Release Notes 2022 R1

Contents

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Introduction

This document provides important information about fixes, enhancements, and key features that are available in Acumatica ERP 2022 R1. The document is designed particularly for those who install Acumatica ERP. All users can benefit from reviewing this content to determine how they may benefit from the changes in this release.

Information fixes, enhancements, and key features for those who customize Acumatica ERP or develop applications for it can be found in the separate *Release Notes for Developers* document.

To try new features and improvements, you can use the demo company, which you can easily deploy by selecting the *SalesDemo* item in the Acumatica ERP Configuration Wizard. For detailed information on deploying the demo company and working with the demo data, see *Demo Materials* on the Acumatica partner portal.

Installation and Upgrade Notes

We strongly recommend that before administrators upgrade Acumatica ERP to a newer product version, they back up all configuration files and databases used by the application instances. For a detailed description of the general procedure of updating Acumatica ERP, see *Updating Acumatica ERP by Using the Configuration Wizard* in the Installation Guide.

Multiple changes have been made in Acumatica ERP 2022 R1, in comparison to Version 2021 R1, that may affect customizations and integrations. For details, see *Release Notes for Developers*.

If the Acumatica ERP instance was integrated with software provided by an independent software vendor (ISV) partner, we recommend that the administrator consult with this partner about the compatibility of its products with Acumatica ERP 2022 R1.

Deprecated Support for Internet Explorer

Acumatica ERP 2022 R1 is the last version that supports Internet Explorer. Starting with the next version, Internet Explorer will no longer be supported. In addition, Internet Explorer will no longer be supported in 2022 R1 (or any other releases) beginning on June 15, 2022. Acumatica ERP will continue to support Microsoft Edge, Firefox, Google Chrome, and Apple Safari.

Deprecated Support for Azure Cloud Services

On August 24, 2021, Microsoft announced plans to retire the Cloud Services (classic) deployment model on August 31, 2024. As of April 5, 2021, the new Azure Cloud Services deployment model is generally available.

Starting in 2022 R1, Acumatica is switching to the new deployment model and is no longer providing the following:

- Azure service package files (with the `.cspkg` extension) for each major version and minor updates
- The functionality to generate `.cscfg` files by using the Acumatica ERP Configuration Wizard

Therefore, starting in Acumatica ERP 2022 R1, an administrator cannot install Acumatica ERP by using the Azure Cloud Services (classic) deployment model.

To deploy the Acumatica ERP Service for 2022 R1 and later on the Windows Azure platform by using Azure Cloud Services (extended support), the administrator should create a Windows virtual machine in the Azure portal and install Acumatica ERP as described in the *Installing Acumatica ERP Locally* topic.

Upgrade Policy

On the *Apply Updates* (SM203510) form, only minor updates are available for the currently installed version of Acumatica ERP. The administrator should upgrade the Acumatica ERP instance from previous major versions of the system to Version 2022 R1 manually on the server. (An upgrade through the web interface is not supported because the customization of the Acumatica ERP instance may be incompatible with Version 2022 R1 due to changes in Version 2022 R1.)

Prerequisite Steps

Before administrators install Acumatica ERP 2022 R1 or upgrade to it locally, they need to do the following:

1. Switch the Internet Information Services application pool where the Acumatica ERP 2022 R1 instance will be installed to Integrated mode. (Classic mode is not supported.)
2. Install Microsoft .NET Frameworks 4.8 on the server where the Acumatica ERP 2022 R1 instance will be installed.
3. Install Microsoft .NET Core 3.1 on the server where the Acumatica ERP 2022 R1 instance will be installed.

Upgrade Path

The upgrade to Acumatica ERP 2022 R1 must be performed as described in the following table. The upgrade process depends on the version before the upgrade.

Table: Upgrade Paths for Acumatica ERP

From Version	Upgrade Path
2022 R1 Beta	An upgrade to later builds of Acumatica ERP 2022 R1 is supported.
2022 R1 Preview 2	An upgrade to later builds of Acumatica ERP 2022 R1 is not supported. The administrator must completely remove all components of the system and install the later build from scratch.
2022 R1 Preview 1	An upgrade to later builds of Acumatica ERP 2022 R1 is not supported. The administrator must completely remove all components of the system and install the later build from scratch.
2021 R2	A direct upgrade to Acumatica ERP 2022 R1 is supported.
2021 R1	A direct upgrade to Acumatica ERP 2022 R1 is supported.
2020 R2	A direct upgrade to Acumatica ERP 2022 R1 is supported.
2020 R1	An incremental upgrade is required. The following steps must be performed in the listed order: 1. Upgrade to the latest Version 2021 R2 X build available. 2. Upgrade to Version 2022 R1.
2019 R2	An incremental upgrade is required. The following steps must be performed in the listed order: 1. Upgrade to the latest Version 2021 R2 X build available. 2. Upgrade to Version 2022 R1.

Acumatica ERP 2022 R1 can be upgraded from the following particular versions:

- 2021 R2 Update 7 (21.207.0045) and earlier
- 2021 R1 Update 18 (21.118.0038) and earlier
- 2020 R2 Update 19 (20.219.0018) and earlier

For the list of upgradable versions for later 2022 R1 updates, see the Release Notes for the particular 2022 R1 update.

Post-Upgrade Changes and Actions

The administrator should be aware of the following changes in the system after the upgrade to Acumatica ERP 2022 R1 has been performed:

- During an upgrade to Acumatica ERP 2022 R1, the system has inserted in the `AP1099Box` table a record related to the new Box 11. This change has been made to support updates made to 1099 forms for the 2021 tax year.

- The following new boxes on the *Reporting Settings* (TX205100) and *Reporting Groups* (TX205200) forms have been populated with the following default values for all tax agencies:
  - **Report Version**: *1*
  - **Valid From**: *1/1/1900*
- On the *Tax Preferences* (TX103000) form, the **Tax Adjustment Numbering Sequence** box has been populated with *APBILL* so that the system will initially work as it has in earlier versions of Acumatica ERP. Before users start working with the tax functionality, for tax adjustments to be numbered separately from other AP documents, the administrator should select the *TXADJUST* numbering sequence in the **Tax Adjustment Numbering Sequence** box on the *Tax Preferences* form.
- If the organization uses the deferred revenue functionality, during an upgrade to Acumatica ERP 2022 R1, the upgrade script has inserted values in the new `BaseCuryID` database field for existing deferral schedules. Each value was copied from the `Company.BaseCuryID` field. This change has been made to support multiple base currencies for deferrals.

  During the upgrade, the following changes have been made by the upgrade script:
  - For all revenue components, on the **Deferral** tab of the *Non-Stock Items* (IN202000) and *Stock Items* (IN202500) forms, *Fair Value* has been inserted in the **Allocation Method** column.
  - On the *Sales Prices* (AR202000) and *Sales Price Worksheets* (AR202010) forms, the new **Discountable** check box has been cleared for all entities.
  - For revenue components with flexible default terms—those that have *Flexible by Periods, Prorate by Days* or *Flexible by Days in Period* selected in the **Recognition Method** box on the *Deferral Codes* (DR202000) form—the **Override Default Term** check box has been selected on the **Deferral** tab of the *Non-Stock Items* and *Stock Items* forms.
- If the organization uses the fixed asset functionality, during an upgrade to Acumatica ERP 2022 R1, the upgrade script has inserted values in the new `BaseCuryID` database field for existing fixed assets. This value has been copied from the `Company.BaseCuryID` field. This change has been made to support multiple base currencies for fixed assets.
- If the organization uses the project accounting functionality, after an upgrade, the system administrator should select or clear the **Calculate Project-Specific Taxes** check box on the *Projects Preferences* (PM101000) form, depending on the organization's business requirements. For more information, see *Projects and Construction: Project-Specific Taxes*.

The administrator should modify the `web.config` file to enable parallel processing on all the forms that support the parallel processing, including the *Run Recognition* (DR501000) form. For details, see *Finance: Performance Improvements in Deferred Revenue Recognition*.

Upgrade Notes Specific to the Retail-Commerce Functionality

If the organization uses the retail-commerce functionality, after an upgrade, the system administrator should note the following:

- If the organization synchronizes product availability data between Acumatica ERP and an external e-commerce system and has made changes to the *BC-StorageDetails* generic inquiry, these changes will no longer be effective after the upgrade to Acumatica ERP 2022 R1. The synchronization mechanism for the export of product availability data has been reworked to use dynamic BQL to query the database directly, without using generic inquiries. The *BC-StorageDetails* generic inquiry is no longer used for calculating the available item quantities to be exported to external e-commerce systems, and will be deleted in a future version of Acumatica ERP.
- If the organization exports sales prices to a BigCommerce store, after the upgrade, the administrator should review the sales prices of each item to make sure that all the item's prices that need to be exported are defined for the sales UOM of the item.
- If the organization exports non-stock items to a BigCommerce store, after the upgrade, the administrator should review the settings of each non-stock item to make sure that the **Require Shipment** check box on the **General** tab of the *Non-Stock Items* (IN202000) form is selected for the items that are sold as physical products and cleared for the items that are sold as digital products in the BigCommerce store.

For more information, see *Commerce: Other Improvements*.

Commerce: Automatically Populated Shipping Options and Payment Methods

Before importing sales orders from a Shopify or BigCommerce store to Acumatica ERP, an administrative user must map the payment methods and shipping options offered in the store to the payment methods and shipping options configured in Acumatica ERP. In previous versions, the user had to first find out the names of the store shipping options and store payment methods and then define the mappings. In many cases, the user learned the exact name only after the synchronization of a sales order failed because of a missing mapping and the system added a row with it to the mapping table.

Starting in Acumatica ERP 2022 R1, the system automatically populates the store payment methods and the store shipping options in the corresponding mapping tables when a connection is first established to a BigCommerce store on the *BigCommerce Stores* (BC201000) form or to a Shopify store on the *Shopify Stores* (BC201010) form.

The following screenshot shows the automatic population of the store shipping options for a BigCommerce store in the **Shipping Option Mapping** table on the **Order Settings** tab of the *BigCommerce Stores* form.

Figure: Populated store shipping options

Store Shipping Options Populated for Shopify Stores

The following table shows the shipping options, which are a combination of a store shipping zone and a store payment method, that are populated for Shopify stores in the table on the **Shipping Settings** tab of the *Shopify Stores* (BC201010) form.

Store Shipping Zone	Store Shipping Method
Domestic	*Custom*
Domestic	*Economy*
Domestic	*Expedited*

Store Shipping Zone	Store Shipping Method
Domestic	*Standard*
Domestic	*UPS*
Domestic	*USPS*
Rest of the World	*CanadaPost*
Rest of the World	*Custom*
Rest of the World	*Economy International*
Rest of the World	*Express International*
Rest of the World	*First Class Package International*
Rest of the World	*Priority Mail Express International*
Rest of the World	*Priority Mail International*
Rest of the World	*Standard International*
Rest of the World	*UPS*
Rest of the World	*USPS*
Rest of the World	*Worldwide*

Store Shipping Options Populated for BigCommerce Stores

The following table lists the shipping options populated for BigCommerce stores in the **Shipping Option Mapping** table on the **Order Settings** tab of the *BigCommerce Stores* (BC201000) form.

Store Shipping Zone	Store Shipping Method
Rest of the World	*Flat Rate*
Rest of the World	*Free Shipping*
Rest of the World	*Pickup in Store*
Rest of the World	*UPS*
Rest of the World	*USPS*
United States	*Flat Rate*
United States	*Free Shipping*
United States	*None*
United States	*Pickup in Store*

Store Shipping Zone	Store Shipping Method
United States	*Ship by*
United States	*UPS*
United States	*USPS*

Store Payment Methods Populated for Shopify Stores

When a connection is first established to a Shopify store on the *Shopify Stores* (BC201010) form, the system adds the following store payment methods to the mapping table on the **Payment Settings** tab:

- *AMAZON*
- *AUTHORIZENET*
- *BOGUS*
- *BRAINTREE*
- *CASH*
- *CASH ON DELIVERY (COD)*
- *CHEQUE*
- *GIFT_CARD*
- *PAYPAL*
- *SHOPIFY_PAYMENTS*

Store Payment Methods Populated for BigCommerce Stores

When a connection is first established to a BigCommerce store on the *BigCommerce Stores* (BC201000) form, the system adds the following store payment methods to the mapping table on the **Payment Settings** tab:

- *AMAZON*
- *AUTHORIZENET (CREDIT_CARD)*
- *BRAINTREE*
- *CHEQUE (OFFLINE)*
- *COD (OFFLINE)*
- *CUSTOM (CUSTOM)*
- *GIFTCERTIFICATE (GIFT_CERTIFICATE)*
- *STRIPE*
- *TEST PAYMENT GATEWAY*

Commerce: Tracking of the Shopify API Version

Shopify releases a new version of the Shopify API every quarter and supports each version for exactly one year.

Each version of Acumatica ERP uses a particular supported version of the Shopify API. To avoid possible issues, a company should upgrade its Acumatica ERP instance to a newer version before the support of the Shopify API version used in its instance is deprecated.

To help users identify which version of the Shopify API is used in their version of Acumatica ERP, on the **Connection Settings** tab of the *Shopify Stores* (BC201010) form, a new **API Version** box has been added (shown in the following screenshot).

Figure: The API Version box on the Shopify Stores form

For more information about the Shopify API versioning, see *the Shopify documentation*.

Commerce: Changes to the Activation of Entities

In Acumatica ERP 2022 R1, updates have been made to show the dependencies of the entities displayed in the table on the **Entity Settings** tab of the *BigCommerce Stores* (BC201000) and *Shopify Stores* (BC201010) forms.

The table below summarizes the dependencies of the entities that can be activated or deactivated on the **Entity Settings** tab of the *BigCommerce Stores* form as follows:

- The **Required Entities** column shows the entities that must be activated as a prerequisite for the current entity (that is, the entity in the current row). Without the activation of the required entities, the synchronization of the current entity is not possible.
- The **Activated Entities** column lists the entities that the system activates when a user activates the current entity.
- The **Deactivated Entities** column lists the entities that the system deactivates when a user deactivates the current entity.

Table: Entity Dependencies on the BigCommerce Stores Form

Entity	Required Entities	Activated Entities	Deactivated Entities
Customer Price Class	None	None	None
Base Sales Price	At least one of the following entities: • *Stock Item* • *Non-Stock Item* • *Template Item*	*Stock Item*	None
Price List	*Customer Price Class* and at least one of the following entities: • *Stock Item* • *Non-Stock Item* • *Template Item*	• *Customer Price Class* • *Stock Item*	None
Customer	None	None	• *Sales Order* • *Customer Location* • *Payment* • *Shipment* • *Refund*
Customer Location	*Customer*	*Customer*	None
Sales Category	None	None	None
Stock Item	None	None	*Product Availability* if *Template Item* is not activated
Non-Stock Item	None	None	None

Entity	Required Entities	Activated Entities	Deactivated Entities
Template Item	None	None	*Product Availability* if *Stock Item* is not activated
Product Image	At least one of the following entities: • *Stock Item* • *Non-Stock Item* • *Template Item*	*Stock Item*	None
Product Availability	At least one of the following entities: • *Stock Item* • *Template Item*	*Stock Item*	None
Sales Order	*Customer*	*Customer*	• *Payment* • *Shipment* • *Refund*
Payment	*Sales Order*	• *Sales Order* • *Customer*	*Refund*
Shipment	*Sales Order*	• *Sales Order* • *Customer*	None
Refund	• *Sales Order* • *Payment*	• *Sales Order* • *Payment* • *Customer*	None

The following table summarizes the dependencies of entities that can be activated or deactivated on the **Entity Settings** tab of the *Shopify Stores* form.

Table: Entity Dependencies for Shopify

Entity	Required Entities	Activated Entities	Deactivated Entities
Customer	None	None	• *Sales Order* • *Customer Location* • *Payment* • *Shipment* • *Refund*
Customer Location	*Customer*	*Customer*	None
Stock Item	None	None	*Product Availability* (if *Template Item* is not activated)
Non-Stock Item	None	None	None

Entity	Required Entities	Activated Entities	Deactivated Entities
Template Item	None	None	*Product Availability* (if *Stock Item* is not activated)
Product Image	At least one of the following entities: • *Stock Item* • *Non-Stock Item* • *Template Item*	*Stock Item*	None
Product Availability	At least one of the following entities: • *Stock Item* • *Template Item*	*Stock Item*	None
Sales Order	*Customer*	*Customer*	• *Payment* • *Shipment* • *Refund*
Payment	*Sales Order*	• *Sales Order* • *Customer*	*Refund*
Shipment	*Sales Order*	• *Sales Order* • *Customer*	None
Refund	• *Sales Order* • *Payment*	• *Sales Order* • *Payment* • *Customer*	None

Commerce: Other Improvements

In Acumatica ERP 2022 R1, multiple improvements to commerce-related functionality have been introduced, as described below.

Changes to the Export of Sales Categories to BigCommerce

Starting in Acumatica ERP 2022 R1, the synchronization of sales categories is no longer required for the export of stock, non-stock, and template items to a BigCommerce store.

Now items can be exported to BigCommerce even if the *Sales Category* entity has not been activated on the **Inventory Settings** tab of the *BigCommerce Stores* (BC201000) store.

If the *Sales Category* entity has been activated, during the synchronization of a stock, non-stock, or template item, the system does the following:

- If any sales categories are assigned to the item in Acumatica ERP and have been exported to the BigCommerce store (or created there), assigns the exported item to these categories in the BigCommerce store
- If no sales categories are assigned to the item, the default sales category or categories have been specified on the **Inventory Settings** tab of the *BigCommerce Stores* store, and the default sales categories have been synchronized with the BigCommerce store, assigns the exported item to these categories in the BigCommerce store
- If no sales categories are assigned to the item and no default categories have been specified, exports the item and does not assign it to any sales categories in the BigCommerce store.

> ⚠️ Any categories that have been assigned to the item in the BigCommerce store become unassigned.

Use of the Sales UOM in Sales Price Export and Order Import

In previous versions of Acumatica ERP, only the sales prices defined for items in the base unit of measure (UOM) could be exported to the BigCommerce store. Also, when an order was imported from a BigCommerce store and a Shopify store, on the **Details** tab of the *Sales Orders* (SO301000) form, the system inserted the base UOM in the order lines. This could lead to a discrepancy if the sales unit of measure was different than the base unit of measure.

In Acumatica ERP 2022 R1, when a user prepares and processes the *Base Sales Price* or *Price List* entities, only the sales prices defined for the item in the sales UOM are exported to the BigCommerce store. Similarly, the system now inserts the sales UOM in the sales order lines of imported orders.

For more information about the export of sales prices to a BigCommerce store, see *Price Synchronization: General Information*.

Changes to the Export of Non-Stock Items to BigCommerce

In previous versions of Acumatica ERP, when a non-stock item was exported to a BigCommerce store, it was marked in the control panel of the BigCommerce store as a digital product (that is, the **Product Type** box under **Basic Information** was set to *Digital*). When an order with these items was created in the BigCommerce store, it did not contain shipping information. After the order was imported to Acumatica ERP and a shipment was created, the shipment could not be exported to the BigCommerce store.

Starting in Acumatica ERP 2022 R1, if a non-stock item is marked as not requiring shipping, it is exported to the BigCommerce store as a digital item. Shipping is not required for the non-stock item when the **Require Shipment** check box is cleared on the **General** tab of the *Non-Stock Items* (IN202000) form. If a non-stock item is marked as

requiring shipping, it is exported to the BigCommerce store as a physical item. (In this case, the **Require Shipment** check box is selected.)

For more information about the export of non-stock items to a BigCommerce store, see *Product Synchronization: General Information*.

Improved Export of Product Availability Data

In Acumatica ERP 2022 R1, the synchronization mechanism for the export of product availability data has been reworked to use dynamic BQL to query the database directly, without using generic inquiries. Also, the export of product availability settings to Shopify or BigCommerce stores has been optimized and now works as summarized in the following table. For each row, when the entity (**Entity** column) is synchronized, the settings of the exported items in the BigCommerce or Shopify store are updated based on the settings listed in the **Availability Settings Synced with BigCommerce** or **Availability Settings Synced with Shopify** columns, respectively.

Table: Synchronization of Settings that Affect Product Availability in the Store

Entity	Availability Settings Synced with BigCommerce	Availability Settings Synced with Shopify
Stock Item, *Non-Stock Item*, and *Template Item*	All product availability settings except **When Qty Unavailable**	All product availability settings
Product Availability	**Default Availability** and **When Qty Unavailable**	**Default Availability** and **When Qty Unavailable**

The default availability settings are defined on the **Inventory Settings** tab of the *BigCommerce Stores* (BC201000) or *Shopify Stores* (BC201010) form. The item-specific availability settings, which take precedence over the default values, are defined on the **eCommerce** tab of the *Non-Stock Items* (IN202000), *Stock Items* (IN202500), and *Template Items* (IN203000) forms.

For more information about the synchronization of product availability settings and available quantities of items with BigCommerce stores, see *Product Availability: General Information*.

For more information about the synchronization of product availability settings and available quantities of items with Shopify stores, see *Product Availability: General Information*.

CRM: Selection of Employees as Case Contacts

In Acumatica ERP 2022 R1, a user who is reporting a case on the *Cases* (CR306000) form can select an employee of the user's own organization as the case contact, in addition to being able to select a case contact of a business account. This gives users of Acumatica ERP the ability to submit cases to their organization's internal IT or legal team. Users can select their own employee accounts as the case contacts.

In previous versions of Acumatica ERP, a user could select a case contact among employees only if the user created the case in the Self-Service Portal. Starting in Acumatica ERP 2022 R1, the user can select a case contact among employees both in the system and in the Self-Service Portal.

This ability depends on a new setting for a case class, which determines whether an employee can be a case contact for a case of the class. On the **Details** tab of the *Case Classes* (CR206000) form, the **Allow Selecting Employee as Case Contact** check box has been added, as shown in the following screenshot.

Figure: The Allow Selecting Employee as Case Contact check box

If this check box is selected for a class, for a case of the class (see Item 1 in the following screenshot), in the **Contact** box (Item 2) of the *Cases* (CR306000) form, a user can select a contact of the *Employee* type (Item 3). The system will insert the name of the employee's company, which is in the **Account Name** column of the lookup table (Item 4), in the **Business Account** box of the form (Item 5). (If the company has multiple branches, the name of the branch will be inserted instead of the company name.)
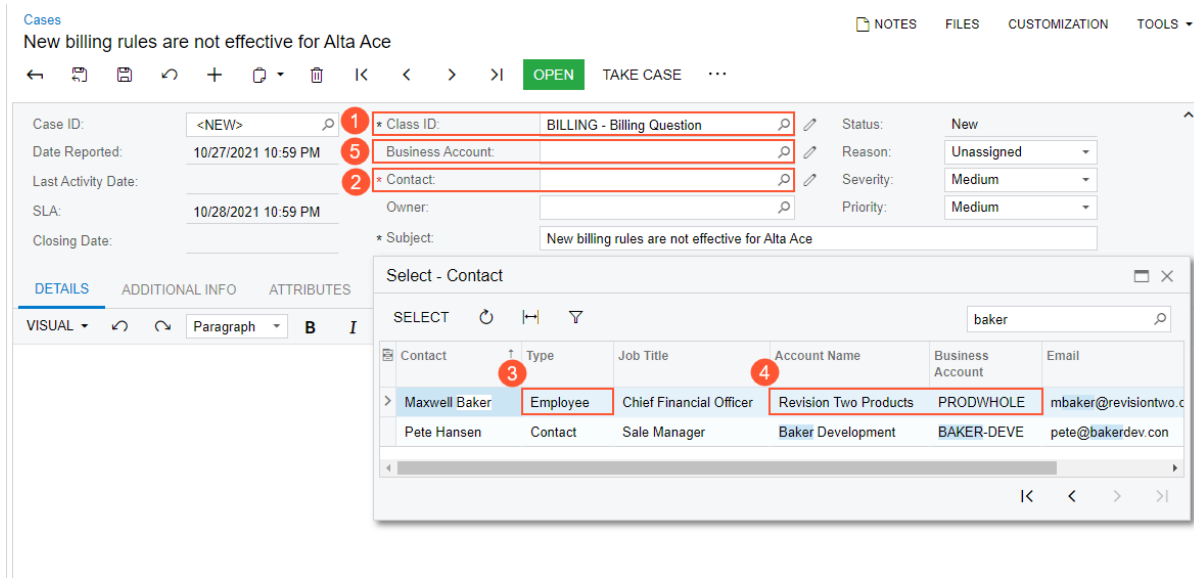
Figure: The selection of an employee on the Cases form

Additional Information

For more information about the selection of case contacts among employees and the submittal of cases to IT, see *Submitting Cases to Internal Teams*.

CRM: Enhancements to CRM Events

Acumatica ERP 2022 R1 introduces a new layout of the *Event* (CR306030) form to make data entry faster and easier. Also, a new *Events (EP4041PL)* form has been added, which gives users the ability to view the existing events and to navigate between events more easily.

New Layout of the Event Form for the Owner or Creator

In Acumatica ERP 2022 R1, the *Event* (CR306030) form has a new layout. The form layout is different for the owner (see the following screenshot) than for a potential attendee of the event (see the screenshot in the next section). The form's subtitle (see Item 1 in the following screenshot) contains the description copied from the **Summary** box of the **Details** tab. Also, the order of the tabs has been changed, and on the **Details** tab, many UI elements have been rearranged or added to improve usability.

The form toolbar has been enhanced as follows:

- The standard **Add New Record** button has been added.
- The standard **Clipboard** button, which a user clicks to open the **Clipboard** menu, has been added.
- The More button has been added; a user clicks it to open the More menu and access additional commands.

Figure: Updates to the Event form

In the new **Time Zone** box (see Item 2 in the previous screenshot), the event creator or owner selects the time zone in which the start and end time are specified. Thus, the event creator or owner can select the time zone relevant to them or the time zone of most event attendees. By default, the **Time Zone** box shows one of the following:

- The default time zone specified for all users in the system, which is located on the *Site Preferences* (SM200505) form in the **Login Time Zone** box of the **General Defaults** section.
- The default time zone of the user currently signed in to the system if it differs from the default time zone specified for all system users. The user's default time zone is specified on the *User Profile* (SM203010) form in the **Time Zone** box of the **Personal Settings** section.

The time zone selected in this box can differ from the time zones listed above. If the event owner changes the time zone after the start and end time have already been entered, the **Start Time** and **End Time** (Item 3) are adjusted to the new time zone. For example, if an event takes place in New York, the time zone is Greenwich Mean Time (GMT)

minus five hours, the start time is 1:00 PM, and the event owner changes the time zone to fit Arizona, GMT minus seven hours, the event's start time will be 1:00 PM, but according to the new time zone. All the potential event attendees can see the start time and end time of the event in the default time zone of their user account.

If the owner of the event changes the time zone again and saves the changes on the *Event* form, the system shows a warning message asking if the owner wants to notify the invited attendees about the new time of the event.

If the **All Day** check box (Item 4) is selected, the system sets the time zone of an event to the default one for the owner and makes the **Time Zone** box unavailable for editing.

> ⚠️ After the upgrade to Acumatica ERP 2022 R1 from previous versions, the default time zone of the system (or the user's default time zone if it differs) is specified in the **Time Zone** box on the *Event* form for all existing events.

In the **Remind At** box (Item 5), instead of a specific date and time, the event creator or owner now selects an option that describes when attendees should be reminded relative to when the event starts. The options available in this box (such as *15 minutes before*, *1 hour before*, or *1 day before*) depend on whether the event takes the whole working day (that is, the **All Day** check box is selected) or a time period making up part of the day.

The new **Owner** box (Item 6) has been added. The event's creator or current owner can specify a value in this box during event creation or later if the owner of the event is not initially specified.

New Layout of the Event Form for a Potential Attendee

On the **Details** tab of the *Event* (CR306030) form (shown and described in the previous section), the commands and UI elements available and visible to a potential event attendee differ from those used by the event's creator or owner. The following screenshot shows the *Event* form as a potential attendee sees it.

The form toolbar and the More menu have the **Accept** and **Decline** commands, which the potential attendee can use to indicate whether they will attend the event. For a potential attendee, the settings on the **Details** and **Attendees** tabs are unavailable for editing. Also, on the **Details** tab, the **Time Zone** box is not displayed, and the times in the **Start Time** and **End Time** boxes are adjusted to the attendee's default time zone.

Figure: The Details tab of the Event form for a potential attendee

Enhancements Related to Event Attendees

In previous versions, the creator or owner of the selected event could select potential attendees of the event on the **Attendees** tab of the *Event* (CR306030) form among only employees. If a contact was not an employee, the user could add this contact and the contact's email address to the event only manually. In Acumatica ERP 2022 R1, the event's creator or owner can select potential event attendees (see Item 1 in the following screenshot) among all leads, contacts, and employees defined in the system. To select an attendee, the user should add a new row to the table, click the magnifier button in the **Contact** column for the row (Item 2), and in the lookup table that opens, select the attendee. The table lists not only employees, but also leads and contacts (Item 3).

Figure: The selection of a contact on the Attendees tab

New Events (EP4041PL) Generic Inquiry Form

Starting in Acumatica ERP 2022 R1, the new *Events (EP4041PL)* generic inquiry form, shown in the following screenshot, has been added. The new form lists only events owned or attended by the employee selected in the **Employee** box (Item 1 in the following screenshot). By default, the system inserts the name of the employee associated with the user who is currently signed in to the system.

Among other summary information about the events, the form now includes the **All Day** column (Item 2) to show all-day events and the **Category** column (Item 3), which contains the event category to help users prioritize the events. The event categories and highlighting (if applicable) can help a user to easily identify the importance of the event.

