include **White Bread**, **Cheddar**, and **Beef**.
  - c. **Quantities** of materials should be amount required to make the order as specified.
7. Close the Job Tracker.
8. Back in the sales order, change to line 2.
9. Repeat steps 4 - 5 above.

10. Examine the **Operations & Materials** for the second job:
  - a. Operations should include the **Assy** and **Cut** operations. The **Bake** operation is not included.
  - b. Materials should include **Gluten Free Bread**, **Lettuce**, and **Tomatoes**.
  - c. **Quantities** of materials should be amount required to make the order as specified.
11. End of workshop 6.

# Tailoring and Tuning Your Active Home Page, Powered by Epicor Kinetic Design

Epicor Kinetic Design is driving the future of user experience for enterprise software. In our latest release, we applied Kinetic Design principles to reimagining the Active Home Page. Join us as we show you how to tailor and tune your Epicor ERP Active Home Page, so your teams have the right information at their fingertips. In this hands-on lab, we will explore how to add widgets for Epicor Data Discovery (EDD) and BAQs, and how you can share these with your teams.

At the conclusion of this lab, you will be able to:

- Identify elements available on the Active Home Page.
- Personalize the Active Home Page by adding:
  - Layouts
  - Tabs
  - Widgets
- Export, Import, and Publish Layouts

## System Requirements

Modules/Licensing	Product Version
Epicor ERP	10.2.300

## Business Flow Requirements

No application setup is needed to implement this functionality other than access to the Epicor application and publishing/editing rights for the Home Page Layouts.

## Login to Epicor ERP

You can now switch between three modes that control the visual design, user interaction, and navigational aspect of the application – the **Modern Shell Menu**, **Classic Menu**, and **Active Home Page** styles. Select the mode you would like to work with at the time of login.

- **Classic Style Menu** – The original interface style used for navigating the Epicor application. This interface has a starting Main Menu with a tree view you expand for selecting programs.
- **Modern Shell Style Menu** – Enhanced menu using the Home Page as your starting point where you can place favorite Epicor programs, application shortcuts, documents or pictures.
- **Active Home Page** – Redesigned home page view. New role based visual experience for users. Displays charts and graphs and can embed other web URL's into the home screen, providing key performance indicators, analytics and quick access to functionality focused for each user role.

## Login and Review the Active Home Page

Login using the Active Home Page:

1. On your Desktop, double-click the **ERP10** icon.
2. In the **User name** field, enter **epicor**, and then press **Tab**.
3. In the **Password** field, enter **epicor**.
4. Clear the **Classic Style** check box.
5. Select the **Active Home Page** check box and press **Enter**.

## Explore the Active Home Page

1. Maximize the Epicor Home Page to fit your screen.
2. Review the menu options on the **User Context menu** (upper right menu bar):
  - Search (Magnifying Glass icon)
  - User ID, Company/Site (System Manager, Epicor Education/Main)
  - Knowledge On Demand videos (Play button)
  - Help (Question mark)
    - Epicor Learning Center
    - Education Courses
  - Actions (Three dots (**More** button))
3. Identify the options from the User ID (**Epicor System Admin**) drop-down menu.
4. Review the menu options on the left menu bar:
  - Slider (Three-lines)
  - Main Menu (Squared grid)
  - Favorites (Heart)
  - Recents (Round Clock)
  - Epicor Data Discovery (Geometric squares figure)
  - Social (Chat bubble)

## Add Favorites

- From the **Main Menu**, navigate to **Financial Management > Accounts Receivable > General Operations**.
- Locate the **Part Tracker** program and click the **Heart** icon to add this program to your favorites.  
The **Add Favorite** window displays.
- Click the **Plus** sign to create a new favorites group.
- In the **New Folder Name** field enter a title such as **XXX Favorites** (where XXX are your initials).
- Click **Save**.

- From the **Main Menu**, use the **Search menu** field to locate the **Job Entry** program and click the **Heart** icon to add this program to your favorites.

The **Add Favorite** window displays.

- Click the **drop-down button** next to the folder name and select **XXX Favorites** (where XXX are your initials).
- Click **Save**.
- From the menu bar click the **Favorites** button (**Heart**).
- Locate and click your new favorites folder: **XXX Favorites** (where XXX are your initials).
- Verify the programs you added displays in the list.
- Optionally, click any of the programs you added to your favorites folder to open. Review and exit the program.
- Remain in the Epicor Application.

## Select a System Layout

Epicor comes with some preset layouts, these are flagged as **System** layouts:

- Executive
- Finance
- Manufacturing
- Supply Chain

1. From the **Home** drop-down, select **Finance**.

The **Replace current layout?** question displays.

2. Verify the **Overwrite Favorites** check box is clear.

If selected, your current favorites folder settings will be removed and replaced by those applicable to the layout you select.

3. Verify the **Export Current Layout** check box is clear.

If selected, this allows you to create a copy of the current layout, which can be imported or published later on.

4. Click **Replace**.

5. Review the new home page layout and tabs.

6. From the **Home** drop-down, select any other layout of your preference, such as **Manufacturing**.

The **Replace current layout?** question displays.

7. Verify both, the **Overwrite Favorites** and **Export Current Layout** check boxes are clear.

8. Click **Replace**.

9. Review the new home page layout and tabs.

## Return the Active Home Page to Default

1. From the **User ID** drop-down (**Epicor System Admin**) on the upper right menu, select **Manage your settings**.
2. Go to **Settings > Home Page**.
3. Click **Reset Layout**.
4. Select the **Reset your home page to default user layout** check box.
5. Click the **Confirm Selected Option** button (**checkmark**).
6. To the **Confirm** message that displays, click **Yes**.
7. The **Default** layout displays.

## Create a Personalized Layout

1. Click the **Edit** button.
2. Click the **Plus** sign in the Tab area.  
The **Add a Tab** window displays, a new tab is added to the current layout, and the Active Home Page status changes to **Edit Mode**.
3. Enter a title such as **XXX Tab 1** (where XXX are your initials).
4. Click **OK**.
5. From the left panel, analyze the **Add Widget** options. You can create any of the following widgets:
  - App Link
  - BAQ Grid
  - Discovery Chart View
  - Discovery KPI View
  - Image
  - Local Application or Document
  - Social
  - Text Label
  - Website

## Add a Text Label Widget

1. Click the **Text Label** widget button.  
The **Add a Text Label** window displays.
2. In the **Label** field enter **Epicor Shortcuts**.
3. Change the **Font Size** to **36**.
4. From the **Horizontal Alignment**, select **Center**.
5. From the **Vertical Alignment**, select **Middle**.
6. Click **OK**.

7. Resize and/or reorder the widget as appropriate.

**Note:** You can click the three-dot button on the upper right corner of the Text box for more options.

### Add an App Link Widget

1. Click the **App Link** button.

The **Add an App Link Widget** window displays.

2. From the **Color** drop-down, select one of your choice, such as blue.

3. From the **App** field, enter the search word **Customer T**.

Menu path to programs that match your search word criteria display.

4. Select the **Customer Tracker**.

5. Review the Title that populates, optionally change it. Leave the rest of the defaults.

6. Click **OK**.

A new Customer Tracker tile is added to your current view.

7. Resize and/or reorder the widget as appropriate.

8. Optionally, repeat steps 1 through 7 to add the **Supplier Tracker**.

### Add an BAQ Grid Widget

1. Click the **BAQ Grid** button.

The **Add a BAQ Grid Widget** window displays.

2. From the **BAQ** field, enter **zPartWarehouse**.

3. In the **Title** field, enter **Parts On Hand**.

4. Select the **Show Filter Row** button.

5. Select the following check boxes:

- Description
- Warehouse
- Part
- Qty. on Hand

6. Click **OK**.

A new BAQ Grid is added to your view.

7. Resize and/or reorder the widget as appropriate.

### Add a Data Discovery View Widget

1. Click the **Discovery Chart View** button.

The **Add a Data Discovery Chart Widget** window displays.

2. In the **Data Discovery View** field, select **Customer Past Due Balance**.

3. Click **OK**.

A new Data Discovery View graph is added to your view.

4. Resize and/or reorder the widget as appropriate.

### Add a Data Discovery KPI Widget

1. Click the **Discovery KPI View** button.

The **Add a Data Discovery KPI Widget** window displays.

2. Select **Aged Receivables**.

3. From the **Color** drop-down, select one of your choice, such as orange.

4. Click **OK**.

A new Data Discovery KPI widget displays.

5. Resize and/or reorder the widget as appropriate.

### Add a Local Application or Document Widget

1. Click the **Local Application or Document** button.

2. From the **Color** drop-down, select one of your choice, such as white.

3. In the **Path** field, enter **C:\WINDOWS\system32\win32calc.exe**.

4. In the **Title** field, enter **Calculator**.

5. For **Image** navigate to **C:\images\calculator.jpg** and click **Open**.

6. Click **OK**.

A shortcut to the Calculator displays.

7. Resize and/or reorder widget as appropriate.

### Add a Link to Website Widget

1. Click the **Website** button.

The **Add an Embedded Website or Link** window displays.

2. Select the **Link to Website** button.

3. In the **URL** field, enter [www.linkedin.com](http://www.linkedin.com)

4. In the **Title** field, enter **LinkedIn**.

5. For **Image** navigate to **C:\images\linkedin-icon.png** and click **Open**.

6. Click **OK**.

A shortcut to the LinkedIn website displays.

7. Resize and/or reorder widget as appropriate.

### Save your Changes

1. From the **Edit Mode** bar on the upper left, select **Save**.

## Edit the Data Discovery View Graph

1. Click the title bar of the **Customer Past Due Balance** widget.  
The Epicor Data Discovery window displays.
2. From the **Graph** options, select a **Pie** graph.
3. Click the **three-dot** button on the upper right and select **Save As**.
4. Change the **Name** and **Description**, then click **Save as New**.
5. Review the changes to your layout.

## Add an Extra Tab

1. Click **Edit** button.
2. Click the **Plus** sign in the Tab area.  
The **Add a Tab** window displays, a new Tab is added to the current layout, and the Active Home Page status changes to **Edit Mode**.
3. Enter a title such as **XXX Tab 2** (where XXX are your initials).
4. Click **OK**.

## Add an Embedded Website Widget

1. Click the **Website** button.  
The Add an Embedded Website or Link window displays.
  2. Select the **Embed Website** button.
  3. In the **URL** field, enter [www.epicor.com](http://www.epicor.com)
  4. In the **Title** field, enter **Epicor**.
  5. Click **OK**.  
A new Embedded Website displays.
- Note:** Internet access is required.
6. Resize and/or reorder widget as appropriate.
  7. From the **Edit Mode** bar on the upper left, select **Save**.

## Remove unnecessary Tabs

1. Click the **Edit** button.
2. Navigate to any existing Tab, other than the XXX Tabs (Where XXX are your initials).
3. Click the **three-dot** button that display at the right of the Tab area.
4. Select **Remove Tab**.
5. To the **Remove?** question, click **Yes**.
6. From the **Edit Mode** bar on the upper left, select **Save**.

## Saving a Layout

When switching the view from one layout to another, you can create a backup copy, so the current layout is saved and can be retrieved in the future:

1. From the **Home** drop-down, select **Executive**.  
The **Replace current layout?** question displays.
2. Verify the **Overwrite Favorites** check box is clear.
3. Select the **Export Current Layout** check box.
4. Click **Replace**.
5. Select a Menu path to save the current layout, such as the **Desktop**.
6. Enter a file name, such as **XXXLayout** (where XXX are your initials).
7. Click **Save**.
8. From the **Home** drop-down, search for your **XXX Layout**.

It does not display, that's because it needs to be published.

## Import a Layout

1. From the **User ID** drop-down (**Epicor System Admin**) on the upper right menu, select **Manage your settings**.
2. Go to **Settings > Home Page**.
3. Click **Import Layout**.
4. Search for and open the file you saved on the Desktop named **XXX Layout** (where XXX are your initials).
5. Click the **Confirm Selected Option** button (**checkmark**).
6. To the **Confirm** message, answer **Yes**.
7. Your layout displays again.
8. From the **Home** drop-down, search for your **XXX Layout**.

It does not display, that's because it needs to be published.

## Publish a Layout

Before a system layout can be available for a user three things must occur:

- The layout must be **published**.
  - The user must have **permissions to the BAQs** that make up the layout (this applies only to the Data Discovery views if you have any in your published layout).
  - The user must have **permission to the layout** itself.
1. From the **User ID** drop-down (**Epicor System Admin**) on the upper right menu, select **Manage your settings**.
  2. Go to **Settings > Home Page**.

3. In the **What would you like to name the published layout?** field, enter **XXXSharedLayout** (where XXX are your initials).
4. Leave the security code field blank, this is an optional field.
5. Click the **Publish Current Layout** button.
6. Navigate back to the Home page.
7. From the **Home** drop-down, review the options that display.

The new customized layout has been published.

**Congratulations!** You have completed the Tailoring and Tuning Your Active Home Page lab.

# Take Your Dashboards into the Field with Epicor Mobile Dashboards

Check out the new improved responsive mobile UI design. In addition, discover the power of deploying your dashboards to your mobile devices such as tablets and smart phones. This lab will show you how to configure your dashboards to be viewed by your users on their mobile devices securely.

At the conclusion of this lab, you will be able to:

- Create an updatable dashboard using existing updatable queries
- Use Publish and Subscribe to filter results between views
- Deploy a dashboard to a mobile device

## Business Flow Requirements

You must activate a security privilege in order to have access to the mobile device functionality. You assign this user privilege in User Account Maintenance.

### Log In

1. From the desktop, open **ERP10**.
2. In both the **User** and **Password** fields enter **manager**.
3. In the left pane, verify that the **Epic06, Epicor Education company, and the Main site** are selected.

### Create Updatable Dashboard

Create a new dashboard using updatable BAQs that displays customers and customer contacts. Using the dashboard you can retrieve a customer record and create new customer contacts or update existing ones.

**Menu Path:** Executive Analysis > Business Activity Management > General Operations > Dashboard

1. From the **New** menu, select **New Dashboard**.
2. In the **Definition ID** field, enter **LV19\_CustContUpdate**.
3. In the **Caption** field, enter **Customer Contact Update**.
4. In the **Description** field, enter **Mobile Customer Contact Update**.
5. Select the **Target Mobile Device** check box.

### Add the Customer Update Query to the Dashboard

1. From the **New** menu, select **New Query**.
2. The **Dashboard Query Properties** window displays.
3. In the **Query ID** field, search for and select **zCustomer01**.
4. Select the **Auto Refresh on Load** check box.
5. Navigate to the **Publish** sheet.

- In the **Publish Columns** section, select the following:

**Customer\_Company**  
**Customer\_Name**  
**Customer\_CustNum**

- In the **Titlebar Subscriber** section, select the **Publish to Title** check box.
- In the field above **Title caption**, select **Customer\_Name**.
- In the **Title caption** field, enter **Customer:** (insert a space after the colon).
- Click **OK**.
- Navigate to the **Mobile** sheet.
- On the **Standard** toolbar, click **Refresh** and view the grid that displays customer information.

### Modify Customer Grid Properties

- In the tree view, right-click the **zCustomer01** grid icon and select **Properties**.
- The **Dashboard Grid Properties** window displays.
- In the **Caption** field, delete the content and enter **Customer List**.
- In the **Grid Caption**, enter **Customers**.
- Click **OK**.

The new caption displays in the tree view and the grid header.

- Click **Save**.

### Add Updatable Query to Dashboard

- From the **New** menu, select **New Query**.  
The **Dashboard Query Properties** window displays.
- In the **Query ID** field, search for and select the **UpdateCustomerContact** query.
- Select the **Auto Refresh on Load** check box.
- Navigate to the **Filter** sheet.
- Enter the following information:

Field	Data
Column Name	CustCnt_Company
Condition	= (equals sign)
Value	zCustomer01- CustomerTrackerQuery: Customer_Company

This condition states the company information must be equal for both queries.

- Press **Enter** to add the second condition:

Field	Data
Column Name	CustCnt_CustNum
Condition	= (equals sign)
Value	zCustomer01- Customer Tracker Query: Customer_CustNum

This condition matches customer numbers for both queries.

When you select a customer from the **Customer List** grid, the related contacts for that customer display in the grid below.

7. In the **Dashboard Query Properties** window, click **OK**.
8. On the **Standard** toolbar, click **Save**.

### Modify Contact Grid Properties

1. In the tree view, right-click the **UpdateCustomerContact** grid icon and select **Properties**.

The **Dashboard Grid Properties** window displays.

2. In the **Caption** field, delete the content and enter **Customer Contacts**.

3. Select the **Updatable** check box.

When you select this check box on the **General** sheet, the **Prompt** check boxes display for all columns that were configured as updatable in the source query.

4. Verify all columns have the **Visible** check box selected.

5. Click **Update All**.

The **Prompt** check box becomes selected for all columns that allow data updates.

6. In the **Grid Caption** field, delete the content and enter **Contact Info**.

7. Click **OK**.

8. On the **Standard** toolbar, click **Save**.

### Deploy and Test the Dashboard

1. From the **Tools** menu, select **Deploy Dashboard**. The **Deploy Dashboard** window displays.

2. Select **Generate Mobile Application** and **Available for Mobile Menu** check boxes.

By selecting these options you create a mobile device application from the current dashboard and make it available on the Mobile Menu.

3. Click **Deploy**.

4. Once finished, click **OK**.

Your mobile dashboard is now available for use.

5. Exit the Dashboard and minimize ERP.

### Launch Epicor Mobile Access

1. On the desktop, double-click the **Epicor Products** icon.

2. Double-click the **Epicor Mobile** icon.

3. In both the **User** and **Password** fields enter **manager**.

4. Increase the size of the window so that you can click **Get Started** in the lower-right corner.

5. Click the **Star** icon next to the **Customer Contact Update** dashboard.

On the Home Page, a new dashboard tile is created.

6. Access the dashboard by clicking on the tile.  
When the dashboard loads, the content of the sidebar changes. It now presents queries and grids that make up the query.
7. Click **Reload Dashboard** to populate grid with data.
8. In the **Search** box, type **ACE** and hit **Enter**.

All customers, with this string of characters in their record, display.

### Update Record Using Mobile Dashboard

1. Select the record for customer **ACEMOLD**.
2. On the sidebar, click the **Customer Contacts** grid.
3. Select the record for **Jim Forrester**.
4. Click the **Enter record view mode** icon found in the top-right corner.
5. Modify the **Fax** and **Phone** number fields.  
Since the **Customer Contacts** grid and the underlying BAQ allow updates of multiple rows at once, when you select this icon, the record change is saved on a grid, allowing you to perform additional updates, if needed.
6. Press the **Previous Record** icon found in the top-right corner to retrieve the record for **Jackson Johnson**.
7. In the **E-Mail Address** field, enter **jjohnson@acemold.org**.
8. Click the **Check** icon again to save the record and then click **X** to close the **Record View** mode.  
Notice the visual indicators on the grid alert the user the records have been modified and are waiting to be saved.
9. Click the **Commit** icon to push the pending edits on this grid to the database.
10. Maximize ERP 10.

### Verify the Contact Updates

**Menu Path:** Sales Management > Order Management > General Operations > Customer Display

1. In the **Customer** field, enter **ACEMOLD** and press **Tab**.
2. Navigate to the **Contacts > List** sheet and verify the grid displays your changes.
3. Exit Customer Display.

# Tasks & Workflows Part One – Creation and Setup

Create and work with Tasks, and Task Sets for use in standardizing and streamlining your workflows. Utilize these tools to establish consistent procedures and guide or control the processes within your organization. These tools are applicable to many areas of Epicor ERP, such as Time & Expense approvals, Case Management, Customer Relationship Management, and Engineering Change Orders.

At the conclusion of this lab, you will be able to:

- Create Tasks with different characteristics
- Group Tasks together into Task Sets specific to areas of functionality
- Assign Task Sets to Sales Territories or Workflow Groups

## System Requirements

Modules/Licensing	Product Version
Epicor ERP	10.2.300
Customer Relationship Management	
Engineering	
Case Management	
Expense Management	
Time Management	

## Business Flow Requirements

For the successful completion of this Lab, the following Application Setup was performed:

- Setup of Users, Roles, and Workforce records
- Creation of Task Types
- Creation of Territories

## Log into the Epicor ERP Application

1. On the desktop, double-click the Epicor **ERP10** application icon.
2. In the **User name** field, enter **manager**.
3. In the **Password** field, enter **manager**.
4. Click **OK**.
5. Navigate to the **Main Menu**, and in the left pane, verify that the **Epic06**, **Epicor Education company**, and the **Main Site** are selected.

## Review Existing Work Force ID

Review an existing Workforce ID for a Sales Person to be used in a CRM Workflow.

Navigate to **Work Force Maintenance**.

**Menu Path:** Sales Management > Customer Relationship Management > Setup > Work Force

1. In the **Work Force ID** field, enter **ED** and press **Tab**.
2. In the **Contact** field, verify **Ed Ucation** displays.
3. In the **Role** field, verify **Sales Person** displays.
4. In the **Reports To** field, verify **James Bailey**.

### Review Authorized Users

1. Navigate to the **Authorized Users > List** sheet.
2. In the **Authorized User** field, verify **Ed Ucation** and **James Bailey** display.  
The **Default** check box automatically defaults for **Ed Ucation**.
3. Exit Work Force Maintenance.

### Create Tasks

Create four new tasks to define a CRM procedure to guide the sales process.

Navigate to **Task Maintenance**.

**Menu Path:** Sales Management > Customer Relationship Management > Setup > Task

**Note:** For the purpose of this course, and in order to complete the tasks assigned, the following tasks are assigned the Sales Person role code.

1. Click **New**.
2. Use the table below to create three new tasks (where XXX are your initials):

Task ID	Description	Priority	Task Type*	Role Code
XXX10	XXX Contact the Prospect	50	Call	Sales Person
XXX20	XXX Generate the Quote	50	Action Item	Sales Person
XXX30	XXX Quote Follow Up	50	Action Item	Sales Person
XXX40	XXX Generate the Order	50	Action Item	Sales Person

**Note:** Task Types are used to classify tasks. Create Task Types from:

**Menu Path:** Sales Management > Customer Relationship Management > Setup > Task Type

3. Click **Save** and exit Task Maintenance.

### Create a CRM Task Set

Navigate to **Task Set Maintenance**.

**Menu Path:** Sales Management > Customer Relationship Management > Setup > Task Set

1. From the **New** menu, select **New Task Set**.
2. In the **Set ID** field, enter **XXX-AUST** (where XXX are your initials).
3. In the **Description** field, enter **XXX-Sales Australia** (where XXX are your initials).
4. In the **Workflow Type** field, select **CRM**.

5. Click **Save**.

### Define Milestones

1. From the **New** menu, select **New Milestone**.

The **Milestones > Detail** sheet displays.

<b>Seq</b>	<b>Task</b>	<b>Required Role</b>	<b>Current Stage</b>	<b>Days to Complete</b>	<b>First Milestone</b>	<b>Win Allowed</b>	<b>Lose Allowed</b>
10	XXX Contact the Prospect	Sales Person	Lead	2	Select	Clear	Select
20	XXX Generate the Quote	Sales Person	Opportunity	2	Clear	Clear	Select
30	XXX Quote Follow Up	Sales Person	Quote	2	Clear	Select	Select
40	XXX Generate the Order	Sales Person	Quote	1	Clear	Select	Select

2. Use the table below to create four new milestones (where XXX are your initials):

The **Required Role** field defaults as **Sales Person**.

3. Click **Save**.

### Define Next Milestones

The order of the milestones also reflects the sequence in which you complete the tasks.

1. In the tree view, select the first milestone (**XXX Contact the Prospect**).
2. Verify the **Milestones > Details** sheet displays.
3. From the **New** menu, select **New Next Milestone**

The **Milestones > Next Milestones > Detail** sheet displays.

4. In the **Next Milestone** field, select **XXX Generate the Quote**.
5. Click **Save**.
6. In the tree view, select the second milestone (**XXX Generate the Quote**).
7. Verify the **Milestones > Details** sheet displays.
8. From the **New** menu, select **New Next Milestone**.

The **Milestones > Next Milestones > Detail** sheet displays.

9. In the **Next Milestone** field, select **XXX Quote Follow Up**.
10. Click **Save**.
11. In the tree view, select the third milestone (**XXX Quote Follow Up**).
12. Verify the **Milestones > Details** sheet displays.
13. From the **New** menu, select **New Next Milestone**.

The **Milestones > Next Milestones > Detail** sheet displays.

14. In the **Next Milestone** field, select **XXX Generate the Order**.

15. Click **Save**.
16. Minimize Task Set Maintenance.

### Assign the Task Set to a Sales Territory

Navigate to **Sales Territory Maintenance**.

**Menu Path:** Sales Management > Customer Relationship Management > Setup > Sales Territory

1. In the **Territory ID** field, enter **AUST** the press **Tab**.
2. In the **Task Set** field, select **XXX-AUST** (where XXX are your initials).
3. Navigate to the **Salespersons > List** sheet, verify **Ed Ucation** and **James Bailey** display.
4. Click **Save**.
5. Exit Sales Territory Maintenance.

### Create an Engineering Task Set

Create a workflow task set and attach milestones to it.

1. Maximize Task Set Maintenance.
2. Navigate to **Task Set > Detail**.
3. From the **New** menu, select **New Task Set**.
4. Enter the following information:

Field	Data
Set ID	DSS-XXX (where XXX are your initials)
Description	DSS-Quick Approval-XXX (where XXX are your initials)
Workflow Type	ECO

5. Click **Save**.

### Add Milestones

1. From the **New** menu, select **New Milestone**. The **Milestones > Detail** sheet displays.

Seq	Task	Current Stage*	Days to Complete	First Milestone	Check Out Allowed	Check In Allowed	Workflow Complete Allowed
10	Needs Analysis	ECO Request	3	Select	Select	Clear	Clear
20	Approve ECO Design	Certification / Approval	3	Clear	Clear	Clear	Clear
30	ECO Complete	Complete	3	Clear	Clear	Select	Select

2. Use the table below to add three milestones:

**Note:** Workflow stages can be used to define the status of a record for Case Management or Engineering workflow types. Create workflow stages from:

**Menu Path:** Sales Management > Case Management > Setup > Workflow Stage

**Menu Path:** Production Management > Engineering > Setup > Workflow Stage

3. Click **Save**.

### Create Next Milestones

Once milestones are created, they are joined in a hierarchical sequence by creating **Next Milestones**. In the tree view of the task set, select each of the first two tasks, in turn.

1. In the tree view, select the first milestone (**Needs Analysis**).
2. Verify the **Milestones > Detail** sheet displays.
3. From the **New** menu, select **New Next Milestone**.  
The **Milestones > Next Milestones > Detail** sheet displays.
4. In the **Next Milestone** field, select **Approve ECO Design**.
5. Click **Save**.
6. In the tree view, select the second milestone (**Approve ECO Design**).
7. Verify the **Milestones > Detail** sheet displays.
8. From the **New** menu, select **New Next Milestone**.  
The **Milestones > Next Milestones > Detail** sheet displays.
9. In the **Next Milestone** field, select **ECO Complete**.
10. Click **Save**.
11. Exit Task Set Maintenance.

### Create a Workflow Group

In this workshop, create an Engineering workflow group called DSS Engineering, and add members to this group, each with different roles in the organization.

Navigate to **Workflow Group**.

**Menu Path:** Production Management > Engineering > Setup > Workflow Group

1. In the **Workflow Type** field at the top, select **ECO**.
2. From the **New** menu, select **New Workflow Group**.

Field	Data
Workflow Group	DSS-XXX (where XXX are your initials)
Description	DSS Engineering Group-XXX (where XXX are your initials)
Default Task Set	DSS Quick Approval XXX (where XXX are your initials).

3. Enter the following information:
4. Click **Save**.
5. From the **New** menu, select **New Group Member**.
6. In the **Member** field, select **Education**.

7. In the **Role** field, select or verify **Sales Person** displays.
8. Click **Save**.
9. From the **New** menu, select **New Group Member**.
10. In the **Member** field, select **Aaron Christiansen**.
11. In the **Role** field, select **ECO Coordinator**.
12. Select the **Primary** check box.
13. Click **Save**.
14. Exit Workflow Group Maintenance.

**Please attend the next Lab, Tasks & Workflows Part Two, to use the task sets and workflows we have created.**

**Thank you!**

# Tasks & Workflows Part Two – See Them in Action

Step your way through an established workflow to see the power of Task Sets in action. These tools are applicable to many areas of Epicor ERP, such as Time & Expense approvals, Case Management, Customer Relationship Management, and Engineering Change Orders.

At the conclusion of this lab, you will be able to:

- Follow a workflow of established task
- Mark tasks as complete
- Review the status of tasks

## System Requirements

Modules/Licensing	Product Version
Epicor ERP	10.2.300
Customer Relationship Management	
Engineering	
Case Management	
Expense Management	
Time Management	

## Business Flow Requirements

The following workshops are built upon preceding Lab **Tasks & Workshops Part One** and can only be performed upon successful completion of Part One Lab.

## Log into the Epicor ERP Application

1. On the desktop, double-click the Epicor **ERP10** application icon.
2. In the **User name** field, enter **manager**.
3. In the **Password** field, enter **manager**.
4. Click **OK**.
5. Navigate to the **Main Menu**, and in the left pane, verify that the **Epic06**, **Epicor Education company**, and the **Main Site** are selected.

## Customer Relationship Management Workflow

### Enter a Lead

Navigate to **Quote Entry**.

**Menu Path:** Sales Management > Customer Relationship Management > General Operations > Quote Entry

6. From the **New** menu, select **New Quote**.
7. In the **Customer** field, enter **INSIGHTS** and press **Tab**.

8. Verify the following information populates:

Field	Data
Status	Lead
Territory	Australia
Primary Salesperson	Ed Ucation

9. Click **Save**.
10. Record the Quote number \_\_\_\_\_.
11. Navigate to the **Header > Detail** sheet.
12. In the **Task Set** field, verify **XXX-Sales Australia** (where XXX are your initials) displays.

## Review Workflow Tasks

1. Navigate to **Tasks > Task Tree**.

The four tasks from the Customer Relationship Management Task Set, created in the preceding Lab, **Tasks & Workflows Part One** are listed. The first task, **XXX Contact the Prospect** (where XXX are your initials), is active.

## Complete the First Task – Contact the Prospect

Enter call details and mark the task Complete.

1. Navigate to the **Tasks > Details** sheet.
2. Click the **Call Log** button.  
The **Call Log** window displays.
3. From the **New** menu, select **New Call**.
4. In the **Description** field, enter **First Call**.  
The **Confirmation** window displays.
5. In the **Text** field, enter:

**John Smith answered the call. He is interested in a quote for 10 pieces of part DCD-100-SP. He may place an order if the price is right.**

6. In the **Call Type** field, select **Call-Sales**.
7. Click **Save**.
8. Exit Call Log.
9. Verify the **Task > Detail** sheet displays.
10. Select the **Complete** check box.
11. Review the following information:

Field	Data
Reason	Move to Next Task
Next Task	XXX Generate the Quote (where XXX are your initials)
Next Stage	OPPORTUNITY

12. Click the **Update** button.

13. Navigate to the **Summary** sheet.
14. From the **Status** field, verify **Opportunity** displays.
15. Navigate to the **Task > Tree** sheet.  
Note that **XXX Contact the Prospect** (where XXX are your initials) displays a green check mark, indicating that it is complete.

The next task, **XXX Generate the Quote** (where XXX are your initials), is now active.

### Complete the Second Task - Generate the Quote

1. From the **New** menu, select **New Line**.
2. Navigate to the **Line > Detail** sheet.
3. In the **Part/Rev** field enter **DCD-100-SP** and press **Tab**.
4. In the **Expected Quantity** field enter **10**.
5. Navigate to the **Summary** sheet.
6. Select the **Quoted** check box.
7. Click **Save**.
8. Optionally, from the **Actions** menu, select **Print Form** and click **Print Preview**.

The **Quote Form** displays.

9. If the Quote was printed, close the Quote Form and the preview message to return to Opportunity/Quote entry.
10. Navigate to the **Task > Task Tree** sheet.
11. In the **Task Tree**, select **XXX Generate the Quote** (where XXX are your initials).
12. Navigate to the **Tasks > Details** sheet.
13. Select the **Complete** check box.
14. Review the following information:

Field	Data
Reason	Move to Next Task
Next Task	XXX Quote Follow Up (where XXX are your initials)
Next Stage	QUOTE

15. Click the **Update** button.
16. Navigate to the **Summary** sheet.
17. From the **Status** field, verify **Quote** displays.

### Complete the Third Task – Quote Follow Up

1. Navigate to the **Task > Task Tree** sheet.
2. In the **Task Tree**, select **XXX Quote Follow Up** (where XXX are your initials).
3. Navigate to the **Task > Detail** sheet.

4. Select the **Complete** check box.
5. Review the following information:

Field	Data
Reason	Move to Next Task
Next Task	XXX Generate the Order (where XXX are your initials)
Next Stage	QUOTE

6. Click the **Update** button.
7. Click **Save**.

### Complete the Last Task – Generate the Order

1. Navigate to the **Line > Detail** sheet.
2. In the **Order Quantity** field enter **10**.
3. Navigate to the **Task > Task Tree** sheet.
4. In the **Task Tree**, select **XXX Generate the Order** (where XXX are your initials).
5. Navigate to the **Task > Detail** sheet.
6. Select the **Complete** check box.
7. Verify the **Win** button is selected.
8. Select the **Create Order** check box.
9. In the **Reason** field, verify **Best Competitive Price** displays.
10. Click **Update**.
11. Navigate to the **Summary** sheet.
12. Verify the **WON** flag displays.

This indicates a Sales Order has been created from this Quote.

13. Navigate to the **Line > Related Sales Order** sheet.
14. Click **Retrieve**.
15. Review the Sales Order number.
16. Click **Save** and exit Opportunity/Quote entry.

### Engineering Workflow

A Customer wants one of our manufactured satellite dish components with one modification, a different type of paint. This change needs to go through our Engineering workflow.

Navigate to the **Engineering Workbench**.

**Menu Path:** Production Management > Engineering > General Operations > Engineering Workbench

### Create an ECO Group

1. Click **New**.

2. Enter the following information:

Field	Data
Group ID	SAT-XXX (where XXX are your initials)
Description	Satellite Group-XXX (where XXX are your initials)
Workflow Group	DSS Engineering Group-XXX (where XXX are your initials)
Task Set	DSS-Quick Approval-XXX (where XXX are your initials)

3. Click **Save**.
4. Navigate to the **Tasks > Tree** sheet to view the workflow.

### Complete a Needs Analysis

1. From the **Actions** menu, select **Revision > New Revision**.  
The **Create New Revision** window displays.
2. In the **Part** field, search for and select **DSS-1010**.
3. Enter the following information:

Field	Data
Rev	XXX (where XXX are your initials)
Effective Date	Accept the default
Description	Epoxy Paint-XXX (where XXX are your initials)

4. Click **OK**.
5. In the tree view, right-click on **Rev: XXX Part: DSS-1010** and select **Get Details > Get From Method/Jobs/Quotes**.
6. In the **Revisions** grid, select **Rev A**.
7. Click **OK**.
8. In the tree view, expand the **Operations** node and select **Opr:60 OP: PTP**.
9. In the **Operation** pane, in the **Operation** field, select **PTE Epoxy Paint**.
10. To the **Do you want to refresh...?** message, click **Yes**.
11. Click **Save**.

### Complete the First Task

1. Navigate to the **Tasks > Tree** sheet.
2. Select **Needs Analysis**.
3. Navigate to the **Tasks > Maintenance** sheet.
4. Select the **Complete** check box.
5. Click the **Update** button.
6. Navigate to the **Tasks > Tree** sheet.  
On the **Needs Analysis** task, a green check mark displays.

The next active task is **Approve ECO Design**, assigned to **Aaron Christiansen**.