The *Events (EP4041PL)* form is a generic inquiry that can be modified, if needed, through the **Customization** menu on the form title bar by a customizer or administrative user with the *Customizer* role assigned.
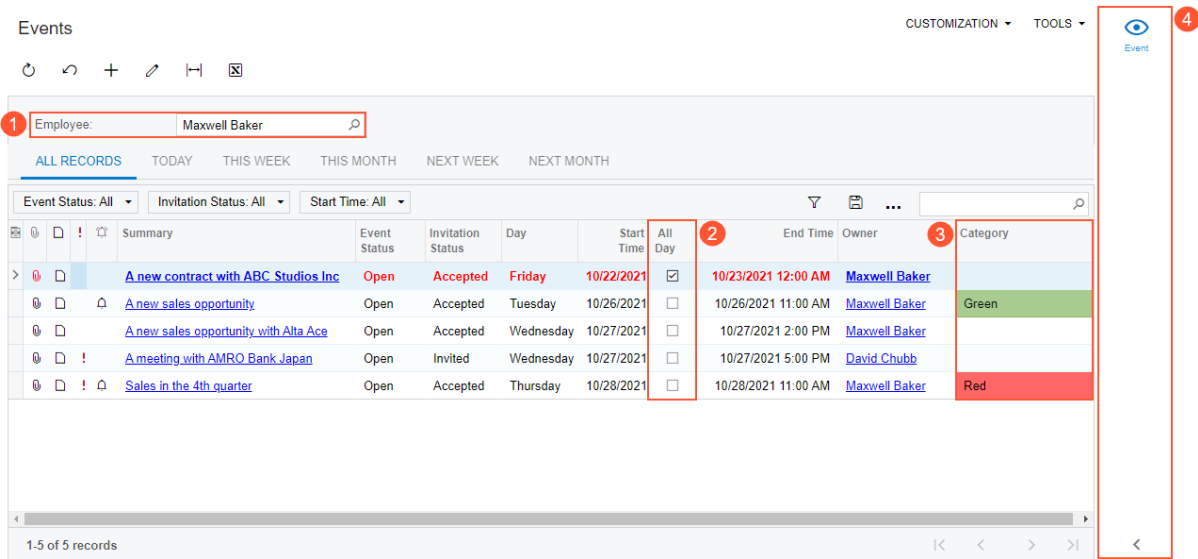
Figure: The new Events (EP4041PL) form

Also, a side panel has been added to the form (see Item 4 in the previous screenshot). By clicking an event in the list and opening the side panel, a user can quickly find, view, and modify the information related to any listed event (see the following screenshot).
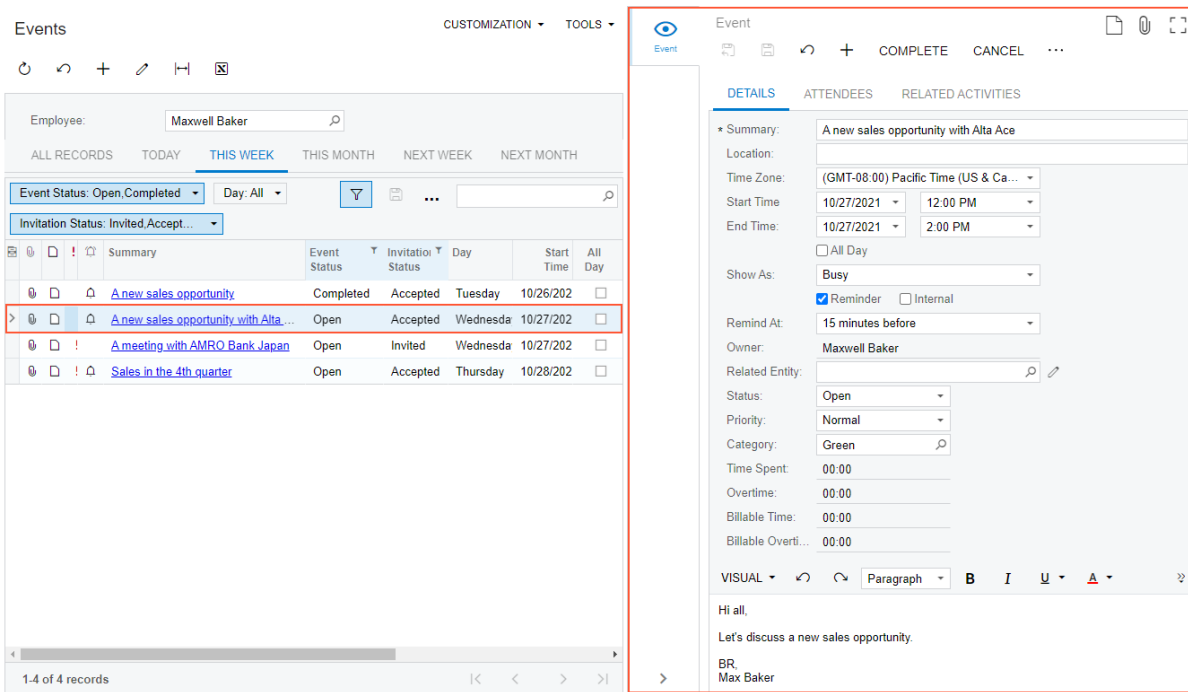
Figure: A side panel for the list of events

The obsolete *Events (EP404100)* and *Event Attendee Statuses (EP204050)* forms have been deleted from the system.

Event-Related Enhancements in the Mobile App

In Acumatica ERP 2022 R1, the usability of the Event screen in the Acumatica mobile app has been improved. The **Summary** tab of the screen has been enhanced as follows (see the screenshot below):

- The **Remind At** box (which the user accesses by expanding the Reminder group of elements) includes such options as *15 minutes before*, *1 hour before*, or *1 day before*.
- The **Time Zone** box has been added.
- The **Owner** box has been placed below the Reminder group of elements (at the bottom of the tab).
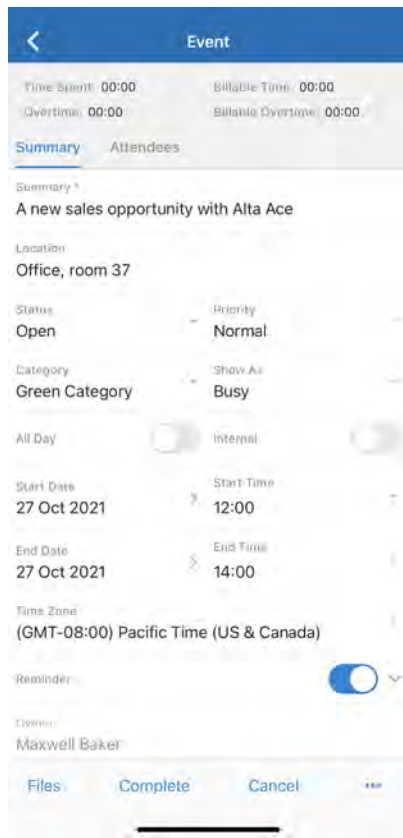
Figure: The Event screen in the mobile app

The updated **Attendees** tab of the Event screen is shown in the following screenshot. On this tab, users can now select attendees among leads, contacts, and employees.
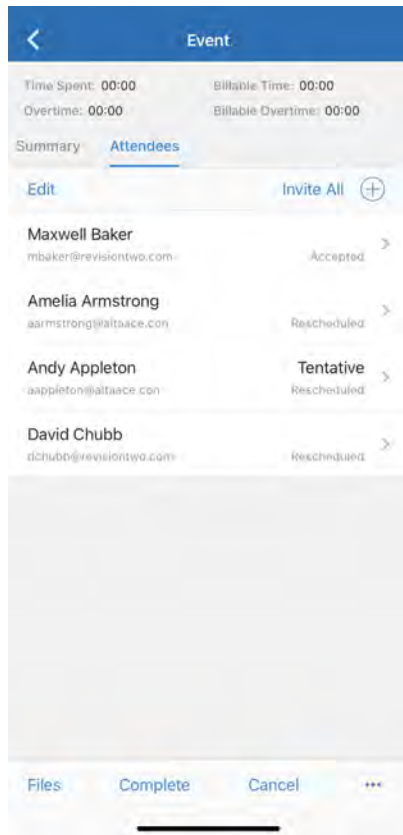
Figure: The Attendees tab on the Event screen in the mobile app

Acumatica ERP 2022 R1 also introduces the new screen, shown in the following screenshot, which lists the events owned or attended by the employee associated with the user who is currently signed in to the system. For each event, it shows the description of the event, the status, the invitation status of an attendee, the start date and time, and the location (if one has been specified).
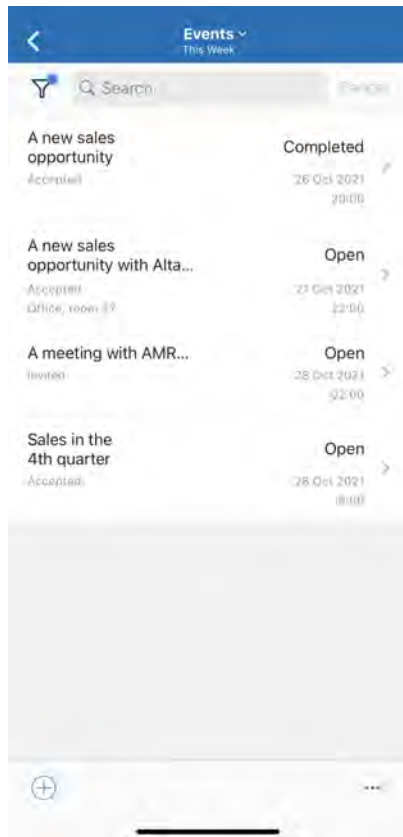
Figure: The new Events screen in the mobile app

Additional Information

For more information about creating events, see *Emails and Activities: Events*, *Emails and Activities: To Create an Event*, and *Notifications About Events*.

CRM: Enhanced Merging of Duplicates and Association of Records

In Acumatica ERP 2022 R1, users can merge duplicate records and associate leads, contacts, and business accounts, including duplicates, faster and more easily. Also, during this association of leads, contacts, and accounts, users can now indicate on the fly which settings should be used for the associated records.

Enhancements to the Duplicates Tab

In previous versions of Acumatica ERP, duplicate records that are available for both merging and association were displayed in one table on the **Duplicates** tab of the *Leads* (CR301000) and *Contacts* (CR302000) forms.

Starting in Acumatica ERP 2022 R1, the **Duplicates** tab of the *Leads* and *Contacts* forms has been enhanced to group possible duplicate records of the lead or contact the user is currently viewing by the way they should be processed. Users can merge duplicates in the **Records for Merging** table (see Item 1 in the screenshot below) and associate records in the **Records for Association** table (Item 2).

In both tables of these forms, UI elements that hold duplicate values are highlighted (see Item 4). If a user clicks a link in the **Display Name** (Item 3), the corresponding duplicate record opens in a new browser tab. Similarly, a user can click a link in the **Business Account** column (Item 5) to open the corresponding business account in a new browser tab.

In the **Records for Merging** table, the user can select a duplicate record and click **Merge** on the table toolbar (Item 6) to start merging the current record with the duplicate. This process is described in the following section.

In the **Records for Association** table, the user can select a duplicate record and click **Associate** on the table toolbar (Item 7) to start associating the current record with the duplicate. For details, see the *Association of Leads, Contacts, and Business Accounts* section.

Figure: The Duplicates tab of the Leads form

In Acumatica ERP 2022 R1, the **Duplicates** tab on the *Business Accounts* (CR303000) form (see Item 1 in the following screenshot) the **Records for Merging** label has been added to the table. UI elements that hold duplicate values are highlighted. If a user clicks a link in the **Business Account** column (Item 2), the business account opens in a new browser tab.

A user can select a duplicate account and click **Merge** on the table toolbar (Item 3) to start merging the current account with the duplicate account. For details, see the following section.

Figure: The Duplicates tab of the Business Accounts form

Merging of Duplicate Leads, Contacts, and Business Accounts

In the **Records for Merging** table on the **Duplicates** tab of the applicable form, a user can merge duplicate records as follows:

- The selected lead on the *Leads* (CR301000) form with a duplicate lead in the table
- The selected contact on the *Contacts* (CR302000) form with a duplicate contact in the table
- The selected account on the *Business Accounts* (CR303000) form if it has the *Business Account* type with a duplicate account in the table

The user can select only one record at a time to be merged with the record currently being viewed on the form. The **Merge** button (see Item 1 in the following screenshot) is available on the table toolbar only if this record has been saved at least once. When the user selects a record in the table and clicks **Merge**, the **Merge Conflicts** dialog box opens. In the **Target Record** box (Item 2), the user can select the record to be kept after the merge, either the record currently being viewed on the form (the *Current Record* option) or the duplicate record selected in the **Records for Merging** table (the *Duplicate Record* option). The table in the dialog box (Item 3) shows field values that differ in these records. Field values are values of elements on the entry form for a record.
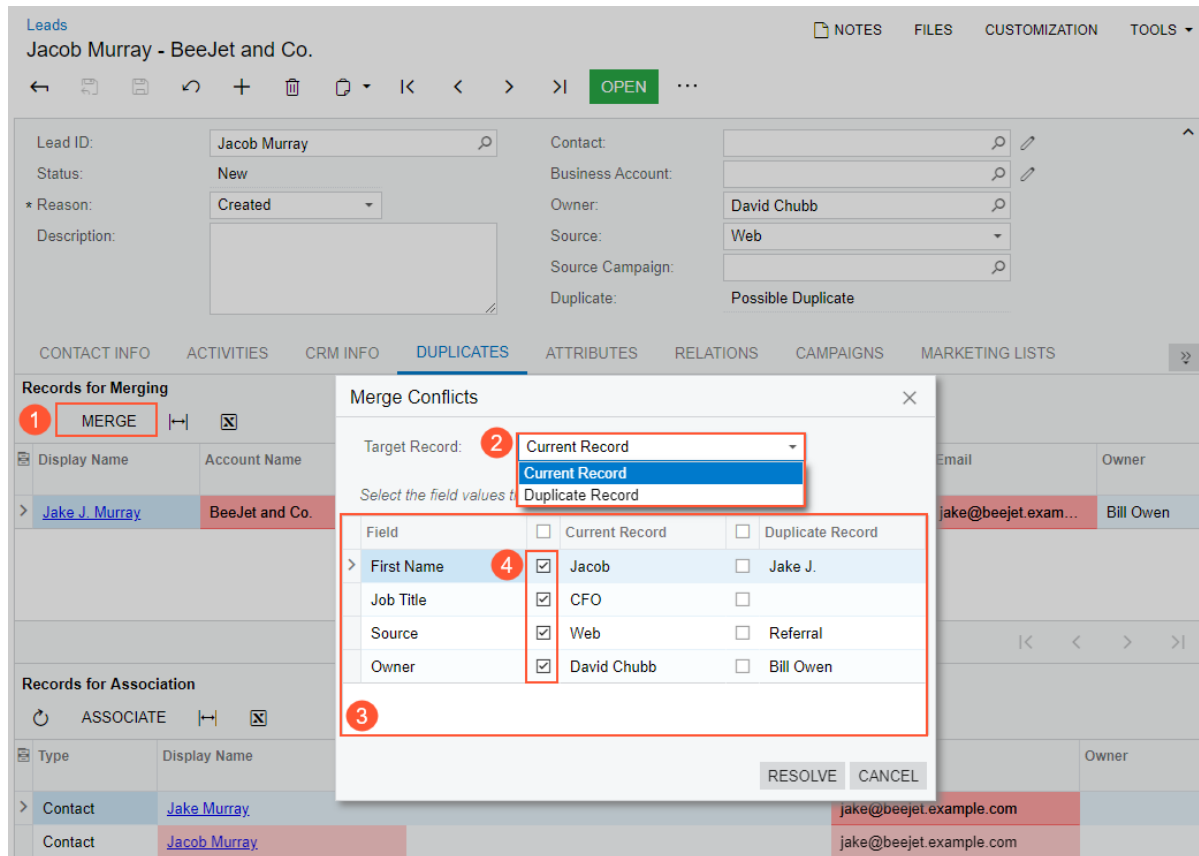
Figure: The Merge Conflicts dialog box

If the **Target Record** box contains the *Current Record* option (which is the default setting), the unlabeled check box left of each field value of the currently viewed record (see Item 4 in the previous screenshot) is selected by default in either of the following cases:

- The compared fields have different values in the currently viewed record and the duplicate record.
- The field value is empty for the duplicate record.

If the user changes the option in the **Target Record** box to *Duplicate Record*, the check boxes left of the field values of the duplicate record become selected.

A user can select the field values to be kept in the currently selected record by selecting the needed check boxes. If the user clears a check box, the field value will be empty after the merge.

A particular field is displayed in the table of the **Merge Conflicts** dialog box when the following conditions are met on the corresponding entry form:

- The UI element for the field is displayed in the Summary area of the *Leads* or *Contacts* form, on the **CRM Info** tab of either form, on the **Contact Info** tab of the *Leads* form, or on the **Details** tab of the *Contacts* form for the contact. (This condition is required.)
- For a contact, the value of the element corresponding to this field on the *Contacts* form is available for changing. (This condition is required.)
- The field values of the record currently being viewed and the duplicate record are different. (This condition is required.)
- Either value in the pair of the compared fields is empty. (This condition is optional.)

⚠️ The **Primary Contact** field is shown in the **Merge Conflicts** dialog box. Suppose that a user is attempting to merge two business accounts and the user has selected the business account currently being viewed as the target. If the user selects a primary contact from a duplicate account as the primary contact for the target account, this contact is associated with the target business account and selected as its primary contact.

If after the user clicks **Merge**, no different field values have been found during duplicate validation, the **Merge Conflicts** dialog box has only the **Target Record** box and the **Resolve** and **Cancel** buttons, as shown in the following screenshot. The user can select the target record and complete or cancel the merge of the duplicates.

*Figure: The Merge Conflicts dialog box without a table*

Association of Leads and Contacts

In previous versions of Acumatica ERP, if a user associated a lead with a duplicate contact, the user could not select the field values to be kept in the lead and the associated contact.

Starting in Acumatica ERP 2022 R1, in the new **Associate the Contact with the Lead** dialog box, a user can select the contact settings to update in the existing contact when it is associated with a lead.

The dialog box opens if the user does any of the following:

- Selects a contact in the **Contact** box of the *Leads* (CR301000) form for a lead.
- Associates a lead with a duplicate contact on the **Duplicates** tab of the *Leads* form by selecting the duplicate contact and clicking **Associate** on the table toolbar of the **Records for Association** table.
- Associates a contact with a duplicate lead on the **Duplicates** tab of the *Contacts* (CR302000) form by selecting the duplicate lead and clicking **Associate** (see Item 1 in the following screenshot) on the table toolbar of the **Records for Association** table.
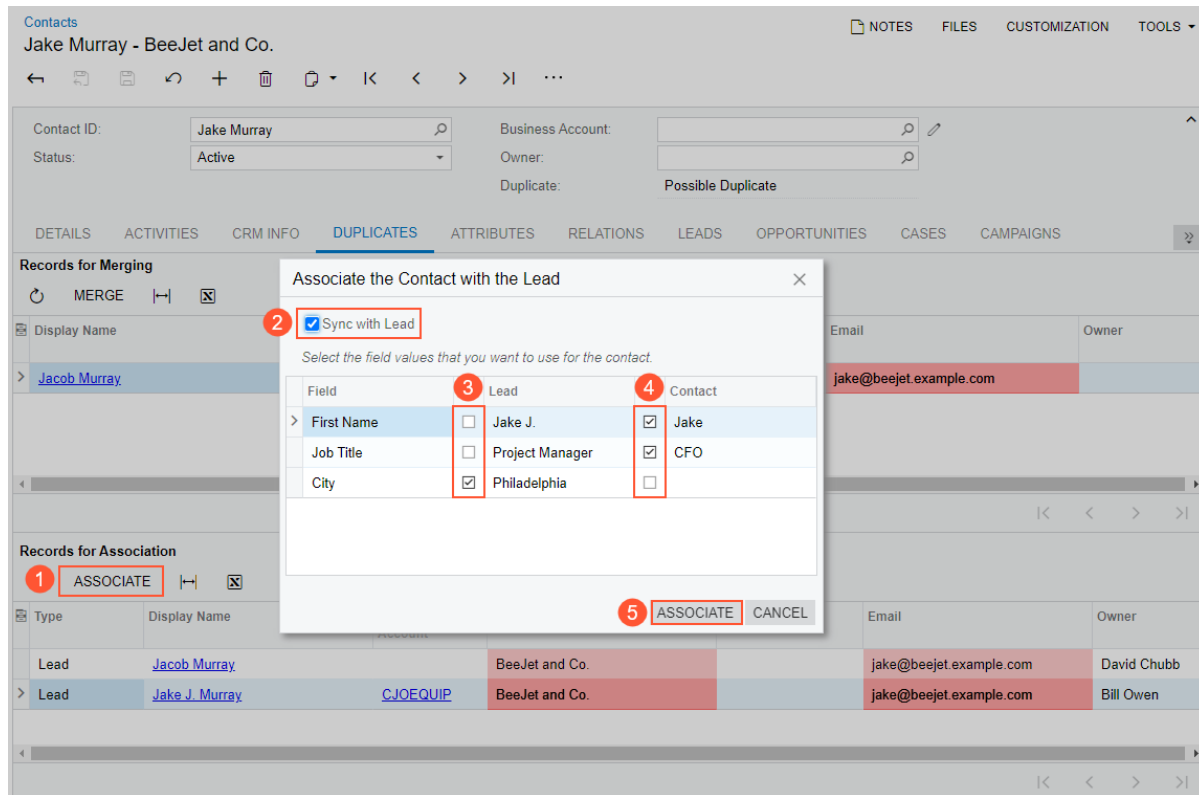
Figure: The Associate the Contact with the Lead dialog box

The table in the **Associate the Contact with the Lead** dialog box lists the field values (that is, the values of the UI elements) from the **Contact Info** tab on the *Leads* form and the **Details** tab on the *Contacts* forms. By default, the **Sync with Lead** check box is selected (see Item 2 in the previous screenshot), meaning that after the lead and the contact have been associated with each other, they will have the same updated contact settings. These settings will be updated as follows:

- The contact's field values will be replaced with the selected lead's field values.
- The lead's field values will be replaced with the selected contact's field values.

The unlabeled check boxes left of the field values are also available for selection (Item 3 and Item 4).

For each field listed in the dialog box, a field value is selected by default as follows:

- If values are specified for the field for both the lead and the contact, the check box left of the contact's field value is selected.
- If a field value is empty for the contact and is specified for the lead, the check box left of the lead's field value is selected.

> ⚠️ If a user clears the **Sync with Lead** check box, the check boxes in the table become unavailable for changing. In this case, after the lead has been associated with the contact, the contact settings on the *Leads* form remain unchanged, and the contact's settings on the *Contacts* form are not updated with values from the associated lead.

A particular field is displayed in the table of the **Associate the Contact with the Lead** dialog box when the following conditions are met:

- The UI element for the field is displayed on the **Contact Info** tab of the *Leads* form for the lead or the **Details** tab of the *Contacts* form for the contact. (This condition is required.)
- For a contact, the value of the element corresponding to this field on the *Contacts* form is available for changing. (This condition is required.)

- The field values of the lead and the contact are different. (This condition is required.)
- The field value on the *Leads* form is not empty. (This condition is optional.)

In the **Associate the Contact with the Lead** dialog box, a user can do any of the following:

- Leave the **Sync with Lead** check box selected, synchronize the contact and address settings in the lead and contact, and associate the lead with the contact by clicking **Associate** (Item 5 in the screenshot above). The **Override** check box on the **Contact Info** tab of the *Leads* form remains cleared.
- Associate the lead with the selected contact without the synchronization of the contact and address settings by clearing the **Sync with Lead** check box and clicking **Associate**. The **Override** check box on the **Contact Info** tab of the *Leads* form becomes selected.

If after the user clicks **Associate**, no different field values have been found, the **Associate the Contact with the Lead** dialog box has only the **Sync with Lead** check box and the **Associate** and **Cancel** buttons, as shown in the following screenshot. The table that lists lead's and contact's settings to be compared is not displayed.
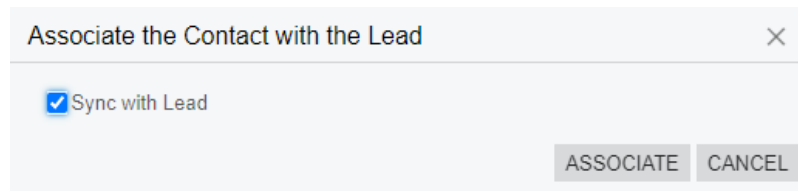
Figure: The Associate the Contact with the Lead dialog box without a table

The user can do any of the following:

- Synchronize the contact and address settings in the lead and the contact, and associate the records by clicking **Associate**
- Associate the contact and the lead without the synchronization of settings by clearing the **Sync with Lead** check box and clicking **Associate**
- Cancel the operation

Association of Leads, Business Accounts, and Contacts

Starting in Acumatica ERP 2022 R1, with the new Associate Entities wizard (see the following screenshot), during the association of a lead with a business account, a user can update specific contact settings in the associated contact, create a new contact and associate it with the lead, or associate the lead with a business account without contact creation.

The Associate Entities wizard opens when a user does either of the following:

- When the **Contact** box is empty, selects an account in the lookup table in the **Business Account** box on the *Leads* (CR301000) form
- Selects a duplicate business account in the **Records for Association** table on the **Duplicates** tab of the *Leads* form and clicks **Associate** on the table toolbar

Figure: The Associate Entities wizard

The wizard presents option buttons the user can click to do the following:

- Associate the account with the lead (the **Associate the Lead with an Account** option button, see the previous screenshot)
- Select the contact associated with the account and associate this contact with the lead (the **Associate the Lead with an Account and a Contact** option button)
- Create a new contact associated with the account and associate this contact with the lead (the **Associate the Lead with an Account and a New Contact** option button)

In the wizard, if the user selects **Associate the Lead with an Account** (Item 1 in the following screenshot) and clicks **Next** (Item 2), the user can do either of the following on the Associate the Account with the Lead page:

- Associate the account with the lead and leave the lead's contact settings unchanged (Item 3).

  When the user clicks **Associate** (Item 4), the wizard is closed. After the user saves the changes on the currently opened form, the lead is associated with the business account. In this case, the contact and address settings of the lead remain unchanged.

Figure: Lead-account association without changing the lead's contact settings

- Associate the account with the lead and replace the lead's contact settings with the settings of the business account (Item 3 in the following screenshot).

  When the user clicks **Associate** (Item 4), the wizard is closed. After the user saves the changes on the currently opened form, the lead is associated with the business account. In this case, the contact and address settings of the lead will be updated with the settings of the associated business account.

Figure: Replacement of the lead's contact settings with the account's settings

In the wizard, if the user selects **Associate the Lead with an Account and a Contact** (Item 1 in the following screenshot) and clicks **Next** (Item 2), the Select the Contact for the Lead page opens.

On the Select the Contact for the Lead page, the user can do the following:

1. Select the contact to be associated with the lead (Item 3) and click **Next** (Item 4).

Figure: Contact selection for the account to be associated with the lead

2. On the Associate the Contact with the Lead page, which opens, associate the lead with the selected contact of the business account as follows:

   - Synchronize the contact settings in the lead and the associated contact by leaving the **Sync with Lead** check box selected (Item 1 in the following screenshot), selecting the needed settings in the table (Item 2), and clicking **Associate** (Item 3). The wizard is closed. After the user saves the changes on the currently opened form, the lead is associated with the contact and the business account. In this case, the contact and address settings in the lead and the associated contact will be synchronized.

   - Clear the **Sync with Lead** check box and click **Associate**. The wizard is closed. After the user saves the changes on the currently opened form, the lead is associated with the contact and the business account. In this case, the contact settings of the lead and the associated contact remain unchanged.

Figure: Contact-lead association and selection of the field values for the contact

In the wizard, if the user selects **Associate the Lead with an Account and a New Contact** (Item 1 in the following screenshot) and clicks **Next** (Item 2), the user can specify the settings of the contact (Item 3) and create the contact on the Create Contact page by clicking **Create** or **Create and Review** (Item 4).

Figure: New contact creation and contact-lead association

The system creates the contact and associates this contact with the lead and the business account.

Association of Leads, Contacts, and Business Accounts in the Acumatica Mobile App

Due to the changes in Acumatica ERP 2022 R1, on the Leads screen in the Acumatica mobile app, if a user does any of the following and saves the lead, the settings' values of the lead are not updated with the settings' values of the associated record, and the **Override** check box becomes selected on the Leads screen:

- The user selects a contact in the **Contact** box.
- The **Contact** box is empty, and the user selects a business account in the **Business Account** box.
- A business account is specified in the **Business Account** box, the contact is specified in the **Contact** box, and the user clears the value in the **Contact** box.

API Changes Related to Association of Leads, Contacts, and Business Accounts

In Acumatica ERP 2022 R1, if a lead record is updated via an API, the settings' values of the lead are not updated with the settings' values of the associated record, and the **Override** check box becomes selected on the *Leads* (CR301000) form in any of the following cases:

- The **Contact** value is specified.
- The **Business Account** value is specified. (A contact has not been specified yet.)
- The **Contact** value is cleared. (A business account and the contact had already been specified.)

Additional Information

For more information about duplicate validation, see *Validating Records for Duplicates*.

CRM: Support of Multiple Base Currencies

The *Multiple Base Currencies* feature was implemented in Acumatica ERP 2021 R1, although in that release, it was not compatible with multiple other features, including *Customer Management*. Starting in Acumatica ERP 2022 R1, the CRM functionality can be used with the *Multiple Base Currencies* feature enabled. With the *Multiple Base Currencies* feature enabled on the *Enable/Disable Features* (CS100000) form, companies with different base currencies can be configured within one tenant; the system now verifies that the base currency specified in the CRM-related documents corresponds to the base currency of the branch.

Changes to the Enable/Disable Features Form

On the *Enable/Disable Features* (CS100000) form, the *Multiple Base Currencies* feature can be enabled if the *Customer Management* feature is enabled.

Multiple Base Currencies in Opportunities, Sales Quotes, and Project Quotes

If the *Multiple Base Currencies* feature is enabled on the *Enable/Disable Features* (CS100000) form, a user can create opportunities for company branches that have various base currencies. The branch's base currency is shown in the **Currency** box on the *Opportunities* (CR304000) form (see the following screenshot).

Figure: The Currency box on the Opportunities form

The base currency of the opportunity is the currency of the branch specified in the **Branch** box on the **Financial** tab of the *Opportunities* form.

If a user creates a sales quote on the *Sales Quotes* (CR304500) form or a project quote on the *Project Quotes* (PM304500) form and the quote is based on an opportunity, the system uses the base currency of the opportunity as the base currency of the sales quote or the project quote.

For an item specified in the **Inventory ID** box on the **Details** tab of the *Opportunities* form, in the **Warehouse** box, the user can specify a warehouse of a branch that uses the same base currency as the opportunity's branch does.

Selection of Customers in Opportunities

In the **Business Account** box on the *Opportunities* (CR304000) form, a user can select only the following customers for an opportunity:

- A customer that is restricted to the opportunity branch
- A customer that is not restricted to any entity but has the same customer base currency as the base currency of the branch specified in the opportunity

This restriction does not apply to business accounts of potential customers because these business accounts do not belong to any branch.

> ⚠️ After the system upgrade, all existing customers are set to the base currency same as the base currency set in the tenant before the upgrade.

Known Limitations

The system currently does not support multiple base currencies in CRM if the *Customer Portal* feature is enabled on the *Enable/Disable Features* (CS100000) form.

Additional Information

For details on configuring the multiple base currencies functionality, see *Multiple Base Currencies: General Information*, *Customer Visibility: General Information*, and *Company Groups: General Information*.

For details on the support of multiple base currencies in order management, see *Order Management: Multiple Base Currencies*.

CRM: New Import Scenarios

In Acumatica ERP 2022 R1, new CRM import scenarios are available in the out-of-the-box system. With these basic import scenarios, users can more easily import new leads, contacts, business accounts, opportunities, and cases into the system and update existing records. Also, users can create new import scenarios based on the new import scenarios, which may be faster than configuring import scenarios from the ground up.

New Predefined Import Scenarios

In previous versions of Acumatica ERP, preconfigured import scenarios for creating leads, contacts, cases, and opportunities were included in the *Sales Demo* dataset but were not available in the out-of-the-box system. The template files for the import scenarios had a limited number of settings. Also, no import scenario was included for adding business accounts to the system.

Starting in Acumatica ERP 2022 R1, on the *Import Scenarios* (SM206025) form, the following predefined import scenarios based on the *Excel Provider* (PX.DataSync.ExcelSYProvider) data provider are available:

- *Import Leads from Excel*
- *Import Contacts from Excel*
- *Import Business Accounts from Excel*
- *Import Opportunities from Excel*
- *Import Cases from Excel*

On the *Data Providers* (SM206015) form, for each import scenario, a template file in XLSX format has been added. Each template file lists examples of how the data for import should be specified, and the required settings are highlighted. In the template files, users can specify various settings for the records to be imported, such as a primary contact for a business account, or items for sale for an opportunity. Users can download the template files, modify their settings, and use new files (based on the templates) for record import.