7. Click **Save** and exit the Engineering Workbench.

### Approve and Check In a Revised Part

1. On the **Main Menu**, select **Options > Change User**.
2. Log on as **Aaron Christiansen**.

Field	Data
User name	aaron
Password	aaron

3. In the **Main Menu**, select **Epic06, Epicor Education**, and then select the **Main** site.
4. In the **Tip of the Day**, click **Close**.
5. From the **Main Menu**, navigate to the **Engineering Workbench**.  
**Menu Path:** Production Management > Engineering > General Operations > Engineering Workbench
6. In the **Group ID** field, search for and select **SAT-XXX** (where XXX are your initials).
7. Navigate to the **Revision > List** sheet and select **DSS-1010**.
8. Navigate to the **Revision > Detail** sheet.
9. Select the **Not Approved** check box. The indicator changes to **Approved**.

### Complete the Second Task

1. Navigate to the **Tasks > Tree** sheet.
2. Select **Approve ECO Design**.
3. Navigate to the **Tasks > Maintenance** sheet.
4. Select the **Complete** check box.
5. Click the **Update** button.

### Check in the Revision

1. From the **Actions** menu, select **Revision > Check In**.
2. In the **Description of Change** window, click **OK**.
3. To the **Check In Complete** message, click **OK**.

### Complete the Third Task

1. Navigate to the **Tasks > Tree** sheet.
2. Select **ECO Complete**.
3. Navigate to the **Tasks > Maintenance** sheet.
4. Select the **Complete** check box.
5. Select the **Workflow Complete** check box.
6. Click the **Update** button.

7. Navigate to the **Tasks > Tree** sheet.  
Confirm all three tasks are complete.
8. Navigate to the **ECO Group Sheet**.
9. In the **Current Stage** field, **Complete** displays.
10. The **Workflow Complete** check box is now **selected**.
11. Click **Save** and exit the Engineering Workbench.

**Congratulations!** You have completed the Tasks & Workflow Part One & Two Labs.

# The Best Tips and Tricks to Improve Your Efficiency

If you are a new user, a user that has been using Epicor ERP for years, or if you are migrating to Epicor ERP, you will benefit from this hands-on session. Learn of the many things available in Epicor ERP that can make your work day more productive. This session focuses on usability features that you might have never known existed or have forgotten. Learn the tricks to get back those minutes in your day!

At the conclusion of this lab, you will be able to:

- Explain the benefits of various client options of the Epicor ERP System
- Effectively use and customize the Active Home Page
- Access and customize the Main Menu program
- Effectively use Data Grids / Lists
- Access and use Detail / Entry Forms

## System Requirements

Modules/Licensing	Product Version
Not Applicable	10.2

## Business Flow Requirements

In User Account Security Maintenance Options, Allow Personalization must be YES for the current user.

### Log In Using the Active Home Page

1. From the Desktop, select the **ERP10** icon.
2. In both the **Username and Password** fields, enter **manager** (all lower-case)
- Select the Active Home Page checkbox**
4. Select the **arrow** or click **Enter**.
5. Select the **Menu** tile.

### Active Home Page

Epicor now has standard Active Home Page layouts you can choose from-, and further customize according to taste.

1. Click the **Settings** icon (cogwheel) in the top right-hand corner.
2. Select the **Home Page** node.
3. In the middle of the screen, under the **Select a layout to apply**, select **Finance** (System Layout).
4. Click the tick box under the field in the same pane.
5. Respond **Discard** to the **Discard Current Layout** message.

Notice the Epicor Data Discovery (EDD) tiles on the Home Screen. You do not have to log off / on for the changes to take effect.

6. Click the **Edit** button in the top right corner.
7. Respond **Yes** to the **This is a system or published layout. Would you like to make a copy?** Message.
8. Click the + icon in the top right corner of the **Accounts Payable** group header.
9. Type: **Form Link**
10. In the form, enter **Purchase Order Entry**.
11. Leave everything else as default, click **Save**.

## Menu Options

If you want to see all programs you are authorized to access, not just the ones you most frequently use, or you are a superuser of the organization you will still have to access the Menu Program.

Click the three horizontal bars in the top left corner

- Switch between the Zoom and the Tree View
- Switch between the Tile and the List View
- Use the Menu Search from the Home Screen

## Grid Sort/Filter/Summation/Group

In this workshop we will use the sort, filter, summation, and group features to be more productive when viewing and entering data in a grid. For our example, we will use the grid view in Purchase Order Entry Suggestions.

**Menu Path:** Material Management > Purchase Management > General Operations > New PO Suggestions

1. Click the **Search** (binoculars) button.
2. In **New Purchase Order Suggestion Search**, without entering any parameters, click **Search**.
3. Click **Select All** and then **OK**.
4. Click the **Material List** sheet.
5. Right-click the **Materials** header, at the top of the grid and select **Show Group By**.
6. Right-click the materials grid again and select **Show Summaries**.
7. In the **Our Qty** column, select the  $\Sigma$  (summation) symbol, and then select the **Sum** check box.
8. Click **OK**.
9. Drag the **Name** column, for the supplier name, into the group section above the columns.

Notice the **Our Qty Sum** next to the supplier's name.

10. Click the **Name** label, in the grouping header. Notice it sorts the fields alphabetically.
  11. Drag the **Part** column into the grouping section above the columns, next to Name.
  12. In the line for **Ethan Industrial Supply**, click the + to expand the group.
- Notice that it is now grouped by parts beneath the supplier identifier.
13. In the grouping header, move the **Part** label in front of the **Name** label.

Notice that the suggestions are now grouped by parts and then by supplier.

14. To remove the groupings, right-click the grouping header and select the check box next to **Show Group By**. Or drag the **Name** and **Part** labels out of the grouping header.

### Sort and Split View for Rows

Knowing how to arrange your grid view can optimize the time you spend analyzing your data. You can split the grid window into two or more panes, so you can view different parts of the data at the same time.

1. Click anywhere in the column header for **Part**.

The grid is sorted by the part code. Additional clicks will toggle between ascending and descending.

2. Move the mouse pointer over the very top of the horizontal scroll bar, to the small rectangle just above the arrow and under the header until the split bar ( ) appears.
3. Drag the split bar to approximately the middle of the grid and release the mouse button.  
You can now scroll through the parts in each window independently.
4. To remove the split, drag the split bar back to the top of the grid.

### Named Search

Use a Named Search to create a series of pre-set search options. In the New PO Suggestions, for example, you can create a Named Search that only pulls in s. You could also create a Named Search that automatically launches a BAQ Search or a Quick Search.

In this example, use New PO Suggestions to demonstrate a Named Search.

Create a Named Search as follows:

1. In **New PO Suggestions**, in the Standard Toolbar, click the **Search** (binoculars) button.
2. Click the **Named Search** button. The **Named Search Options** window displays.
3. Navigate to the **Detail > Defaults** sheet.
4. Click **New**.
5. In the **Named Search ID and Description** fields, enter **Howard**.
6. In **Search Type**, verify **Basic Search** displays.

Other options are, BAQ Search and Quick Search.

7. In the Basic sheet, the **Basic** tab, in the **Buyer** field, select **Howard Low**.

Note: The options present on the Basic sheet will vary for different programs.

8. Click **Save** and exit Named Search Options.
9. In the New Purchase Order Suggestion Search, from the **Named Search** drop-down, select **Howard** and click **Search**.
10. Click **Select All** and then **OK**. Notice that all of Howard Low's suggestions display in the Material List.

## Auto-Load Search

You can define a similar default action using the Auto Load Search option. This is configured within the Options window.

1. In **New PO Suggestions**, from the **Tools** menu, select **Options**.

The **Options** window displays.

2. In the **As the Form Opens** section, select **Auto Load Search**.

The named searches you have created for this program are available in this list.

3. In the **Auto Load Search** field, select **Howard** and click **OK**.

4. Exit and reopen **New PO Suggestions**.

Now each time you launch this program, the **New Purchase Order Suggestion Search** automatically displays, and, by default, the **Buyer** field displays **Howard Low**. You are still able to change the search parameters.

5. To disable the Auto Load search, from the **Tools** menu, select **Options** and select **No Action**.

## Auto-Populate Search

You can personalize each program to automatically load all the records selected through a named search. You can then immediately populate a maintenance or entry program with the data you want.

Set up the Auto-populate option as follows:

1. With **Purchase Order Suggestion Entry** open, from the **Tools** menu, select **Options**. The **Options** window displays.
2. In the **As the Form Opens** section, select **Auto Populate Data**.
3. In the Auto Populate Data field, the named searches you have created for this program are available.
4. Select **Howard** and click **OK**.
5. Exit and reopen **New PO Suggestions**.

Now, each time you launch this program, it will populate with the PO suggestions for Howard Low.

## Publish and Subscribe (aka Context Menus, aka Open With)

The publish and subscribe functionality allows you to move easily between two screens, without reopening and searching for each new item of interest. In this example, we will use context menus to navigate to Part Maintenance, and then move between PO suggestions and examine the part master record. This saves you time from searching when moving between two screens.

1. Navigate to the **Material List** tab.
2. In the **Materials** grid, right-click in the **Part** field, not the column header, but in the field where the data is displayed, and select **Open With > Part Entry**.
3. Rearrange your screen so that you can see both **Part Maintenance** and **Purchase Order Suggestion Entry**.
4. In the **Materials** grid, select on a different part.

Notice that the **Part Maintenance** record changes to match the record you just selected in the materials grid.

### Simple Search

If you do not know an entire part number and want to search for it, save a few steps with these simple search steps.

Use simple search as follows:

1. In the **Part** field, enter **001**.
  2. Click **Ctrl S**. The Part Search box displays.
- The results display with those parts associated with 001 at the top of the list.
3. Exit the Search Form.
  4. Clear the Part field and remain in **Part Maintenance**.

### Required Fields

You can set a visual color cue for the required fields on a program form. This can be helpful, especially when learning the system.

1. In Part Maintenance, select **Tools > Options**.  
The **Options** box displays.
2. From the **Options** box, in the **Control Indicators** section, select the **Required Field** check box.  
Salmon color is already selected, but another color can be selected.
3. Click **OK**.  
The required fields are now highlighted in your chosen color.

### Field Help

You probably know that you can access Application Help by clicking the F1 key. Doing so launches the Epicor Help window and displays the page appropriate for the application sheet. The Field Help functionality will display the field definition much more quickly than looking through the application help to find a field definition. Once Field Help is open, it will display the help for each field as you move through the program.

**Menu Path:** Material Management > Purchase Management > Setup > Part

1. In the Part field, enter **mouse** and click **Tab**.
  2. From the **Help** menu, select **Field Help**.  
The Field Help sheet is displayed in pane on the left.
  3. On the top right of the **Field Help** pane, click the **Pin**  button.  
This keeps the Field Help pane visible.
- Note:** If the Field Help window is no longer visible, hover over the Field Help label on the left side of the window.
4. Select various fields to see that the description in the Field Help pane changes.

5. Click and Hold on the **Field Help** pane title bar and move to another location to float the pane or dock the pane in another location.
6. To reset the layout, go to **Tools > Reset Layouts to Base**.
7. In the Reset Layouts to Base window, click **OK**.

### Keyboard Shortcuts (aka Hot Keys)

You can enter a sales order, from start to finish, without ever using your mouse. Use keyboard shortcuts for everything.

**Menu Path:** Sales Management > Order Management > General Operations > Order Entry

1. Click **Alt F**. The File menu is expanded and the first option, **New**, is highlighted.
2. Click **Enter**.
3. In the **Customer** field, enter **Addison**, and click **Tab**.
4. In the **PO** field, enter **XXX** (where XXX are your initials), and then click **Tab**.
5. In the **Need By Date** field, enter **6/1/2019**, and then click **Tab**.
6. In the **Ship By Date** field, enter **5/30/2019**, and then click **Tab**.
7. Click **Alt F**. The File menu is expanded.
8. Click the **Right Arrow** once, and then click the **Down Arrow** twice.
9. Click **Enter**.

You are now adding a new line at the bottom of the sheet.

10. In the **Order Lines** grid, click **Tab** once to move to the **Part** field, and then enter **020-1223**.

11. Click **Alt F**, and then type **S**.

In the bottom left corner of the window you will see that the record is being saved.

12. Remain in **Order Entry**.

### Rip and Dock Forms

1. Navigate to the **Lines > Detail** sheet.
2. Click and hold the **Comments** sheet tab and drag your mouse a little bit in any direction.  
The **Comments** sheet is ripped from or repositioned in the Order Entry screen.
3. Drag the **Comments** sheet to the far right of the Order Entry form until a gray outline is imposed on half of the screen.
4. Drop the **Comments** sheet.  
The sheet is now docked to the right side of the **Lines > Detail** sheet.
5. To dock a sheet that has been moved you can double-click the blue bar at the top of the ripped form or click **Tools > Options > Reset Layouts**.

# Understand the Flexibility of Epicor ERP Posting Rules

## System Requirements

Modules/Licensing	Product Version
<General Ledger>	<10.2.000>

Posting rules are a sequence of instructions (algorithms) that define how a business transaction is processed into a GL transaction for a specific book. Modify posting rules for specific needs, such as including additional journal text for certain inventory transactions. Monitor temporary business events such as marketing campaigns, customer activity or projects by updating a dynamic segment for these temporary values upon invoice posting.

At the conclusion of this lab, you will be able to:

- Add a new revision and select manual review
- Use the Review Journal to analyze and post transactions
- Update AR Invoice posting rule to use a Dynamic Segment
- Use the PE Log Viewer
- Update COS/WIP posting rule to include transaction text

## Manual Review

Use GL Transaction Type Maintenance to activate the manual review functionality. Typically, valid transactions automatically post to the general ledger (GL) without review. You can indicate that you want to review all GL transactions before they post. It is best to leverage this feature when you activate a new revision. A manual review of the transactions can help identify errors that can occur during the posting process of a revision.

To activate the manual review functionality, navigate to the **Revisions > Revision Detail** sheet and select the **Manually review all transactions** check box. When you use the manual review feature, all GL transactions post directly to the Review Journal, where you can review the transaction line details. From there you can use the **Actions** menu to confirm, adjust, or cancel each GL transaction.

## Review Transactions in the Review Journal

If you need to modify one or more of the posting rules, manual review is recommended. This workshop demonstrates how to set up and use the manual transaction review functionality.

Navigate to GL Transaction Type Maintenance.

Menu Path: Financial Management > General Ledger > Setup > GL Transaction Type

1. In the **Transaction Type** field, search for and select **AR Invoice**.
2. In the tree view, select AR Invoice > Revision: Base Std- Active. The Revisions > Revision Detail sheet displays.
3. Select the **Manually review all transactions** check box.
4. Click Save.

5. Minimize GL Transaction Type Maintenance.

## Enter an AR Invoice

Navigate to **AR Invoice Entry**.

**Menu Path:** Financial Management > Accounts Receivable > General Operations > Invoice Entry

1. From the **New** menu, select **New Group**.
2. In the **Group** field, enter **XXX** (where **XXX** are your initials).
3. From the **New** menu, select **New Miscellaneous Invoice**. The Header > **Detail** sheet displays.
4. In the **Sales Order** field, enter 5120 and press **Tab**.
5. From the **New** menu, select **New Line**. The **Line > Detail** sheet displays.
6. Select the **SO Line/Rel** button, search for and select the line that displays.
7. Click **Save**.
8. From the tree view, note the AR Invoice number.
9. From the **Actions** menu, select **Group > Post**. The **AR Invoice Post Process** window displays.
10. Select File then **Submit** and close the AR Invoice Post Process window.
11. Minimize AR Invoice Entry.

## Use the Review Journal

Navigate to the **Review Journal**.

**Menu Path:** Financial Management > General Ledger > General Operations > Review Journal

1. Click the **Journal Entry** button.
  - a. The Review Journal Entry Search window displays.
2. Click **Search**.
3. **Double-click** the **latest** search record line to **select** it.
4. In the tree view, select and expand the **Transaction Lines > Records: All**. The **Transactions > Lines > Detail** sheet displays.
5. Review the transaction details for the third line.
6. The field below the **Amount** field displays whether the amount **debts** or **credits** an account. In this task, the amount credits the account used to generate the transaction line.
7. The **GL Account** section displays the general ledger account number for the transaction line.
8. The **Booking Rule Reference** field displays the posting rule used to generate transaction line.
9. The **Description** field displays the reference details for the AR invoice.
10. From the **Actions** menu, select **Journal Entry Confirmation**. The transactions are now posted to the general ledger.
11. **Exit** the Review Journal.

## Clear Manual Review

In this workshop, revert to the standard posting rules for the AR Invoice transaction types.

Maximize GL Transaction Type Maintenance.

1. In the **Transaction Type** field, verify **AR Invoice** displays.
2. In the tree view, select **AR Invoice > Revision: Base Std - Active**. The **Revisions > Revision Detail** sheet displays.
3. Clear the **Manually review all transactions** check box.
4. Click **Save**.
5. Remain in GL Transaction Type Maintenance for next workshop.

## Add a Revision

Default revisions have a status of **Active** or **Blocked** and cannot be modified. To configure the posting process for a specific transaction type, add a new revision. This workshop demonstrates how to use one of the available revisions as a template to add a new revision.

1. In the **Transaction Type** field, verify **AR Invoice** displays.
2. From the **New** menu, select **New Revision**. The **New Revision** window displays.
3. Verify Create **new revision by copying existing revision** check box is selected.
4. In the Source Revision field, select **Base Std - Active**.
5. Click **OK**.
6. The **Revisions > Revision Detail** sheet displays. This may take several minutes.
7. Select **Revision: A - Draft** from the tree view.
8. In the **Revision ID** field, enter **Dynamic**.
9. Click **Save**.

## Dynamic Account Segments

Dynamic account segments are used to record temporary, unique business activity. Link, or reference, dynamic segments to a business entity, which is a table that records data placed against customer, supplier, part, and other entities.

Dynamic segments set segment values based on values from posted transactions or user input. If your chart of accounts (COA) uses dynamic segments, you can directly assign dynamic segments to GL controls or modify specific posting rules to post to the dynamic segments.

Once you use a COA you can no longer add controlled segments to it, but you can always add dynamic segments. Dynamic segments often reference customer, supplier, part, or other business entities. The reference creates the segment value based on the entity ID. If you select the **Use Business Entity** check box in **Chart of Account Structure Maintenance**, you can associate the entity with a segment. The dynamic segment values are set based on the selected business entity.

## Post Sales to a Dynamic Segment

In this workshop, revise a posting rule to post sales to a dynamic segment.

- Add a Posting Code. Since the Customer table is in place, add the CustID field to the SoldTo Customer.

### Add Customer ID Posting Code

1. From the tree view, verify the **AR Invoice** GL transaction type is selected.
2. From the tree view, select the **Revision: Dynamic - Draft**
3. From the tree view, navigate to **Revision: Dynamic - Draft > AR Invoice > Posting Codes**.
4. From the **Posting Codes** node, select **SoldTo Customer**.
5. From the **New** menu, select **New Post Code**.  
The Revisions > Incoming Document Lines > Entities > Posting Codes > Detail sheet displays.
6. In the **Name** field, enter **Customer ID**.
7. In the **Description** field, enter **Customer ID** code.
8. In the **Entity's Data Source** field, verify **Customer** displays.
9. In the **Field** field, select **CustID**.
10. Click **Save**.

### Use CustID to Populate the Customer Segment

Once the customer ID is added to the input document, use the Customer ID field to populate the Customer segment in the posting rules.

1. From the tree view, navigate to **Revision: Dynamic - Draft > Rules > Book: Main Book > Posting Rules**.
2. From the **Posting Rules** node, select **Post Extended Price Amount (Regular Invoice, Part)**. The Revisions > Book > Booking Rules > Operations>Base sheet displays.
3. In the **Summary** pane, right-click on the line where the following transaction amount is defined: Transaction Amount = Select Account From AR Invoice-Line Where Name = Extended Price AND Currency  
= Transactional

**Note:** From this operation line, the controlled part of the account is already retrieved using the hierarchy.

4. From the right-click menu that displays, select **Insert**.  
A new line displays in the **Summary** pane and states Please select variable and value or function.
5. At the bottom of the sheet, from the **Operations** field, select **Temp Account** from the context menu.
6. In the **Operations** field, click on the **Temp Account** link and select the **Customer** segment.
7. From the **Formula** field, (to the right of the **Operations** field), select **Value** from the context menu.
8. In the **Formula** field, click on the **Value** link and select **ABT Field > AR Invoice > Posting Codes > SoldTo Customer > Customer ID**.

The customer segment now populates for the sales account. In the Summary pane, the operation displays as:

TempAccount.Customer = AR Invoice-SoldToCustomer--CustomerID

9. Click **Save**.

### **Activate the Dynamic Revision**

1. Navigate to the Revisions > Revision Detail sheet.
2. In the **Status** field, select **Active**.
3. Navigate to the GL Transaction Type > sheet.
4. Verify the Logging check box is selected.
5. Click **Save**.
6. Minimize GL Transaction Type Maintenance.

### **Create an AR Invoice**

Navigate to AR Invoice Entry.

**Menu Path:** Financial Management > Accounts Receivable > General Operations > Invoice Entry

1. From the **New** menu, select **New Group**.
2. In the **Group** field, enter **DYN**.
3. From the **New** menu, select **New Miscellaneous Invoice**. The Header > **Detail** sheet displays.
4. In the **Sales Order** field, enter 5120 and press **Tab**.
5. From the **New** menu, select **New Line**.
6. The **Line > Detail** sheet displays.
7. Select the **SO Line/Rel** button and search for and select the line that displays.
8. Click **Save**.

### **Print the AR Invoice Edit List**

1. From the **Actions** menu, select **Group > Edit List**. The **Invoice Entry - Group Edit List** window displays.
2. From the **File** menu, select **Print Preview**.
3. Review the **GL ACCOUNT RECAP** section of the report
4. Verify a credit to the sales account 4010-00-00-DALTON displays.
5. Close the report and **Invoice Entry - Group Edit List** window.

### **Post the AR Invoice**

1. From the **Actions** menu, select **Group > Post**. The **AR Invoice Post Process** window displays.
2. From the **File** menu, select **Submit** and close the **AR Invoice Post Process** window.
3. Exit AR Invoice Entry.

## Use PE Log Viewer

In this workshop, review invoice transaction in the PE Log Viewer. Navigate to PE Log Viewer. Menu Path: Financial Management > General Ledger > General Operations > PE Log Viewer

1. Click the **binoculars** to open Search window.
2. From Search Window, click **Search**.
3. Double-click to select the first entry.
  - a. The invoice transaction displays in the PE Log Viewer
4. In the Find field, enter **DALTON** and press **Tab**.
5. Click the **Down Arrow** that is to the right of the Find field.
6. Click the **Down Arrow** once again to view the **Post Code** reference for customer DALTON.
7. Click the **Down Arrow** more times (by the 8th to 10th search you will see the 4010-00-00-Dalton reference).
8. **Exit** PE Log Viewer.

## Review Results in Journal Tracker

Navigate to Journal Tracker.

**Menu Path:** Financial Management > General Ledger > General Operations > Journal Tracker

1. Click the **Journal Code** button.  
The Review Journal Entry Search window displays.
2. Click the Search button and select the **Sales Journal**.
3. Navigate to the **Transaction Detail > Specific > Detail sheet**.
4. Click the **Retrieve** button.
5. **Review** the transaction details.
6. **Exit** Journal Tracker.

## Modify a Posting Rule Transaction

The controller wants to change the Transaction Text for **COS/WIP** Capture Transactions. In this workshop, you will modify transaction text for the **PUR-STK/PUR-INS**: Post Extended Cost to A/P Clearing And Inventory/Expense/Inspection Accounts rule within the **COSandWIP** GL Transaction Type.

Navigate to GL Transaction Type Maintenance.

**Menu Path:** Financial Management > General Ledger > Setup > GL Transaction Type

## Add a Revision

1. **Maximize** GL Transaction Type Maintenance.
2. Select **Clear**.
3. Navigate to the **GL Transaction Type** sheet.

4. In the **Transaction Type** field, search for and **select COSAndWIP**.
5. From the **New menu**, select **New Revision**. The **New Revision window displays**.
6. **Verify** Create new revision by copying existing revision check box is selected.
7. In the **Source Revision** field, select **Base Std (Active)**.
8. Click **OK**.

The Revisions > Revision Detail sheet displays. This may take several minutes.

9. In the Tree View, select the new Revision: A - Draft revision.
10. In the **Revision ID** field, enter **XXXFun** (where XXX are your initials).
11. Click **Save**.

#### **Modify Standard Posting Rule PUR-STK/PUR-INS to include Transaction Text**

1. In the Tree View, navigate to and select COSandWIP > Revision: XXXFun > Rules > Book: Main Book > Posting Rules > PUR-STK/PUR-INS.
2. Navigate to **Revisions > Book > Booking Rules > Operations>Base** sheet. Review the standard operation text.
3. Click the **Customization** sheet. You customize posting rules from here.
4. Right-click in the empty space and select **Add**.
5. At the bottom of the screen, notice the **Operation** radio button is active.
6. Click on the list below this radio button and select **Transaction Text**.
7. From the **Formula** field (to the right), select **Concatenate String + String**.  
You can combine, or concatenate, multiple strings.
8. In the **Formula** field, click the first "**String**" and select **Value**. The **Enter Value** window displays.
9. Enter **PO\_** and click **OK**.
10. Click **Save**.

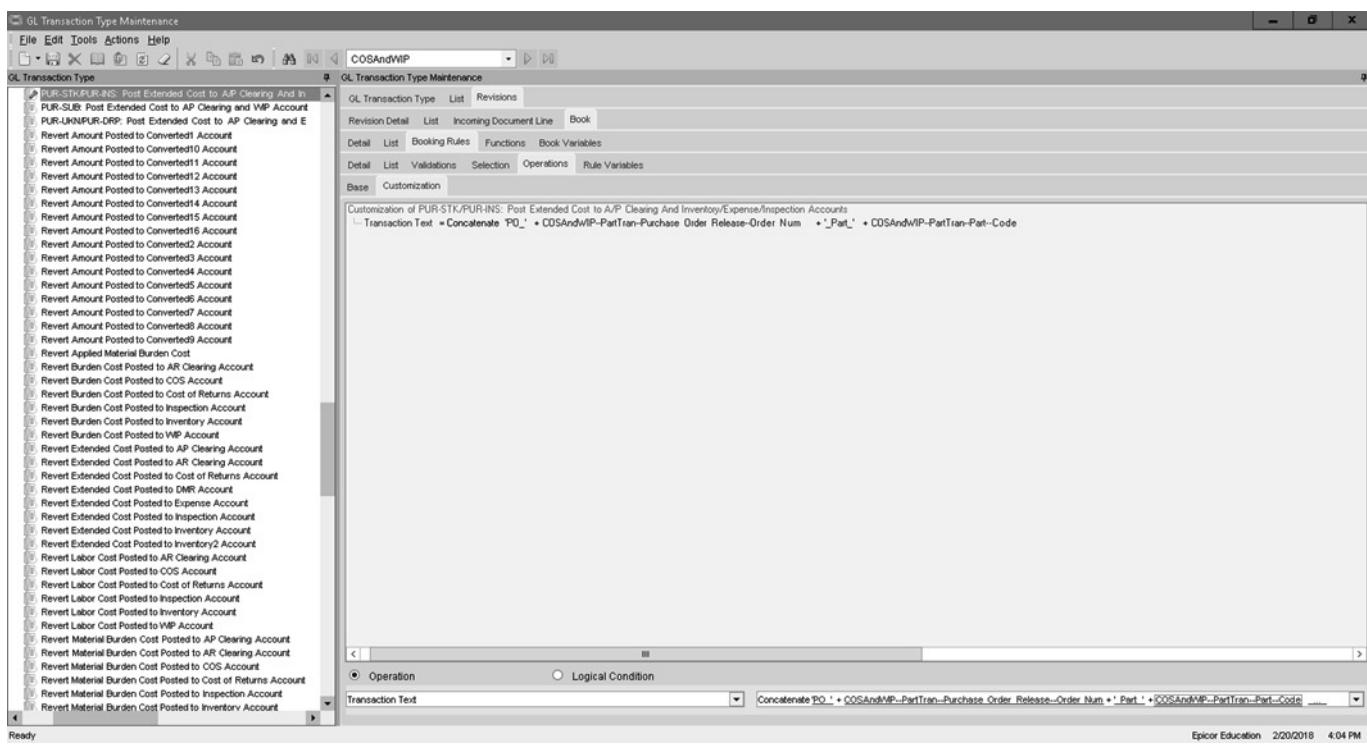
11. In the **Formula** field, select the next "**String**" and select:

**ABT Field>COSandWIP>PartTran>PostingCodes>PurchaseOrderRelease>OrderNum**

12. Click **Save**.
13. In the **Formula** field, Click the **blue dash** to add a "**String**" link.
14. In the **Formula** field, select the next "**String**" and select **Value**. The **Enter Value** window displays.
15. Enter **\_Part\_** and click **OK**.
16. Click **Save**.
17. In the **Formula** field, Click the **blue dash** to add a "**String**" link.
18. In the **Formula** field, select the next "**String**" and select:  
**ABT Field>COSandWIP>PartTran>PostingCodes>Part>Code**.
19. Click **Save**. The Custom Text displays as:

## Understand the Flexibility of Epicor ERP Posting Rules

Transaction Text= Concatenate 'PO\_ ', COSAndWIP--PartTran--Purchase Order Release-- Order Num , '\_ Part\_ ', and COSAndWIP--PartTran--Part--Code



## Activate the Revision

1. Navigate to the Revisions > Revision Detail sheet.
  2. In the **Status** field, select **Active**.
- Activating a revision can take up to a few minutes. The Status field deactivates when activation is complete.
3. Exit GL Transaction Type Maintenance.

## Enter a PO Receipt

Navigate to **Receipt Entry**.

**Menu Path:** Material Management > Shipping / Receiving > General Operations > Receipt Entry

1. From the **New** menu, select **New Receipt**.
2. In the **PO Field** enter 4210 and click **Tab**.
3. In the **Packing** Slip field, enter the 4210.
4. Click **Save**.
5. From the **Actions** menu, select **Mass Receipt**. The **Mass Receipts** window displays.
6. Click the **Select All** button to select all lines.
7. Click the **Get All** button to receive all the required quantity.
8. Click the **Receive All** button to receive the lines by mass receipt.

9. Click **Process** to receive the lines by mass receipt.
10. Click **Close** then **Exit** Mass Receipts. On the **Summary** sheet, verify the **Received All** check box is selected  
The All Received status displays.
11. Click **Save**.
12. If a message the **Receipt** is **Compliant** displays, click **OK**.
13. **Exit** Receipt Entry.

## Capture and Post Inventory Transactions

Navigate to **Inventory Reconciliation Process** (Capture COS/WIP Activity).

**Menu Path:** Finance Management > General Ledger > General Operations > Inventory Reconciliation Process

1. Verify the **Post to General Ledger** check box is selected.
2. Select the **Post Cost of Sales / MFG Variance** check box.
3. Click File > Submit.
4. Exit Capture COS/WIP Activity.

## Review Results in Journal Tracker

Navigate to Journal Tracker.

**Menu Path:** Financial Management > General Ledger > General Operations > Journal Tracker

1. Click the **Journal Code** button.
2. The **Review Journal Entry Search** window displays.
3. Click Search, and then select the Inventory Journal.
4. Navigate to the **Transaction Detail > Specific > Detail** sheet.
5. Click the **Retrieve** button.
6. Review the transaction details.
7. Note the **Journal Transaction** field displays the PO text, for example: PO\_4210\_Part\_RL-FIFO.
8. **Exit** the Journal Tracker.

**Congratulations! You have completed Understand the Flexibility of Epicor ERP Posting Rules.**

# Upgrading BPMs from ABL to C#

This session will focus on tools and techniques for migrating BPM's from Epicor 9 to Epicor 10 both through code conversion from ABL to c# and leveraging new tools now available in Epicor 10. It will also cover an example of prototyping a BPM using a Visual Studio solution.

At the conclusion of this lab, you will be able to:

- Know how to access and use the on-line ABL to c# conversion tool
- Understand syntax comparisons between ABL and c#
- Know about code cleanup options and techniques
- Enable server logging and write messages to the server log from BPMs
- Manually enter c# code into the BPM script editor
- Use the new Fill Table by Query BPM Action Items
- Use Visual Studio to prototype BPMs

**Audience:** IT staff familiar working with BPMs and some programming experience. c# programming and .NET development experience recommended but newcomers will get an idea of what these tools will do for them.

## System Requirements

Modules/Licensing	Product Version
BPM/BAQ	10.x

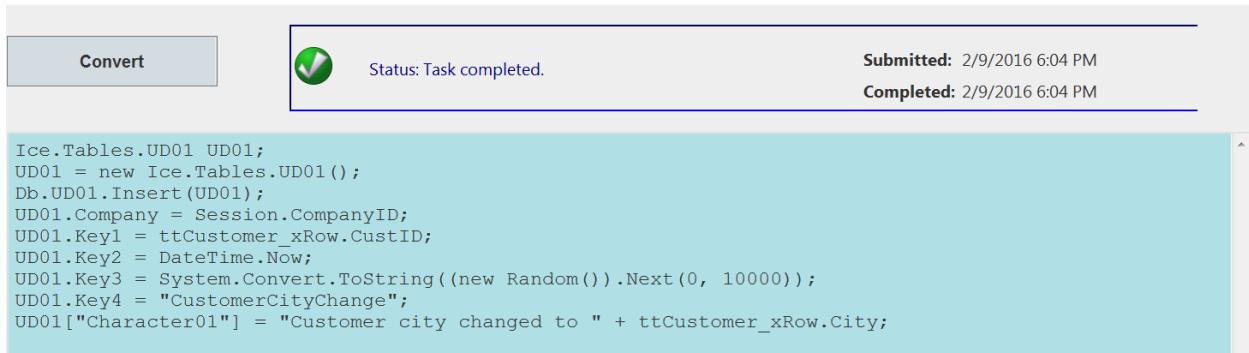
The screenshot shows the Epicor ICE 3.0 Migration interface. At the top, there is a navigation bar with links for Conversion, Exported Directives, History, Activity, and About. On the left, a sidebar displays system requirements for Modules/Licensing (BPM/BAQ) and Product Version (10.x). The main content area is titled "Online Conversion - Progress 4GL to C#" and contains a message about converting source code snippets. Below this, there is a text input field for "Progress Code" and a "BO Name:" dropdown. The "Progress Code" field contains the following ABL code:

```

CREATE UD01.

ASSIGN UD01.Company = cur-comp
UD01.Key1 = ttCustomer.CustID
UD01.Key2 = NOW
UD01.Key3 = string(RANDOM(0,10000))
UD01.Key4 = 'CustomerCityChange'
UD01.Character01 = 'Customer city changed to ' + ttCustomer.City.

```



The screenshot shows a software interface for code conversion. On the left, there's a 'Convert' button. In the center, a status message says 'Status: Task completed.' with a green checkmark icon. To the right, there are two timestamped entries: 'Submitted: 2/9/2016 6:04 PM' and 'Completed: 2/9/2016 6:04 PM'. Below this information is a code editor window displaying the following C# code:

```
Ice.Tables.UD01 UD01;
UD01 = new Ice.Tables.UD01();
Db.UD01.Insert(UD01);
UD01.Company = Session.CompanyID;
UD01.Key1 = ttCustomer_xRow.CustID;
UD01.Key2 = DateTime.Now;
UD01.Key3 = System.Convert.ToString((new Random()).Next(0, 10000));
UD01.Key4 = "CustomerCityChange";
UD01["Character01"] = "Customer city changed to " + ttCustomer_xRow.City;
```

## Review - ABL Versus c# Code Comparison

### Get One Row

#### ABL

FIND FIRST UD01 WHERE UD01.Company = cur-comp AND UD01.Key1 = 'Dalton' NO-ERROR.