On the *Import by Scenario* (SM206036) form, in the **Name** box, a user can select any of the import scenarios listed above and click **Prepare** on the form toolbar. On the **Prepared Data** tab, the user can see the settings of the test records to be imported from the file to the system. The user can import the test records and then view the newly imported records on the *Leads* (CR301000), *Contacts* (CR302000), *Business Accounts* (CR303000), *Opportunities* (CR304000), or *Cases* (CR306000) form corresponding to the import scenario.

The new import scenarios give users the ability to specify various workflow statuses for business accounts, leads, contacts, opportunities, and cases to be imported.

By using the new template files, users can also import notes related the records. The users can find the notes by clicking **Notes** on the form title bar of the *Leads*, *Contacts*, *Business Accounts*, and *Opportunities*, *Cases* forms.

For details about each import scenario, see the following sections.

Import of Leads from Excel

The *Import Leads from Excel* import scenario gives users the ability to import leads with various statuses, such as *New*, *Open*, *Sales-Ready*, *Sales-Accepted*, *Converted*, and *Disqualified*.

Based on the predefined settings specified for this import scenario on the *Import Scenarios* (SM206025) form, if a lead is associated with an existing contact as a result of the import, the lead's contact and address settings are synchronized with the contact's settings. The system can be configured to not perform this synchronization. In this case, the contact and address settings of the record that existed are not changed, and the contact and address settings of the imported record are those specified in the data source. To cause the system to not synchronize these settings, on the **Mapping** tab of the *Import Scenarios* form for this import scenario, the user does the following:

1. In the **Source Field/ Value** column, clears the **Active** check box for the *=IIf([Lead.RefContactID]=Null, 'True', 'False')* field

2. Saves the import scenario

The `Import Leads from Excel Template.xlsx` template file has the following test leads, which can be imported to the system:

- A lead that has the *Open* status and is not associated with a contact or business account.
- A lead associated with a contact from the *Sales Demo* dataset. The lead's contact information will be synchronized with the information from the contact as a result of the import.
- A lead associated with a business account from the *Sales Demo* dataset. The lead's contact information differs from the contact information of the business account.

Import of Contacts from Excel

The *Import Contacts from Excel* import scenario gives users the ability to import contacts with the *Active* status. A user can modify the import scenario so that during the import, a new contact will be associated with a business account that already exists in the system. During the import, the address settings of the contact can be synchronized with the address settings of the business account.

The `Import Contacts from Excel Template.xlsx` template file has the following test contacts, which can be imported to the system:

- A contact associated with a business account.
- A contact associated with a business account from the *Sales Demo* dataset. The contact's address settings differ from the address settings of the business account.
- A contact associated with a business account from the *Sales Demo* dataset. The contact's address settings are copied from the business account.

Import of Business Accounts from Excel

The *Import Business Accounts from Excel* import scenario gives users the ability to create a business account and create the primary contact associated with the account, if needed.

The `Import Business Accounts from Excel Template.xlsx` template file can include such data as contact settings of a business account, address settings, CRM-related settings, and settings of a primary contact. The template file has the following test business accounts, which can be imported to the system:

- A business account that has a primary contact
- A business account that has no primary contact

Import of Opportunities from Excel

The *Import Opportunities from Excel* import scenario gives users the ability to import opportunities that have items for sale. As a result of the import, these items for sale will be added to the **Details** tab on the *Opportunities* (CR304000) form.

The `Import Opportunities from Excel Template.xlsx` template file has column names that include the following:

- *Inventory ID*
- *Warehouse*
- *Quantity*
- *Unit Price*
- *Discount, %*
- *Project Task*
- *Cost Code*

For each item for sale, a user can specify values in the columns listed above. In the import scenario, these columns are mapped to the fields on the *Opportunities* form. A new row is added to the template file for each item included in an opportunity. As a result of the import, the values in these columns will be inserted in the appropriate elements of the form for each imported record. For some opportunity-specific columns, multiple items of an opportunity will have the same values and can be copied by the user. These values might include the values in the *Opportunity ID*, *Status*, *Business Account*, or *Subject* column in the file.

The template file has the following test opportunities, which can be imported to the system:

- An opportunity that has the *Open* status and a few items for sale (products or services) from the *Sales Demo* dataset
- An opportunity that is associated with a business account and has a few items for sale (products or services) from the *Sales Demo* dataset

Users can import opportunities that have various statuses, such as *New*, *Open*, *Won*, and *Lost*.

Import of Cases from Excel

The *Import Cases from Excel* import scenario gives users the ability to import cases that have various statuses, such as *New*, *Open*, *Pending Customer*, *Closed*, and *Released*.

The `Import Cases from Excel Template.xlsx` template file has the following test cases, which can be imported to the system:

- A case associated with a contact from the *Sales Demo* dataset
- A case that has the *Closed* status and is associated with a business account from the *Sales Demo* dataset

CRM: Enhanced Support of User-Defined Fields for Activities, Tasks, and Events

In Acumatica ERP 2022 R1, user-defined fields can be added to activities, tasks, and events. Also, values of user-defined fields can be copied between activities, tasks, events, and the entity that they have been created from if the user-defined fields have been added to the entry form of the entity.

User-Defined Fields in Activities, Tasks, and Events

Starting in Acumatica ERP 2022 R1, users can add user-defined fields to the **User-Defined Fields** tab of the Summary area of the following forms:

- *Activity* (CR306010)
- *Task* (CR306020)
- *Event* (CR306030)

To add or modify user-defined fields from any of these forms, on the form title bar, a user clicks **Customization > Manage User-Defined Fields** to open the *Edit User Defined Fields* (CS205020) form. For each user-defined field to be added, the user clicks **Add User Defined Field** and specifies its parameters, including the **Attribute ID**. Before they can be added on a particular form, user-defined fields must be defined as attributes on the *Attributes* (CS205000) form.

On the **Properties** tab of this form, the **Activity Type** box has been added (see Item 1 in the following screenshot). This box is shown only when a user opens this form from the *Activity*, *Task*, or *Event* form.

The **Activity Type** box lists all the types of activities for which the **Active** check box is selected on the *Activity Types* (CR102000) form. The activity types defined in a company's system might include custom activities, tasks, and events. If a user wants to specify a default value for a user-defined field for a task, event, or activity of a particular type, the user must select this type in the **Activity Type** box. Then in the **Default** column of the table (Item 2), this user can specify the default value for each of the listed attributes. The system saves these default values for the form for which the user-defined fields are being defined and the activity type. The default settings apply to only the selected type.
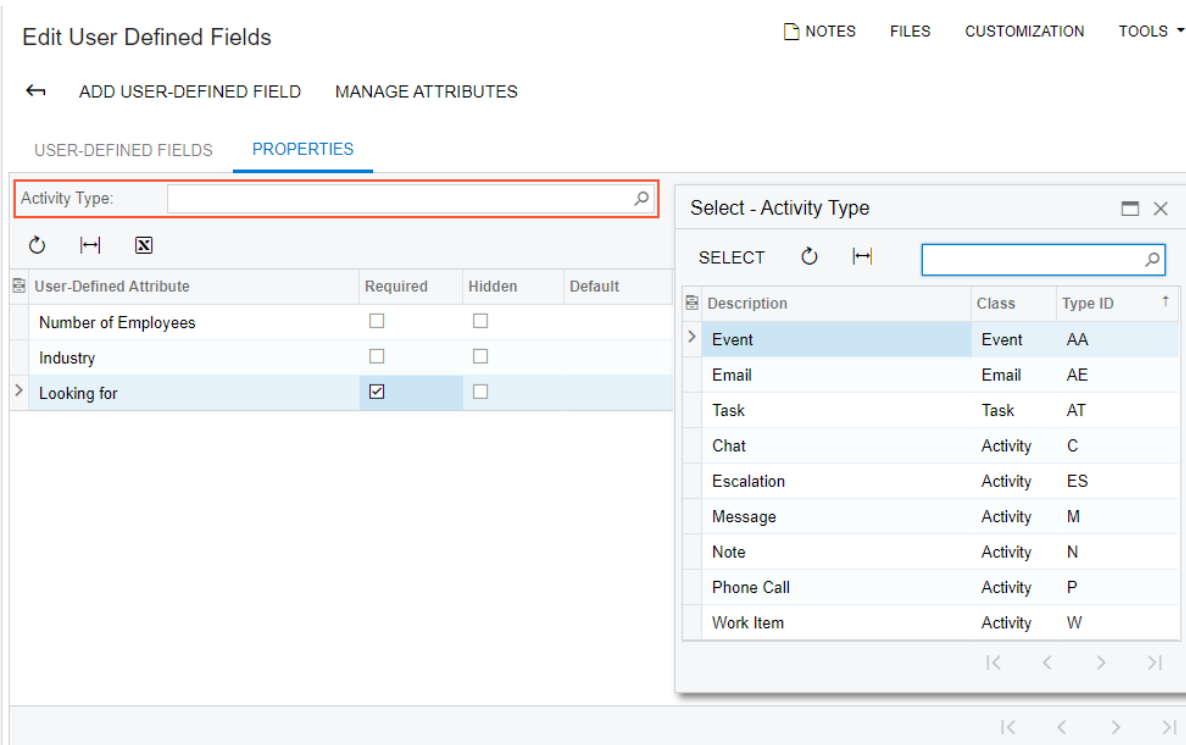
Figure: Selection of the activity type box and the default user-defined fields

Copying of User-Defined Field Values

In Acumatica ERP 2022 R1, if a user creates an activity, task, or event from another task, event, or any entity in the system to which user-defined fields can be added, and both the original entity and the new activity, task, or event has any of the same user-defined fields, the values of these user-defined fields are automatically copied to the new entity.

For example, suppose that the *Cases* (CR306000) form and the *Event* (CR306030) form have the same two user-defined fields and the user has filled in the values for the case (see Item 1 in the following screenshot). If the user creates a new event by using the *Cases* form as a starting point, on the *Event* (CR306030) form, which opens in a pop-up window, the values of the case are copied to the corresponding fields on the **User-Defined Fields** tab (Item 2).
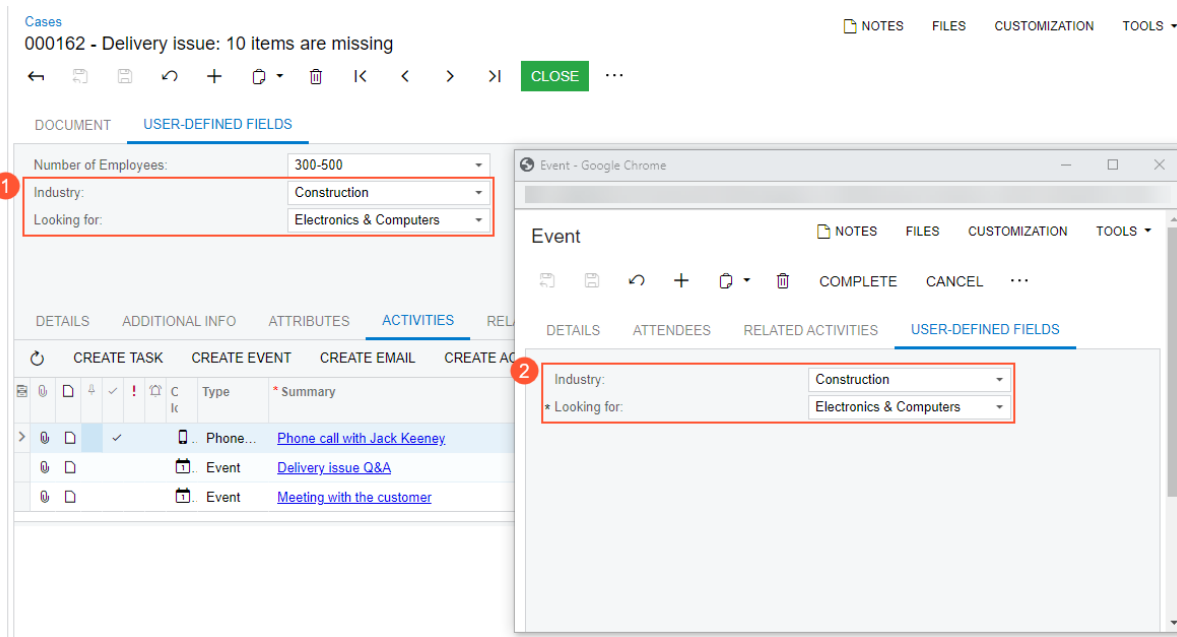
Figure: Values of the same user-defined fields copied to a new event

If both the new entity (activity, task, or event) and the entity that is used as a starting point for the creation of the new entity have default values defined for the same user-defined field, the field value from the original entity is copied to the corresponding field of the new entity.

If a user creates an activity, task, or event from another entity's form and the new entity has any user-defined field that is defined as required on the new entity's form, the user must fill in the value in this field before saving the entity.

CRM: Other Improvements

Improvements to the Selection of Owner

In previous versions of Acumatica ERP, only an employee that was linked to a user account could be specified as an owner in the **Owner** box on the data entry form of a record. See the following screenshot, which shows the box on the *Opportunities* (CR304000) form.

Figure: The Owner box on the Opportunities form

Starting in Acumatica ERP 2022 R1, an employee can be specified in the **Owner** box even if a user with the *Active* status is not linked with the employee on the **User Info** tab of the *Employees* (EP203000) form.

An employee that is not linked with a user can be specified in the **Owner** box on the following forms:

- *Leads* (CR301000)
- *Contacts* (CR302000)
- *Business Accounts* (CR303000)
- *Marketing Lists* (CR204000)
- *Marketing Campaigns* (CR202000)
- *Opportunities* (CR304000)
- *Sales Quotes* (CR304500)
- *Project Quotes* (PM304500)
- *Shipments* (SO302000)
- *Activity* (CR306010)
- *Task* (CR306020)
- *Event* (CR306030)
- *System Email Accounts* (SM204002)

Change of Tabs' Names

In Acumatica ERP 2022 R1, the **General Settings** tab has been renamed to **General** on the following forms:

- *Customer Management Preferences* (CR101000)

- *Business Account Classes* (CR208000)
- *Employee Classes* (EP202000)

Also, the **Mailing Settings** tab has been renamed to **Mailing & Printing** on the following forms:

- *Customer Management Preferences*
- *Business Account Classes*

Documentation: Improvements in User Guides

In Acumatica ERP 2022 R1, multiple improvements have been made to the content and structure of the guides that make up the documentation, as described in the following sections.

Customer Relationship Management Guide

The following changes and enhancements have been made in the Customer Relationship Management guide:

- A new chapter, Submitting Internal Cases to IT, has been added. This chapter gives users an understanding of how to create cases to their organization's internal IT or legal team.
- In the Managing Emails and Activities chapter, the following topics have been significantly updated:
  - Emails and Activities: Events
  - Emails and Activities: To Create an Event (By completing this activity, users will learn how to create an event and invite leads, contacts, employees, and persons whose data has not been entered in the system.)
- The Validating Records for Duplicates chapter has been significantly updated. In this chapter, the following topics have been added:
  - Validating Records for Duplicates: Merging of Duplicate Records
  - Validating Records for Duplicates: Association of Leads and Contacts
  - Validating Records for Duplicates: Association of Leads with Business Accounts and Contacts

  Also, the Validating Records for Duplicates: To Validate a Lead for Duplicates activity has been updated.

Financial Management Guides

The following changes have been made in the financial management guides:

- A new chapter, Maintaining Prices and Costs in Different Base Currencies, has been added to the Prices and Discounts guide. By completing the activity in this chapter, users will learn how to maintain the default prices of non-stock items in multiple base currencies used by companies in the same tenant. Users will also process an invoice with a non-stock item for which the default price in the base currency has been defined.
- A new chapter, Processing Documents Between Companies with Different Base Currencies, has been added to the Currency Management guide. By completing the activities in this chapter, users will learn how to process an AR invoice and an AP bill involving branches of companies with different base currencies.
- A new chapter, Preparing a Consolidated Financial Statement, has been added to the Currency Management guide. By completing the activities in this chapter, users will learn how to translate the account balances of a subsidiary company into the base currency of the parent company. Users will then learn how to prepare and run an ARM report based on a predefined Profit & Loss report; this new report will consolidate the financial data of both companies.

The Manufacturing Guide and the Implementing Manufacturing Chapter in the Implementation Guide

In the Manufacturing guide, the following new chapters have been added:

- Producing Items with Outside Processing: Users will learn how to process production orders that contain outside operations.
- Producing Items with Backflushing: Users will learn how to process production orders with operations for which material and labor costs will be backflushed.

The Implementing Manufacturing chapter has been added to the Implementation guide. The guide now contains the following new chapters and chapters and topics that have been moved from the Manufacturing guide:

- Preparing the System for Manufacturing Implementation
- Implementing Bills of Material: General Process
- Configuring Production Order Types
- Configuring MRP
- Implementing Production of Lot- or Serial-Tracked Items
- Implementing Outside Processing
- Implementing Item Production with Backflushing

Projects and Construction Guides

The following changes have been made in the Project Accounting and Construction guides:

- New activities have been added to the Purchasing Materials to the Project Site and Purchasing Materials to the Project Site with Receipt chapters. By completing the activities, users will learn how to configure a project to purchase items that are drop-shipped to a project site, and how to process the drop-shipment of items with the processing of a receipt and without the processing of a receipt.
- A new chapter, Managing Multicurrency Projects, has been added to the Project Accounting guide. By reading the topics in this chapter, users will learn how to track projects in a project currency that differs from the base currency of the company that manages the project.
- A new chapter, Tracking Changes to Commitments, has been added to the Project Accounting guide. By reading the topics in this chapter and completing the activity, users will learn how to process change orders for project commitments.
- A new chapter, Tracking Changes in Construction Projects, has been added to the Construction guide. By reading the topics in this chapter and completing the activities, users will learn how to process cost and revenue changes to a construction project. Also, these users will learn how to track changes in the project budget forecast.
- A new chapter, Managing the Construction Project Budget, has been added to the Construction guide. By reading the topics in this chapter and completing the activities, users will learn how to populate and track the budget of a construction project, capture project costs, and track project budget overrun.

Field Service Guides

The following changes have been made in the field service guides:

- In the Equipment Management guide, all topics related to service contracts have been combined in the Managing Service Contracts chapter.
- New activities have been added to the Managing Service Contracts chapter of the Equipment Management guide. By completing the activities, users will learn how to process service contracts of different billing types, how to copy a service contract, and how to renew a service contract.
- In the Route Management guide, the Processing Route Service Contracts chapter has been renamed to Managing Route Service Contracts. The content of the chapter has been reorganized and updated.
- A new activity has been added to the Managing Route Service Contracts chapter. By completing the activity, users will learn how to create a route service contract, create route service contract schedules, and generate and review route appointments.

Field Services: Renewal of Service Contracts

Starting in Acumatica ERP 2022 R1, the service contract functionality has been extended and enhanced. The following new capabilities are available in Acumatica ERP:

- A service contract can be renewed, which moves its expiration date forward by the specified duration. Once the service contract is renewed, it maintains most of the settings it previously had, including the schedules that have been generated. A service contract can be renewed before or after the expiration date as long as its status is *Active*.
- A service contract can be copied. The copied contract is assigned the *Draft* status so that some contract settings (such as start date, expiration date, customer, and project) can be modified. This capability can be used when a customer is due for renewal but some settings of the existing contract should be changed; in this case, the user prepares a service contract quote for the replacement contract. A user can also copy a service contract when another contract with similar settings is needed.
- The *Service Contract Quote (FS660000)* report can be generated and emailed to the customer before the expiration of the contract. This report shows the quantity of visits and the prices expected to occur during the forecast contract duration. The report can also be used as a quote when a user is creating a contract.

These capabilities apply to the following types of service contracts:

- Service contracts created on the *Service Contracts* (FS305700) form if the *Equipment Management* feature is enabled on the *Enable/Disable Features* (CS100000) form
- Route service contracts created on the *Route Service Contracts* (FS300800) form if the *Route Management* feature is enabled on the *Enable/Disable Features* form

In the following sections of this topic, these capabilities are described in detail for service contracts created on the *Service Contracts* form. The capabilities work similarly for route service contracts created on the *Route Service Contracts* form.

Creation of a Renewable Service Contract

To create a service contract that can be renewed, on the *Service Contracts* (FS305700) form, a user selects *Renewable* in the **Expiration Type** box of the **Contract Settings** section. The user also specifies the period until the expiration date in the **Duration** box (as the following screenshot shows).

> ⚠️ The **Duration** box appears on the form when the user selects *Expiring* or *Renewable* in the **Expiration Type** box.

Figure: The new Renewable option and Duration box

The following options are available in the **Duration** drop-down box: *Month*, *Quarter*, *Year*, and *Custom (days)*. The user can select *Month*, *Quarter*, or *Year*, and specify the number of months, quarters, or years (depending on the selected option) in the adjacent box. After the user specifies these settings, the system calculates the expiration date and inserts it in the **Expiration Date** box. If the user selects *Custom (days)*, the **Expiration Date** box becomes available for editing. When the user manually selects the expiration date, the system calculates the number of days before the expiration date and inserts it in the **Duration** box.

On the *Service Contracts* form for the service contract, if *Expiring* has been selected in the **Expiration Type** box before the upgrade of Acumatica ERP to the 2022 R1 version, then after the upgrade, *Custom (days)* will be automatically selected in the **Duration** box, and will be calculated based on the expiration date specified before the upgrade.

After Acumatica ERP has been upgraded to version 2022 R1, for the contracts created before the upgrade, the expiration type will stay unchanged (either *Expiring* or *Unlimited*) because for the active service contracts, the expiration type and expiration date cannot be modified. If a user wants to change the expiration type of a contract created before the upgrade from *Expiring* to *Renewable*, we recommend that the user copy the contract and change the expiration type in the new contract. (The new capability of copying the contract is described further in this topic.) For example, suppose that a user has a service contract with a start date of January 1, 2021, and an expiration date of December 31, 2021, and the user wants to have a renewable contract. In this case, the user copies the contract and specifies January 1, 2022, as the contract's start date.

Renewal of a Service Contract

A user can renew a service contract with the *Active* status before or after its expiration date. On the More menu of the *Service Contracts* (FS305700) form, the **Renew** command (under **Processing**) has been added; see the following screenshot. The command becomes available when a renewable service contract—one with *Renewable* selected in the **Expiration Type** box in the **Contract Settings** section—has been activated.
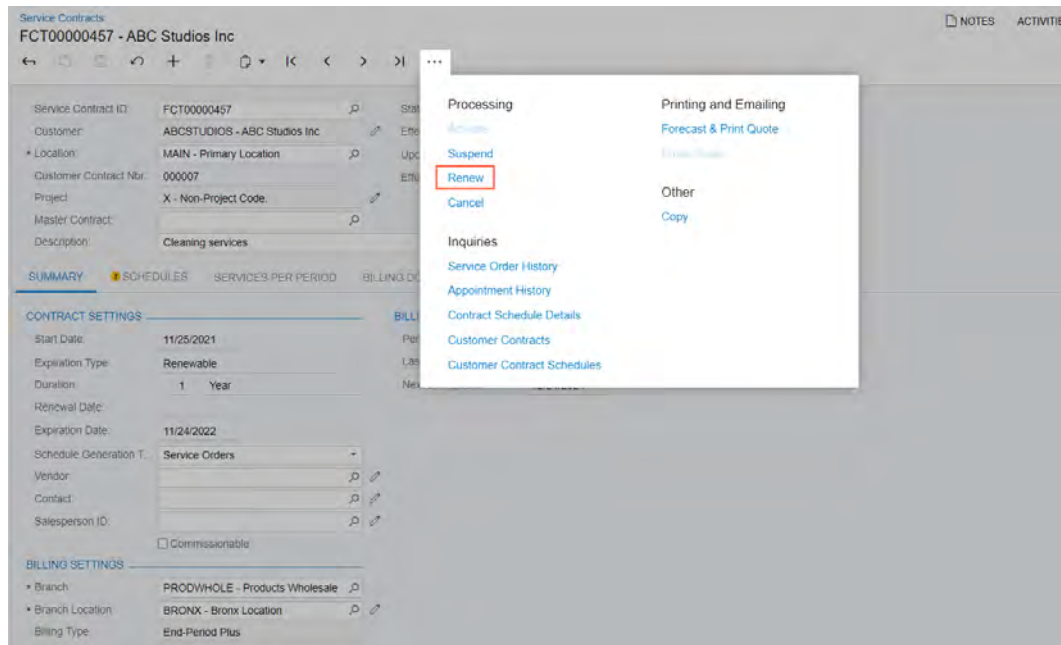
Figure: The Renew command

When a user clicks **Renew**, the system determines the contract renewal date based on the expiration date before the command is clicked (*11/24/2022* in this example, as shown in the screenshot above). The new renewal date is the day after the previous expiration date. The system inserts this date in the **Renewal Date** box and updates the date in the **Expiration Date** box based on the period specified in the **Duration** box (see the following screenshot).
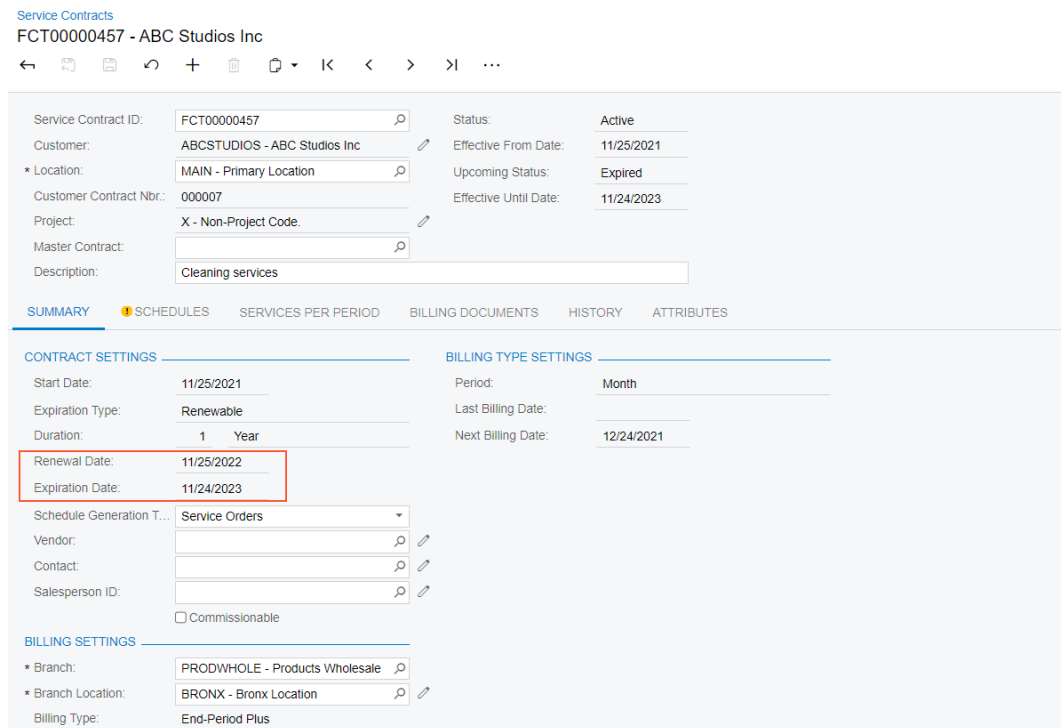
Figure: Renewal and expiration dates

A service contract can be renewed multiple times. Each time a user clicks **Renew**, the renewal and expiration dates will be moved forward by the amount of time specified in the **Duration** box.

Copying of a Service Contract

Acumatica ERP now provides the capability to copy a service contract. If a user needs a contract with similar settings to those of an existing contract, the user can now click the new **Copy** command on the More menu of the *Service Contracts* (FS305700) form, as the following screenshot shows.
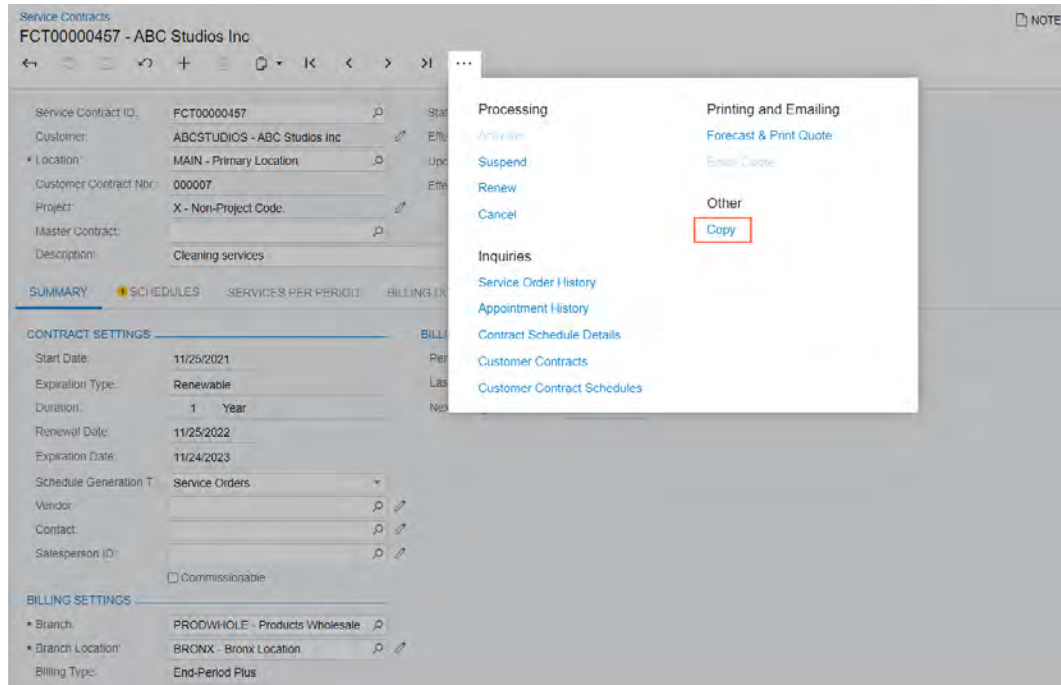
Figure: The Copy command

Once the user clicks **Copy**, the **Copy Contract** dialog box opens, as shown in the following screenshot. In the dialog box, the user specifies the start date that will be inserted in the copy of the service contract and in the copies of any schedules that are associated with the service contract. The expiration date of the new contract will be calculated based on the start date and the duration, and will be inserted in this service contract as well as in the copies of the schedules.

Figure: The Copy Contract dialog box

When the **Copy** command is used, a new contract with the *Draft* status is created with most of the same settings (and similar generated schedules) as those specified in the original one. On the **History** tab (shown in the following screenshot), a user can review which actions have been performed for the contract and when, as well as view the reference numbers of the original service contract and schedule.

Figure: The history of the copied service contract

Now a user can modify the following settings of the service contract with the *Draft* status (even if the service contract has schedules associated with it): **Customer**, **Location**, **Billing Customer**, **Billing Location**, **Project**, **Start Date**, **Expiration Type**, and **Expiration Date**.

After the contract is saved, if a user changes the contract start date or end date (or both), the schedule start date or end date (or both) will be updated accordingly if the contract start date is equal to the schedule start date, and the contract end date is equal to the schedule end date. If the contract start date differs from the start date of the schedule, or the contract end date differs from the contract end date, then a user should ensure that the new contract start date is not later than the schedule start date, and the contract end date is not earlier than the schedule end date.

Preparation and Emailing of a Service Contract Quote

A user can now generate a report that is a print-friendly service contract quote based on an existing service contract. On the More menu of the *Service Contracts* (FS305700) form, the **Forecast & Print Quote** command is now available under **Printing and Emailing**, as shown in the following screenshot. When a user clicks this command,

the system opens a dialog box in which the user specifies the start and end date of forecasting, and then the system generates and opens the print-friendly *Service Contract Quote (FS660000)* report.
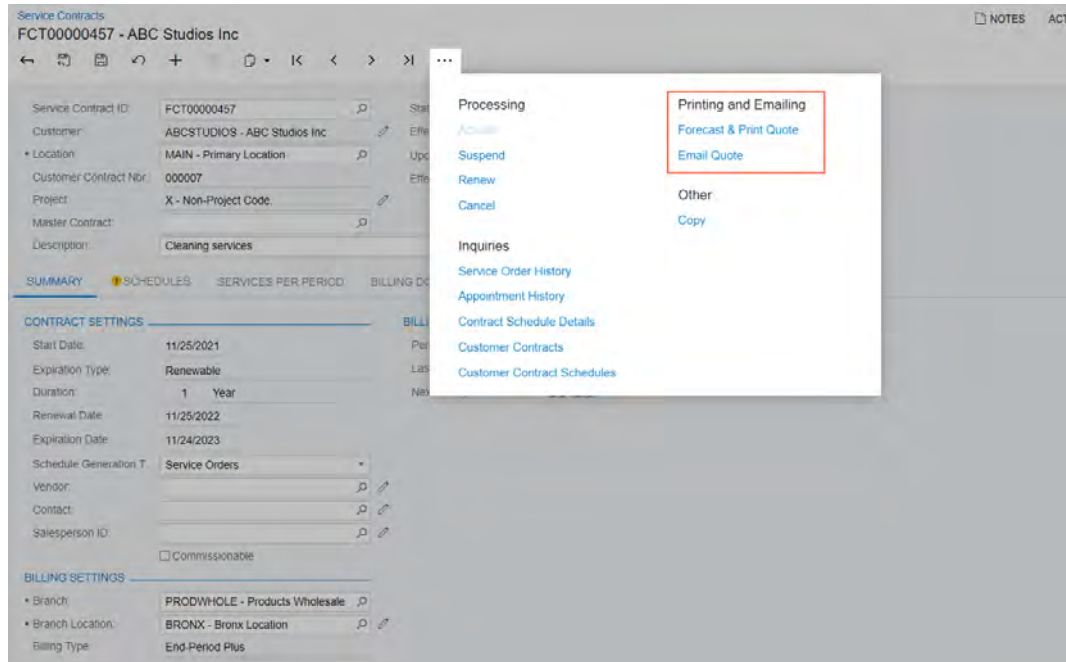
Figure: Commands for printing and emailing the quote

This report (see the following screenshot) shows the expected quantity of visits that should occur during the forecast contract duration, the price for each scheduled visit, the total price of all expected visits, and the expected number of billing documents to be generated during the contract duration. Note that the taxes and discounts are not included in the quote report. (Depending on the billing type specified for the service contract, some of these settings may not be shown in the report.)
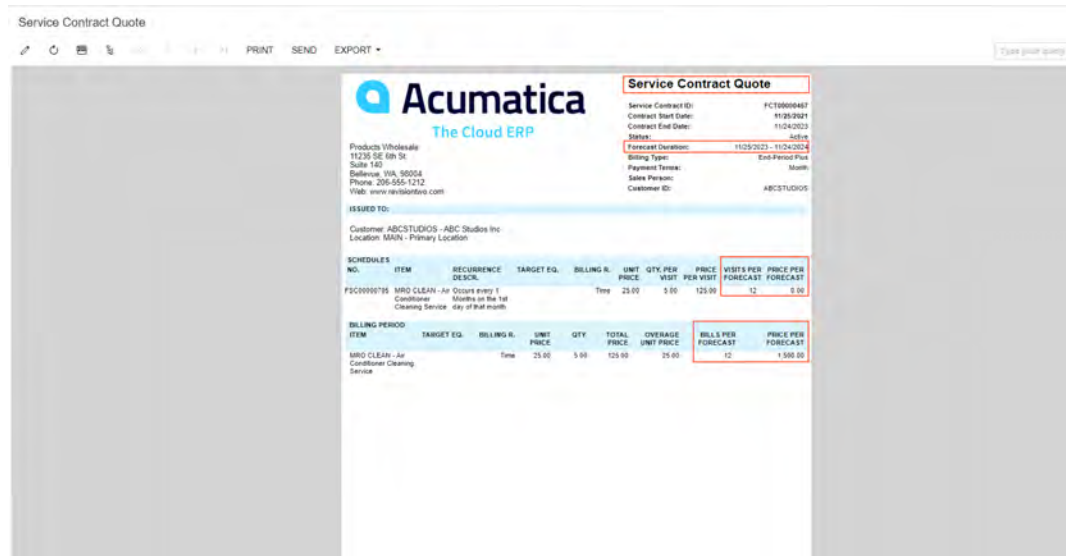
Figure: Service Contract Quote report

Once this report has been generated, the user can email it to the customer by clicking the **Send** button on the report toolbar or by clicking the new **Email Quote** command (under **Printing and Emailing**) on the More menu on the *Service Contracts* form.

> ⚠ The **Email Quote** command is available if the selected service contract has at least one service contract quote report generated.

The quote report can be emailed immediately after generation or at any later time. If the service contract settings (for example, prices or schedule settings) have been changed after the quote generation, a user should regenerate the quote report before emailing it.

For service contracts with a billing type other than *At Time of Service*, and with *Regular Price* selected in the **Take Prices From** box on the **Summary** tab of the *Service Contracts* form, the quote report reflects the prices specified on the *Stock Items* (IN202500) or *Non-Stock Items* (IN202000) form. These princes are specified in the **Default Price** box of the **Price/Cost** tab of either form. Thus, the prices in the quote reports may vary during the contract duration if the default prices of the items change.

If *Contract* is selected in the **Take Price From** box, the system will use the prices specified on the **Prices** tab of the *Service Contracts* form.

Configuration of the Notification Template for the Report

On the *Notification Templates* (SM304003) form, the new *ServiceContractQuoteNotification* notification template has been predefined. This template is designed for sending emails with the *Service Contract Quote (FS660000)* report when a user clicks **Email Quote** on the More menu of the *Service Contracts* (FS305700) form. This template is listed in the **Default Sources** table of the new **Mailing & Printing** tab on the *Equipment Management Preferences* (FS100300) and *Route Management Preferences* forms. (See the *Equipment Management Preferences* form in the following screenshot.)

Figure: The Mailing & Printing Tab

This tab contains the **Default Sources** table, where a user can activate any predefined mailing, and the **Default Recipients** table, where the user can review the default types of recipients for the mailing selected in the **Default Sources** table and add rows for additional recipients, if needed. For each row, in the **Contact Type** column, the user selects one of the following options, which represent the types of recipients in the row:

- *Billing* (default): With this option selected, the system sends the notification email to the customer specified in the **Billing Customer** box of the **Summary** tab (**Billing Settings** section) of the *Service Contracts* form. For this customer, the system uses the email address specified in the **Email** box on the **Billing** tab (**Bill-To Info** section) of the *Customers* (AR03000) form.
- *Employee*: With this option selected, the **Contact ID** column of the current table becomes available for editing. The system sends the notification email to the employee the user specifies in the **Contact ID** column of the current row. The system uses the email address specified for this contact in the **Email** box on the **General Info** tab (**Contact Info** section) of the *Employees* (EP203000) form.

- *Customer*: With this option selected, the system sends the notification email to the customer specified in the **Customer** box in the **Summary** area of the *Service Contracts* form. The system uses the email address specified in the **Email** box on the **Billing** tab (**Bill-To Info** section) of the *Customers* form.

- *Vendor*: With this option selected, the system sends the notification email to the vendor specified in the **Vendor** box of the **Summary** tab (**Contract Settings** section) of the *Service Contracts* form. For the vendor, the system uses the email address specified in the **Account Email** box on the **General** tab (**Additional Account Info** section) of the *Vendors* (AP303000) form.

- *Salesperson*: With this option selected, the system sends the notification email to the salesperson specified in the **Salesperson ID** box on the **Summary** tab (**Contract Settings** section) of the *Service Contracts* form. The salesperson account should be associated with an employee account; that is, for an employee, the salesperson ID should be selected in the **Salesperson** box on the **General Info** tab (**Employee Settings** section) of the *Employees* form. The system uses the email address specified in the **Email** box on the **General Info** tab (**Contact Info** section).

- *Contact*: With this option selected, the system sends the notification email to the contact specified in the **Contact** box on the **Summary** tab (**Contract Settings** section) of the *Service Contracts* form. The system uses the email address specified for the contact in the **Email** box of the **Details** tab (**Contact** section) of the *Contacts* form.

Mass Processing of Service Contracts

A user can process multiple service contracts at once by using the *Process Service Contracts* (FS501200) form. The following options have been added to the **Action** box of the Selection area of the form: *Renew*, *Forecast*, and *Email Quote*. (See the following screenshot.)

Figure: New options in the Action box

The user specifies the needed settings in the Selection area of the form, and then processes all of the listed contracts or only those the user selects by using the unlabeled check boxes in the table.

Improvements to Project Settings on the Service Contracts Form

On the **Summary** tab of the *Service Contracts* (FS305700) form, the new **Default Values** section has been added. The section is available if in the **Project** box of the Summary area of the form, a specific project is specified (that is, a project that is different than the non-project code, which by default is *X* but may be different in a particular system), as shown in the example in the following screenshot.

Figure: The Default Values section with a specific project selected

This section now contains the **Default Project Task** box, which has been moved from the Summary area. Also, the **Default Cost Code** box has been added to the section. This box is available if the *Cost Code* feature is enabled on the *Enable/Disable Features* (CS100000) form. The **Default Cost Code** setting is required if a specific project is selected in the **Project** box. The system inserts the default cost code in the **Cost Code** column of the following tabs:

- The **Services per Period** tab of the *Service Contracts* form for the lines a user adds to a service contract
- The **Details** tab of the *Service Contract Schedules* (FS305100) form for the lines a user adds to a schedule

> ⚠ During an upgrade to Acumatica ERP 2022 R1, the upgrade script will not fill in the **Default Cost Code** box for the existing service contracts created for projects; thus, a user must specify a default cost code before modifying each particular service contract.

A project's default task is the task specified as the default one for the selected project on the **Tasks** tab of the *Projects* (PM301000) form. If a user changes the project in the **Project** box of the Summary area on the *Service Contracts* form, then the system inserts the project's default task in the following elements:

- The **Default Project Task** box on the **Summary** tab of the *Service Contracts* form
- The **Project Task** column on the **Services Per Period** tab of the *Service Contracts* form
- The **Default Project Task** box in the Summary area of the *Service Contract Schedules* form.
- The **Project Task** column on the **Details** tab of the *Service Contract Schedules* form

After a service contract is saved and has the *Draft* status, if a user needs to specify a project task that is different than the default project task specified on the *Projects* form, the user should do one of the following:

- Manually specify the task in the **Project Task** column on the **Services Per Period** tab of the *Service Contracts* form and on the **Details** tab of the *Service Contract Schedules* form.
- Temporarily change the default project task for the selected project on the *Projects* form.
- On the *Service Contracts* form, temporarily change the project identifier to the non-project code, and save your changes. Then change the project back to the previous identifier, and specify the needed project task in the **Default Project Task** box.

When a user changes a specific project to another specific project in the **Project** box on the Summary area on the *Service Contracts* form, the cost code will not be changed in the **Default Cost Code** box of the **Summary** tab. If a user changes the cost code in the **Default Cost Code** box, the cost code will not be updated in the existing lines on

the **Services per Period** tab of the *Service Contracts* form or on the **Details** tab of the *Service Contract Schedules* form. However, if the user adds new lines, the updated default cost code will be inserted.

If a user needs to change the cost code of the service contract and its schedules to another one, the user should do one of the following:

- Manually specify the cost code in the **Cost Code** column on the **Services Per Period** tab of the *Service Contracts* form, and on the **Details** tab of the *Service Contract Schedules* form.
- On the *Service Contracts* form, temporarily change the project identifier to the non-project code, and save your changes. Then change the project back to the previous identifier, and specify the needed cost code in the **Default Cost Code** box.

Finance: 2021 Updates in 1099 Forms

According to the *2021 Instructions for Forms 1099-MISC and 1099-NEC* document issued by the IRS, the 1099-MISC and 1099-NEC forms in Acumatica ERP 2022 R1 have been updated as follows:

- On the *1099-NEC Form* (AP653100) form, Box 2 has been added. Payers may use either Box 2 on the *1099-NEC Form* or Box 7 on the *1099-MISC Form* (AP653000) form to report any sales totaling $5,000 or more of consumer products for resale, on buy-sell, on deposit-commission, or on any other basis.
- The *1099-NEC Form* form has been resized and now can accommodate three forms on a page.
- On the *1099-MISC Form* form, the new Box 11 has been added. Box 11 includes any reporting under section 6050R, regarding cash payments for the purchase of fish for resale purposes from an individual or corporation who is engaged in catching fish.

UI Changes

On the **1099 Settings** tab of the *Accounts Payable Preferences* (AP101000) form, the **Report Direct Sales On** box (Item 1 in the screenshot below) has been added with the following options:

- *Form 1099-MISC Always* (default): Direct sales will always be reported in Box 7 on *1099-MISC Form* (AP653000).
- *Form 1099-NEC Always*: Direct sales will be always reported in Box 2 on *1099-NEC Form* (AP653100).
- *Form 1099-MISC if Filed for Payee*: Direct sales will be reported in Box 7 of *1099-MISC Form* if the form is filed for a payee.
- *Form 1099-NEC if Filed for Payee*: Direct sales will be reported in Box 2 on *1099-NEC Form* if the form is filed for a payee.

Also, *Box 11 (Fish Purchased for Resale)* (Item 2 in the screenshot below) has been added to the table.

The following screenshot shows the UI changes on the *Accounts Payable Preferences* form.

Figure: UI changes on the Accounts Payable Preferences form

Changes to E-Files

The format of e-files generated on the *Create E-File* (AP507500) form has been updated according to Publication 1220 that was issued by the Internal Revenue Service (IRS) for tax year 2021.

Upgrade Notes

During an upgrade to Acumatica ERP 2022 R1, the system will insert in the AP1099Box table a record related to the new Box 11.

Finance: GL Anomaly Detection

In previous versions of Acumatica ERP, users had to review the posted transactions to identify errors in them, without any assistance from the system.

Starting in Acumatica ERP 2022 R1, a feature can be enabled to detect issues with reclassified transactions. The system will help the users to recognize potential mistakes in posted transactions, which will reduce the time for error resolution and improve the accuracy of these transactions.

The *GL Anomaly Detection* feature, which is introduced in 2022 R1, uses a machine learning algorithm to calculate predictions of errors in posted GL transactions. The algorithm uses a machine learning model—a file trained to recognize certain patterns. The model is operated by a cloud service and is based on reclassified GL transactions in closed periods.

The training begins with initial training—the first step after the feature activation. For initial training, the model needs at least two closed periods with posted reclassified transactions. Based on these transactions, the model calculates patterns and trains the model on the period most recently sent from Acumatica ERP. The training goes on continuously as new data is loaded; each time the model is trained more specifically to recognize errors. Each newly closed period has to be sent to the model to train it.

On the *Analyze Accounting Transactions* (GL510000) form, a user starts the initial training and then analyzes transactions. On the *Account Details* (GL404000) form, the user can check the correctness of posted transactions and analyze account balances. The system detects and highlights possible errors based on the reclassified transactions posted in previously closed periods. The user can mark a transaction as falsely identified as a possible error or agree with the system's prediction and correct a highlighted error by reclassifying the transaction.

Changes to the Enable/Disable Features Form

On the *Enable/Disable Features* (CS100000) form, the *GL Anomaly Detection* feature has been added under the **Advanced Financials** group of features. Regardless of whether the feature is enabled, the system displays a warning message left of it that this is the beta version of the feature.

Changes to the Companies Form

On the *Companies* (CS101500) form, the **Use for Anomaly Detection** check box has been added in the Summary area, as shown in the following screenshot.

Figure: The Use for Anomaly Detection check box

The new check box appears on the form if the *GL Anomaly Detection* feature is enabled on the *Enable/Disable Features* (CS100000) form. By default, the check box is cleared. If a user selects the check box, the company becomes visible on the *Analyze Accounting Transactions* (GL510000) form.

The Analyze Accounting Transactions Form

The new *Analyze Accounting Transactions* (GL510000) form has been added to the **Finance** workspace under the **Processes** category. The form is not listed on the quick menu of the workspace. To view the listed form, the user should click **Show All**.

The *Analyze Accounting Transactions* form appears in the system if the *GL Anomaly Detection* feature is enabled on the *Enable/Disable Features* (CS100000) form. The form is visible to only users that are assigned to the *Administrator*, *GL Admin*, or *AcumaticaSupport* role on the *User Roles* (SM201005) form.

The new form provides information about only companies that have the **Use for Anomaly Detection** check box selected on the *Companies* (CS101500) form. For each company included in processing, the system detects the financial periods from which it is possible to select posted transactions. Then the system sends the transactions to the cloud service. After training and analysis has been performed, the system loads the response from the service and updates the data in the table.

The following screenshot shows the default state of the *Analyze Accounting Transactions* form when the user opens it for the first time.

Figure: The Analyze Accounting Transactions form before initial training

The **Action** drop-down list in the Summary area displays the following options:

- *Train Model*: When the option is selected, the system loads active companies for which the **Use for Anomaly Detection** check box is selected on the *Companies* form. This action can be performed if the service status of each company is *Pending Training*, *Training Failed*, or *Ready for Analysis*. The system then sends the GL transactions of each company to the cloud service by using an API. A user performs this action for initial training of the model based on all companies after a system upgrade, for initial training based on a new company, or for training based on existing companies.

- *Analyze Transactions*: When the model has been trained and a user selects this option, the system loads active companies for which the **Use for Anomaly Detection** check box is selected on the *Companies* form. This action can be performed if the service status of each company should be *Ready for Analysis*. The system then sends GL transactions from the first open period from the selected open periods of each company to the cloud service by using an API. Users can send transactions for analysis as many times as needed before closing a financial period. In this case, only newly posted transactions will be sent to the cloud service.

- *Get Status*: When the user begins processing for all companies or only selected ones and selects this option, the system loads all companies with the service status of *Training in Progress* and *Analysis in Progress*. For companies with the *Training in Progress* status, when training is completed successfully, users can send transactions from an open period for analysis. For companies with the *Analysis in Progress* status, when the results of transaction analysis are ready, the cloud service returns the confidence scores to the system. Users can view the confidence scores on the *Account Details* (GL404000) form by selecting the needed selection criteria and clicking **Show Predictions** on the form toolbar.

The **Service Status** column of the *Analyze Accounting Transactions* form displays the current status of the GL anomaly detection service for each selected company. The following table lists the possible statuses and their descriptions.

Status	Description
Pending Training	Initial training has not been performed for the company. This status is the default one after an upgrade and for new companies created after the upgrade.
Training in Progress	Data has been sent by the training process, and the model is not yet ready.
Training Failed	The training failed because the model could not perform training on the data that was sent to it.
Ready for Analysis	The model is ready for transaction analysis and prediction.

Status	Description
Analysis in Progress	Data has been sent for analysis, and the model has not yet returned *confidence scores*. A confidence score is an indicator that the transaction is likely an erroneous one. The higher the confidence score, the more likely the transaction is to be erroneous.

The following screenshot illustrates the *Analyze Accounting Transactions* form displaying a company for which transactions can be analyzed.
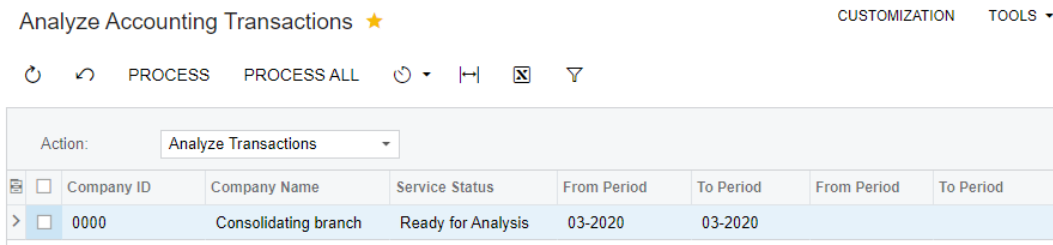
Figure: The Analyze Accounting Transactions form with a company

> ⓘ On the *Analyze Accounting Transactions* form, a user can create an automation schedule for each process that can be run on this form.

Changes to the Account Details Form

If the *GL Anomaly Detection* feature is enabled on the *Enable/Disable Features* (CS100000) form, on the *Account Details* (GL404000) form, the **Show Predictions** button appears on the form toolbar, as shown in the following screenshot.
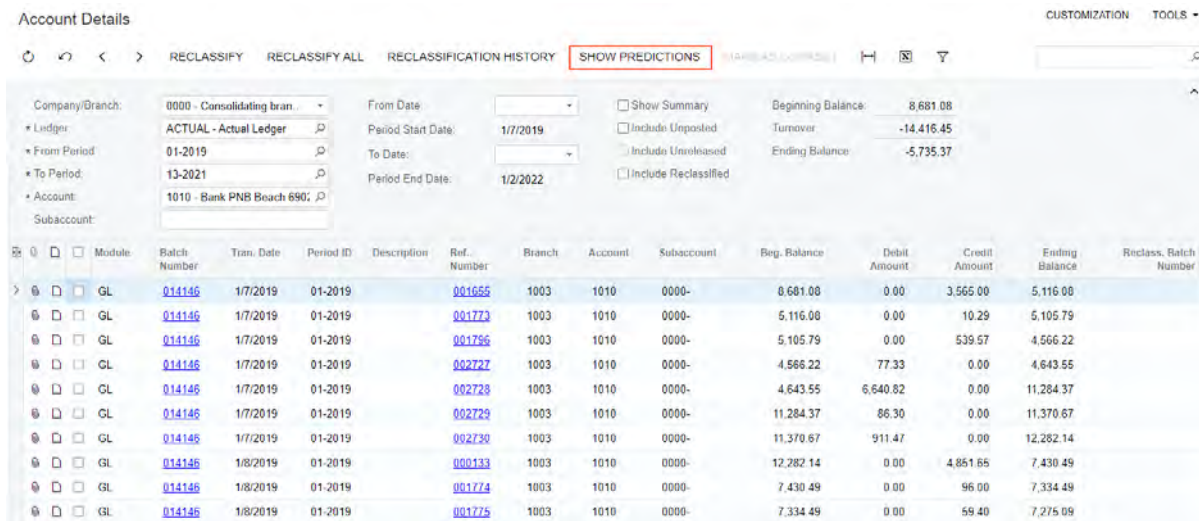
Figure: The Show Predictions button on the Account Details form

When a user clicks **Show Predictions**, the following UI changes occur on the form:

- The **Show Predictions** button becomes hidden.
- The **Hide Predictions** button (see Item 1 in the screenshot below) is displayed on the form toolbar.
- The **Mark as Correct** button (Item 2) becomes available.

- The **Confidence Score, %** column (Item 3) is displayed in the table.

The records in the table are sorted in descending order by their confidence score. (The possible values of the confidence score range from 0.01 to 100.) Records with confidence scores of 50 or higher are highlighted with colors. The higher the score, the darker the red color. The following screenshot illustrates the *Account Details* form after a user has clicked **Show Predictions**.
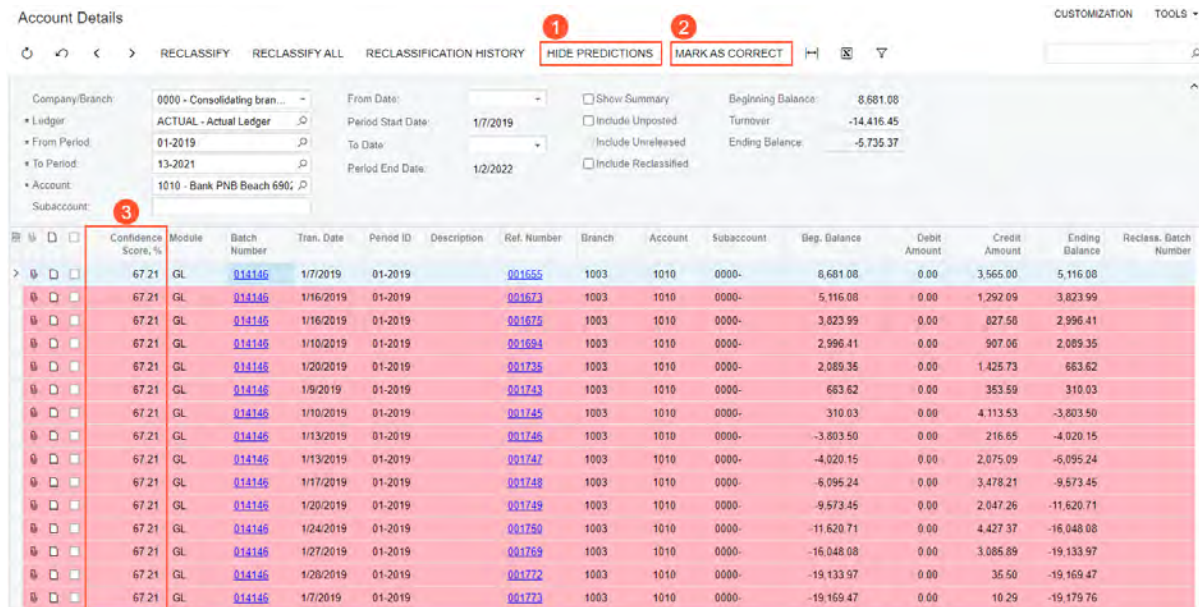
Figure: The UI changes on the Account Details form

Changes to the Manage Financial Periods Form

On the *Manage Financial Periods* (GL503000) form, when a user is closing a financial period, the system checks whether all the transactions in the selected company and period have been sent for analysis. This verification is performed if the *GL Anomaly Detection* feature is enabled on the *Enable/Disable Features* (CS100000) form and the company has the **Use for Anomaly Detection** check box selected on the *Companies* (CS101500) form. If at least one transaction has not been sent for analysis, the system will display a warning message.

Workflow of GL Anomaly Detection

After the *GL Anomaly Detection* feature has been enabled on the *Enable/Disable Features* (CS100000) form, the workflow of GL anomaly detection is performed as shown in the following diagram.

Detection of GL Anomalies

Start

Job title may vary across companies

GL Admin

1 Train the model

Analyze Accounting Transactions (GL510000)

Service Status
Pending Training

Is the training successful?

Yes — No

Service Status
Training Failed

Service Status
Training in Progress

Service Status
Ready for Analysis

GL Admin

2 Analyze transactions

Analyze Accounting Transactions (GL510000)

Is the analysis successful?

Yes — No

GL Admin

3 Review transactions

Account Details (GL404000)

Are any transactions highlighted as erroneous?

Yes

No

4 Reclassify the transactions

Reclassify Transactions (GL506000)

5 Mark the transactions as correct (click **Mark as Correct**)

Analyze Accounting Transactions (GL510000)

GL Admin

End

LEGEND

—— Required action

- - - Optional action

Additional Information

For details on the GL anomaly detection process, see *GL Anomaly Detection: General Information*.

Finance: GL Anomalies Dashboard

In Acumatica ERP 2022 R1, the *GL Anomalies* dashboard has been introduced. This dashboard includes various key performance indicators (KPIs), tables, and charts. The widgets of the dashboard use generic inquiries to gather the underlying data. This dashboard can be used for reviewing the data related to *Finance: GL Anomaly Detection*.

Users can access the dashboard from the **Dashboards** workspace, in the **Dashboard: Finance** category.

An example of the *GL Anomalies* dashboard is shown in the following screenshot.
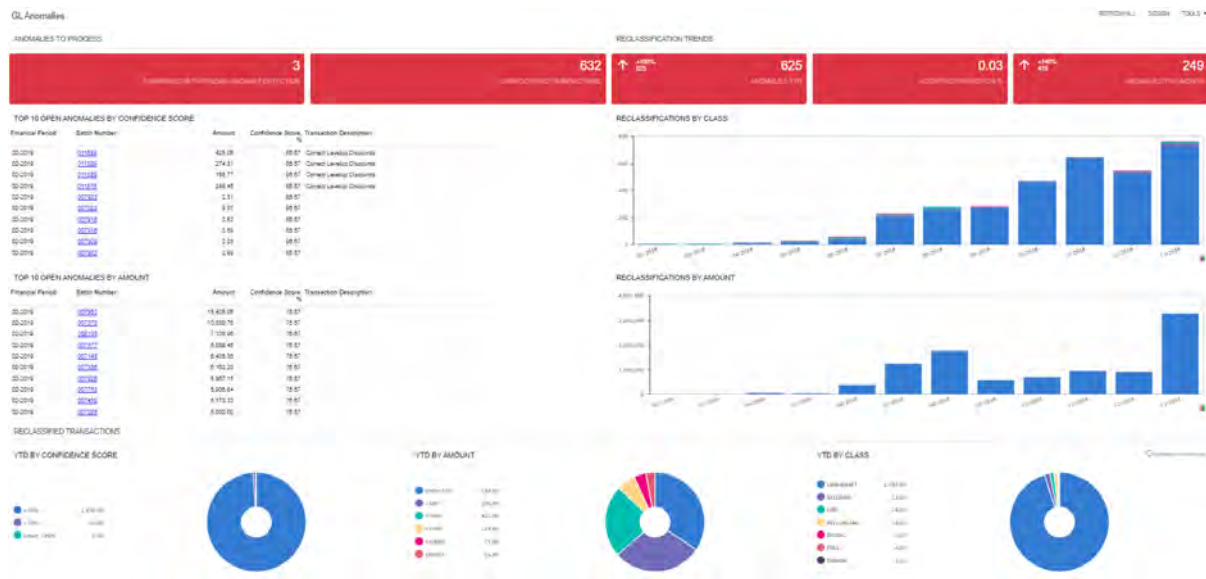
Figure: GL Anomalies dashboard

The following table lists the widgets included in the *GL Anomalies* dashboard and briefly describes each of them.

Widget Name	Type of Widget	Description
Anomalies to Process section		
Companies with Pending Anomaly Detection	*Key Performance Indicator* with the *Scorecard* visualization type	The companies for which the service status is *Pending Training*, *Training in Progress*, *Training Failed*, *Analysis in Progress*, or *Ready for Analysis* for the current period. This status can be found on the **Service Status** column of the *Analyze Accounting Transactions* (GL510000) form.
Unprocessed Transactions	*Key Performance Indicator* with the *Scorecard KPI* visualization type	The predicted anomalies (which are GL transactions) that have not been processed.
Top 10 Open Anomalies by Confidence Score	*Data Table*	The top 10 anomalies that require an action because their confidence score is higher than the threshold. The table includes the following columns: **Financial Period**, **Batch Number**, **Amount**, **Confidence Score, %**, and **Transaction Description**.