#### c#

Straight from the conversion –

Not a valid LINQ reference.

```
Ice.Tables.UD01 UD01;
UD01 = (from UD01_Row in Db.UD01
 where UD01_Row.Company == Session.CompanyID &&
 string.Compare(UD01_Row.Key1, "Dalton", true) == 0 &&
 string.Compare((string)UD01_Row["ShortChar01"], "MN", true) == 0
 select UD01_Row).FirstOrDefault();
```

Modified and corrected –

- Changed explicit type for UD01 to an implicit type var.
- Changed reference for ShortChar01 to the strongly typed data model reference.
- Removed optional string.Compare extension methods.

```
var UD01 = (from UD01_Row in Db.UD01
 where UD01_Row.Company == Session.CompanyID &&
 UD01_Row.Key1 == "Dalton" &&
 UD01_Row.ShortChar01 == "MN"
 select UD01_Row).FirstOrDefault();
```

### Get One Row, Update Multiple

#### ABL

```
FIND FIRST ttCustomer WHERE ttCustomer.Company = cur-comp and
 (ttCustomer.RowMod = 'U' OR ttCustomer.RowMod = 'A') NO-ERROR.
FOR EACH UD01 WHERE UD01.Company = cur-comp AND UD01.Key1 = ttCustomer.CustID NO-LOCK:
 ASSIGN UD01.Character01 = ttCustomer.City
 UD01.RowMod = 'U':U.
END.
```

## c#

Straight from the conversion –

```
Ice.Tables.UD01 UD01;
var ttCustomer_xRow = (from ttCustomer_Row in ttCustomer
 where ttCustomer_Row.Company == Session.CompanyID &&
 (string.Equals(ttCustomer_Row.RowMod, IceRow.ROWSTATE_UPDATED,
 StringComparison.OrdinalIgnoreCase) || string.Equals(ttCustomer_
Row.RowMod, IceRow.ROWSTATE_ADDED, StringComparison.OrdinalIgnoreCase))
 select ttCustomer_Row).FirstOrDefault();

foreach (var UD01_iterator in (from UD01_Row in Db.UD01
 where UD01_Row.Company == Session.CompanyID &&
 UD01_Row.Key1 == ttCustomer_xRow.CustID
 select UD01_Row))
{
 UD01 = UD01_iterator;
 UD01["Character01"] = ttCustomer_xRow.City; UD01.RowMod = "U";
}
```

Modified and corrected –

- Switched the row state evaluation to use extension methods.
- Removed UD01 declaration.
- Changed reference for Character01 to the strongly typed data model reference.
- Removed UD01.RowMod = "U"; this field is not used in the data model.

```
var ttCust_Row = (from custRow in ttCustomer
 where custRow.Company == Session.CompanyID &&
 (custRow.Added() || custRow.Updated())
 select custRow).FirstOrDefault();

foreach (var UD01_iterator in (from UD01_Row in Db.UD01
```

```

 where UD01_Row.Company == Session.CompanyID &&
 UD01_Row.Key1 == ttCust_Row.CustID
 select UD01_Row))
 {
 UD01_iterator.Character01 = ttCust_Row.City;
 }

```

**Adding Rows****ABL**

FIND FIRST ttCustomer WHERE ttCustomer.Company = cur-comp and

ttCustomer.RowMod = 'A' NO-ERROR.

CREATE UD01.

ASSIGN UD01.Company = cur-comp

UD01.Key1 = ttCustomer.CustID

UD01.Key2 = NOW

UD01.Key3 = string(RANDOM(0,10000))

UD01.Key4 = 'CustomerCityAdd'

UD01.Character01 = 'New Customer added with a city of ' + ttCustomer.City.

**C#**

Straight from the conversion –

**Ice.Tables.UD01 UD01;**

var ttCustomer\_xRow = (from ttCustomer\_Row in ttCustomer

where ttCustomer\_Row.Company == Session.CompanyID &&

string.Equals(ttCustomer\_Row.RowMod, IceRow.ROWSTATE\_ADDED,  
StringComparison.OrdinalIgnoreCase)

select ttCustomer\_Row).FirstOrDefault();

**UD01 = new Ice.Tables.UD01();**

Db.UD01.Insert(UD01);

UD01.Company = Session.CompanyID;

UD01.Key1 = ttCustomer\_xRow.CustID;

UD01.Key2 = **DateTime.Now**;

UD01.Key3 = **System.Convert.ToString((new Random()).Next(0, 10000))**;

UD01.Key4 = "CustomerCityAdd";

UD100A["Character01"] = "New Customer added with a city of " + ttCustomer\_xRow.City;

Modified and corrected –

- Changed explicit type for UD01 to an implicit type var and moved declaration closer to the actual usage.
- Changed the random number function to a NewGuid.
- Changed reference for Character01 to the strongly typed data model reference.
- Switched the row state evaluation to use extension methods.

```
var ttCustomer_xRow = (from ttCustomer_Row in ttCustomer
 where ttCustomer_Row.Company == Session.CompanyID &&
 (ttCustomer_Row.Added() || ttCustomer_Row.Updated())
 select ttCustomer_Row).FirstOrDefault();
```

```
var UD01 = new Ice.Tables.UD01();
Db.UD01.Insert(UD01);
UD01.Company = Session.CompanyID;
UD01.Key1 = ttCustomer_xRow.CustID;
UD01.Key2 = DateTime.Now.ToString();
UD01.Key3 = System.Guid.NewGuid().ToString();
UD01.Key4 = "CustomerCityAdd";
UD01.Character01 = "New Customer added with a city of " + ttCustomer_xRow.City;
```

## Deleting Rows

### ABL

```
FIND FIRST ttCustomer WHERE ttCustomer.Company = cur-comp AND
 ttCustomer.RowMod = 'U' AND
 ttCustomer.CustID = 'DALTON' NO-ERROR.
```

```
FOR EACH UD01 WHERE UD01.Company = cur-comp AND
 UD01.Key1 = ttCustomer.CustID:
 DELETE UD01.
```

```
END.
```

### C#

Straight from the conversion –

```
Ice.Tables.UD01 UD01;
var ttCustomer_xRow = (from ttCustomer_Row in ttCustomer
 where ttCustomer_Row.Company == Session.CompanyID &&
 string.Equals(ttCustomer_Row.RowMod, IceRow.ROWSTATE_UPDATED,
 StringComparison.OrdinalIgnoreCase)
```

```

select ttCustomer_Row).FirstOrDefault();

foreach (var UD01_iterator in (from UD01_Row in Db.UD01
 where UD01_Row.Company == Session.CompanyID &&
 UD01_Row.Key1 == ttCustomer_xRow.CustID
 select UD01_Row))

{
 UD01 = UD01_iterator;
 Db.UD01.Delete(UD01);
}

```

Modified and corrected –

Changed explicit type for UD01 to an implicit type var and moved declaration closer to the actual usage.  
Switched the row state evaluation to use extension methods.

```

var ttCustomer_xRow = (from ttCustomer_Row in ttCustomer
 where ttCustomer_Row.Company == Session.CompanyID &&
 ttCustomer_Row.Updated()
 select ttCustomer_Row).FirstOrDefault();

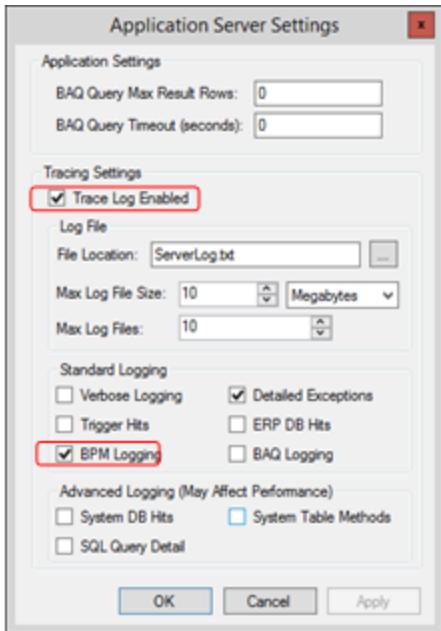
foreach (var UD01_iterator in (from UD01_Row in Db.UD01
 where UD01_Row.Company == Session.CompanyID &&
 UD01_Row.Key1 == ttCustomer_xRow.CustID
 select UD01_Row))

{
 var UD01 = UD01_iterator;
 Db.UD01.Delete(UD01);
}

```

### Writing to the Server Log

**Note:** You will need to enable server logging in the Epicor Administration console.



## ABL

MESSAGE "Write a message and maybe include table field values....".

## c#

```
Ice.Diagnostics.Log.WriteLine("Write a message and maybe include table field values...");
```

## Working with the BPM Custom Code Editor

This exercise covers creating new BPMs and adding custom c# code that uses LINQ statements to add rows to the UD01 table when the customer's city changes for all open sales orders.

### Create a new Method Directive

Navigate to **Method Directive Maintenance**.

**Menu Path:** System Management > Business Process Management > Method Directive Maintenance

1. Click the **Method Code...** search button and select the **Customer** business object.
2. Enter a **U** in the **Where Method Name Starts At** field and click the **Search** button.
3. Select the **Update** method and click **OK**.
4. Click **New-Pre-Processing Directive** from the **New** menu.
5. Enter a directive name of **XXX\_BPMTest** and enter a directive group of **XXX** (Replace XXX with your initials).
6. Select the **Enabled** check box and click **Save**.
7. Click the **Design...** button. The **BPM Designer** displays.
8. Add a new condition to the designer pallet and connect the **Start** action to the top of it.
9. Add a new condition row and configure it to check for changes to **ttCustomer.City**.
10. Drag an Execute Custom Code action on to the designer pallet and connect it to the True side of the condition.
11. Click the **code...** link and paste the following code into the editor window.

Note: You can find a text file with this code snippet in the following location – C:\Insight-s19\Jobs\BPM\Code Snippets.txt

```
// Get the row being updated or added.

var ttCustRow = (from custRow in ttCustomer
 where custRow.Added() || custRow.Updated()
 select custRow).FirstOrDefault();

// Check that we got a row

if (ttCustRow == null)
{
 return;
}

// Find the current Customer record before changes.

// Note: We are only select 2 fields from the entire row.

var currCustRow = (from Cust_Row in Db.Customer
 where Cust_Row.SysRowID == ttCustRow.SysRowID
 select new
 {
 SysRowID = Cust_Row.SysRowID,
 City = Cust_Row.City
 }).FirstOrDefault();

// Capture the current City.

string currCity = string.Empty;
if (currCustRow != null) currCity = currCustRow.City;

// Find all open sales orders for this customer.

var orderNumbers =
 from orderHeadRow in Db.OrderHed
 where orderHeadRow.Company == Session.CompanyID &&
 orderHeadRow.CustNum == ttCustRow.CustNum && orderHeadRow.OpenOrder
 select orderHeadRow.OrderNum;

foreach (var orderNumber in orderNumbers)
{

```

```
// Write a message to the server log.
Ice.Diagnostics.Log.WriteEntry("***** " + string.Format("Attention: Reroute order#{0} from {1} to {2} for
customer {3}", orderNumber, currCity, ttCustRow.City, ttCustRow.CustID) +
"*****");

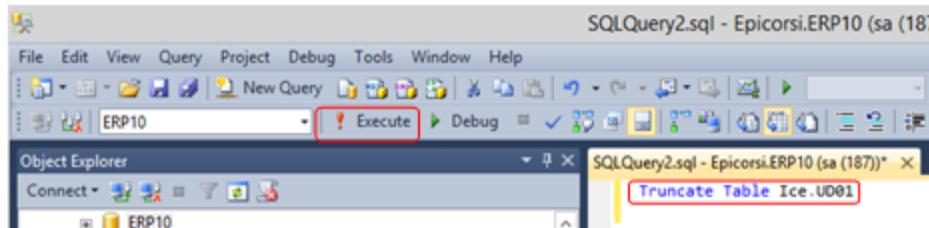
// Add rows to UD01.
var newRow = new UD01
{
 Company = Session.CompanyID,
 Key1 = ttCustRow.CustID,
 Key2 = DateTime.Now.ToString(),
 Key3 = System.Guid.NewGuid().ToString(),
 Key4 = "CustomerCityChange",
 Character01 = string.Format("Attention: Reroute order#{0} from {1} to {2} for customer {3}", orderNumber,
currCity, ttCustRow.City, ttCustRow.CustID)
};
Db.UD01.Insert(newRow);
}
```

12. Click **OK**.
13. Click **Validate** and review the **Validation Results** message.
14. Click **Save and Exit**.
15. Click **Save** on the Method Directive Maintenance forms menu.

### Test the new directive

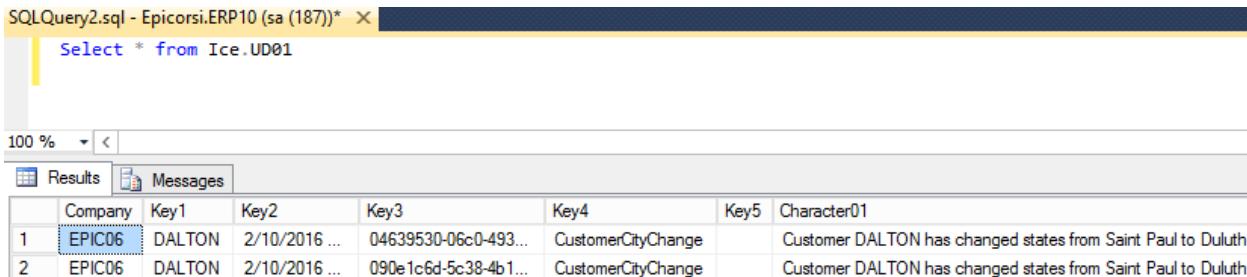
Open **SQL Server Management Studio**.

1. In the Object Explorer tree view, in the Databases section, right-click the ERP10 database and select New Query.
2. In the query window, enter Truncate Table Ice.UD01 command and click the Execute button.



3. Return to Epicor application and navigate to Customer Maintenance.  
Menu Path: Sales Management > Order Management > Setup > Customer
4. In the Customer field, select Dalton.
5. In the City field, change the city to Duluth.

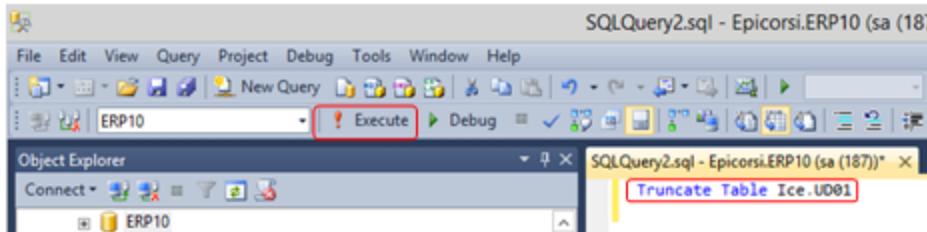
6. Click Save.
7. Return to SQL Server Management Studio and remove the Truncate Table command.
8. In the query window, enter the Select \* from Ice.UD01 command and click Execute.



The screenshot shows the SQL Server Management Studio interface. The query window contains the command `Select * from Ice.UD01`. The results pane displays a grid with the following data:

	Company	Key1	Key2	Key3	Key4	Key5	Character01
1	EPIC06	DALTON	2/10/2016 ...	04639530-06c0-493...	CustomerCityChange		Customer DALTON has changed states from Saint Paul to Duluth
2	EPIC06	DALTON	2/10/2016 ...	090e1c6d-5c38-4b1...	CustomerCityChange		Customer DALTON has changed states from Saint Paul to Duluth

9. Clear the table. Enter the Truncate Table Ice.UD01 command in the query window and click Execute.



10. Disable the directive before the next exercise.

### Use the Fill Table by Query BPM Action

This exercise will accomplish the same results we did by executing custom c# code using a new Fill Table by Query action item.

#### Create New Method Directive

Navigate to **Method Directives Maintenance**.

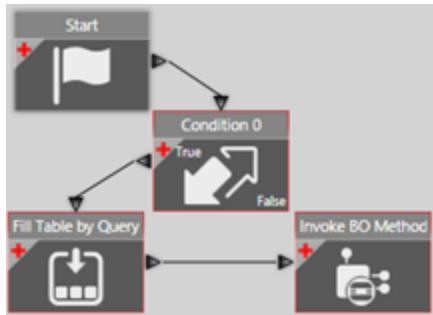
**Menu Path:** System Management > Business Process Management > Method Directives Maintenance

1. Click the Method Code button. The Method Search window displays.
2. In the Search by Business Object section, verify Product is selected.
3. In the Business Object field, select Customer.
4. In the Where Method Name Starts At field, enter U.
5. Click Search.
6. In the Search Results grid, select the Update method and click OK.
7. Verify the Method Code field displays Erp.Customer.Update business method.
8. Click New and select New Pre-Processing. The Pre-Processing > Detail sheet displays.
9. In the Directive Name field, enter XXX - CustomerAlert (where XXX are your initials).
10. In the Group field, enter XXX (where XXX are your initials).
11. Click Save.

## Create Workflow Skeleton

First, design the skeleton of the workflow used in this workshop.

1. On the Pre-Processing > Detail sheet, click Design. The BPM Workflow Designer displays.
2. Place the following workflow items on the designer canvas:
  - Condition
  - Fill Table by Query
  - Invoke BO Method
3. Create the following connections:
  - a. Connect Start to Condition.
  - b. Connect the Condition's True outbound exit to the Fill Table by Query action.
  - c. Connect the Fill Table by Query action to the Invoke BO Method action.
4. Verify the workflow looks similar to the following:



## Configure Condition

Configure the condition to fire the directive when a city is changed on a customer master record.

1. In the designer canvas, click the Condition item to select it.
2. In the Condition pane at the bottom of the window, click the Add Line icon.
3. From the list of available conditions, select the following condition:

The specified field has been changes from any to another.
4. Click specified.
5. Verify the Table field displays ttCustomer (ds.Customer).
6. Search for the City field and select it.
7. Click OK to exit the Select Table Field(s) window. The condition is now prepared.

## Configure Invoke BO Method Action

Before you configure Fill Table by Query action to prepare data for the BO method call, you can configure the Invoke BO Method to specify which method you want to call. To store data in a directive-level variable, you must create it while you configure parameters of this method call. By doing this, you make sure the variable type you create corresponds to the type of method parameter to which it is assigned.