Widget Name	Type of Widget	Description
Top 10 Open Anomalies by Amount	*Data Table*	The top 10 anomalies that require an action because their confidence score is higher than the threshold. The table includes the following columns: **Financial Period**, **Batch Number**, **Amount**, **Confidence Score, %**, and **Transaction Description**.
Reclassification Trends section		
Anomalies YTD	*Trend Card KPI*	The number of anomalies detected in the current financial year (year-to-date) versus the number of anomalies detected in the previous financial year.
Accepted Prediction %	*Trend Card KPI*	The total number of reclassified transactions divided by the number of predicted reclassifications over a certain confidence score level.
Anomalies This Month	*Trend Card KPI*	The number of anomalies detected within the current month versus the number of anomalies detected in the previous month.
Reclassifications by Class	*Chart* (with the *Stacked Column* type)	The number of GL transactions that were reclassified by financial period for the past 12 months. The GL transactions are broken down by account class.
Reclassifications by Amount	*Chart* (with the *Stacked Column* type)	The total amount of GL transactions that were reclassified by financial period for the past 12 months.
Reclassified Transactions section		
YTD by Confidence Score	*Chart* (with the *Doughnut* type)	Year-to-date reclassified transactions broken down by confidence score.
YTD by Amount	*Chart* (with the *Doughnut* type)	Year-to-date reclassified transactions broken down by amount.
YTD by Class	*Chart* (with the *Doughnut* type)	Year-to-date reclassified transactions broken down by account class.

Finance: Improvements to the Recognition of AP Documents

In Acumatica ERP 2022 R1, multiple improvements to the recognition of AP documents have been introduced, as described below.

Ability to Resubmit Documents for Recognition

In previous versions of Acumatica ERP, on the *Incoming Documents* (AP301100) form, if the recognition process failed or was interrupted (for example, due to an unstable internet connection), the system assigned the uploaded document the *Error* status and hid the **Recognize** button on the form toolbar. In this case, the user had to create a new record and upload the PDF file again.

In Acumatica ERP 2022 R1, if recognition has failed, the system still assigns the uploaded document the *Error* status but does not hide the **Recognize** button. If the user clicks the button again, the system repeats the recognition process. The user does not need to create a new record and upload the document; the system does this automatically.

Additionally, for a document with the *Error* status, a user can view the history of the failed recognition attempts in the **History** dialog box (see the following screenshot) and get the information a support engineer may need to investigate the failure. To view this dialog box, the user clicks **View History** on the form toolbar.
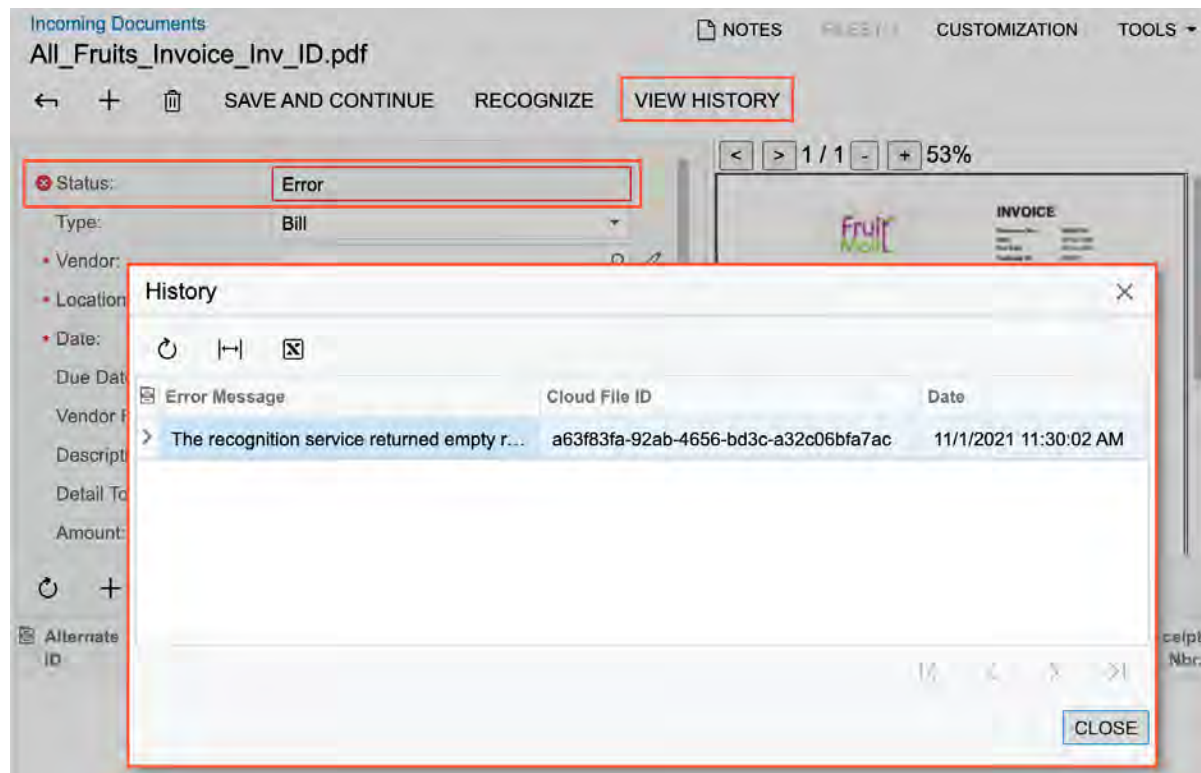
Figure: The History dialog box opened for a document with the Error status

A Search for a Vendor After Recognition

During the recognition process, the system uses information from the submitted document to search for a vendor. In some cases, the system cannot find the vendor for various reasons: For example, the vendor's record does not exist in the system, or there are some typos in the vendor's saved information or in the submitted documents.

In Acumatica ERP 2022 R1, a user can initiate a search for a vendor for a recognized document by clicking **Search Vendor** on the form toolbar of the *Incoming Documents* (AP301100) form (see the following screenshot). The system starts searching for the vendor's record in the same way as it did during the recognition process. For details, see *AP Documents from PDFs: Search for a Vendor by Email Address*.

Figure: The new Search Vendor button on the Incoming Documents form

Mass-Processing Form Instead of a List of Records

The new the *Incoming Documents* (AP301110) mass-processing form has been introduced. This mass-processing form replaces the *Incoming Documents (AP3011PL)* list of records, which was configured as a substitute form for the *Incoming Documents* (AP301100) form. The new form provides more information about the documents than the replaced list of records did.

A user can submit for recognition one document or multiple documents at once by dragging the files to a dedicated part of the form, which is located between the form toolbar and the table (see the following screenshot). Also, a user can click the area and upload the files by following the standard uploading steps (which depend on the user's browser).
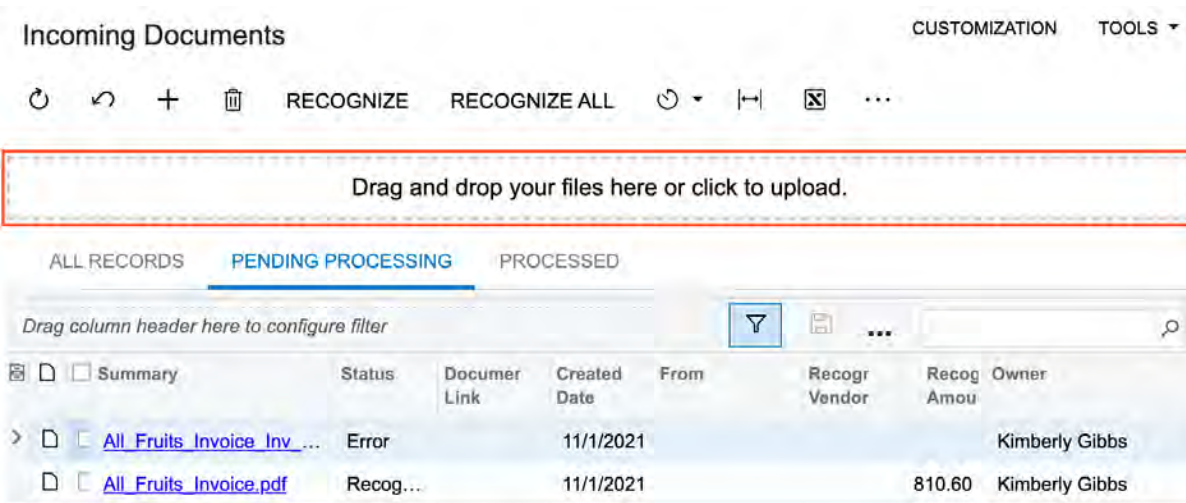
Figure: The area to drag files into on the Incoming Documents form

Alternatively, a user can submit for recognition multiple documents at once by selecting the unlabeled check boxes for these documents and clicking **Recognize** on the form toolbar (see Item 1 in the following screenshot), or submit all the documents that are pending processing by clicking **Recognize All** (Item 2) on the form toolbar.

Also, a user can initiate a search for a vendor for the list of selected documents by clicking **Search Vendor** (Item 3) on the **More** menu of the form. For a selected document with the *Error* status, a user can view the history of the failed recognition attempts by clicking **View History** (Item 4) on the **More** menu.
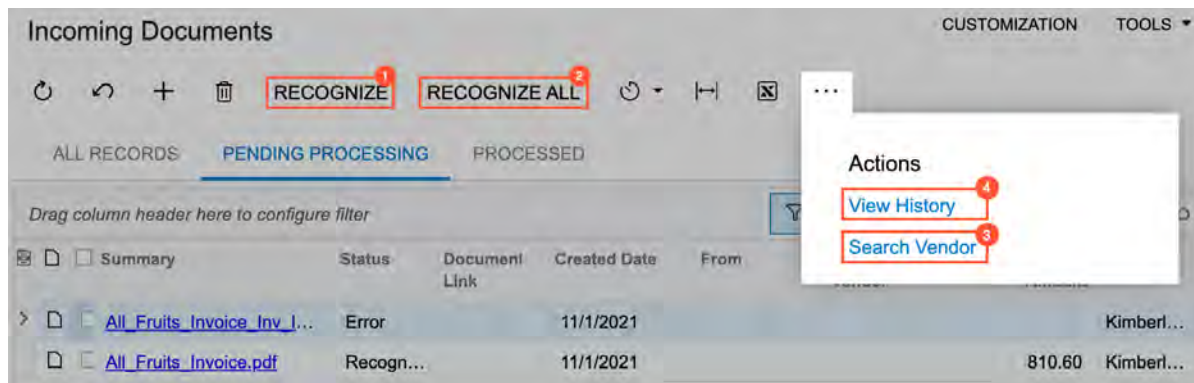
Figure: The actions available on the Incoming Documents form

Improvements to the Mapping of Document Details

During the process of mapping document details, a user could mistakenly map data to the wrong column. In previous versions, the user had to start the mapping process all over again. In Acumatica ERP 2022 R1, several improvements have been implemented to easily correct such mistakes on the *Incoming Documents* (AP301100) form.

If data has been mapped to a column incorrectly, a user switches to editing mode by clicking **Mapping Options > Update Column Mapping** on the toolbar of the table of the form. In this table, the user clicks a cell in the column with the incorrect data (see Item 1 in the following screenshot). Then in the Preview area, the user hovers over the column with data that needs to be removed. The system displays a red *X* in the upper right corner of the mapped column (Item 2). When the user clicks the *X*, the system removes data from the column.
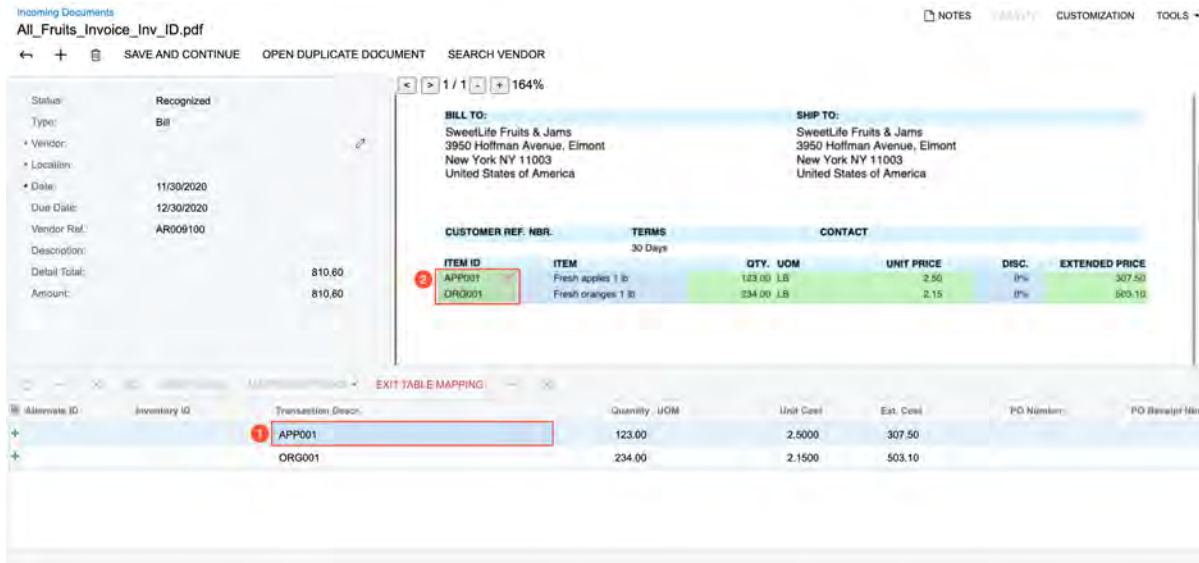
Figure: The ability to remove incorrect mapping

Alternatively, the user can override the incorrect mapping with the correct data if the data in the correct column has not been mapped yet. While keeping focus on the cell with the incorrect mapping in the table (see Item 1 in the following screenshot), in the Preview area, the user clicks the unmapped column (Item 2), and the system overrides the mapping.
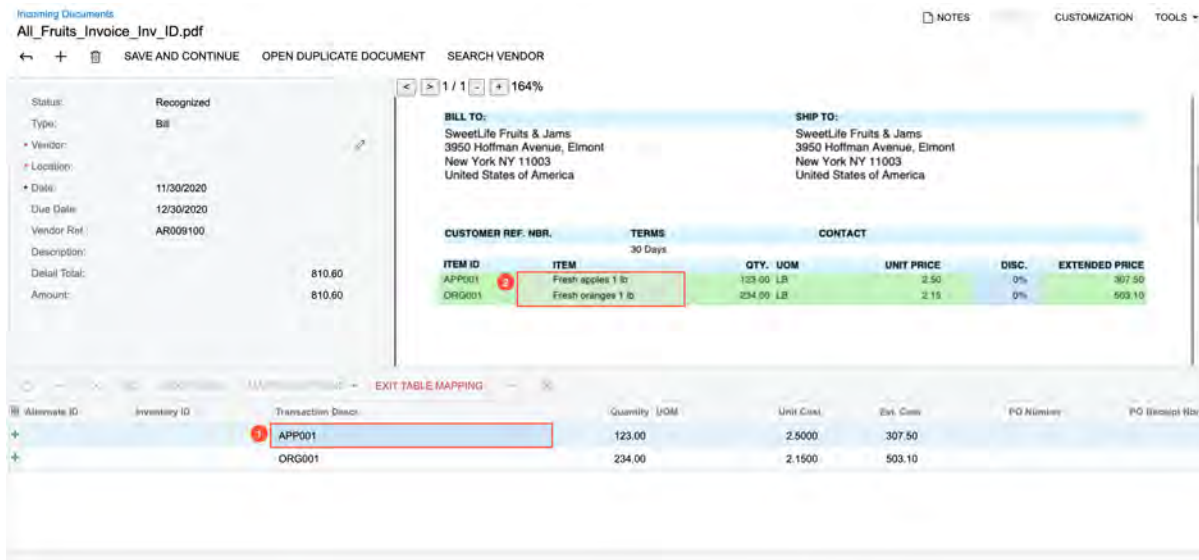
Figure: The ability to override incorrect mapping

Also, a user can map data from multiple unmapped columns in the Preview area into one column in the table with the details. The user sets focus on the cell in the table column to which data from multiple columns should be mapped (see Item 1 in the following screenshot). In the Preview area, the user clicks the first column to be mapped to the column selected in the table (Item 2). Then the user holds CTRL and clicks another column (Item 3) and another one (Item 4). For each row, the system merges data from the mapped columns into one cell (Item 1).

Figure: The ability to merge data

Finance: Mass-Processing of Bank Transactions

In previous versions of Acumatica ERP, it was not possible to automatically match a large number of bank transactions or create an automation schedule for the matching and processing of bank transactions.

In Acumatica ERP 2022 R1, the *Process Bank Transactions (CA3060PL)* form has been replaced with the *Process Bank Transactions* (CA501000) form, which is shown in the screenshot below.

The new form contains the following filter tabs:

- **All Records**: Lists all cash accounts
- **Unprocessed Transactions** (see Item 1 in the following screenshot): Lists cash accounts with nonzero amounts of unprocessed receipts or disbursements

The form toolbar contains the following buttons (Item 2):

- **Auto-Match**: Initiates the process of matching bank transactions for the cash accounts selected in the table
- **Auto-Match All**: Initiates the process of matching bank transactions for all cash accounts in the table

Figure: The new Process Bank Transactions form

The results of the matching are saved automatically and need to be processed by the user manually on the *Process Bank Transactions* (CA306000), as was the case before.

Users can now schedule the automated processing of bank transactions on this form by using automated schedules. A user can initiate the scheduling process from the *Process Bank Transactions* (CA501000) form by clicking **Schedules > Add** on the form toolbar (Item 3), or from the *Automation Schedules* (SM205020) form.

Additional Information

For details on mass processing, see *Bank Reconciliation: Mass Processing*.

Finance: Matching of Bank Transactions to Multiple AR and AP Documents

The functionality of matching bank transactions to multiple documents was introduced in Acumatica ERP 2021 R2. Users could match a bank account to multiple invoices and bills, but to apply a credit memo or a debit adjustment, a user had to create a new document on the **Create Payment** tab of the *Process Bank Transactions* (CA306000) form. The creation of new documents could be time-consuming if users had many documents to be matched.

Starting in Acumatica ERP 2022 R1, bank transactions can be matched to multiple AR documents (invoices and credit memos) and multiple AP documents (bills and debit adjustments) on the **Match to Invoices** tab of the *Process Bank Transactions* (CA306000) form.

On the **Match to Invoices** tab, the following settings should be specified to make it possible for a user to match a *Receipt* bank transaction to invoices and credit memos and a *Disbursement* bank transaction to bills and debit adjustments:

- The **Match to Multiple Documents** check box should be selected.
- The **Business Account** box should be filled in with a customer or vendor. If a customer is selected, the bank transaction can be matched to multiple invoices and credit memos. If a vendor is selected, the bank transaction can be matched to multiple bills and debit adjustments.

If these conditions are met, the system loads all AR and AP documents for the specified business account, regardless of the document amount.

In the lookup table that opens when a user clicks the magnifier button in the **Business Account** box on the **Match to Invoices** tab of the *Process Bank Transactions* form, the user can select any type of business account.

The following screenshot shows a *Receipt* transaction (Item 1) that is matched to multiple invoices and a credit memo (Item 2) of a specific customer (Item 3). When a user clicks **Process** on the form toolbar, the system creates a payment for these invoices and applies the credit memo to this payment.

Figure: A receipt transaction matched to multiple AR documents

The following screenshot shows a *Disbursement* transaction (Item 1) that is matched to multiple bills and a debit adjustment (Item 2) of a specific vendor (Item 3). When a user clicks **Process** on the form toolbar, the system creates a payment for these bills and applies the debit adjustment to this payment.
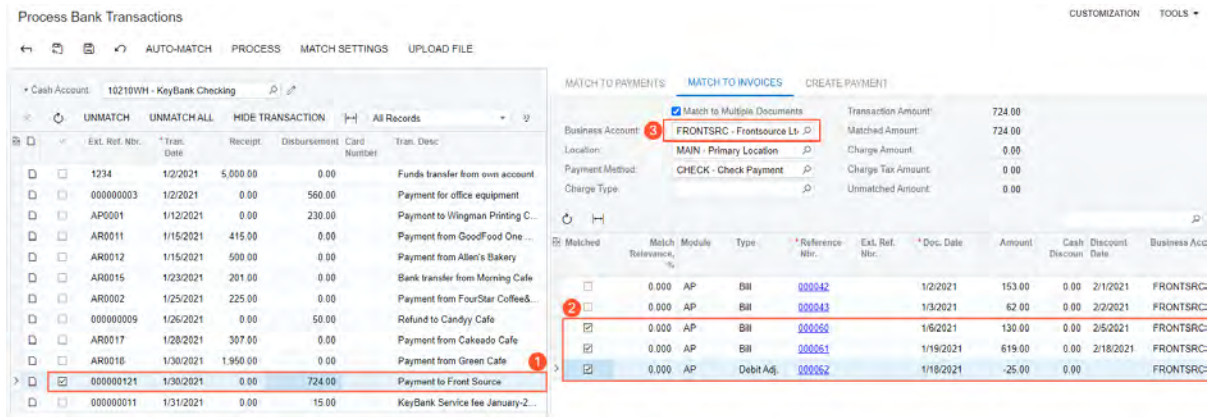
Figure: A disbursement transaction matched to multiple AP documents

Additional Information

For more details on matching a disbursement transaction to multiple AP documents during bank reconciliation, see Step 6 in *Bank Reconciliation: To Process a Bank Statement in OFX Format and Reconcile a Cash Account*.

Finance: Matching of Bank Transactions to Prepayments with Charges

In previous versions of Acumatica ERP, on the *Process Bank Transactions* (CA306000) form, unreleased AR payments and prepayments with deducted charges were shown with the full amount (without the charge being deducted). As a result, users could not match these payments or prepayments to the corresponding bank transaction.

Starting in Acumatica ERP 2022 R1, on the **Match to Payments** tab of the *Process Bank Transactions* form, the system shows unreleased payments and prepayments with deductible charges applied to them, which can be matched to bank transactions.

Usage Example

For example, suppose that a bank statement uploaded on the *Process Bank Transactions* (CA306000) form includes a $2600 receipt transaction.

In the system, a prepayment of $2700 (Item 1) with the *Balanced* status (Item 2) has been created with a deductible charge of $100 applied (Item 3), as shown in the following screenshot.

> ⚠️ The entry type of the deductible charge must have the **Deduct from Payment** check box selected on the *Entry Types* (CA203000) form.

Figure: An unreleased prepayment with a deductible charge

On the *Process Bank Transactions* form, this prepayment of $2700 with the charge of $100 (Item 1) can be matched by a user or auto-matched by the system to the $2600 bank transaction (Item 2), as shown in the following screenshot.

Figure: The bank transaction matched to the prepayment

Finance: Multiple Versions of a Tax Report

In previous versions of Acumatica ERP, only one version of a tax report could be created for a tax agency. If the format of a tax return was changed by tax authorities, users had to modify the tax reporting settings based on the new requirements. These modifications could not be prepared in advance and became valid on a specified date, usually on January 1 of the upcoming year. Consequently, it was not possible to prepare an amendment of the tax report for previous periods in which the old reporting settings were used. The reports and inquiries that used the modified reporting settings showed inaccurate data if users ran them for previous periods.

Starting in Acumatica ERP 2022 R1, users can create an amended version of any tax report in advance. The new version of the tax report can be used starting in January 2022.

In February 2022, accountants can prepare a tax report for January 2022 to meet the 2022 tax regulations. At the same time, if needed, accountants can prepare an amendment for the tax report for December 2021 and use the old settings of the tax report for this amendment. Accountants can run Acumatica ERP tax reports for 2021 and 2022 based on the reporting settings that are valid for the respective year.

Changes to the Reporting Settings Form

On the *Reporting Settings* (TX205100) form, the following UI changes (shown in the following screenshots) have been introduced:

- The More button (...) (Item 1 in the following screenshot) has been added on the form toolbar. A user clicks this button to open the new More menu.
- In the Summary area, the **Report Version** and **Valid From** boxes have been added (Item 2).

Figure: The UI changes on the Reporting Settings form
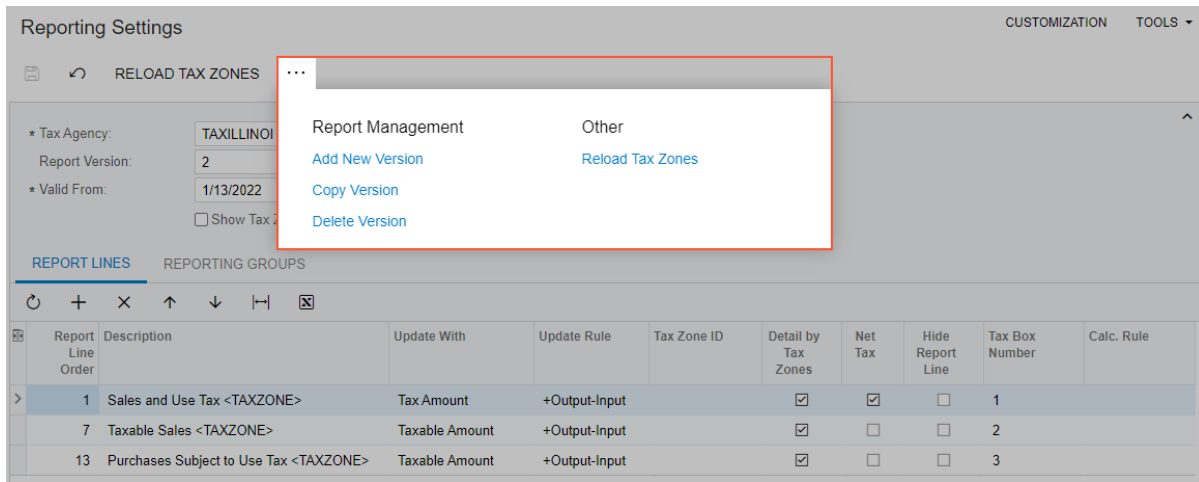
Figure: The More menu on the Reporting Settings form

The **Report Management** category of the More menu displays the following commands.

Command	Description
Add New Version	Creates an empty version of the tax report for the selected tax agency. The new version will not have report lines specified. This version will include the current set of reporting groups. The number of the created report version will be displayed in the **Report Version** box in the Summary area.
Copy Version	Copies the selected report version and pastes it as a new version for the selected tax agency. The records on the **Report Lines** and **Reporting Groups** tabs are copied too. The number of the created report version will be displayed in the **Report Version** box, and the **Valid From** setting will be updated with the new date.
Delete Version	Deletes the selected report version. Only a newly added version can be deleted. This command becomes available if the selected report version does not have tax transactions posted for it.

Changes to the Reporting Groups Form

On the *Reporting Groups* (TX205200) form, the **Report Version** box has been added, as shown in the following screenshot.

Figure: The Report Version box on the Reporting Groups form

The **Report Version** box displays a version of the tax report. Users can select a version by opening the lookup table for this box.

If a user opens the *Reporting Groups* form from a workspace, the **Report Version** box is empty, even if a tax agency is selected. If a user navigates to the *Reporting Groups* form from the *Reporting Settings* (TX205100) form by clicking **Group Details** on the **Reporting Groups** tab, the **Report Version** box shows the **Report Version** setting that is copied from the *Reporting Settings* form.

Changes to Reports, Inquiries, and Processes

The process that users run on the *Prepare Tax Report* (TX501000) form now uses the report version that corresponds to the selected tax period.

The process that users run on the *Release Tax Report* (TX502000) form now uses the report version recorded in the `TaxHistory` table by the process that was run on the *Prepare Tax Report* form.

For both processes, the system will apply the report version whose **Valid From** date is earlier than or the same as the end date of the selected tax period and whose version number is the highest of the available versions. If a tax report has multiple versions with a **Valid From** date that falls within the reporting period, the system will select the version with a **Valid From** date that is closest to the end date of the tax period.

The *Tax Summary* (TX621000), *Tax Details* (TX620500), and *Tax Report Details* (TX502010) forms now use the report version saved to the `TaxHistory` table for the selected period.

Upgrade Notes

After an upgrade to Acumatica ERP 2022 R1, the new boxes on the *Reporting Settings* (TX205100) and *Reporting Groups* (TX205200) forms will be populated with the following values for all tax agencies:

- **Report Version**: *1*
- **Valid From**: *1/1/1900*

Additional Information

For details on maintaining multiple versions of a tax report, see *Tax Report Configuration: Multiple Versions of a Tax Report*.

Finance: Numbering Sequence for Tax Adjustments

In previous versions of Acumatica ERP, when users created tax adjustments on the *Tax Adjustments* (TX301000) form, the system used the numbering sequence for AP bills. Each time a number was used for a tax adjustment, it created a break in the reference numbers of accounts payable documents.

In Acumatica ERP 2022 R1, a predefined numbering sequence (*TXADJUST*) has been created and can be used for tax adjustments. The following screenshot shows the new numbering sequence on the *Numbering Sequences* (CS201010) form.

Figure: The new TXADJUST numbering sequence

Changes to the Tax Preferences Form

On the *Tax Preferences* (TX103000) form, the **Numbering Settings** section with the **Tax Adjustment Numbering Sequence** box has been added, as shown in the following screenshot.

Figure: The Numbering Settings section on the Tax Preferences form

Before users start to work with the tax functionality, an administrative user can select the *TXADJUST* numbering sequence in the **Tax Adjustment Numbering Sequence** box on the *Tax Preferences* form. A different numbering sequence can instead be specified in this box as long as it has first been created on the *Numbering Sequences* form. The new numbering sequence will be used by the system for the *Adjust Output* and *Adjust Input* types of documents created by users on the *Tax Adjustments* (TX301000) form.

Upgrade Notes

After an upgrade to Acumatica ERP 2022 R1, the **Tax Adjustment Numbering Sequence** box on the *Tax Preferences* (TX103000) form will be populated with the numbering sequence for AP bills. Thus, the system will initially work as it has in earlier versions of Acumatica ERP.

Additional Information

On more details on creating a tax adjustment, see *Tax Adjustments: Process Activity*.

Finance: Performance Improvements in Deferred Revenue Recognition

In previous versions of Acumatica ERP, the process that users ran on the *Run Recognition* (DR501000) form had performance issues and was likely to time out if there were a lot of deferral schedules to process. Namely, the following processing tasks could take a significant amount of time:

- Loading of deferral schedule records to the table on the form
- Recognition of the loaded records when a user clicked **Process** or **Process All** on the form toolbar

To address these issues, the following solutions have been implemented in Acumatica ERP 2022 R1 for the *Run Recognition* form:

1. *Parallel processing*, which increases the speed of the process. An administrator must make changes in the system to enable this processing, as described in the next section.

2. *Paging*, which increases the speed of data loading. The system implements this mechanism without the administrator taking any action.

   The paging mechanism works only if the system does not contain a deferral code with the *On Payment* option specified in the **Recognition Method** box on the *Deferral Codes* (DR202000) form.

Enabling of Parallel Processing

To enable parallel processing on all the forms that support the parallel processing, including the *Run Recognition* (DR501000) form, an administrative user should do the following:

1. Modify the following parameters in the `<appSettings>` section of the `web.config` file.

   ```
   <add key="ParallelProcessingDisabled" value="false" />
       <add key="ParallelProcessingBatchSize" value="1000" />
       <add key="EnableAutoNumberingInSeparateConnection" value="false" />
   ```

2. Optional but strongly recommended: In the `<px.core>` section, increase the `Timeout` values to `600` by adding the following attributes to the `<px.core/pxdatabase/providers/add>` node.