1. In the designer canvas, select the Invoke BO Method action.

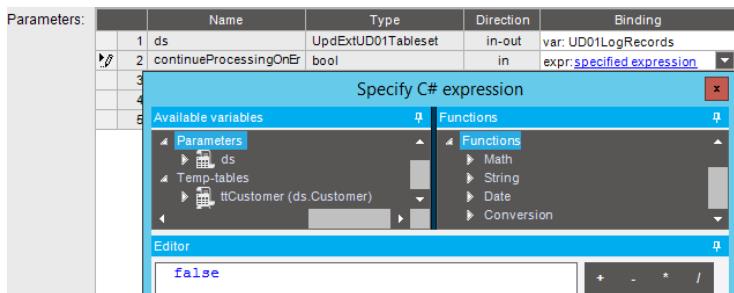
2. In the Actions pane found at the lower portion of the screen, view the Action statement:  
Invoke specified BO method with specified parameters.
3. Click the first specified link.
4. In the Choose BO Method window, select System.  
User-defined tables belong to framework part of the application.
5. Select UD01 and select the UpdateExt method.
6. Click the second specified link to configure the data to pass as parameters to this method.
7. Notice the first parameter of this method is named ds (dataset). This parameter uses the INPUT-OUTPUT direction, which indicates the method receives data from this parameter and potentially returns the updated data into the variable of the same type.

Note: If you know the type of required variable in advance, you can use the Variables tab within the Designer to create it. In this example, use another way of creating a directive level variable directly from within the action where it will be used.

8. For the ds parameter, click Binding and select create new variable. The Create New Variable window displays.
  9. Verify the default variable required Type of Ice.Tablesets.UpdExtUD01Tableset.
  10. In the Name field, enter UD01LogRecords and click OK.
- Important! Usage of directive level variables is limited to the directive where they are defined. Any intermediate data they hold cannot be passed between multiple directives.
11. Specify the two INPUT parameters that pass data into the method. You must supply these required parameters.
  12. For the continueProcessingOnError parameter, select Binding.

Note the two available options:

- create new variable - as discussed in previous steps, use this option to create a new variable. In this case, create the simple (scalar) variable of the boolean type.
  - expr: specified expression - use this option to launch the Specify C# expression window to compose an expression assigned to this parameter.
13. In this example, create an expression for the continueProcessingOnError parameter.
    - a. In the Binding field, select expr: specified expression.
    - b. Click specified expression. The Specify C# Expression window displays.
    - c. In the Editor pane, enter false.
    - d. Click OK.



This expression ensures the processing will not continue if an error occurs.

14. Create an expression for the rollbackParentOnChild parameter.
  - a. In the Binding field, select expr: specified expression.
  - b. Click specified expression. The Specify C# expression displays.
  - c. In the Editor pane, enter true.
  - d. Click OK. This expression ensures consistency of data when it is processed.

Business Object:	<a href="#">Ice.UD01</a>
Method Name:	<a href="#">UpdateExt</a>
<b>Parameters:</b>	
1	Name: ds Type: UpdExtUD01Tableset Direction: in-out Binding: var: UD01LogRecords
2	Name: continueProcessingOnEr Type: bool Direction: in Binding: expr:false
3	Name: rollbackParentOnChild Type: bool Direction: in Binding: expr:true
4	Name: errorsOccurred Type: bool Direction: out Binding: [ignore]
5	Name: <return value> Type: BOUpdErrorTableset Direction: out Binding: [ignore]

15. Specify the two OUTPUT parameters which return data from the method call.

Note: The Business Object method does not require any data from the parameters of this direction. You can either assign these method parameters to variables of the same type or you can select the [ignore] binding to assign no value.

In this example, for both the errorsOccured and <return value> parameters, select [ignore].

16. In the Setup Method Parameters window, click OK.
17. In BPM Workflow Designer, click the Variables tab at the bottom of the window. Verify the newly created variable is present. The Invoke BO Method action is now configured.

Note: You can use this tab to create new variables, view existing ones, rename them, change their types and to delete them.

## Design BPM Query

In this task, configure the Fill Table by Query action. Use action to add data into a target in-memory table. An in-memory table can be either a temporary table (ttTable) passed as an argument to the Business Object method or it can be a directive-level variable of the Tableset type.

First, you must design a BPM query. When you construct the query, you can reference both in-memory tables, such as ttCustomer and standard database tables such as ERP.Customer. To complete the query, you must explicitly set which columns you want to display in the result set.

1. In the designer canvas, click the Fill Table by Query action to select it.
2. In the Actions pane, view the Action statement:

Use the designed query to insert data into the specified table with specified mapping.

3. Click designed. The Compose Query window displays.
4. In the Query Name field, enter CustomerOrders.
5. Place the following tables on the designer canvas:
  - ttCustomer - Supplies the modified value of the customer city record.
  - ERP.Customer - Provides the original value of the customer city record.
  - ERP.OrderHed – Provides the list of open orders for the customer to be updated.

Note the **ERP.Customer** and **ERP.OrderHed** tables are automatically linked. Highlight the link between these tables and change OrderHed.BTCustNum to OrderHed.Custum.

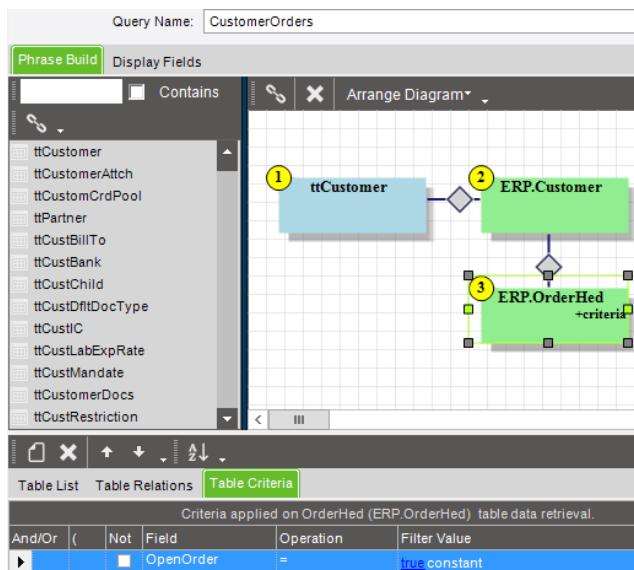
6. Create relation between the ttCustomer and ERP.Customer tables.
  - a. Click Add Connection and link both tables.
  - b. On the Table Relations sheet, click the Add Row icon (twice).
  - c. Create the following relations:

<b>ttCustomer</b>	<b>Customer</b>
Company	Company
CustNum	CustNum

7. Modify the relation between the Customer and ERP.OrderHed tables.
8. Click the link and confirm the following fields are linked:

<b>ttCustomer</b>	<b>Customer</b>
Company	Company
CustNum	CustNum

9. Apply criteria on the OrderHed table to only retrieve open orders.
  - a. On the canvas, click the ERP.OrderHed table.
  - b. On the Table Criteria sheet, click Add Row.
  - c. In the Field column, select OpenOrder.
  - d. In the Operation column, accept the default value equals (=).
  - e. In the Filter value column, select specified constant.
  - f. Click specified. The Specify Value window displays.
  - g. Enter true and click OK.



10. Now select the fields to display in the result set.

- Select the Display Fields sheet.
- Select the following fields:
  - ttCustomer\_Company
  - ttCustomer\_CustID
  - ttCustomer\_City
  - Customer\_City
  - OrderHed\_OrderNum

11. In the Compose Query window, click OK.

### Select Target Table

Now select the target in-memory table where data from the BPM Query will be inserted. In this example, you select the directive level variable of the TableSet type you created for this directive.

- In the **insert data into** the Action phrase, click **specified**. The **Select Table** window displays.
- From the **Table** drop-down list, scroll down and select **UD01LogRecords.UD01** to insert records into the UD01 table of the UD01LogRecords directive level variable.
- Click **OK**.

### Configure Table Mappings

To complete the action, configure how records are be mapped to the in-memory table. The number of records added to the selected table is equal to the number of records returned from the BPM Query.

- In the table with Action phrase, click the specified mapping link.

The Setup Table Mapping window displays, presenting all fields available within the UD01LogRecords.UD01 table.

- In the Company column, in the Binding field, select field: ttCustomer\_Company.

3. In the Key1 column, in the Binding field, select field: ttCustomer\_CustID.
4. In the Key2 column, build an expression that stamps the current time.
  - a. In the Binding field, select expr: specified expression.
  - b. Click the specified expression link. The Specify C# expression window displays.
  - c. In the Functions list, expand the Date branch and double-click Now to add the BpmFunc.Now() function to the Editor.
  - d. The Key2 column requires a string data type. To convert the default datetime format to string, perform the following steps:
    - Place the cursor right after the brackets.
    - In the Functions list, expand the Conversion branch and double-click x.ToString().
    - Verify the expression now reads:  
BpmFunc.Now().ToString()
    - Click OK.
5. For the Key3 column, build an expression to ensure a unique key is created for each sales order that needs to be updated. To accomplish this task, create a unique GUID for each row.
  - a. From the Binding drop-down list, select expr: specified expression.
  - b. Click the specified expression link to launch the Specify C# expression window.
  - c. In the Editor pane, type the below expression:  
System.Guid.NewGuid().ToString()
6. Click OK.
7. For the Key4 column, build the expression that marks all records created by this directive in the UD01 table. This approach helps you to identify the source of data updates, if needed.
  - a. From the Binding drop-down list, select expr: specified expression.
  - b. Click the specified expression link to launch the Specify C# expression window.
  - c. In the Editor pane, type the below expression:  
"CustomerCityChange"
  - d. Click OK.
8. For the Character01 column, build an expression that alerts the users to update the affected sales orders.
  - a. From the Binding drop-down list, select expr: specified expression.
  - b. Click the specified expression link to launch the Specify C# expression window.
  - c. In the Editor pane, enter the below expression:  
  

```
string.Format("Attention: Reroute order#{0} from
{1} to {2} for customer {3}",
queryRow.OrderHed_OrderNum,
queryRow.Customer_City, queryRow.ttCustomer_City,
queryRow.ttCustomer_CustID)
```

**Note:** In this message, parameters inside the brackets are substituted with data returned by the BPM Query. In the Specify C# expression window, notice the Query row branch is found at the bottom of the Available variables pane. It displays the list of columns you selected for display when you designed the BPM Query. This way, you can use the rows returned by the query to make up the expression.

9. Click OK.
10. For the RowMod column found at the bottom of the Columns list, build an expression that marks all records as added to the table.
  - a. From the Binding drop-down list, select expr: specified expression.
  - b. Click the specified expression link to launch the Specify C# expression window.
  - c. In the Editor pane, type the below expression:  
"A"
11. In the Setup Table Mapping window, click OK.
12. Click Validate and verify the directive reports contain no errors.
13. Click Save and Exit and Enable the directive.
14. Click Save and minimize Method Directives.

### Modify Customer Record

1. Navigate to Customer Maintenance.  
Menu Path: Sales Management > Order Management > Setup > Customer
2. Retrieve the record for customer Dalton.
3. In the City field, delete the existing record and enter Green Bay.
4. Click Save to trigger the BPM directive.
5. Minimize Customer Maintenance.

### Test the Directive

1. Verify the records were updated into the UD01 table. You may use either of the following ways:
  - a. Use Microsoft® SQL Server® Management Studio to run the query against the Ice.UD01 table.  
The syntax may look as follows:

Select\*from Ice.UD01

	Company	Key1	Key2	Key3	Key4	Key5	Character01
1	EPIC06	Dalton	2/18/2016 4:34:36 PM	33c7504a-3a36-4e21-86a1-0fc827110d6	CustomerCityChange		Attention: Reroute order#5371 from Green Bay to Duluth for customer Dalton
2	EPIC06	Dalton	2/18/2016 4:34:40 PM	00a2e97e-8ae1-44ca-8cb4-d6a4fd7091	CustomerCityChange		Attention: Reroute order#5304 from Green Bay to Duluth for customer Dalton
3	EPIC06	Dalton	2/18/2016 4:34:40 PM	0a20a380-5046-443b-a459-b5d643bc05b	CustomerCityChange		Attention: Reroute order#5060 from Green Bay to Duluth for customer Dalton
4	EPIC06	Dalton	2/18/2016 4:34:40 PM	0e5198d6-7c12-4bc6-bb6b-c1b64546b6b0	CustomerCityChange		Attention: Reroute order#5000 from Green Bay to Duluth for customer Dalton

- b. In Epicor ERP, construct a Business Activity Query against the Ice.UD01 table.

Verify the results look similar to the following:

The screenshot shows the Business Activity Query Designer interface. At the top, there's a menu bar with File, Edit, Tools, Actions, Help, and a toolbar with various icons. Below that is a toolbar with buttons for Detail, General, Query Builder, Update, Analyze (which is selected), Where Used, and BAQ Search. The main area has tabs for General, Query Results, and Character01. The Query Results tab displays a grid of data with columns: Company, Key1, Key2, Key3, Key4, and Character01. The data consists of multiple rows of records. Below the grid is a section for Query Execution Messages, which states: "Query returned 45 row(s). Query has no more records to return. Query execution total time: 809.8002 ms." At the bottom, there are buttons for Analyze..., Test..., Clear Grid, Rows To Return (with a dropdown menu), Updatable Query (with Get List, Update, Get New, and Run Custom buttons), and a status bar indicating "Ready Epicor Education".

2. Clear the table, enter the Truncate Table Ice.UD01 command into the query window.
3. Click Execute.

The screenshot shows the SQL Server Management Studio (SSMS) interface. At the top, there's a menu bar with File, Edit, View, Query, Project, Debug, Tools, Window, Help, and a toolbar with various icons. The Object Explorer on the left shows a connection to "ERP10". In the center, there's a query window titled "SQLQuery2.sql - Epicorsi.ERP10 (sa (187)\* X)". The query window contains the command: "Truncate Table Ice.UD01".

4. Disable the directive before the next exercise.

## Using Visual Studio to Develop BPM's

Review how to setup a Visual Studio solution with the required assembly references to be able to instantiate the Db context object and execute c# code that performs the desired functions required for your BPM. You can then copy and paste the code into the BPM Custom Code editor.

**Environment:** You perform this activity on the application server running your target Epicor instance.

**Pre-requisites:** Visual Studio 2015 Community or higher is required and Sql Server Management Studio 2014 is recommended.

1. Open the completed Visual Studio solution from this location – C:\Insight-s19\Labs\BPM\BPMTTestHarness.sln
  2. Create a new Visual Studio 2015 Console Application.
  3. In the App.config file of your new solution, add the following key right after the <configuration> tag.
- ```

<appSettings>
  <add key="NotificationType" value="local" />
</appSettings>

```

- In your Web.config file in the root of your App Server website directory, copy the contents of the <connectionString> tag. You can find the Web.config file in the following location - C:\inet-pub\wwwroot\ERP10\Server\web.config

Note: You only need to add the bolded lines to the App.Config file of your Visual Studio solution.

<connectionStrings>

```

<add name="IceContext" con-
nec-
tionString-
="metadat-
a=res://Ice.Data.Model/IceCo-
ntex-
t.c-
sdl|res://Ice.Data.Model/IceCon-
text.ssdl|res://Ice.Data.Model/IceContext.msl;provider=System.Data.SqlClient;provider connection
string="Data Source=(local);Initial Catalog=ERP10;User ID=sa;Password=epicor;Min Pool Size=100;Max Pool
Size=2000;MultipleActiveResultSets=True"; providerName="System.Data.EntityClient" />

<add name="ErpContext" con-
nec-
tionString-
="metadat-
a=res://Erp.Data.910100/ErpCo-
ntex-
t.c-
sdl|res://Erp.Data.910100/ErpCon-
text.ssdl|res://Erp.Data.910100/ErpContext.msl;provider=System.Data.SqlClient;provider connection
string="Data Source=(local);Initial Catalog=ERP10;User ID=sa;Password=epicor;Min Pool Size=100;Max
Pool Size=2000;MultipleActiveResultSets=True"; providerName="System.Data.EntityClient" />

<add name="ReportData" connectionString="Data Source=(local);Initial Catalog=ERP10SSRS_Reports;User
ID=sa;Password=epicor;Enlist=False;Min Pool Size=100;Max Pool Size=2000;MultipleActiveResultSets=True" />

```

</connectionStrings>

- Paste it into the App.Config setting file in your new console application following the </appSettings>tag.

The final code will look like this.



- Add a client-side assembly reference for the Session.

- Ice.Core.Session.dll

7. Add the needed server-side assembly references to your application.
 - a. Epicor.Ice.dll
 - b. Epicor.ServiceModel.dll
 - c. Epicor.System.dll
 - d. Erp.Common.ContractInterfaces.dll
 - e. Erp.Data.910100.dll
 - f. Ice.Data.Model.dll
 - g. Erp.Contracts.BO.Customer.dll (One of these for each tt table you need to reference)
8. In your **Program.cs** file, add a namespace reference for **Erp** and **System.Data**.


```
using System.Linq;
using System.Data;
using Erp;
using Ice;
using Ice.Core;
using Ice.Tables;
using Erp.Tablesets;
```
9. Declare the following static variables:


```
private static ErpContext Db;
private static Erp.Tablesets.CustomerTable ttCustomer;
private static Session Session;
```
10. Review the **Main** method in **Program.cs** and review the setup of ttCustomer's test record.


```
// Create a new instance of the ttCustomer table
ttCustomer = new CustomerTable();

// Create a new row for ttCustomer and populate the required columns
CustomerRow custRow = new CustomerRow();
custRow.Company = Session.CompanyID;
custRow.CustNum = 9;
custRow.CustID = "Dalton";
custRow.City = "Duluth";
custRow.RowMod = "A";

// Stick a row into ttCusomter and pass it to the BPM code.
ttCustomer.Insert(0,custRow);
TestBPM();
```
11. Navigate to the **Program.cs** file and click the grey bar area to the left of line 47 to place a break point.

Upgrading BPMs from ABL to C#

```
44     private static void TestBPM()
45     {
46         // Get the row being updated or added.
47         var ttCust_Row = (from custRow in ttCustomer
48                            where custRow.Added() || custRow.Updated()
49                            select custRow).FirstOrDefault();
50         // Check that we got a row
```

12. Press **F5** to start debugging and press **F10** to step through the program.
13. Press **F5** to continue execution without breaking.
14. Use SQL Management Studio to verify the records update into the **UD01** table.