   ```
   queryTimeout="600"
   transactionQueryTimeout="600"
   ```

   For example, see the following code.

   ```
   <px.core>
     <pxdatabase defaultProvider="PXSqlDatabaseProvider">
       <providers>
         <add name="PXSqlDatabaseProvider" type="PX.Data.PXSqlDatabaseProvider, PX.Data"
         connectionStringName="ProjectX" companyID="" secureCompanyID="False"
         queryTimeout="600" transactionQueryTimeout="600"/>
         ...
     </pxdatabase>
   </px.core>
   ```

3. Save the file. This will automatically restart the website.

Changes to the Run Recognition Form

In previous versions of Acumatica ERP, on the *Run Recognition* (DR501000) form, the system showed only the first open transaction of a deferral schedule component even if there were multiple open transactions of this component and these transactions met the selection criteria on the form (the **Branch**, **Deferral Code**, and **Recognition Date** settings).

In Acumatica ERP 2022 R1, the *Run Recognition* form shows all open transactions of deferral schedules that meet the selection criteria. A user can process any or all of the listed transactions. In the following screenshot, Item 1 shows the components of the same deferral schedule and Item 2 shows the transactions of this component, which the user can process.

Figure: Transactions loaded on the Run Recognition form

Finance: Reconciliation of Unreleased Retainage in AR and AP with GL

In previous versions of Acumatica ERP, users had no convenient way of reconciling the balances of the Retainage Payable and Retainage Receivable accounts in the general ledger with the unreleased retainage amount in AP and AR documents.

To resolve this issue, in Acumatica ERP 2022 R1, two new reports have been implemented—*AP Retained Balance* (AP635000) and *AR Retained Balance* (AR635000). Both reports appear in the system if the *Retainage Support* feature is enabled on the *Enable/Disable Features* (CS100000) form.

The report amounts are calculated based on the documents that match the following criteria:

- The **Apply Retainage** check box is selected for the document on the on the *Bills and Adjustments* (AP301000) or *Invoices and Memos* (AR301000) form.
- The document has unreleased retainage at the end of the selected financial period.
- The closed period of the document is later than the selected financial period, and the post period is earlier than or the same as the selected financial period

All amounts in the reports are shown in the base currency of the selected company. The amounts of credit memos in the *AR Retained Balance* report and of debit adjustments in the *AP Retained Balance* report are shown as negative numbers.

The new reports use the updated logic of calculating closed dates and closed periods. This logic is described in *Finance: Updated Logic of Closed Date and Closed Period for Documents with Retainage*.

The AP Retained Balance Report

The *AP Retained Balance* (AP635000) report displays the balance of open retainage in the AP subledger for a selected financial period.

On the report form, a user can select the needed report format, *Detailed* or *Summary*, before running the report. The following screenshot shows the *AP Retained Balance* report generated in the *Detailed* format for a particular vendor.

AP Retained Balance (Detailed)
Company/Branch: PRODWHOLE
Financial Period: 02-2022
Page: 1 of 1
Date: 2/25/2022 4:12 AM
User: admin admin

Account	Subaccount	Description						
21000	000-000	Retainage Payable						

Vendor	Vendor Name							
BCPHCO	BC Phillips Company							

Ref. Number	Doc. Type	Vendor Ref.	Doc. Date	Posted	Description	Total Amount	Original Retainage	Unreleased Retainage
002408	Bill	34521	11/25/2020	11-2020	Lumber for interior walls	31,165.00	1,558.25	1,558.25
002442	Bill	78432	12/30/2020	12-2020		22,400.00	1,120.00	1,120.00
002450	Bill	76598	12/28/2020	12-2020	Framing	271,256.00	13,562.80	13,562.80
					Vendor Retained Balance:			16,241.05
					Account Retained Balance:			16,241.05

Figure: The AP Retained Balance report (Detailed format)

The report is available for users to which the *Administrator*, *AP Viewer*, *AP Clerk*, *AP Admin*, or *Acumatica Support* role is assigned on the *User Roles* (SM201005) form.

The AR Retained Balance Report

The *AR Retained Balance* (AR635000) report displays the balance of open retainage in the AR subledger for a selected financial period.

On the report form, a user can select the needed report format, *Detailed* or *Summary*, before running the report. The following screenshot shows the *AR Retained Balance* report generated in the *Summary* format for all customers.

AR Retained Balance (Summary) Company/Branch: PRODWHOLE		Financial Period: 01-2022		Page: 1 of 1 Date: 2/25/2022 4:15 AM User: admin admin

Account	Subaccount	Description		
11100	000-000	Retainage Receivable		

Customer	Customer Name		Unreleased Retainage
BNRCONTRAC	BNR Contractors		7,869.07
EQUGRP	The Equity Group Investors		802,487.06
FLAGLER	Flagler Family Trust		136,467.79
ITALIANCO	The Italian Company		41,046.21
MEPVENTURE	MEP Capital Ventures		11,487.76
		Account Retained Balance:	999,357.89

Figure: The AR Retained Balance report (Summary format)

The report is available for users to which the *Administrator*, *AR Viewer*, *AR Clerk*, *AR Admin*, or *Acumatica Support* role is assigned on the *User Roles* (SM201005) form.

Finance: Residual Method for ASC606

In previous versions of Acumatica ERP, if the *Revenue Recognition by IFRS 15/ASC606* feature was enabled on the *Enable/Disable Features* (CS100000) form, the residual approach for allocating the transaction price to the performance obligations was not supported. This was an issue for companies that could not establish observable standalone selling prices (fair value prices) for a performance obligation or for multiple performance obligations on the same invoice. In such cases, the ASC606 standard allows companies to use the residual approach described in *ASC 606-10-32-34*, where revenue for these performance obligations is allocated on a residual basis.

In previous versions of Acumatica ERP, the revenue components of an inventory item with a flexible deferral code —a deferral code for which a flexible recognition method is specified on the *Deferral Codes* (DR202000) form— shared the same default term specified on the **Deferral** tab of the *Stock Items* (IN202500) form. However, in some cases, different recognition periods are required for the revenue components. For example, a subscription license can have two components: a component for maintenance with a one-year recognition period, and a subscription license with a one-day recognition period.

To address these issues, the following enhancements have been introduced in Acumatica ERP 2022 R1:

- For revenue components, the *Residual* allocation method has been added to be used with ASC606. This allocation method can be selected for one of the revenue components of an item with the *MDA* deferral code.

  A user can change the allocation method for a component at any time. The updated method will be used in new deferral schedules or when the user recalculates the existing deferral schedules.

  If an invoice contains a single revenue component with the *Residual* allocation method, the residual amount will be calculated as the invoice amount without taxes minus the revenue of non-residual components. If an invoice contains multiple revenue components with the *Residual* allocation method, the calculated residual amount will be distributed among the residual components based on their allocation weights.

  If the residual amount or any allocation weight is zero or a negative value, the entire revenue of the invoice will be posted to a dedicated suspense GL account.

  A residual component will be included in the deferral schedule created for a document if there is a deferral code associated with the component; the revenue allocated for the component will be recognized based on its schedule. The revenue allocated for a residual component that is not associated with any deferral code will be recognized immediately.

- For fair value prices of selected performance obligations, runtime computation has been implemented. For specific prices, the system can calculate the effective fair value prices at runtime by applying to them the discounts for which the **Apply to Deferred Revenue** check box is selected on the *Discount Codes* (AR209000) form and the **Discountable** check box is selected on the *Sales Prices* (AR202000) form. These effective fair value prices will be used for revenue allocation.

  On the *Stock Items* and *Non-Stock Items* (IN202000) forms, for the same item, a user can mix the revenue components whose revenue is allocated based on fair value price (with and without runtime computation) and the component with the *Residual* allocation method.

- Revenue components with different deferral settings can be used in the same document. For an inventory item, a user can specify revenue components with flexible deferral codes and different default terms. For all revenue components of the same inventory item, recognition will start on the **Term Start Date** specified in a document line on data entry forms. In a document line for an inventory item, the default **Term End Date** is based on the maximum default terms of the components.

Changes to the Deferred Revenue Preferences Form

On the *Deferred Revenue Preferences* (DR101000) form, the **Other** section with the **Suspense Account** and **Suspense Sub.** boxes has been added, as shown in the following screenshot.

The **Other** section appears on the form if the *Revenue Recognition by IFRS 15/ASC606* feature is enabled on the *Enable/Disable Features* (CS100000) form.

Figure: The Other section on the Deferred Revenue Preferences form

If these settings are specified, the entire revenue amount will be posted to this account and subaccount if the revenue of the document (an invoice or a credit memo) cannot be properly allocated—for example, if the residual amount or any allocation weight is zero or negative. Users will have to review the invoices posted to the suspense account and manually create a deferral schedule for them.

Changes to the Stock Items and Non-Stock Items Forms

If the *Revenue Recognition by IFRS 15/ASC606* feature is enabled on the *Enable/Disable Features* (CS100000) form, the following changes are made to the **Revenue Components** table of the **Deferral** tab on the *Non-Stock Items* (IN202000) and *Stock Items* (IN202500) forms:

- The **Allocation Method** column with two options—*Fair Value* (default) and *Residual*—is displayed (Item 1 in the screenshot below)
- The **Override Default Term** column (Item 2) is displayed. All the revenue components with flexible deferral codes that have the **Override Default Term** check box selected must have the same default term specified in the **Default Term** column
- The **Fixed Amount**, **Percentage**, and **Total Percentage** columns are hidden.
- The **Deferral Code** column is available for editing for all the components (Item 3). For residual components, a deferral code is optional.

The following screenshot illustrates these UI changes on the *Non-Stock Items* form.

Figure: UI changes on the Non-Stock Items form

Changes to the Sales Prices Form

On the *Sales Prices* (AR202000) form, the **Discountable** column has been added to the table, as shown in the following screenshot.

Figure: The Discountable column on the Sales Prices form

The column appears on the form if the *Revenue Recognition by IFRS 15/ASC606* and *Customer Discounts* features have been enabled on the *Enable/Disable Features* (CS100000) form.

The **Discountable** check box can be selected only for prices for which the **Fair Value** check box is selected. If the **Discountable** check box is selected, for the discount codes for which the **Apply to Deferred Revenue** check box is selected on the *Discount Codes* (AR209000) form, the system will apply the discounts defined on the *Discounts* (AR209500) form. The discounts will be applied to fair value prices to get the effective fair value prices to be used in the calculation of deferred revenue.

Changes to the Sales Price Worksheets Form

On the *Sales Price Worksheets* (AR202010) form, the **Discountable** check box has been added to the Selection area, as shown in the following screenshot.

Figure: The Discountable check box on the Sales Price Worksheets form

The check box appears on the form if the *Revenue Recognition by IFRS 15/ASC606* and *Customer Discounts* features have been enabled on the *Enable/Disable Features* (CS100000) form. The check box is available if the **Fair Value** check box in the Selection area is selected.

In the **Copy Prices** dialog box, which opens if a user clicks **Copy Prices** on the table toolbar of the *Sales Price Worksheets* form, the **Discountable** check box has been added to the **Source** section, as shown in the following screenshot.
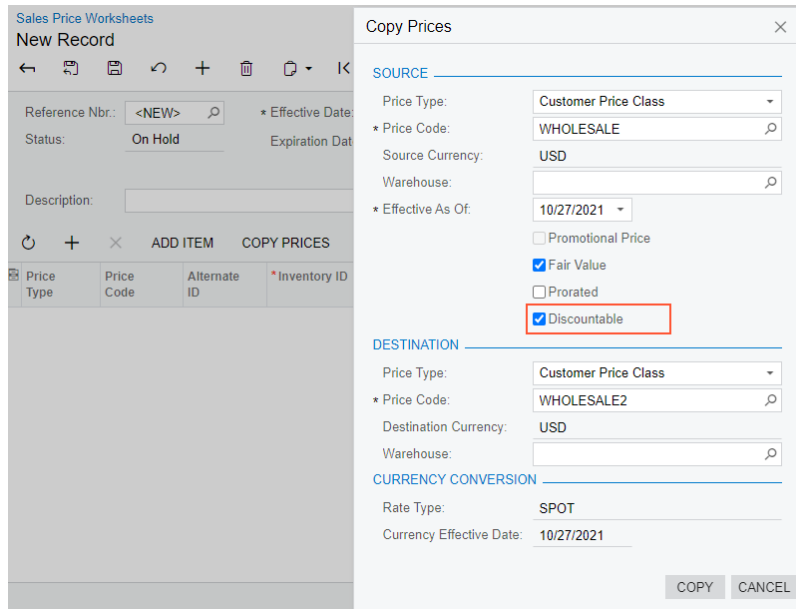
Figure: The Discountable check box in the Copy Prices dialog box

By selecting this check box, users can filter the discountable prices for copying. The check box is available if the **Fair Value** check box is selected. The check box appears in the dialog box if the *Revenue Recognition by IFRS 15/ASC606* and *Customer Discounts* features have been enabled on the *Enable/Disable Features* form.

Changes to the Deferral Schedule Form

The **Discount Percent** column has been added to the **Components** table of the **Reallocation Pool** tab on the *Deferral Schedule* (DR201500) form, as shown in the following screenshot.
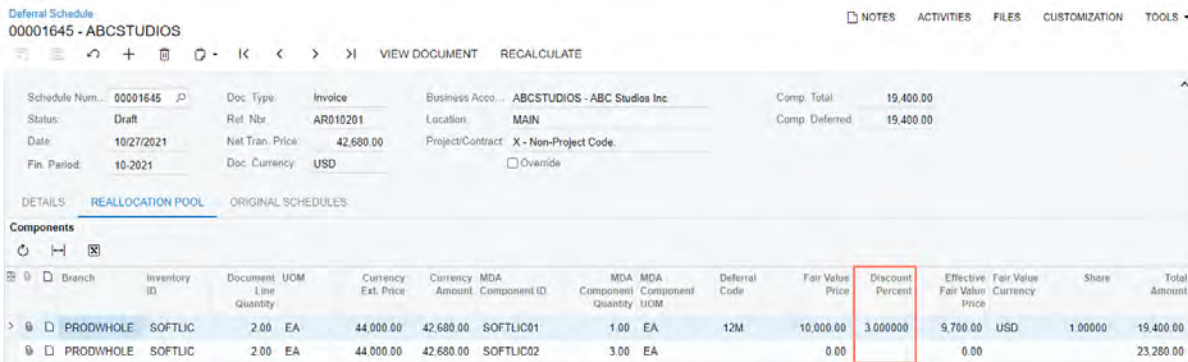
Figure: The Discount Percent column on the Deferral Schedule form

The **Discount Percent** column is read-only and appears on the form if the *Revenue Recognition by IFRS 15/ASC606* and *Customer Discounts* features have been enabled on the *Enable/Disable Features* (CS100000) form. The column displays the percent of the deferred revenue discount, which has the **Apply to Deferred Revenue** check box selected on the *Discount Codes* (AR209000) form, applied to a discountable fair value price of the component. The fair value price without a discount is shown in the **Fair Value Price** column. The **Effective Fair Value Price** column displays the prorated fair value price after the deferred revenue discount has been applied.

Upgrade Notes

During an upgrade to Acumatica ERP 2022 R1, the upgrade script will perform the following actions:

- For all revenue components, on the **Deferral** tab of the *Non-Stock Items* (IN202000) and *Stock Items* (IN202500) forms, *Fair Value* will be inserted in the **Allocation Method** column.

- On the *Sales Prices* (AR202000) and *Sales Price Worksheets* (AR202010) forms, the new **Discountable** check box will be cleared for all entities.

- For revenue components with flexible default terms—those that have the *Flexible by Periods, Prorate by Days* or *Flexible by Days in Period* selected in the **Recognition Method** box on the *Deferral Codes* (DR202000) form—the **Override Default Term** check box will be selected on the **Deferral** tab of the *Non-Stock Items* and *Stock Items* forms.

Finance: Support of Multiple Base Currencies for Deferred Revenue

The *Multiple Base Currencies* feature was implemented in Acumatica ERP in 2021 R1, although it was not compatible with multiple other features, including *Deferred Revenue Management*. Starting in Acumatica ERP 2022 R1, the deferred revenue subledger can be used with the *Multiple Base Currencies* feature enabled. The deferred revenue functional area does not support deferral schedules in a foreign currency; schedules are processed only in the base currency. With the *Multiple Base Currencies* feature enabled on the *Enable/Disable Features* (CS100000) form, on all deferred revenue forms that produce GL transactions, the system verifies that entities with the same base currency are specified in one deferral schedule. Users can now review the currency of deferral schedules on all data entry forms and reports.

Changes to the Enable/Disable Features Form

On the *Enable/Disable Features* (CS100000) form, the *Multiple Base Currencies* feature can be enabled if the *Deferred Revenue Management* feature is enabled.

Changes to the Deferral Schedule Form

If the *Multiple Base Currencies* feature is enabled on the *Enable/Disable Features* (CS100000) form, depending on whether the *Revenue Recognition by IFRS 15/ASC 606* feature is enabled, the **Currency** box has been added to the Summary area of the *Deferral Schedule* (DR201500) form, as shown in the following screenshots.

Figure: The Deferral Schedule form with Revenue Recognition by IFRS 15/ASC 606 disabled

Figure: The Deferral Schedule form with Revenue Recognition by IFRS 15/ASC 606 enabled

For a deferral schedule created automatically by the system based on a document, the **Currency** setting (Item 1) is copied from the document's base currency. In this case, the **Doc. Currency** box (Item 2) is read-only (as you can see in the second screenshot above).

For manually created deferral schedules, the following rules determine the value in the **Currency** box:

- If no document is selected in the **Ref. Nbr.** box and no business account is selected in the **Business Account** box, the **Currency** box is filled in by default with the base currency of the branch to which the user is signed in. The **Currency** box is read-only.
- If no document is selected in the **Ref. Nbr.** box and the **Business Account** box contains a business account for which a base currency is specified, the **Currency** box is filled in with the base currency of the entity (branch, company, or company group) associated with the business account. The **Currency** box is read-only.
- If the **Business Account** box contains a business account which is not associated with any entity, the **Currency** box is filled in with the base currency of the branch to which the user is signed in. The **Currency** box is available for editing. The lookup table in the **Currency** box displays the base currencies of the branches to which the user has access.
- If a document is selected in the **Ref. Nbr.** box, the **Currency** box is filled in by default with the document's base currency, regardless of whether the base currency is specified for the selected business account.

The system verifies that all branches selected in the **Components** table on the **Details** tab have the same base currency as the schedule currency specified in the **Currency** box of the Summary area. On release of the deferral schedule, the system verifies that the base currency of the entity associated with the business account (if one is specified) and of the branches selected in the **Components** table is the same as the schedule currency.

Changes to the Release Schedules Form

On the *Release Schedules* (DR503000) form, if the *Multiple Base Currencies* feature is enabled, the **Currency** column is displayed in the table, as shown in the following screenshot. The **Currency** column is filled in with the schedule's currency, which is specified on the *Deferral Schedule* (DR201500) form.

Figure: The Currency column on the Release Schedules form

Changes to the Run Recognition Form

On the *Run Recognition* (DR501000) form, if the *Multiple Base Currencies* feature is enabled, the **Currency** column is displayed in the table, as shown in the following screenshot. The **Currency** column is filled in with the schedule's currency, which is specified on the *Deferral Schedule* (DR201500) form.

Figure: The Currency column on the Run Recognition form

Changes to the Deferral Transaction Summary Form

On the *Deferral Transaction Summary* (DR402000) form, if the *Multiple Base Currencies* feature is enabled, the Currency column is displayed in the table, as shown in the following screenshot. The **Currency** column is filled in with the schedule's currency, which is specified on the *Deferral Schedule* (DR201500) form.

Figure: The Currency column on the Deferral Transaction Summary form

Changes to Reports and Inquiries

On the *Draft Schedules* (DR630030) form, the **Company/Branch** box has been added to the **Report Parameters** tab. This parameter is required if the *Multiple Base Currencies* feature is enabled on the *Enable/Disable Features* (CS100000) form.

On multiple other report forms that are related to deferred revenue and already have the **Company/Branch** report parameter, this parameter is now required if the *Multiple Base Currencies* feature is enabled.

Upgrade Notes

During an upgrade to Acumatica ERP 2022 R1, the upgrade script will insert values in the new `BaseCuryID` database field for existing deferral schedules. Each value will be copied from the `Company.BaseCuryID` field.

Finance: Support of Multiple Base Currencies for Fixed Assets

The *Multiple Base Currencies* feature was implemented in Acumatica ERP in 2021 R1, although it was not compatible with multiple other features, including *Fixed Asset Management*. Starting in Acumatica ERP 2022 R1, the *Fixed Asset Management* feature can be used with the *Multiple Base Currencies* feature enabled. The fixed assets functional area does not support documents in a foreign currency; documents are processed only in the base currency. With the *Multiple Base Currencies* feature enabled on the *Enable/Disable Features* (CS100000) form, on all fixed asset-related forms that produce GL transactions, the system verifies that the branches specified in a transaction have the same base currency. Users can now review the currency of amounts and total amounts in all fixed asset transactions on multiple data entry forms and reports.

Changes to the Enable/Disable Features Form

On the *Enable/Disable Features* (CS100000) form, the *Multiple Base Currencies* feature can be enabled if the *Fixed Asset Management* feature is enabled.

Changes to the Fixed Assets Form

On the *Fixed Assets* (FA303000) form, if the *Multiple Base Currencies* feature is enabled, the **Currency** box is displayed on the **General** tab, as shown in the following screenshot.

Figure: The Currency box on the Fixed Assets form

The **Currency** box shows the currency in which the fixed asset amounts are stored. The asset's currency specified in this box is the base currency of the branch to which the asset is assigned. The **Currency** box is read-only.

If on the *Fixed Assets* form, a user changes the branch of the asset in the **Branch** box on the **General** tab and no *Purchasing+* transaction has been released for the asset, the system will insert the base currency of the selected branch in the **Currency** box.

> ⚠ Users cannot change the asset's branch to a branch in a different currency in the following cases:
> - If the asset has produced at least one GL transaction with the *Purchasing+* transaction type
> - If the asset was created by clicking **Split** on the More menu of the *Fixed Assets* form, even if no GL transaction was generated
> - If the asset was created on the *Convert Purchases to Assets* (FA504500) form, even if no GL transaction has been generated yet
> - If a reconciliation transaction has been created for the asset
> - If the asset was migrated

If the *Multiple Base Currencies* feature is enabled, on the **Reconciliation** tab of the *Fixed Assets* form, the system loads only the transactions in the base currency of the branch selected in the **Branch** box.

Changes to the Convert Purchases to Assets Form
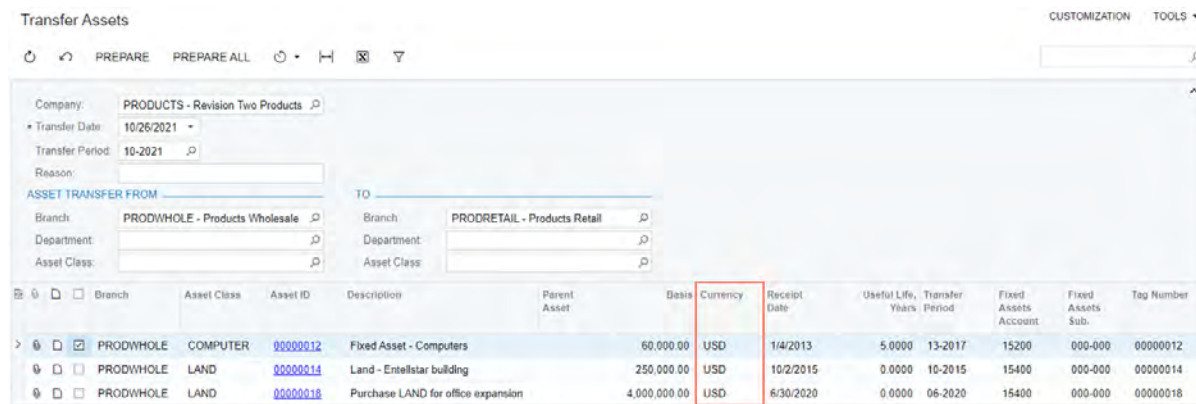
On the *Convert Purchases to Assets* (FA504500) form, if the *Multiple Base Currencies* feature is enabled, it will not be possible to create an asset in a branch based on a purchasing transaction posted for another branch that has a different base currency.

If a user is adding a new asset, the upper table shows only the GL transactions in the same base currency as the base currency of the selected branch.

If a user is making an addition to a fixed asset, the lookup table in the **Asset ID** column in the lower table shows only the assets whose currency is the same as the base currency of the selected branch.

Changes to the Transfer Assets Form

On the *Transfer Assets* (FA507000) form, if the *Multiple Base Currencies* feature is enabled, the **Currency** column is displayed in the table, as shown in the following screenshot.

Figure: The Currency column on the Transfer Assets form

The **Currency** column shows the asset's currency, which is specified on the *Fixed Assets* (FA303000) form. Users will be able to easily transfer assets from multiple branches with the same base currency to one branch.

> (i) Assets can be transferred only between the branches with the same base currencies. If the currencies are different, an asset has to be disposed of in the source branch on the *Dispose Assets* (FA505000) form and acquired in the destination branch on the *Fixed Assets* form.

Changes to the Dispose Assets Form

On the *Dispose Assets* (FA505000) form, if the *Multiple Base Currencies* feature is enabled, the **Company/Branch** setting is now required. By default, this setting displays the branch to which the user is signed in. The user can select another branch, company, or company group to which the user has access.

Changes to the Calculate Depreciation Form

On the *Calculate Depreciation* (FA502000) form, if the *Multiple Base Currencies* feature is enabled, the **Currency** column is displayed in the table, as shown in the following screenshot. The **Currency** column shows the asset's currency, which is specified on the *Fixed Assets* (FA303000) form.

Figure: The Currency column on the Calculate Depreciation form

Changes to Reports and Inquiries

If the *Multiple Base Currencies* feature is enabled on the *Enable/Disable Features* (CS100000) form, on multiple report and inquiry forms related to fixed assets, the **Company/Branch** setting is now required. By default, this element is filled in with the company or branch to which the user is signed in.

Upgrade Notes

During an upgrade to Acumatica ERP 2022 R1, the upgrade script will insert the values in the new `BaseCuryID` database field for existing fixed assets. This value will be copied from the `Company.BaseCuryID` field.

Finance: Updated Logic of Closed Date and Closed Period for Documents with Retainage

In previous versions of Acumatica ERP, the closed date, closed financial period, and closed transaction period for all documents were set to the date of the most recent application of the payment document. This setting was not correct for documents with retainage—those that had the **Apply Retainage** check box selected in the Summary area of the *Bills and Adjustments* (AP301000) or *Invoices and Memos* (AR301000) form. This is because these documents became closed when all of the following conditions were met:

- The balance of the original document became zero.
- The amount of unreleased retainage for the original document became zero.
- The balance of child retainage documents for the original document, if they existed, became zero.

In Acumatica ERP 2022 R1, a new logic of determining the closed date (the `ClosedDate` field maintained by the system), closed period (`ClosedFinPeriod`), and (`ClosedTranPeriod`) has been introduced for documents with retainage. Each of these dates is defined as the most recent date and the most recent period of either of the following events:

- The payment application of the original document
- The release of the retainage document (when the retained balance is transferred from the retainage account to the AR or AP account)

The closed date and closed period will be filled in for the original document when the status of the original document changes from *Open* to *Closed*.

Due to the changed logic, retainage reconciliation reports will be based on the `ClosedFinPeriod` parameter of the document. (This parameter is not displayed on the UI and is stored in the database.) The affected reports are *AP Retained Balance* (AP635000) and *AR Retained Balance* (AR635000). When one of these reports is run, the system will select only the documents whose closed period is later than the **Financial Period** specified in the report parameters of the applicable report.

The changed logic described in this topic was necessary in order to provide a convenient way for users to reconcile the balances of the Retainage Payable and Retainage Receivable accounts with the general ledger. For more information, see *Finance: Reconciliation of Unreleased Retainage in AR and AP with GL*.

Finance: Other Improvements

In Acumatica ERP 2022 R1, multiple improvements to financial management processes have been introduced, as described below.

Performance Improvements in Fixed Asset Processes

In many cases, the most recent period of fixed asset book history in the `FABookHistory` table is needed for transactions. In previous Acumatica ERP versions, to retrieve this period, the system used an aggregate query that was slow, especially on large amounts of data. The slow aggregated query affected multiple fixed asset processes, especially depreciation calculation and disposal.

To improve the performance of these processes, in Acumatica ERP 2022 R1, this most recent period is now stored in the `FABookBalance` table in the newly added `FaBookBalance.MaxHistoryPeriodID` field. A new most recent period is calculated and saved to the database whenever a fixed asset's history is changed (inserted or deleted). The slow aggregated query has been removed, and the `FaBookBalance.MaxHistoryPeriodID` field is used instead of the removed query.

The Addition of the Branch Column on Fixed Assets Forms

In previous versions of Acumatica ERP, information about branches was not available on the *Fixed Asset Transactions* (FA301000) form and on the **Transaction History** tab of the *Fixed Assets* (FA303000) form. As a result, users could not review the source and destination branches of transactions created on these forms.

On the *Fixed Asset Transactions* (FA301000) form, the **Branch** column has been added to the table, as shown in the following screenshot.

Figure: The Branch column on the Fixed Asset Transactions form

For transactions that have *Transfer* specified in the **Origin** box on the *Fixed Asset Transactions* form, the **From Branch** column has been added to the table. The column appears on the form if the *Multi-Branch Support* feature is enabled on the *Enable/Disable Features* form.