Select * from Ice.UD01

| | Company | Key1 | Key2 | Key3 | Key4 | Key5 | Character01 |
|---|---------|--------|----------------------|--------------------------------------|--------------------|------|--|
| 1 | EPIC06 | Dalton | 2/18/2016 4:34:36 PM | 33c7504a-3a36-4e21-86a1-0fc0f27110d6 | CustomerCityChange | | Attention: Reroute order#5371 from Green Bay to Duluth for customer Dalton |
| 2 | EPIC06 | Dalton | 2/18/2016 4:34:40 PM | 00a2e97e-8ae1-44ca-9cb4-d6a4ffdf7091 | CustomerCityChange | | Attention: Reroute order#5304 from Green Bay to Duluth for customer Dalton |
| 3 | EPIC06 | Dalton | 2/18/2016 4:34:40 PM | 0a20a380-5046-443b-a459-b5d643bc05b | CustomerCityChange | | Attention: Reroute order#5060 from Green Bay to Duluth for customer Dalton |
| 4 | EPIC06 | Dalton | 2/18/2016 4:34:40 PM | 0e5198d6-7c12-4bc6-bb6b-c1b64546b60 | CustomerCityChange | | Attention: Reroute order#5000 from Green Bay to Duluth for customer Dalton |

Using SQL Server in Production and Architectural Planning, Part 1 and 2

When you use SQL Server in a production environment or you want to deploy ERP 10, it is important to understand how SQL Server functions in your IT infrastructure. In this session, you explore the operational aspects of SQL Server, including basic backup / restore as well as SQL replication. You will acquire the information you need to use SQL Server in production environment and plan your architecture around SQL Server's unique capabilities.

SQL Server Management for Epicor ERP can seem difficult to learn at first without formal training! However, basic day-to-day management is not difficult to learn. In this lab, you examine some of the most important, yet simple, ways to manage a production SQL Server environment. You learn how to use the primary tools to manage your environment daily.

At the conclusion of this lab, you will be able to:

- Understand the SQL Server and Epicor ERP relationship.
- Perform basic SQL Server system monitoring tasks.
- Perform basic SQL Server management tasks.

How Epicor ERP 10 Connects to the SQL Database – Web.Config

In this workshop, you look at an ERP 10 instance and discover the machine and SQL database to which it connects.

1. In the **Search** dialog box, enter **IIS** and select **Internet Information Services (IIS) Manager**.
Do not select **version 6.0**.
 2. Expand the **EPICORSI > Sites > Default Web Site** node and select **ERP10**.
 3. Right-click **ERP10** and select **Explore**.
- The **File Explorer** window displays with the default path: **C:\inetpub\wwwroot\ERP10\Server**.
4. Open **web.config** in **Notepad** by double-clicking it.
 5. In **Notepad**, search for **connectionStrings**. You can also scroll through the file and locate this entry.

Once located, you see three nodes, **IceContext**, **ErpContext**, and **ReportData**. Check the **Data Source** for all three. Notice they are pointing towards the **ERP10** catalog on local host. On your machine, the default instance of SQL Server should have a db name **ERP10**. That is your ERP 10 db for the ERP10 site.

Below is a sample snippet from the **C:\inetpub\wwwroot\ERP10\Server\Web.Config** file:

```
<add name="ErpContext" con-
nec-
tionString-
="metadat-
a=res://Erp.Data.910100/ErpCo-
ntex-
t.c-
sdl|res://Erp.Data.910100/ErpCon-
text.ssdl|res://Erp.Data.910100/ErpContext.msl;provider=System.Data.SqlClient;provider connection
```

```
string="Data Source=(local);Initial Catalog=ERP10;User ID=sa;Password=epicor;Min Pool Size=100;Max Pool Size=2000;MultipleActiveResultSets=True"; providerName="System.Data.EntityClient" />
```

SQL Server Components and Configuration

In this workshop, you will identify the SQL Server instance running on your machine. You will learn to start and stop the SQL Server instance. Use SQL Server Configuration Manager to manage the services associated with SQL Server.

One machine can run several instances of SQL Server. One instance can host multiple SQL databases.

1. Start **SQL Server 2014 Configuration Manager**.

Menu Path: From your desktop, navigate to **Start > Programs > Microsoft SQL Server 2014 > Configuration Tools > SQL Server Configuration Manager**.

Important: Please make sure you are opening the 2014 Configuration Manager.

2. Navigate to **SQL Server Configuration Manager (Local) > SQL Server Services**.

A list of SQL Server Services displays.

3. Review some of them and understand how they are useful in running Epicor ERP 10.

- **SQL Full-text Filter Daemon Launcher (MSSQLSERVER)** – Helps with searches in Epicor ERP. For example, the **Part Description** search. You can use **CONTAINS** to search data.
- **SQL Server Reporting Services (MSSQLSERVER)** – Used for printing and rendering ERP 10 reports.
- **SQL Server Agent (MSSQLSERVER)** – You can run background and scheduled jobs, such as index maintenance, which you will cover later in the lab.
- **SQL Server (MSSQLSERVER)** – Database Engine. Stores and retrieves ERP data.

You will also notice some have the **Automatic** start mode and have a user associated with the service. Any service that accesses the network resource has to be run via domain account.

4. Stop your SQL Server instance. From the **SQL Server Services** list, select **SQL Server (MSSQLSERVER)**, right-click it, and select **Stop**.

This stops the SQL Server instance and associated services, such as SQL Server Agent for that instance. Now you cannot run Epicor ERP. Try launching Epicor ERP 10 by clicking the **ERP 10** shortcut on your desktop.

Note: When you stop the service, you do not just stop ERP10 db that serves Epicor ERP 10 instance on your machine; you stop all databases hosted by the MSSQLSERVER instance.

5. Start the SQL Server instance before moving on to the next step. From the **SQL Server Services** list, select **SQL Server (MSSQLSERVER)**, right-click it and select **Start**.

Understand Your SQL Server Instance

In this workshop, use the SQL Management Studio to understand the SQL Server instance running on your lab machine. You will find out what version of SQL Server the machine is running. You will check the memory allocated to the SQL Server instance and change it to another value.

1. Start **SQL Server Management Studio 2014**.

Menu Path: From your desktop, navigate to **Start > Programs > Microsoft SQL Server 2014 > SQL Server Management Studio.**

2. In the **Connect to Server** dialog box, enter **EPICORSI** as the server name, select **Windows Authentication**, and click **Connect**.

Note: EPICORSI was only provided as the server name. When you enter it, it is assumed it will connect to the default instance named **MSSQLSERVER**. If there are multiple instances running on the machine, you have to fully qualify by providing server-name\instance-name, for example, **ERPDB\ProdInstance**.

3. Once connected to **EPICORSI (SQL Server 12.0.4213 – EpicorSI\Administrator)**, in the **Object Explorer**, expand the **Databases** node.

You will see several databases running on this instance. For example, System Databases, ActivityStreams...ERP10...Stas.

4. From the **Databases** list, select **ERP10**, right-click it, and select **New Query**.

A blank editor window displays. You can enter **select @@VERSION** and click **Execute** (or press the **CTRL + E** keys) on the top ribbon. It displays the version of your SQL Server in the **Results** window at the bottom.

5. In the **Object Explorer**, select the **EPICORSI** node, right-click it, and select **Properties**.

Server Properties – EPICORSI dialog box displays. Navigate to the **General** tab and look at the SQL Server version and other details of the SQL Server instance. These properties apply to all databases running on the instance.

6. Increase the memory. In the **Server Properties – EPICORSI** dialog box, navigate to the **Memory** tab.

The **Server Memory Options** displays.

7. Change the **Maximum memory** to **3,072 MB** from the **default value of 2,048 MB (2 Gig)** (Default is 2147483647 MB).

This forces SQL Server Database Engine to use up to 3 Gig of RAM.

8. Click **OK** and close the Server Properties dialog box.

The memory change is immediate and you do not need to restart SQL Server service or the computer.

9. (Extra step for your home use. Verify the memory usage increases using the **Task Manager**. Look for the **sqlserver.exe** process and check its **Memory (Private Working Set)**. The memory change only occurs if the value is already at **2 Gig**. On lab machines, you will not see the impact right away as the SQL Server may not have consumed 3 Gig of RAM yet.)

Important: Keep the SQL Management Studio open for the next lab workshops.

SQL Server – DB Files, Disk Usage by Database and by Table

In this workshop, you learn the method to determine the disk space your database uses. You also look within the database file to see the tables that are the largest in terms of disk space and record count.

1. In the **Object Explorer**, select the **ERP10** database, right-click it, and select **Properties**.

The **Database Properties – ERP10** dialog box displays.

2. Navigate to the **General** sheet.

3. On the right hand side, locate the **Database** category, look at the name, and confirm it is the **ERP10** database.
4. Review the size and space available.
 - **Size** - how much space, in MB, **ERP10** db is consuming on the disk (MDF and LDF files).
 - **Space Available** - the empty space in that file left before the **ERP10.mdf** file grows on the disk.
5. Let us find out the location of the **ERP10** db on the disk. In the **Database Properties – ERP10** dialog box, navigate to the **Files** tab and look at the **Database files:** grid.

The **Path** column tells you the database file folder, and **File Name** is the file located at that path.

6. Open the **File Explorer** and go to the following folder:

C:\Program Files\Microsoft SQL Server\MSSQL11.MSSQLSERVER\MSSQL\DATA

7. In this folder, look for the **ERP10.MDF** and **ERP10.LDF** files.

These files constitute the ERP 10 database.

- **ERP10.MDF** is where the Customer, Sales Order, and Purchase Order data is stored.
 - **ERP10.LDF** is the SQL Log file. It stores committed transactional data not yet stored in the **ERP10.MDF** file since the last checkpoint and data since the last full backup.
8. Close the Database Properties – **ERP10** dialog box.
 9. Run the **Disk Usage by Table** report. In the **Object Explorer**, select **ERP10**, right-click it, and select **Reports > Standard Reports > Disk Usage by Table**.
 10. Review the list of ERP 10 tables and their disk usage. Sort the **Number of Records** column (press the **v** key twice) and get the columns sorted by the highest number of rows first.

Note the **Data** and **Indexes** columns. The data stored in a clustered index for that table is shown in the **Data (KB)** column. Other indexes are combined in the **Indexes (KB)** column by table.

Note: For other important reports, explore the **Reports** option. Look at other canned reports available to you, such as **Index Usage Stats** and **Index Physical Stats**. Another canned report that can be helpful is the **Schema Changes History**. This report tells you who modified the schema of your database. These reports are very handy in monitoring your production SQL instance.

Tip! You can also download reports, such as **Performance Dashboard**, and install them under custom reports. This link will get you the reports: <http://www.microsoft.com/en-us/-download/details.aspx?id=29063>.

11. Remain in the **SQL Management Studio** for the next lab workshops.

SQL Server – Activity Monitor – What is Running on Your Instance?

In this workshop, learn how to find out what is running on your SQL Server instance. You can use the SQL Server Management Studio connected to the SQL Server instance to achieve this. It is useful for analyzing performance and debugging problems using Activity Monitor.

1. In the **Object Explorer**, right-click the **EPICORSI (SQL Server 12.0.4213 – EpicorSI\Administrator)** node and select **Activity Monitor**.

The **Activity Monitor** displays. Notice it has five sections – **Overview**, **Processes**, **Resource Waits**, **Data File I/O**, and **Recent Expensive Queries**.

2. Expand the **Processes** section.

A list of processes running on the SQL Server displays. Each process has a unique session ID (SPID). These are the threads working currently on your SQL Server instance. You can filter the rows by Database or Login, etc.

3. Right-click any SPID and select **Details**.

The **Session Details** dialog box displays with the list of latest T-SQL statements run on this SPID.

4. Right-click any SPID and select **Trace Process in SQL Server Profiler**.

The SQL Server Profiler displays, where you can see all T-SQLs.

5. In the **Activity Monitor** window, expand **Recent Expensive Queries** and notice the expensive queries.

You can sort and filter the columns to debug performance issues.

SQL Server – Extended Events – What Can You Track Over Time on Your Instance?

In this workshop, learn how to find out what is running on your SQL Server instance. You can use the SQL Server Management Studio connected to the SQL Server instance to achieve this. It is useful for analyzing performance and debugging problems using extended events.

1. In the **Object Explorer**, right-click the **EPICORSI (SQL Server 12.0.4213 – EpicorSI\Administrator)** node.
2. Expand the **Management** node.
3. Right-click on the **Sessions** node and select **New Session Wizard**.

The **New Session Wizard** program will give the options of picking templates in order to fast track setup of monitoring.

In order to be specific in our use of extended events, for this exercise you will not use a template.

4. Enter the **Session name** value of **BackupRestoreMonitoring**.
5. Select the **Start the even session at server startup** check box.
6. Select the **Do not use a template** radio button.
7. Click the **Next** button.
8. In the **Event library** search field search for value **backup**.
9. Double-click **databases_backup_restore_throughput** event name.

The event will move from the Event library to the Selected events area of the New Session screen.

10. Click the **Next** button.
11. Select the following check boxes:

```
client_hostname
collect_system_time
database_name
nt_username
sql_text
task_time
```

12. Click the **Next** button.
13. Click the **Next** button bypassing an **Event Filters**.
14. Select the **Save data to a file for later analysis** check box.

15. In the **file name on server**, enter **C:\temp\BackupRestoreMonitoring.xel**.
16. Click the **Next** button.
17. Click the **Script** button for how to do this via TSQL script.
18. Click the **Finish** button.
19. Select the following check boxes:
 - a. **Start the event session immediately after session creation.**
 - b. **Watch live data on screen as it is captured.**
20. Click the **Close** button.

Keep the events display up and move on to the next lab task.

SQL Server – Take a Full Backup of the Database

It is recommended that you run your production system in the Full Recovery mode and take a full backup of your database, then take periodic differential backups. You should also take a frequent (multiple times a day) Transaction Log backup. This strategy minimizes the data loss in case of system failure.

Review **Database Backups under the Full Recovery Model** at the following link:

<http://technet.microsoft.com/en-us/library/ms186289.aspx>

Part I – Change the Recovery Model

1. In the **Object Explorer**, select the **ERP10** database, right-click it, and select **Properties**.
The **Database Properties – ERP10** dialog box displays.
2. In the **Select a page** pane, click **Options**.
3. If the **Simple** recovery model displays in the **Recovery model** list box, then change it to **Full**.
4. Click **OK** to complete the change of the recovery model.

Now your ERP10 database is ready to take a full backup.

Part II – Create Full Database Backup

1. In the **Object Explorer**, select **ERP10**, right-click it, and select **Tasks > Backup**.
The **Back Up Database – ERP10** dialog box displays.
2. Verify the database name is **ERP10** and leave the **Recovery Model:** as **Full**.
3. From the **Backup Type** list, select **Full**.
4. From the **Destination** list, select **Back up to Disk**.
Note the backup location and the file name: **C:\epicor\Backups\ERP10_DB.BAK**.
5. In the **Select a page** pane, select **Options**.
6. From the **Overwrite Media** list, select **Overwrite all existing backup sets**.

Note: If you want to generate a T-SQL, click **Script**, which will put a T-SQL statement in the **SQL Management Studio**. You can adjust this T-SQL to take backups directly without going through the user interface.

7. In the **Backup Database – ERP10** dialog box, accept the default values and click **OK** to start the backup process.

Note the **Progress** in the bottom left corner of the dialog box. It takes up to 5 minutes to complete the backup.

8. To **The backup of database ‘ERP 10’ completed successfully** message, click **OK**.
9. Use the **Windows File Explorer** to check the **Date modified** of the **C:\epicor\Backups\ERP10_DB.BAK** file.

It should match the time the backup completed.

SQL Server – Extended Events – Continued...

In this workshop, learn how to find out what is running on your SQL Server instance. You can use the SQL Server Management Studio connected to the SQL Server instance to achieve this. It is useful for analyzing performance and debugging problems.

1. Review the **Live Data** windows of the extended event created earlier in this lab.
2. Click an event **name** to review the **details** view at the bottom of the screen.
3. Right-click one of the **Columns** and select **Choose-Columns...**
4. The lab chosen **available columns** will be listed, left-click the double right arrow  on the following **available columns** to add them to the **selected columns** list and then click **OK**.
5. Click **OK**.

This is meant to be a primer of how to work with the extended events engine. There are endless possibilities of what you can track and recall later with additional training.

SQL Server – Move SQL Database to Different Location

To improve performance, spread the SQL files and tempdb files on different RAID drives. This workshop shows you how to move the SQL data files to different drives.

1. The databases are located in the **C:\Program Files\Microsoft SQL Server-\MSSQL11.MSSQLSERVER\MSSQL\DATA** folder. Move **AdventureWorks2012** to the **C:\TEMP** folder.
2. Detach the database from the SQL Server instance. In the **Object Explorer**, select **AdventureWorks2012**, right-click it, and select **Tasks > Detach**.
3. In the **Detach Database** window, change the **Drop Connections** column to **Yes** and click **OK** to complete the operation.

AdventureWorks2012 is no longer listed under the **Databases** node.

4. In the **Windows File Explorer**, navigate to **C:\Program Files\Microsoft SQL Server-\MSSQL11.MSSQLSERVER\MSSQL\DATA**.
5. Cut the **AdventureWorks2012_Data.mdf** and **AdventureWorks2012_Log.LDF** files and paste them to the **C:\TEMP** folder.

6. In the **Object Explorer**, right-click **Databases** and select **Attach Databases**.
7. In the **Attach Databases** window, click the **Add** button. The **Locate Database Files – EPICORSI** window displays.
8. In the **File name** field, enter **c:\temp** and press **Enter**.
9. Select **AdventureWorks2012_Data.mdf** from the list, and click **OK**.
10. Verify the database is located in the **C:\TEMP** folder. In the **Object Explorer**, select **AdventureWorks2012**, right-click **Properties**, navigate to the **Files** tab, and in the **Database files:** grid, see the **PATH** column.

It should point to the **C:\TEMP** folder.