The following screenshot illustrates a transfer transaction with the new **Branch** and **From Branch** columns.
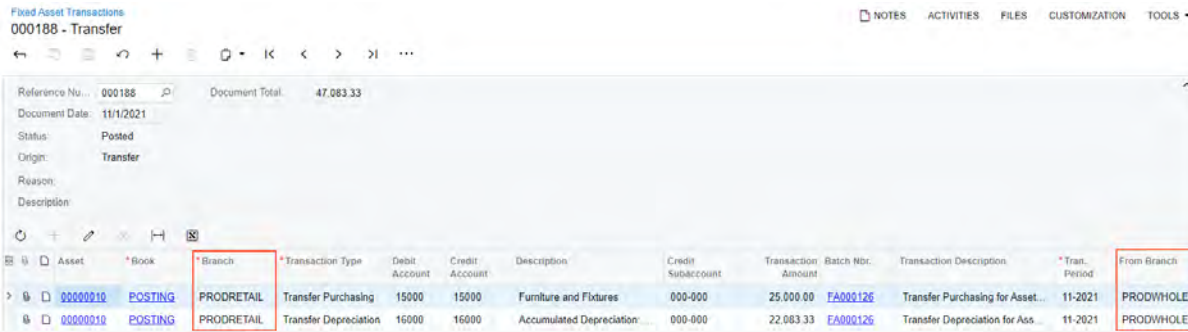
Figure: The Branch and From Branch columns on the Fixed Asset Transactions form

In Acumatica ERP 2022 R1, the **Branch** column has been added to the table on the **Transactions** tab of the *Fixed Assets* form, as shown in the following screenshot.
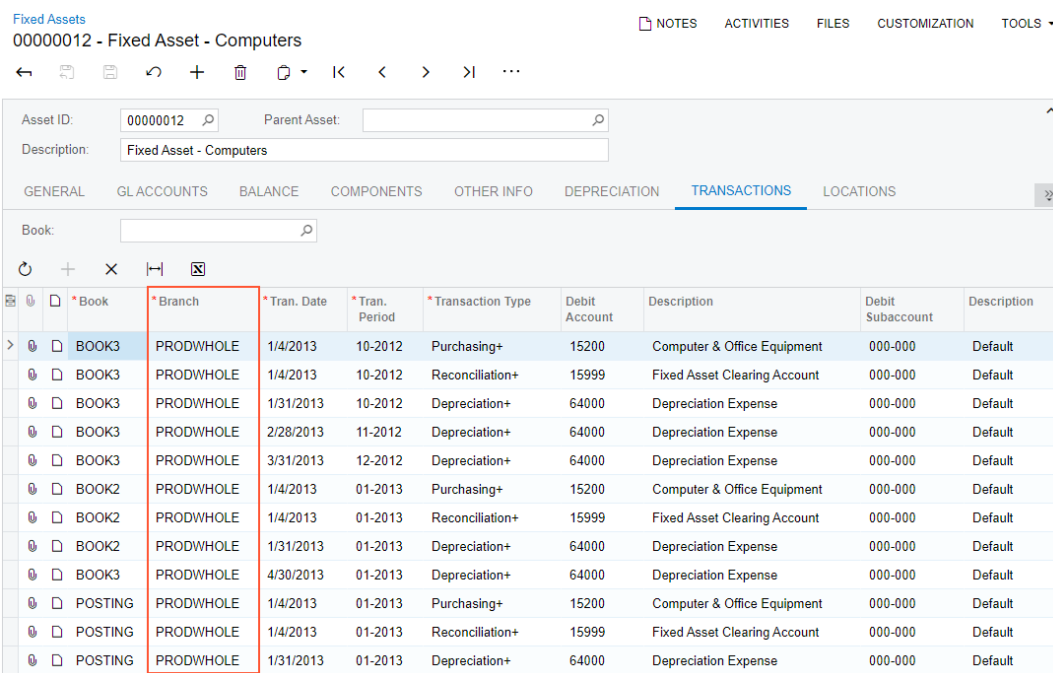
Figure: The Branch column on the Fixed Assets form

The **Branch** column appears on the form if the *Multibranch Support* feature is enabled on the *Enable/Disable Features* (CS100000) form.

Simplified Workflows for Financial Forms

In previous versions of Acumatica ERP, the customization of workflows was prohibited for some forms. Starting in Acumatica ERP 2022 R1, the description of these workflows has been simplified, and customizers can modify the workflows in Customization Project Editor. Customized and custom workflows can be created for the following screens:

- *Invoices and Memos* (AR301000)
- *Payments and Applications* (AR302000)
- *Cash Sales* (AR304000)
- *Invoices* (SO303000)
- *Bills and Adjustments* (AP301000)

- *Checks and Payments* (AP302000)
- *Quick Checks* (AP304000)

Display of the Card Type for Card Payment Methods

In Acumatica ERP 2022 R1, a new box, **Card Type**, has been added to the Summary area of the *Customer Payment Methods* (AR303010) form (shown in the following screenshot).

During the processing of a card payment, the system receives (from the processing center) and stores the information about the type of card used for the payment. If the received card type matches a value defined in Acumatica ERP, the **Card Type** box displays the value defined in Acumatica ERP. If a value is unknown, this box contains *Other* followed by the card type code received from the processing center.

Customer Payment Methods
ABARTENDE - American Express:****-****-****-0002

| | | | | | | | | | |

* Customer:	ABARTENDE - USA Bartending Schoc
Payment Method:	MASTERCARD - Mastercard
	☑ Active
Proc. Center ID:	AUTHNETAPI
Customer Profile ID:	502560218
Cash Account:	
Card/Account Nbr.:	American Express:****-****-****-0002
Expiration Date:	09/24
Card Type:	American Express

PAYMENT METHOD DETAILS

| | CREATE NEW | EDIT | | |

	Description	Value
>	Payment Profile ID	505463781

Figure: The Card Type box on the Customer Payment Methods form

The information about the card type is also displayed in the **Card Type** and **Proc. Center Card Type** columns on the *Payment Processing Log* (AR406500) form and in the **Card Type** box of the Summary area on the *Payment Method Transaction History* (AR406000) form.

After the upgrade to Acumatica ERP 2022 R1, the **Card Type** box will remain empty for existing customer payment methods. However, a user will be able to review the type of card used for payments made with these customer payment methods on the *Payment Processing Log* and *Payment Method Transaction History* forms.

Also, the format of the values shown in the **Card/Account Nbr.** box displayed on multiple Acumatica ERP forms has been changed. In previous versions, the box showed the payment method followed by the card number. Now the card type and the card number are shown instead. As was the case previously, the card number is displayed in accordance with the display mask specified for the payment method on the *Payment Methods* (CA204000) form.

Assignment of a Payment Date Based on the Bank Transaction

In previous versions of Acumatica ERP, when a user matched a bank transaction to an unreleased AR or AP payment document on the *Process Bank Transactions* (CA306000) form and then processed the matched transactions, the system did not update the payment date to match the bank transaction date automatically. The user had to manually adjust the date of the payment document and then process the bank transaction.

In Acumatica ERP 2022 R1, a new check box, **Set Payment Date to Bank Transaction Date**, has been added to the Summary area of the *Payment Methods* (CA204000) form (shown in the following screenshot).

Figure: The new check box on the Payment Methods form

Now if this check box is selected for a payment method on the *Payment Methods* form, when a user matches a bank transaction to an unreleased payment document that is based on the payment method and then processes the bank transaction on the *Process Bank Transactions* form, the system updates the date of the payment document to match the date of the bank transaction.

Integrations: Changing the Availability of Carrier Services for New Carriers
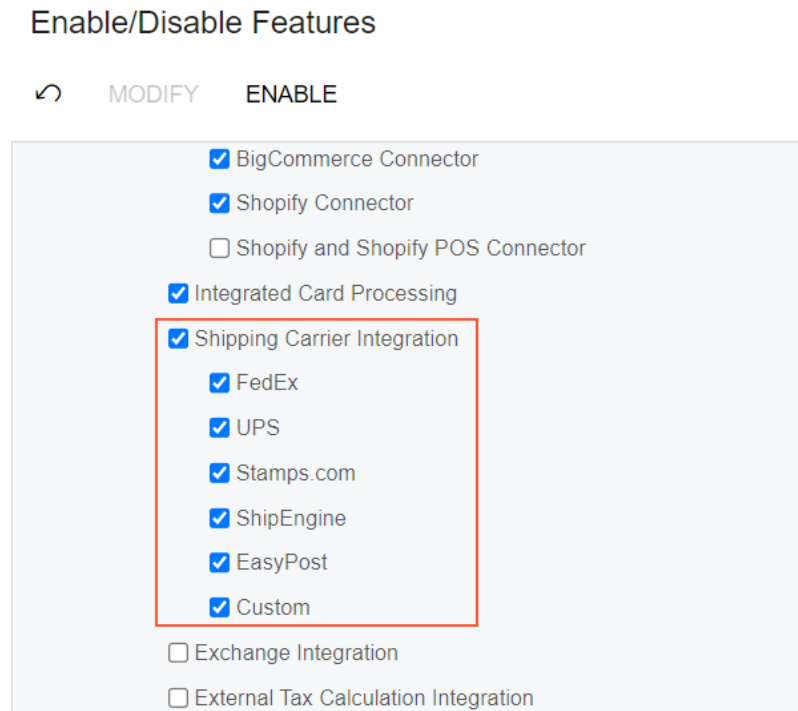
Previously, when a user enabled the *Shipping Carrier Integration* feature on the *Enable/Disable Features* (CS100000) form, all carrier services were available simultaneously. Acumatica ERP 2022 R1 introduces the ability to select the specific carrier services that will be used. These services are listed under the *Shipping Carrier Integration* feature.

Making a Carrier Service Available

On the *Enable/Disable Features* (CS100000) form, a user can now enable any number of features to allow the use of the corresponding carrier services in Acumatica ERP (see the following screenshot).

Figure: The features under the Shipping Carrier Integration feature

When the user enables a feature under the *Shipping Carrier Integration* feature, the corresponding plug-in appears in the **Plug-In (Type)** box of the *Carriers* (CS207700) form when the user creates a new carrier on the form. If a carrier-related feature has not been enabled, its corresponding plug-in does not appear in the box. For example, if the user enables the *FedEx* feature and disables the rest of the features under the *Shipping Carrier Integration* feature, the system will display only the *PX.FedExCarrier.FedExCarrier* plug-in in the **Plug-In (Type)** box of the *Carriers* form when a new carrier is being created (see the following screenshot).
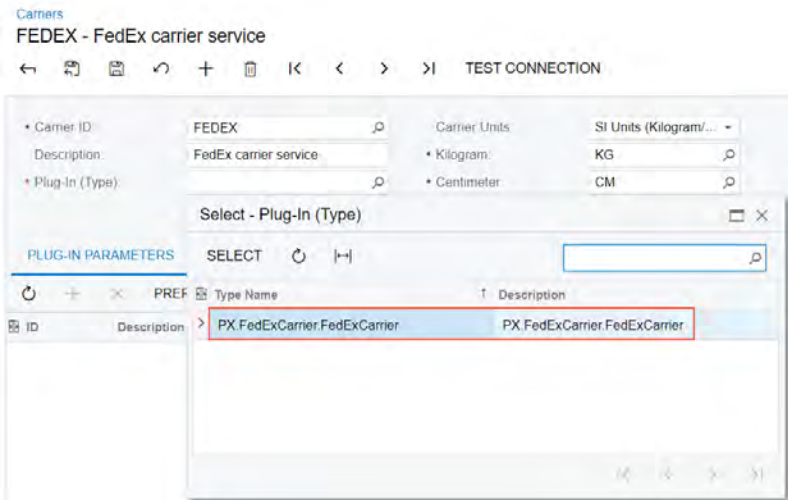
Figure: PX.FedExCarrier.FedExCarrier in the Plug-In (Type) box

The following features have been added under the *Shipping Carrier Integration* feature:

- *FedEx*: The ability to use the FedEx carrier service with the *PX.FedExCarrier.FedExCarrier* plug-in
- *UPS*: The ability to use the UPS carrier service with the *PX.UpsCarrier.UpsCarrier* plug-in
- *Stamps.com*: The ability to use the Stamps.com carrier service with the *PX.StampsCarrier.StampsCarrier* plug-in
- *ShipEngine*: The ability to use the ShipEngine carrier service with the *PX.ShipEngineCarrier.ShipEngineCarrier* plug-in
- *EasyPost*: The ability to use the EasyPost carrier service with the *PX.EasyPostCarrier.EasyPostCarrier* plug-in
- *Custom*: The ability to use a custom carrier service with a custom plug-in

> ⚠ The USPS carrier service has been deprecated. The *PX.UspsCarrier.UspsCarrier* plug-in cannot be used for the creation of new carriers anymore.

Effects of the Upgrade on Existing Carriers

The carriers that have been configured in Acumatica ERP before the upgrade to the 2022 R1 version are not affected by the restrictions of new features under the *Shipping Carrier Integration* feature. The user can view the list of those carriers and use them for shipping even if the corresponding feature is disabled on the *Enable/Disable Features* (CS100000) form. If the *Shipping Carrier Integration* feature was enabled before the upgrade to the 2022 R1 version, all new features under this feature will be enabled after the upgrade. If the *Shipping Carrier Integration* feature was disabled before the upgrade to the 2022 R1 version, all new features under this feature will be disabled after the upgrade.

Integrations: Improvements to the Acumatica Add-In for Outlook

The Acumatica add-in for Outlook allows an email to be associated with the corresponding contact and this email to be stored as an email activity in Acumatica ERP. This add-in works only if the *Outlook Integration* feature (under *Third Party Integrations*) is enabled on the *Enable/Disable Features* (CS100000) form.

In previous versions of Acumatica ERP, enabling the *Construction Project Management* feature, which is located in the *Projects* group of features, gave users the capability to attach email activities to related projects through the Acumatica add-in for Outlook. Starting in Acumatica ERP 2022 R1, this capability is available if the *Projects* feature is enabled (see the following screenshot), but it no longer requires the *Construction Project Management* feature to be enabled.

Figure: Features required for attaching email activities to projects

Integrations: Sending the Customer Tax ID to the EasyPost Carrier Service

In Acumatica ERP 2022 R1, the ability to send the customer's tax ID to the EasyPost carrier service has been implemented.

Updates to the Tax ID Provision Workflow

The tax ID sent to the EasyPost carrier service defines the party responsible for the import fees of the shipment. Previously, Acumatica ERP could send only the tax ID specified in the **Tax Registration ID** box on the **Company Details** tab (**Tax Registration Info** section) of the *Companies* (CS101500) form (shown in the following screenshot) or the **Branch Details** tab (**Tax Registration Info** section) of the *Branches* (CS102000) form to the EasyPost carrier service. That is, in previous versions, only one party could be responsible for the import fees.

Figure: The Tax Registration ID box on the Companies form

The system can now send the tax ID of the customer to the EasyPost carrier service. The system sends the tax ID specified on the **Shipping** tab (**Tax Settings** section) of the *Customers* (AR303000) form for the customer that is specified in the shipment on the *Shipments* (SO302000) form.

Figure: The Tax Registration ID box on the Customers form

The EasyPost carrier service can accept only one tax ID for a shipment. The system chooses the tax ID to send to the service on the basis of the option selected in the **Terms of Sales (Incoterm)** box on the **Shipping** tab (**Shipping Information** section) of the *Shipments* form. (See the following screenshot.)
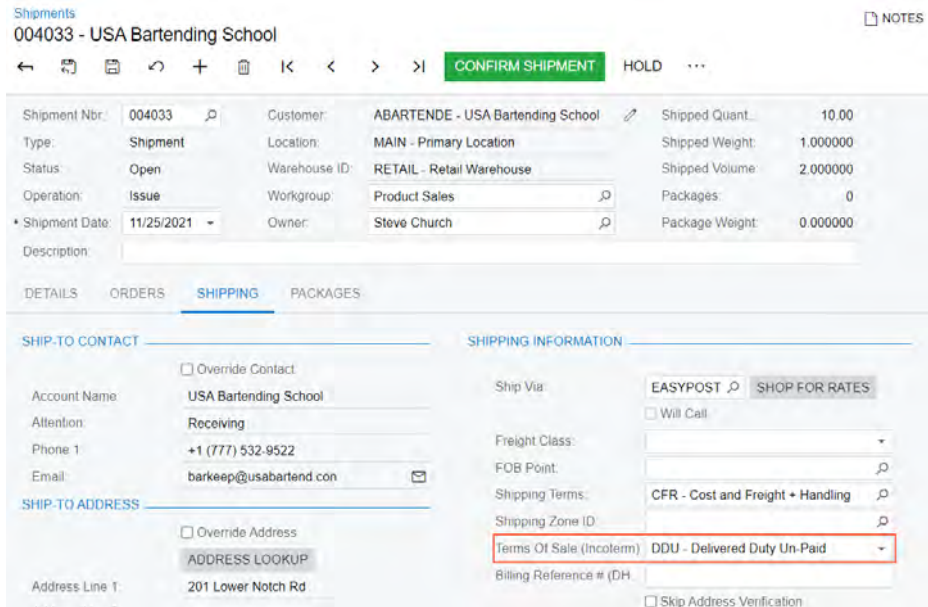
Figure: The Terms of Sale (Incoterm) box on the Shipments form

The following table shows the incoterms supported in Acumatica ERP.

Table: The Incoterms Supported in Acumatica ERP

Incoterm	Import Fees (Vendor)	Import Fees (Customer)
DDP – Delivered Duty Paid	Yes	No
CFR – Cost and Freight	No	Yes
CIF – Cost Insurance and Freight	No	Yes
CIP – Carriage and Insurance Paid To	No	Yes
CPT – Carriage Paid To	No	Yes
DAP – Delivered at Place	No	Yes
DAT – Delivered at Terminal	No	Yes
DDU – Delivered Duty Un-Paid	No	Yes
EXW – Ex Works	No	Yes
FAS – Free Alongside Ship	No	Yes
FCA – Free Carrier	No	Yes
FOB – Free on Board	No	Yes

Localization: Migration of UK Localization to the Core Product

Starting in Acumatica ERP 2022 R1, most of the functionality specific to companies doing business in the United Kingdom has become part of the core product of Acumatica ERP, rather than being provided as customization projects (as was the case in previous versions). If the *UK Localization* feature is enabled on the *Enable/Disable Features* (CS100000) form, the following types of functionality become available in the system:

- Bankers Automated Clearing Service (BACS)
- Making Tax Digital (MTD)

When this feature is enabled, a number of new forms become available, and changes occur on various existing Acumatica ERP forms.

Support of BACS Standard 18 for HSBC

To support the export of released batch payments into a BACS payment file that complies with the requirements of HSBC bank, multiple UI changes have been introduced on the *Payment Methods* (CA204000) form.

In the Summary area, the **Direct Deposit File Format** box has been added, as shown in the following screenshot.

Figure: The Summary area of the Payment Methods form

This box appears on the form regardless of whether the *UK Localization* feature is enabled on the *Enable/Disable Features* (CS100000) form. The box becomes visible if *Direct Deposit* is selected in the **Means of Payment** box in the Summary area of the *Payment Methods* form for a payment method and at least one file format for direct deposits has been configured in the system.

If the *UK Localization* feature is enabled, the *BACS HSBC payment* option can be selected in the **Direct Deposit File Format** box (also in the Summary area of the form). With this option selected, the settings on the **Settings for Use in AP** and **Remittance Settings** tabs of the *Payment Methods* form are automatically populated by the system based on HSBC requirements for BACS implementation (see Item 1, Item 2, and Item 3 in the following screenshots).

Figure: UI changes on the Settings for Use in AP tab

Figure: UI changes on the Remittance Settings tab

The *BACS HSBC payment* export scenario has been added to the system to support BACS Standard 18. This export scenario can be viewed and edited on the *Export Scenarios* (SM207025) form. The system inserts this export scenario in the **Export Scenario** box of the **Settings for Use in AP** tab of the *Payment Methods* form if *BACS HSBC payment* is selected in the **Direct Deposit File Format** box of this form.

To generate a batch of payments in Standard 18 for HSBC, users should do the following:

1. On the *Payment Methods* form, define a payment method with the following settings:

   - **Means of Payment**: *Direct Deposit*
   - **Direct Deposit File Format**: *BACS HSBC payment*

2. On the *Batch Payments* (AP305000) form, create a batch payment by clicking **Export** on the form toolbar. A batch file with payments will be attached to the form.

Support for Making Tax Digital (MTD)

Making Tax Digital (MTD) for VAT came into effect on April 1, 2019, in the United Kingdom and is now supported by the core Acumatica ERP product. Multiple UI changes have been introduced in Acumatica ERP 2022 R1 to enable users to transfer VAT return information to Her Majesty's Revenue and Customs (HMRC).

On the *External Applications* (SM301000) form, a new option has been added to the **Type** box: *HMRC Making Tax Digital*. If this option is selected, the **Client ID**, **Client Secret**, and **Return Url** boxes in the **Application** section of the form become hidden. (The following screenshot shows the selection of this type; notice that the boxes are not shown in the section.)

Figure: UI changes on the External Applications form

On the *Companies* (CS101500) form, the **MTD External Application** box (see Item 1 in the following screenshot) has been added to the **Tax Registration Info** section of the **Company Details** tab. The new box appears on the form if *GB - United Kingdom of Great Britain and Northern Ireland* (Item 2) is selected in the **Country** box (in the **Main Address** section) of the **Company Details** tab and the *UK Localization* feature is enabled on the *Enable/Disable Features* (CS100000) form. The following screenshot shows the UI changes on the *Companies* form.

Figure: UI changes on the Companies form

On the *Branches* (CS102000) form, the **MTD External Application** box (see Item 1 in the following screenshot) has been added to the **Tax Registration Info** section on the **Branch Details** tab. The new box appears on the form if in the **Main Address** section of this tab, *GB - United Kingdom of Great Britain and Northern Ireland* is selected in the **Country** box (Item 2), and the *UK Localization* feature is enabled on the *Enable/Disable Features* form. The following screenshot shows the UI changes on the *Branches* form.

Figure: UI changes on the Branches form

The new box appears on the form if the following conditions are met:

- On the *Branches* form, *GB - United Kingdom of Great Britain and Northern Ireland* is selected in the **Country** box (in the **Main Address** section of the **Company Details** tab, as shown in the screenshot above) for the branch
- On the *Enable/Disable Features* form, the *UK Localization* and *Multibranch Support* features are enabled
- On the *Companies* form, the company to which the branch belongs has the **File Taxes by Branch** check box selected on the **Company Details** tab

> ⚠️ An external application can be selected in the **MTD External Application** box only once in the instance, on either the *Companies* or *Branches* form. The lookup table that opens when a user clicks the magnifying button in the **MTD External Application** box shows only external applications that have not been yet selected for a company or a branch.

The Submit VAT Return Form

To support the MTD functionality, the *Submit VAT Return* (TX502020) form has been implemented. The form appears in the system if the *UK Localization* feature is enabled on the *Enable/Disable Features* (CS100000) form. The form is available to users for which the *Administrator*, *TX Admin*, or *AcumaticaSupport* role is assigned on the *User Roles* (SM201005) form.

The following screenshot shows the *Submit VAT Return* form.

Figure: The new Submit VAT Return form

Users specify the settings in the **Tax Period** section of this form and submit the VAT return to HMRC. The following table lists the tax boxes submitted to HMRC.

Tax Box Number	Description
1	Box 1 - VAT on Sales
2	Box 2 - VAT on Purchases, T10
3	Box 3 - Total VAT (including T10 input VAT)
4	Box 4 - VAT on Purchases
5	Box 5 - Net VAT to be paid or reclaimed
6	Box 6 - Total taxable value of Sales (including box 8)
7	Box 7 - Total taxable value of Purchases (including box 9)
8	Box 8 - Total taxable value of Sales, EC

Tax Box Number	Description
9	Box 9 - Total taxable value of Purchases, EC

Users should configure the tax report on the *Reporting Settings* (TX205100) form with the tax box numbers specified on correct report lines.

Additional Information

On details of configuring and using BACS payments, see *Processing BACS Payments*.

On details of configuring MTD support and submitting VAT returns, see *Configuring Support for Making Tax Digital (MTD)* and *To Submit a VAT Return*.

Localization: Changes to the EFT Export in the Canadian Localization

In previous versions of Acumatica ERP, users of the Canadian Edition could export EFT payments for Canadian banks, but this functionality was available through a customization package. The package included a set of import scenarios to create a payment method for direct deposits and an export scenario to export payments based on this payment method to a payment file compliant with the CPA-005 standard. The export scenario, however, did not fully adhere to the Royal Bank of Canada's specific requirements for the format of the EFT payment file and test EFT payment file.

Starting in Acumatica ERP 2022 R1, the setup and generation of EFT payment files no longer require customization. Also, the generated EFT files are now compliant with the Royal Bank of Canada's requirements for the file format. Multiple changes have been introduced on existing Acumatica ERP forms, as described below.

Support for the CPA-005 Standard

To support the export of released batch payments to an EFT payment file that complies with the CPA-005 format specifications for credit files, a number of changes have been introduced on the *Payment Methods* (CA204000) form.

In the Summary area, the **Direct Deposit File Format** box has been added, as shown in the following screenshot. This box appears on the form if the *Canadian Localization* feature is enabled on the *Enable/Disable Features* (CS100000) form and *Direct Deposit* is selected for a payment method in the **Means of Payment** box in the Summary area of the *Payment Methods* form.

Figure: The Summary area of the Payment Methods form

To set up the payment method to comply with the CPA-005 requirements, a user needs to select *CPA005* in the **Direct Deposit File Format** box. When this option is selected, the system automatically populates the settings on the **Settings for Use in AP** and **Remittance Settings** tabs of the *Payment Methods* form based on the CPA-005 standard.

On the **Settings for Use in AP** tab, the settings are specified as follows (as shown in the following screenshot):

- The **Create Batch Payments** option button is selected.
- In the **Export Scenario** box, *Export AP Payment to Payments (Canadian Localization)* is inserted. This export scenario has been added to the system to support the CPA-005 standard and can be viewed and edited on the *Export Scenarios* (SM207025) form.

- The new **Require Batch Seq. Number** check box is selected and unavailable for editing. With this check box selected, a user needs to specify the batch sequence number on the *Batch Payments* (AP305000) form before releasing the payment batch.
- The **Payment Method Details** table is filled in, as shown in the following screenshot.

Figure: Pre-populated settings on the Settings for Use in AP tab

On the **Remittance Settings** tab, the rows of the table are populated as shown in the following screenshot. The elements configured in this table hold remittance information that is required for cash accounts linked to this payment method.

Figure: Pre-populated settings on the Remittance Settings tab

Generation of the Test EFT File

A user can generate a test EFT payment file before submitting the real EFT payment file to ensure that the real EFT payment file meets the file format requirements of the particular bank.

To support the generation of a test EFT payment file, the new **Generate Test File** button has been added to the form toolbar of the *Batch Payments* (AP305000) form.

Figure: The new Generate Test File button on the Batch Payments form

To generate the test EFT payment file, a user should click the **Generate Test File** button on the form toolbar (the corresponding command is also available on the More menu). The system generates the file and attaches it to the form. The name of the test file contains the -*Test* suffix so that it is easier to distinguish it from a real EFT payment file.

Manufacturing: Control Point Operations in Production Routing

Acumatica ERP Manufacturing Edition 2022 R1 provides enhanced recording of quantities of completed items for production operations. Organizations may define labor and materials to be backflushed for most routing operations if they want to reduce the cost of manual recording of quantities of completed items during the production process. However, there may be specific milestone operations at which workers must record the quantity of completed items.

Now production managers can mark particular routing operations as control points, which means that workers must record the quantity of completed items for each of these operations. The use of control points provides the following enhancements in the production management process:

- Better visibility of the production progress: Workers must enter the quantity of completed items not only for the last operation in routing (as it was in the previous versions) but also for each control point operation, so that production managers can track the progress.
- Improved accuracy of data recording for production orders: The system now helps manufacturers to prevent quantity entry on operations after the control point operation if the quantity exceeds the quantity reported as complete on the previous operation marked as a control point. This can greatly reduce recording errors and prevent the receipt of items for which any operations have not been recorded as completed.

Control Point Operations

A production manager can set up control points at the work center or production operation level. If workers must record the completed quantity for operations performed in a particular work center, the production manager selects the new **Control Point** check box on the **General** tab of the *Work Centers* (AM207000) form, shown in the following screenshot. The system copies the state of the check box to each new bill of material, estimate, engineering change control, and engineering change request that includes an operation with the work center specified.

Figure: The Control Point check box on the Work Centers form

If only some operations performed in a work center must be control points, then the production manager makes sure that the **Control Point** check box is cleared for the work center on the *Work Centers* form. The production manager then marks particular operations as control points in a bill of material by selecting the new **Control Point**

check box for each needed operation in the Operations table of the *Bill of Material* (AM208000) form, displayed in the following screenshot. The system copies the state of the check box for these operations to each new production order based on the bill of material.

Operation ID	Work Center	Oper Desc	Setup Time	Run Units	Run Time	Machine Units	Machine Time	Queue Time	Finish Time	Move Time	Backflush Labor	Scrap Action	Control Point
0010	WC40	Cutting	00:00	10.00	01:00	0.00	01:00	00:00	00:00	00:00	☐	No Action	☑
0020	WC70	Form	01:00	0.00	01:00	20.00	01:00	00:00	00:00	00:00	☑	No Action	☐
0030	WC10	Assembly	00:00	10.00	01:00	0.00	01:00	00:00	00:00	00:00	☐	No Action	☑
0040	WC100	Inspection	00:00	10.00	01:00	0.00	01:00	00:00	00:00	00:00	☐	No Action	☐

MATERIALS STEPS TOOLS OVERHEAD OUTSIDE PROCESS

Inventory ID	Description	Qty Required	UOM	Unit Cost	Planned Cost	Material Type	Phantom Routing	Backflush	Warehouse
MGSHEET10	Sheet Metal 10 Guage	0.02	POUND	25.00	0.50	Regular	Before	☑	
MGBLACKDYE	Black Dye	1.00	OZ	15.00	15.00	Regular	Before	☑	

Figure: The Control Point column on the Bill of Material form

The production manager can change the default state of the **Control Point** check box for each operation of a production order (except the last one) in the Operations table on the *Production Order Details* (AM209000) form, shown in the following screenshot.

> ⚠️ The last routing operation is always a control point because before the production order can be completed, workers must record the completed quantity. Thus, for the last operation in the Operations table, the **Control Point** check box is selected and unavailable for editing.

Figure: The Control Point column on the Production Order Details form

If multiple routing operations are marked as control points, when a worker enters the quantity of completed items on the *Labor* (AM301000) or *Move* (AM302000) form for the control point operations, the system verifies that the quantity entered for the current operation is less than or equal to the quantity recorded for the preceding control point operation. If this condition is not met, the system displays an error message (shown in the screenshot below) and does not release the labor or move transaction until the worker enters the correct item quantity.

For example, suppose that a production order for producing a base unit contains four operations: *0010 Cutting*, *0020 Form*, *0030 Assembly*, and *0040 Inspection*; the *0010* and *0030* operations are control points. Further suppose that on the *Move* form, a worker creates a move transaction for Operation *0010* and specifies 7 as the completed quantity. Then another worker, when specifying the completed quantity of the item for Operation *0030* on the same form, mistakenly specifies 70 instead of 7 as the quantity. The system does not release the move transaction until the worker specifies a quantity of 7 or less.
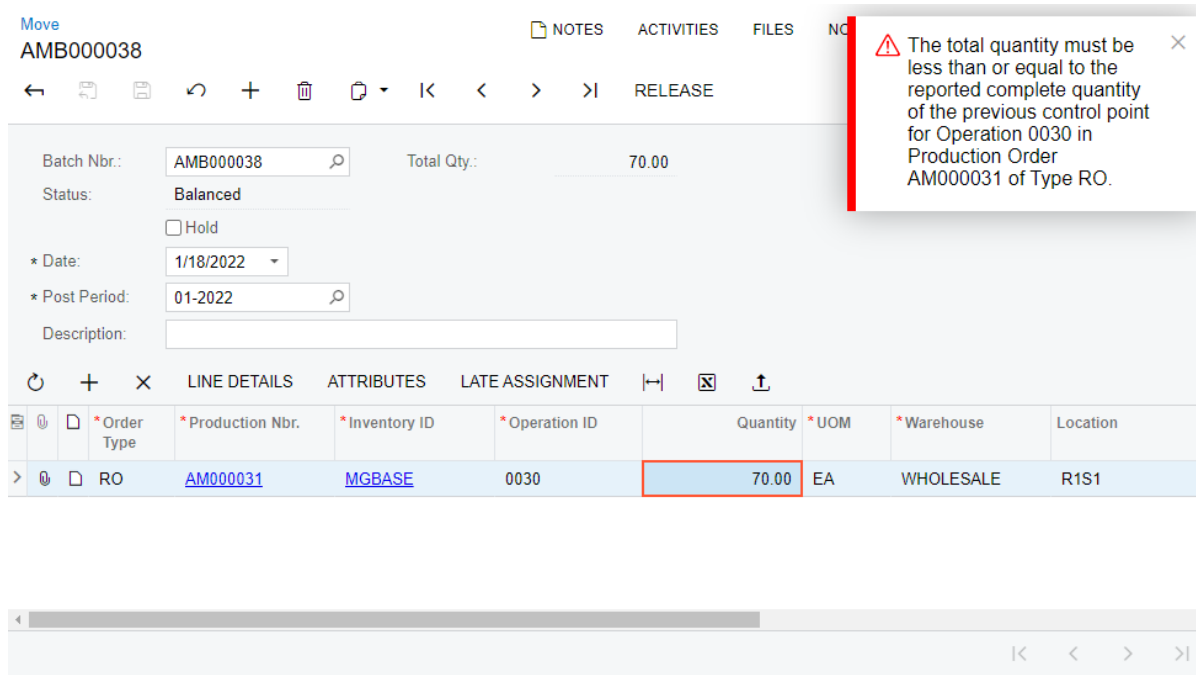
Figure: The error message on the Move form

When a worker would like to revert the quantity of completed items for some operation and enters a negative quantity value on the *Move* form for this operation, the system verifies that the completed quantity after the reversal is more than or equal to the completed quantity recorded for the next operation marked as a control point. If the validation fails, the system displays an error message and does not release the transaction until the worker enters the correct quantity to be reversed.