SQL Server – Add tempdb File

Tempdb system database is a global resource and is used by the SQL Server instance for all databases running on that instance. Use the Tempdb system database for storing temporary user objects, such as temporary tables and stored procedures. Use it for row versioning, intermediate query results, and sorting. Best practice is to create as many tempdb files as there are CPU cores on the SQL Server machine. Keep the tempdb files on a separate fast drive. This workshop shows you how to add additional tempdb files to your SQL Server instance.

1. In the **Object Explorer**, select **Database > System Databases > tempdb**, right-click it, and select **Properties**.

The **Database Properties – tempdb** dialog box displays.

2. Select a page and navigate to the **Files** tab.
3. On the lower right hand side, click the **Add** button to add an additional tempdb file.

In the **Database files:** grid, a new row is added.

4. In the **Logical Name** column, enter **tempdev1**.

Accept the default values for the **File Type** and **File Group** columns.

5. You are creating the **tempdev1** file with the initial size of **100 MB**, so enter **100** in the **Initial Size (MB)** column.

6. For **Autogrowth / Maxsize**, click the **Ellipsis (...)** button.

The **Change Autogrowth for tempdev1** dialog box displays.

7. Select the **In Percent** file growth type with a value of **10** and click **OK** to close the dialog box.
8. In this workshop, accept the default file location.

In your production environment, you can change the file location to a separate drive to spread the I/O load around.

9. In the **Database Properties – tempdb** dialog box, click **OK** to finish the creation of a new tempdb file.
10. Use the **File Explorer** to verify the existence of the new file on the disk. Navigate to the **C:\Program Files\Microsoft SQL Server\MSSQL11.MSSQLSERVER\MSSQL\DATA** folder and look for **tempdev1.ndf**.

Notice the extension is **NDF** instead of **MDF**. This is because SQL Server uses the NDF extension for secondary data files.

SQL Agent – Maintenance Script Wizard – Update Statistics, Reorganize Index

The Reorganize Index task defragments and compacts clustered and non-clustered indexes on tables and views. This improves index-scanning performance.

The Update Statistics task ensures the query optimizer has up-to-date information about the distribution of data values in the tables. This allows the optimizer to make better judgments about data access strategies.

You should routinely update statistics and reorganize indexes. Run the maintenance plan during off hours. This workshop will show you how to set up an automatic task to do that. Once every 2-3 months you should rebuild indexes. Reorganizing indexes is less resource intensive than rebuilding them and hence can be run more frequently.

1. In the **Object Explorer**, select **SQL Server Agent**, right-click it, and start it if it is not running.
2. In the **Object Explorer**, select **Management > Management Plans**, right-click it, and select **Maintenance Plan Wizard**.
3. Click **Next**. The **SQL Server Maintenance Plan Wizard** starting sheet displays.
4. Enter the name **ERP 10 Maintenance**.
5. Accept the defaults and click **Next**.
6. Select the **Reorganize Index** and **Update Statistics** check boxes.
7. Click **Next**.
8. On the **Select Maintenance Task Order** sheet, accept the defaults and click **Next**.
9. From the **Databases:** list, select **AdventureWorks2012** and accept the defaults.
10. Click **Next**.

Note: You are selecting **AdventureWorks2012** instead of **ERP10** to ensure the processes finishes in a reasonable time on the lab machines.

11. From the **Databases:** list, select **ERP10** and accept the defaults.
12. Click **Next**.
13. Accept the default report location and click **Next**.
14. Click **Finish**.

The **Maintenance Plan Wizard Progress** window displays **Success. 5 Total, 5 Success**.

15. Click **Close**.
16. Execute the plan. In the **Object Explorer**, select **Management > Management Plans**, right-click **Maintenance Plan**, and click **Execute**.

When it completes, the **Execute Maintenance Plan** window displays **Success**. This process takes some time (10 minutes). Continue with the next workshop and let this process complete.

Replication – Set up Basic Replication

In this three-part workshop, use **transactional replication with a pull subscription** to allow continuous incremental changes from the source to the target database. The configuration is a Distributor/Publisher with one Subscriber. This setup creates a log reader and a snapshot job at the distributor. The distribution job is created in the subscriber.

- **Publisher** – The database from which data is replicated. Also known as the source database (for example, ERP 10 Production database, ERP10 in this lab).
- **Distribution Database** – A database that manages the flow of replicating data to subscriber database(s).
- **Transaction Log Reader** – A SQL Server Agent that captures individual changes as they occur and forwards them on to the distribution database.
- **Snapshot Agent** – A SQL Server Agent that captures bulk data into files when starting replication.
- **Snapshot File Share** – A folder into which replication places snapshot data files.
- **Subscription Agent** – A SQL Server Agent that manages updating a subscriber database with data changes.
- **Subscriber Database** – The replicated database into which data from the publisher is copied. Also known as the target database (for example, Epicor EPM database or your in-house SQL db for custom apps, AdventureWorks2012 in this lab).
- **Transactional publication** – The Publisher streams transactions to the Subscribers after they receive an initial snapshot of the published data.

In this workshop, you replicate the ERP.ABCCode table from ERP10 db to another database, AdventureWorks2012. After setting up replication, you update the ERP.ABCCode table and ensure the record updates display in the replicated database.

Part I – Create Publication (Source Database)

1. In the **Object Explorer**, select **Databases > System Databases > distribution**.
The presence of the **distribution** node indicates that replication is installed on your SQL Server machine.
2. In the **Object Explorer**, select **SQL Server Agent**, right-click it, and start it if it is not running.
3. In the **Object Explorer**, collapse the **Databases** node.
4. In the **Object Explorer**, select **Replication > Local Publications**, right-click it, and select **New Publication**.
The **New Publication Wizard** dialog box displays.
5. Click **Next**.
6. From the **Publication Database** list, select **ERP10**, and click **Next**.
7. From the **Publication Type** list, select **Transactional Publication**, and click **Next**.
8. Expand the **Tables** node, select **ABCCode(Erp)**, and click **Next**.
When you select this table, you will publish changes occurring to ERP.ABCCode to the subscriber(s).
9. Do not add any filters. Click **Next**.
In this sheet, you can add a filter on **Company = EPIC06** if you want to transfer/publish changes to **ABCCode** records belonging to the **EPIC06** company. In this workshop, you will skip this step.
10. In the **Create a snapshot immediately and keep the snapshot available to initialize subscriptions** section, select the **Yes** check box.
11. Click **Next**.
12. Click the **Security Settings** button to modify the **Snapshot Agent Security** settings.

13. In the **Snapshot Agent Security** window, select the **Run under the SQL Server Agent service account (...)** radio button option.
 14. Accept the defaults and click **OK**. The Snapshot Agent Security window closes.
 15. Click **Next**.
 16. Verify that the **Create the publication** check box is selected.
 17. Click **Next**.
 18. In the **Publication Name:** field, enter **ERP 10 Production Data**.
 19. Click **Finish**.
- A **Success. 3 Total, 3 Success** message displays.
20. Click **Close**.

Part II – Create Subscription

1. In the **Object Explorer**, select **Replication > Local Publications**, right-click it, and select **New Subscriptions**.
 2. Click **Next**.
 3. From the **Publisher** list, select **EPICORSI**.
 4. In the **Databases and publications:** tree view, select **ERP 10 Production Data**.
This is the publication you created in the previous step.
 5. Click **Next**.
 6. Select **Run each agent as its Subscriber (pull subscription)** and click **Next**.
 7. Select the **EPICORSI** check box.
 8. From the **Subscription Database** list, select **AdventureWorks2012**.
 9. Click **Next**.
 10. For the row containing the **EPICORSI** value, click the button in the right most column.
The **Distribution Agent Security** dialog box displays.
 11. Click the **Run under the SQL Server Agent service account** radio button.
 12. Accept the defaults and click **OK**.
 13. Click **Next**.
 14. Accept the defaults and click **Next**.
 15. Accept the defaults and click **Next**.
 16. Accept the defaults and click **Next**.
 17. Click **Finish**.
- A **Success. 1 Total, 1 Success** message displays.
18. Click **Close**.

Part III – Test Replication Setup

1. Verify data transfers. Check if the subscriber (**AdventureWorks2012**) initialization was successful. Run the following query to verify 10 rows display in the output:

```
select *  
from [AdventureWorks2012].[ERP].[ABCCode]
```

2. Click **New Query** and run the following query to update the publisher's value:

```
update [ERP10].[ERP].[ABCCode]  
set countfreq = 92  
where company = 'EPIC03'  
and abccode = 'b'
```

```
select *  
from [ERP10].[ERP].[ABCCode]  
where company = 'EPIC03'  
and abccode = 'b'
```

3. Wait 15 to 30 seconds. Click **New Query** and run the following query to verify the data is updated in the subscriber table:

```
select *  
from [AdventureWorks2012].[ERP].[ABCCode]  
where company = 'EPIC03'  
and abccode = 'b'
```

The **CountFreq** value transfers from the publisher database to the subscriber database.

4. Repeat steps 1-4 with additional values like **99** and **101**.

Using the Epicor ERP Report Routing/Printing Capabilities

A routing rule determines how the report output generates, prints, and distributes. Routing rules help you streamline the reporting for specific business needs. During this series of exercises, you will work through several examples where report output is directed in different ways according to the specified criteria.

During this series of exercises, you create a routing rule that filters on a custom attribute. The routing rule activates when it locates this attribute on a specific record.

At the conclusion of this lab, you will be able to:

- Create a custom attribute
- Modify a report data definition to include the attribute table
- Create a custom report style
- Design a routing rule that checks for a specific value in the attribute table
- Deploy the report style that contains the routing rule

Log In

1. From the desktop, open **ERP10**.
2. In both the **User** and **Password** fields, enter **manager**.
3. In the left pane, verify that the **Epic06**, **Epicor Education** company, and the **Main** site are selected.

Workshop – Filter and send PO to Supplier by Attribute

You want to send purchase orders to certain suppliers automatically, based on a supplier attribute.

Verify the Attribute

1. Navigate to **Attribute Maintenance**.
Menu Path: Material Management > Supplier Relationship Management > Setup > Attribute
2. In the **Attribute** field, search for and select **Email PO to Supplier**.
3. Exit Attribute Maintenance.

Verify the Attribute on a Supplier

1. Navigate to **Supplier Maintenance**.
Menu Path: Material Management > Supplier Relationship Management > Setup > Supplier
2. In the **Supplier** field, enter **GUTH**.
3. Navigate to the **Supplier > Address** sheet.
4. In the **Email** field, verify **Fred.Fixerman@epicorti.net**.
5. Navigate to the **Attributes** sheet.

6. In the Selected Attributes list, verify Email PO to Supplier is listed.
7. Exit Supplier Maintenance.

Copy System Report

1. Navigate to **Report Data Definition Maintenance**.
Menu Path: System Management > Reporting > Report Data Definition
2. In the **Code** field, enter or search for **POForm**.
3. Click Actions > Duplicate Report.
4. In the Report Def ID, enter **POForm-Email**.
5. In the Description field, enter **POForm - Supplier Email**.
6. Click **OK**.
7. Click **Save**.

Modify Report Definition

1. In the tree view, expand the **Report Data > Data Sources** node and select **POHeader**.
2. In Data Sources > Report Table > Exclusions, clear the VendorNum check boxes for ExcludeColumn and ExcludeLabel.
3. From **New**, select **New Table**.
4. Click on **Schema Table**, search for and select **VendAttr**.
5. Click **Save**.
6. Click **Refresh**.
7. In the tree view, select the **VendAttr** table and navigate to **Data Sources > Report Table > Exclusions**.
8. Click Actions > Include All Columns.
9. Click **Save**.

Define Relationship

1. From New, select New Relationship.
2. In the Relationships > Detail sheet, in both Relation and Description, enter **POHeaderVendAttr**.
3. In Parent Table, select **POHeader**.
4. In **Child Table**, select the **VendAttr**.
5. In Relation Type, select Output.
6. In the Relationship Fields pane, click New.
7. In both the **Parent** and **Child** field names, select **Company**.
8. In the **Relationship Fields** group box, click **New**.
9. In both the **Parent** and **Child** field names, select **VendorNum**.
10. Click **Save** and exit Report Data Definition.

Create Report Style

1. Navigate to **Report Style Maintenance**.
Menu Path: System Management > Reporting > Report Style
2. In the **Report ID** field, search for and select **POForm**.
3. In the tree view, expand the list of **Report Styles** and select **Standard - SSRS**.
4. In the **Actions** menu, select **Copy Report Style**.
5. In the Report Copy Location window, in the Report Folder Name, enter PurchaseOrderFormEmail.
6. Click **Copy**.
7. In the tree view, select the **Standard – SSRS - Copy** report style.
8. In the **Description**, change the text to **Email PO**.
9. In the Data Definition, select POForm-Email.
10. Click **Save**.

Design Routing Rule

1. From New, select New SSRS Breaking/Routing.
2. In Break Table select POHeader.
3. Click the **Design** button.

Select Break Column

1. Click and drag the **Break** element onto the workflow designer.
2. Connect the **Start** element to the **Break** element.
3. Select the **Break** element and, in the lower pane, click on the **specified** link.
4. In the **Available Columns** list, select **PONum**, and click the right arrow to move it to **Selected Break Columns**.
5. Click **OK**.

Define Condition

1. From the **Flow Chart** section, click and drag a **Condition** element to the workflow designer.
2. Connect the **Break** element to the **Condition** element.
3. Select the **Condition** element.
4. In the lower pane, click the **Add New** condition button.
5. From the drop-down, select The **specified** report field on **any row is equal to the specified value**.
6. Click the first **specified** link.
7. In the **Table** drop-down list, select the **VendAttr** table.
8. On the **Fields** list, select the **AttrCode** check box.
9. Click **OK**.

10. Keep the **any row** and **is equal to** default values.
11. Click the second **specified** link.
12. In the **Value** field, enter **EmailPO**.
13. Click **OK**.
The condition statement now reads The **VendAttr AttrCode** report field on **any row** is **equal to** the **EmailPO** value.

Add User Action

1. In the **Routing Actions** elements, click and drag the **User Action** element to the workflow.
2. Drag a connection from the **Condition False** side to the **User Action** element.

Add Send E-mail Action

1. In the **Routing Actions** elements, click and drag the **Send E-Mail** element onto the workflow designer.
2. Drag a connection from the **Condition True** side of the **Condition** to the **Send E-Mail** element.
3. Click the **Send E-Mail** element and select **designed** link in the **Action**.
4. In the **Name**, enter **EmailPO**.
5. In the **From** field, enter **noreply@epicor.com**.
6. Right-click the **To** field and select **Insert Fields**.
7. In the **Name** field, enter **SupplierEmail**.
8. From the **POHeader** table, check **Vendor_EMailAddress**.
9. Click **OK**.
10. In the **Subject** field, enter **Purchase Order**, and then right-click and select **Insert Fields**.
The **Select Table Field(s)** window displays.
11. For **Name**, type **PONum**, then from **POHeader**, select the check box next to **PONum** and click **OK**.
12. Right-click in the **Attachment Name** field and select **Insert Fields**.
13. In the **Name** field, enter **pdfName**.
14. From **POHeader**, check **PONum** and click **OK**.
15. In the **Body** field, enter We are placing an order with your company. Please see the attached purchase order for information.
16. Enter two lines below then right-click and select **Insert Fields**.
17. In the **Name**, enter **BuyerName**.
18. In the **POHeader** table, find and select the **BuyerID_Name** field.
19. Click **OK**.
20. In the **Email Template**, click **OK** again.

Activate Routing Rule

1. Click the **Save and Exit** button in the bottom left of the form.

2. Check **Enabled**.
3. Click **Save** and exit Report Style Maintenance.

Test Rule

1. Locate an open purchase order for Guthrie Casting.
Menu Path: Material Management > Purchase Management > General Operations > Purchase Order Entry
2. Click **PO Number**, and search for and select PO **4144**.
3. Click Actions > Print.
4. For **Report Style** select **Email PO** and click the **Print Preview** icon.
5. In the **Routing Enabled** message, click **Yes**.
6. In the **taskbar**, select **Outlook 2013**.
7. Check the **Inbox** for **fred.fixerman@epicorti.net** to view the message.

Insights

Epicor Customer Conference 2019

EPICOR.

Corporate Office
804 Las Cimas Parkway
Austin, TX 78746 USA

Toll Free: +1.888.448.2636
Direct: +1.512.328.2300
Fax: +1.512.278.5590

Latin America and Caribbean
Blvd. Antonio L. Rodriguez
#1882 Int. 104 Plaza Central,
Col. Santa Maria, Monterrey,
Nuevo Leon, CP 64650 Mexico

Phone: +52.81.1551.7100
Fax: +52.81.1551.7117

Europe, Middle East and Africa
No. 1 The Arena
Downshire Way
Bracknell, Berkshire RG12 1PU
United Kingdom

Phone: +44.1344.468468
Fax: +44.1344.468010

Asia
238A Thomson Road #23-06
Novena Square Tower A
Singapore 307684
Singapore

Phone: +65.6333.8121
Fax: +65.6333.8131

Australia and New Zealand
Suite 2 Level 8,
100 Pacific Highway
North Sydney, NSW 2060
Australia

Phone: +61.2.9927.6200
Fax: +61.2.9927.6298

The contents of this document are for informational purposes only and are subject to change without notice. Epicor Software Corporation makes no guarantee, representations or warranties with regard to the enclosed information and specifically disclaims, to the full extent of the law, any applicable implied warranties, such as fitness for a particular purpose, merchantability, satisfactory quality or reasonable skill and care. This document and its contents, including the viewpoints, dates and functional content expressed herein are believed to be accurate as of its date of publication, April 2019. The results represented in this testimonial may be unique to the particular user as each user's experience will vary. The usage of any Epicor software shall be pursuant to the applicable end user license agreement and the performance of any consulting services by Epicor personnel shall be pursuant to applicable standard services terms and conditions. Usage of the solution(s) described in this document with other Epicor software or third party products may require the purchase of licenses for such other products. Epicor, Business Inspired, and the Epicor logo are registered trademarks or trademarks of Epicor Software Corporation in the United States, certain other countries and/or the EU. All other trademarks mentioned are the property of their respective owners. Copyright © 2019 Epicor Software Corporation. All rights reserved.

www.epicor.com