In the previously considered example of a production order for producing a base unit, suppose that on the *Move* form, a worker creates a move transaction for Operation *0010* and specifies the completed quantity as 7. Further suppose that another worker creates a move transaction for Operation *0030* on the same form and specifies the quantity of 5. Then the first worker found out that the quantity specified for Operation *0010* is incorrect and creates a move transaction with a quantity of –3. The system calculates the new completed quantity for Operation *0010* as 7 – 3 = 4. The new quantity is less than the quantity recorded for Operation *0030*. So the system will not release the move transaction until the worker specifies –2 or –1 as the quantity to be reversed.

UI Enhancements

To support the new functionality, the following UI changes have been introduced:

1. The **Control Point** check box has been added to the Work Centers (AM2070PL) list of records and *Work Center Dispatch* (AM000007) form so that a production manager can quickly find the work centers marked as control points (see the following screenshot of the Work Centers list of records).

Figure: The Control Point column on the Work Centers list of records

2. The **Control Point** check box has been added to the following locations:

   - *Estimate* (AM303000), **Operations** tab
   - *Bill of Material* (AM208000), Operations table
   - *Engineering Change Request* (AM210000), **Operations** tab
   - *Engineering Change Order* (AM215000), **Operations** tab

3. The **Control Point** check box has been added to the Summary area of the *Estimate Operation* (AM304000) form, as shown in the following screenshot.

Figure: The Control Point check box on the Estimate Operation form

4. The state of the **Control Point** box for operations is now displayed on the *Production Ticket* (AM625000) and *Production Ticket with Barcode* (AM625010) reports. The following screenshot shows the *Production Ticket with Barcode* report.

Figure: The state of the Control Point check box in the Production Ticket with Barcode report

5. The **Control Point** check box has been added to the lookup table of the **Operation ID** box or column on the forms of Acumatica ERP Manufacturing Edition where it is displayed. The following screenshot shows the lookup table for the **Operation ID** column on the *Move* (AM302000) form.

Figure: The Control Point column in the lookup table for the Operation ID box

Additional Information

For more information about control point operations, see *Production Processing: Control Point Operations*.

Manufacturing: Direct Creation of Engineering Change Orders

In Acumatica ERP Manufacturing Edition 2022 R1, a manufacturing engineer can now directly create an engineering change order (ECO) without first creating an engineering change request (ECR).

Direct Creation of Engineering Change Orders

An organization with a small engineering team may find it undesirable to create an engineering change request as a prerequisite to creating an engineering change order. The team may want to eliminate the extra step of reviewing and generating the ECO and avoid storing unnecessary data in the system. In previous versions of Acumatica ERP Manufacturing Edition, a manufacturing engineer always had to create an ECR before creating an ECO. This extra step is no longer needed.

To allow the direct creation of ECOs, a manufacturing engineer clears the new **Require ECR before Creating ECO** check box on the *BOM Preferences* (AM101000) form, shown in the following screenshot. With this check box cleared, the engineer can create an ECO directly on the *Engineering Change Order* (AM215000) form by clicking **Add New Record** on the form toolbar. This check box is displayed only when the *Engineering Change Control* feature is enabled on the *Enable/Disable Features* (CS100000) form.

> ⚠ Once the check box has been cleared, we do not recommend selecting it again because this may cause the engineering change control functionality to work improperly.

Figure: The new Require ECR before Creating ECO check box on the BOM Preferences form

UI Enhancements

On the *BOM Preferences* (AM101000) form, for clarity, the **Prevent New Revision Without ECR** has been renamed to **Require ECR/ECO for New BOM Revisions** (see the following screenshot).

Figure: The renamed Require ECR/ECO for New BOM Revisions check box on the BOM Preferences form

Additional Information

For more information about engineering change control, see *Engineering Change Control: General Information*.

Manufacturing: Document Visibility Restriction by Branch

In Acumatica ERP Manufacturing Edition 2022 R1, on forms that display production-related documents and transactions, support of multiple branches has been implemented. If an organization uses multiple branches in Acumatica ERP, an implementation manager now can restrict the visibility of documents and transactions by branch for each user role.

This functionality is available only when either the *Multibranch Support* feature or the *Multicompany Support* feature is enabled (or both features are enabled) on the *Enable/Disable Features* (CS100000) form.

Visibility Restriction by Branch

In many cases, users who work in a particular branch must be able to view production documents and transactions related to only their branch. To meet this requirement, an implementation manager can restrict the visibility of branch-specific data for a user role assigned to the users of each branch by doing the following:

1. On the *User Roles* (SM201005) form, creating a user role dedicated to restricting the visibility of data to particular branches and assigning the role to the needed users.

2. On the *Branches* (CS102000) form, for the branch, specifying the dedicated user role in the **Access Role** box of the **Configuration Settings** on the **Branch Details** tab.

For more information, see *Security of Organizations' Branches*.

Forms with Multibranch Support

In a multibranch company, each warehouse is assigned to a specific branch. For production documents and transactions that are warehouse-specific, the system now copies the branch from the warehouse settings specified on the *Warehouses* (IN204000) form and uses this branch to restrict the visibility of data for users on applicable forms of Acumatica ERP Manufacturing Edition.

On the following forms, the **Branch** box has been added in the noted locations:

- *Production Order Maintenance* (AM201500): In the **Financial Settings** section on the **References** tab (see the following screenshot)

Figure: The Branch box on the Production Order Maintenance form

- *Production Order Details* (AM209000): In the Summary area (see the following screenshot)

Figure: The Branch box on the Production Order Details form

On the following forms, multiple branches have been supported in the noted ways:

- *Create Production Orders* (AM510000): When a user initiates the creation of production orders, the system copies the branch of the demand warehouse to the production order.
- *Process Capable to Promise* (AM515000): When creating a planning production order during CTP calculation, the system copies to the production order the branch of the warehouse specified in the sales order line on the *Sales Orders* (SO301000) form. Then the system copies the branch to the regular production order when a user accepts the CTP date.

The **Branch** column has been added to the tables of the following forms:

- *Cost Transactions* (AM309000)
- *Close Production Orders* (AM506000)
- *Estimates (AM3030PL)*
- *Forecast* (AM202000)
- *Forecast Listing* (AM000005)
- *Generate Forecast* (AM502000)
- *Master Production Schedule* (AM201000)
- *MRP Display* (AM400000)

- *MRP Exceptions* (AM403000)
- *MPS Listing* (AM000004)
- *Print Production Orders* (AM511000)
- *Production Order Maintenance (AM2015PL)*
- *Production Summary* (AM000006)
- *Release AM Documents* (AM503000)
- *Release Production Orders* (AM500000)
- *Rough Cut Planning* (AM501000)
- *Unreleased Material Allocations* (AM305500)
- *Vendor Shipments (AM3100PL)*
- *Work Center Dispatch* (AM000007)

The column is hidden by default on most of these forms. If an implementation manager wants users to view this column, the manager should add it to the table by using the **Column Configuration** dialog box and sharing the configuration with all users in the system. For details, see *To Share a Column Configuration*.

> Displaying the branch on a form may be useful only if a user can view data in multiple branches.

Manufacturing: Planned Delay Times in Production Scheduling

In Acumatica ERP Manufacturing Edition 2022 R1, additional settings have been implemented to reflect planned delays that may occur in the production process. The system now uses these settings to calculate the duration of production operations by accounting for the move time, finish time, and queue time in material requirements planning and advanced planning and scheduling.

Settings for Delay Times Between Operations

If an organization has various delays between production operations, it can specify any of the following fixed times in the production settings:

- Queue time: The time a semi-finished item has to wait in a work center before workers can start processing the item. For example, the previous operation may take less lime than the current operation, so items need to be stacked before the current operation is started.

- Finish time: The time required for the semi-finished item to be prepared for the next operation when the current operation has been finished. For example, the item being produced may need time to dry, cure, or age.

- Move time: The time for a semi-finished item to be moved from the work center where the current operation is performed to the work center where the next operation will be performed. For example, the work centers may be located in different buildings, and it may take significant time to move the items from one building to the other.

In the previous versions of Acumatica ERP Manufacturing Edition, a production manager could enter the queue time, finish time, and move time for operations of a production order on the *Production Order Details* (AM209000) form (see the following screenshot). However, these times were not taken into consideration when the system scheduled the resources required for the production. In Acumatica ERP Manufacturing Edition 2022 R1, these settings affect the scheduling calculations.

Figure: The delay times on the Production Order Details form

A production manager can now specify the default values of the queue time, finish time, and move time for all new work centers in the **Default Queue Time**, **Default Finish Time**, and **Default Move Time** boxes of the new **Work Center Defaults** section on the *BOM Preferences* (AM101000) form, as shown in the following screenshot.

Figure: The default delay times on the BOM Preferences form

The manager can change the default time values for each work center in the new **Default Queue Time**, **Default Finish Time**, and **Default Move Time** boxes on the **General** tab of the *Work Centers* (AM207000) form, shown in the following screenshot. The system copies these values when users add the operations performed in the work center to a bill of material, estimate, engineering change request, engineering change order, or production order on the corresponding forms. (For a full list of forms where the new time settings have been added, see the *UI Enhancements* section below.)

Figure: The default delay times on the Work Centers form

Queue Time

A production manager can specify the queue time of an operation to account for potential delays in the start of the operation, which can be useful if these delays are planned or regular. During scheduling, the system extends the operation's lead time and the production order's lead time by the queue time. During advanced planning and scheduling, the system also does the following when a nonzero queue time is specified for a particular operation:

- Delays the start time of the operation.
- If the queue time is specified for the first operation in the routing, does one of the following with the production order, depending on the value in the **Scheduling Method** box on the *Production Order Maintenance* (AM201500) form:
  - *Start On*: Delays the start time of the first operation and therefore delays the finish time (and possibly date) of the production order. For example, suppose that the initial start date of a production order is January 5, the finish date is January 6, and a queue time of one day is specified for the first operation. When the system schedules the production order, it keeps January 5 as the start date of the production order and changes the finish date to January 7 to account for the queue time.
  - *Finish On*: Moves the start date of the entire production order to the earlier date. For example, suppose that the initial start date of a production order is January 5, the finish date is January 6, and a queue time of one day is specified for the first operation. When the system schedules the production order, it keeps January 6 as the finish date and changes the start date to January 4 to account for the queue time.

The system does not increase the occupation time of the crew, machine, tool, or work center resources by the value of the queue time.

Finish Time

A production manager can specify the finish time for an operation to account for the time needed to finalize the operation before workers can move the items to the next operation. During scheduling, the system extends the operation's lead time and the production order lead time by the finish time. During advanced planning and scheduling, the system also does the following when a nonzero finish time is specified for a particular operation:

- Increases the occupation time of the work center resource where the operation takes place
- Starts counting the finish time when a user records an operation as completed

The system does not increase the occupation time of the crew, machine, or tool resources by the value of the finish time.

Move Time

A production manager can specify the move time for an operation so that the system considers the time needed to move items in production between the work center where the current operation was performed and the work center where the next operation will be performed. During scheduling, the system delays the start of the next operation and extends the production order lead time by the move time.

During advanced planning and scheduling, when a nonzero move time is specified for the last operation in the routing, the system also does the following with the production order, depending on the value in the **Scheduling Method** box on the *Production Order Maintenance* (AM201500) form:

- *Start On*: Delays the finish time (and possibly date) of the entire production order. For example, suppose that the initial start date of a production order is January 5, the finish date is January 6, and a move time of one day is specified for the last operation. When the system schedules the production order, it keeps January 5 as the start date of the production order and changes the finish date to January 7 to account for the move time.
- *Finish On*: Moves the scheduled start date of the production order to the earlier date. For example, suppose that the initial start date of a production order is January 5, the finish date is January 6, and a move time of one day is specified for the last operation. When the system schedules the production order, it keeps January 6 as the finish date and changes the start date to January 4 to account for the move time.

The system does not increase the occupation time of the crew, machine, tool, or work center resources by the value of the move time.

UI Enhancements

To support the new functionality, the following UI changes have been introduced:

- The **Default Move Time** box has been moved from the **Scheduling** section of the *Production Preferences* (AM10200) form to the new **Work Center Defaults** section of the *BOM Preferences* (AM101000) form.
- The **Move Time** column has been added to the following locations:
  - *Estimate* (AM303000), **Operations** tab
  - *Bill of Material* (AM208000), Operations table
  - *Engineering Change Request* (AM210000), **Operations** tab
  - *Engineering Change Order* (AM215000), **Operations** tab

  The following screenshot displays the Operations table on the *Bill of Material* form.

Figure: The Move Time column on the Bill of Material form

- The **Move Time** box has been added to the Summary area of the *Estimate Operation* (AM304000) form, as shown in the following screenshot.

Figure: The Move Time box on the Estimate Operation form

- The **Queue Time** and **Finish Time** columns have been added to the *Work Center Schedule* (AM000001) form, as you can see in the following screenshot.

Figure: The Queue Time and Move Time columns on the Work Center Schedule form

- The move time has been added to the *BOM Routing* (AM612000) report, displayed in the following screenshot.

Figure: The Move Time boxes in the BOM Routing report

Additional Information

For more information about lead time calculation, see *MRP Configuration: Variable Manufacturing Lead Times* and *Advanced Planning and Scheduling: Operation Lead Time*.

Manufacturing: Predefined Dashboards

Starting in 2022 R1, the following dashboards are available in Acumatica ERP Manufacturing Edition out of the box:

- *Production Manager (AM0034DB)*: A dashboard where production managers can review the manufacturing-related information that is important for everyday work, such as the number of production orders in process, the number of late production orders, the production variances, and relevant information about projects.
- *Production Meeting (AM0041DB)*: A dashboard for plant managers, area leads, and employees who support production. They can use the dashboard to quickly review manufacturing-related information during a daily production meeting.
- *Engineering (AM0035DB)*: A dashboard for engineers who are responsible for managing and maintaining bills of material, engineering change requests, and engineering change orders. On the dashboard, they can review information related to engineering change control.

These dashboards, which are described in more detail in the following sections, include various key performance indicators (KPIs), metrics, and charts, and use generic inquiries to gather the underlying data. Users can access the dashboards from the **Dashboards** workspace, where they are listed under the **Dashboard: Manufacturing** category.

Production Manager Dashboard

The *Production Manager (AM0034DB)* dashboard is shown in the following screenshot.

Figure: The Production Manager dashboard

The following table lists the widgets included in the *Production Manager* dashboard and briefly describes each of them.

Widget	Widget Type	Description
Orders to Release To-day	*KPI*	The number of production orders with the *Planned* status that have a start date that is the same as or earlier than the current date.

Widget	Widget Type	Description
Orders to Release This Week	*KPI*	The number of production orders with the *Planned* status that have a start date within the current week.
Late Production Orders	*KPI*	The number of production orders that have an end date earlier than the current date and a status other than *Closed*, *Completed*, or *Canceled*.
Production Orders with Past-Due Operations	*KPI*	The number of production orders that have an operation with an end date earlier than the current date. The widget excludes production orders that have a status of *Completed*, *Closed*, or *Canceled*.
Production Orders by Status	*Chart*	The number of production orders that have a status other than *Closed* or *Canceled*, grouped by status.
Work Queues (Qty.)	*Chart*	The sum of the quantities to produce grouped by work center. The widget displays up to 10 work centers with the largest queues.
Orders to Review	*Data Table*	The list of production orders that have the *Completed* status.
Orders Not Started	*Data Table*	The list of production orders (excluding planning production orders) that have the *Planned* status.
Late Production Orders with Sales Orders	*Data Table*	The list of production orders that have an end date earlier than the current date and that have a linked sales order. The widget excludes production orders that have a status of *Completed* or *Closed*.
Projects by Status	*Chart*	The number of projects, grouped by status. The widget excludes the projects with the *Canceled* or *Completed* status. The data in this widget is available only when the *Projects* feature is enabled on the *Enable/Disable Features* (CS100000) form.
Urgent Project Issues	*KPI*	The number of project issues with a priority of *Urgent*. The data in this widget is available only when the *Projects* feature is enabled on the *Enable/Disable Features* (CS100000) form.
Labor Variances by Month	*Chart*	The sum of labor variances for the last six months for production orders with a start date in these months. The widget excludes the orders with a status of *Planning*.
Top 5 Variances this Quarter	*Chart*	The five production orders that have the largest variance and a start date within the current quarter. The system calculates variance as the sum of the material variance, labor variance, fixed overhead variance, variable overhead variance, machine variance, tool variance, and subcontract variance. The widget excludes production orders that have a status of *Planned*.

Widget	Widget Type	Description
Top 5 Variances this Period	*Chart*	The five production orders that have the largest variance and a start date within the current financial period. The system calculates variance as the sum of the material variance, labor variance, fixed overhead variance, variable overhead variance, machine variance, tool variance, and subcontract variance. The widget excludes production orders that have a status of *Planned*.
Material Variances by Month	*Chart*	The sum of material variances for the last six months for production orders with a start date in these months.
Top 5 WIP Value Orders	*Chart*	The five production orders with the largest WIP total.
Scrap Analysis	*Data Table*	The list of operations with the quantity scrapped larger than zero for all production orders. The widget excludes production orders that have a status of *Closed* or *Canceled*.

Production Meeting Dashboard

The *Production Meeting (AM0041DB)* dashboard is shown in the following screenshot.

Figure: The Production Meeting dashboard

The following table lists the widgets included in the *Production Meeting* dashboard and briefly describes each of them.

Widget	Widget Type	Description
Orders to Release Today	*KPI*	The number of production orders with the *Planned* status that have a start date that is the same as or earlier than the current date.
Orders to Release This Week	*KPI*	The number of production orders with the *Planned* status that have a start date within the current week.

Widget	Widget Type	Description
Late Production Orders	*KPI*	The number of production orders that have an end date earlier than the current date and a status other than *Closed*, *Completed*, or *Canceled*.
Production Orders with Past-Due Operations	*KPI*	The number of production orders that have an operation with an end date earlier than the current date. The widget excludes production orders that have a status of *Completed*, *Closed*, or *Canceled*.
Work Center Planned Utilization Pct.	*Chart*	The five work centers with the largest amount of planned work for the next seven days. The system calculates the amount of planned work as the ratio of planned blocks to total blocks for each day and for each work center.
Production Orders by Status	*Chart*	The number of production orders that have a status other than *Closed* or *Canceled*, grouped by status.
Work Queues (Qty.)	*Chart*	The sum of the quantities to produce grouped by work center. This widget displays up to 10 work centers with the largest queues.
SO Lines Due Today	*Link*	A link to the generic inquiry that displays all open sales order lines with a ship date that is the same as the current date.
Missed SO Lines - Day Prior	*KPI*	The number of open sales order lines with a ship date of the previous date. The widget excludes the lines of orders with a status of *Canceled*, *Completed*, or *Invoiced*.
Late Purchase Order Lines	*KPI*	The number of all purchase order lines that have an overdue promised date and an open quantity that is greater than 0. The widget excludes the lines of purchase orders with the *RS* order type or a status of *Canceled*, *Closed*, or *Rejected*.
Late Purchase Order Lines - Day Prior	*KPI*	The number of all purchase order lines that have a promised date that is the same as the previous date and an open quantity that is greater than 0. The widget excludes the lines of purchase orders with the *RS* order type or a status of *Canceled*, *Closed*, or *Rejected*.
Projects by Status	*Chart*	The number of projects, grouped by status. The widget excludes the projects with the *Canceled* or *Completed* status. The data in this widget is available only when the *Projects* feature is enabled on the *Enable/Disable Features* (CS100000) form.
Urgent Project Issues	*KPI*	The number of project issues with a priority of *Urgent*. The data in this widget is available only when the *Projects* feature is enabled on the *Enable/Disable Features* (CS100000) form.

Engineering Dashboard

The *Engineering (AM0035DB)* dashboard is shown in the following screenshot. The majority of the dashboard data is available only when the *Engineering Change Control* feature is enabled on the *Enable/Disable Features* (CS100000) form.
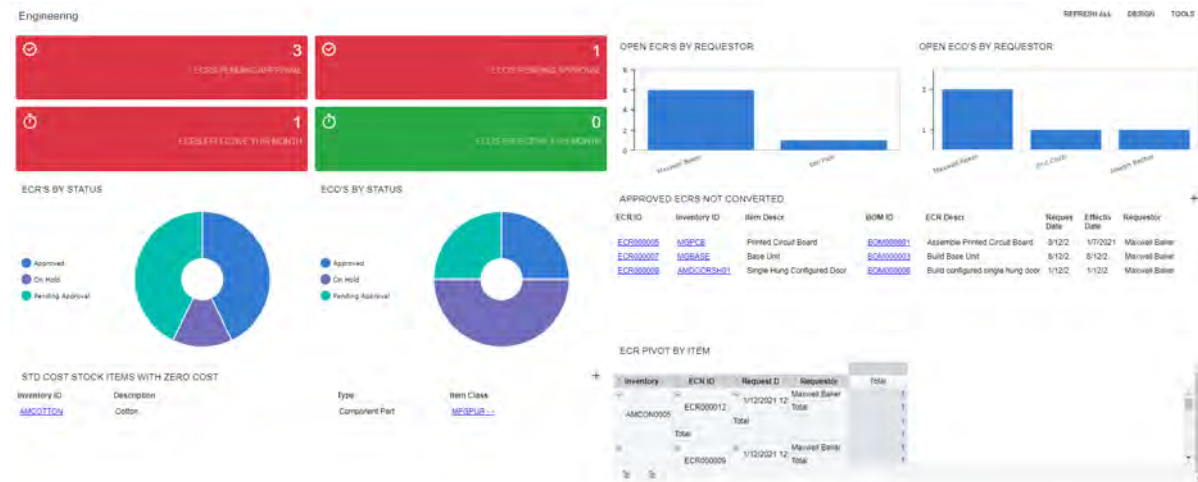
Figure: The Engineering dashboard

The following table lists the widgets included in the *Engineering* dashboard and briefly describes each of them.

Widget	Widget Type	Description
ECRs Pending Approval	*Scorecard KPI*	The number of engineering change requests (ECRs) that have the *Pending Approval* status. The data in this widget is available only when approval maps have been configured for ECRs.
ECOs Pending Approval	*Scorecard KPI*	The number of engineering change orders (ECOs) that have the *Pending Approval* status. The data in this widget is available only when approval maps have been configured for ECOs.
ECRs Effective this Month	*Scorecard KPI*	The number of ECRs whose effective date is between the first date and the last date of the current month.
ECOs Effective this Month	*Scorecard KPI*	The number of ECOs whose effective date is between the first date and the last date of the current month.
Open ECRs by Requestor	*Chart*	The number of open ECRs, grouped by the requestor. The widget excludes ECRs with a status of *Rejected* or *Completed*.
Open ECOs by Requestor	*Chart*	The number of open ECOs, grouped by the requestor. The widget excludes ECOs with a status of *Rejected* or *Completed*.
ECRs by Status	*Chart*	The number of ECRs by status, excluding *Rejected* or *Completed*.

Widget	Widget Type	Description
ECOs by Status	*Chart*	The number of ECOs by status, excluding *Rejected* or *Completed*.
Approved ECRs Not Converted	*Data Table*	The list of ECRs with a status of *Approved* and a blank ECO ID.
Std. Cost Stock Items with Zero Cost	*Data Table*	The list of stock items that have the *Standard* valuation method with a current cost of 0.
ECR Pivot by Item	*Pivot Table*	The list of ECRs with such details as inventory ID, ECR ID, request date, and requestor. The widget aggregates the number of ECRs by BOM ID.

Manufacturing: Predefined User Roles

In Acumatica ERP Manufacturing Edition 2022 R1, predefined user roles have been added that provide access to the forms needed in the everyday work of particular employees (see the following screenshot). Implementation managers can now use these predefined roles for users involved in production instead of creating and setting up the roles from the ground up. The managers can also modify the role permissions to meet the organization's access policies. In smaller organizations, the managers can apply multiple roles to the same user who takes over multiple duties.
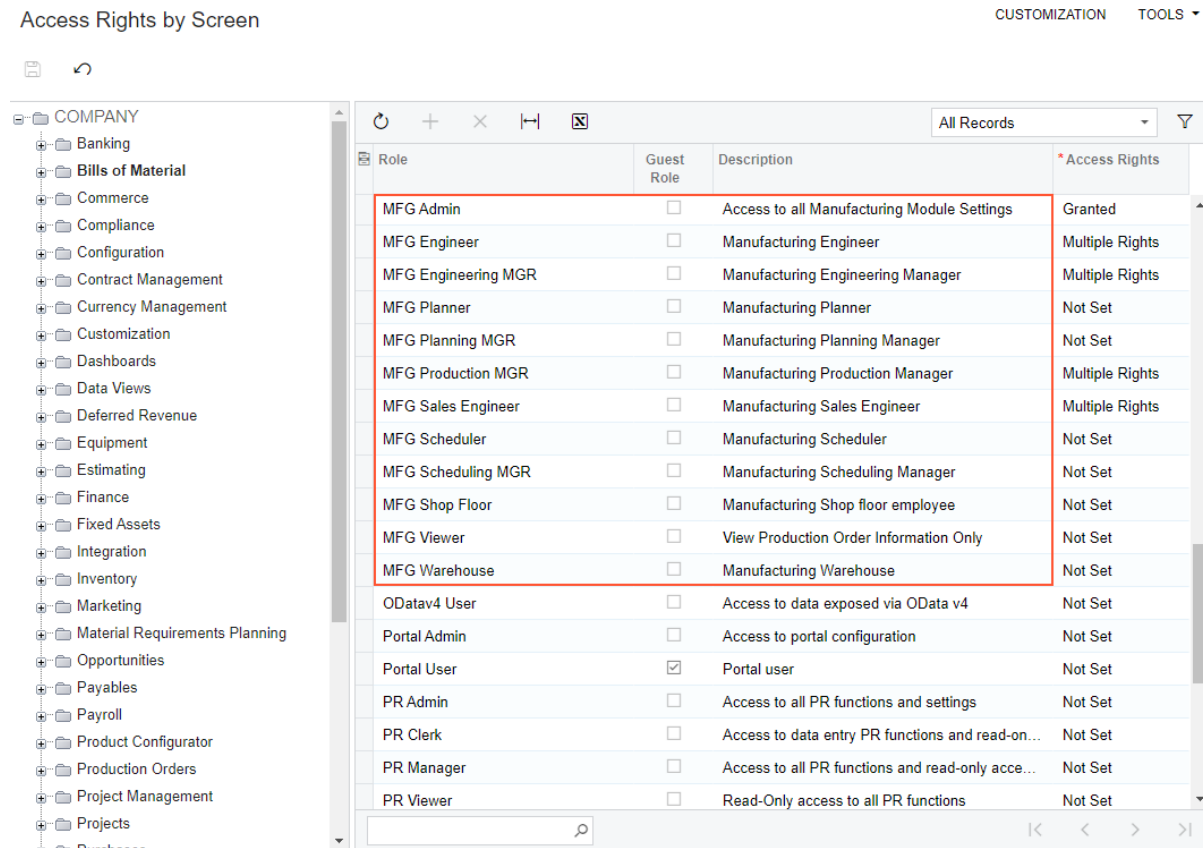
Figure: The predefined user roles for manufacturing processes

In the following table, you can view the details of the predefined user roles.

Role Name	Description	Responsibilities
MFG Engineer	A manufacturing engineer who supports the shop floor	• Creates and maintains bills of materials • Initiates engineering change requests and executes engineering change orders • Suggests cost-effective alternate processes and materials when possible

Role Name	Description	Responsibilities
MFG Engineering MGR	A manager of manufacturing engineers who sets up engineering change control and monitors changes in bills of material	• Sets preferences related to engineering • Creates and maintains bills of material (except creating labor codes, overhead, and shifts) • Handles mass changes and cost rolling
MFG Shop Floor	A shop floor worker whose time is typically value-added	• Performs the manufacturing of items • Clocks in and out of jobs • Views work center schedules and production dashboards
MFG Production MGR	A manufacturing production manager who resolves problems for the shop floor and ensures that production is moving along	• Works with planning, scheduling, engineering, and warehouse personnel to resolve problems • Creates and changes production orders • Approves clock entries of production workers • Specifies production settings (except labor codes)
MFG Scheduler	A manufacturing scheduler who sets up and reviews the production schedule; this person also adjusts constraints and communicates completion dates	• Identifies and resolves scheduling conflicts in advance • Has the primary KPI to keep the on-time delivery percent high • Uses material requirement planning tools • Regenerates material requirements planning • Runs rough-cut planning
MFG Scheduling MGR	A manufacturing scheduling manager who defines the scheduling methodology and monitors the scheduling and planning process	• Sets the preferences for scheduling • Maintains advanced planning and scheduling • Works closely with the planner and the production manager to make sure the planning, production, and scheduling areas align • Regenerates material requirements planning • Runs rough-cut planning
MFG Planner	A manufacturing planner who regularly evaluates the requirements needed to successfully execute both customer- and replenishment-driven production orders	• Uses statistical analysis to suggest stocking levels for raw materials, semi-finished goods, and finished goods • Makes recommendations on staffing levels based on trends and data • Generates and manages forecasts

Role Name	Description	Responsibilities
MFG Planning MGR	A manufacturing planning manager who develops production plans in adherence to the organization's budget and deadlines	• Uses statistical analysis to suggest stocking levels for raw materials, semi-finished goods, and finished goods • Makes recommendations on staffing levels based on trends and data • Generates and manages forecasts • Uses master production schedules for planning
MFG Sales Engineer	A manufacturing sales engineer who works closely with sales or independently	• Takes customer requirements and applies information to an estimate • Has a primary key performance indicator (KPI) of an estimate or request for quotation (RFQ) turnaround time • Has secondary KPIs of winning percent and profitability percent • Uses estimating functionality (except for preferences) • Creates inventory items from non-inventory items • Converts estimates to bills of material
MFG Warehouse	A manufacturing warehouse worker who supports production	• Primarily performs cycle counts, picking of material, and moving of items in production from one location to another • Helps place material on shelves • Issues materials to production orders • Supports the traceability of items by lot or serial number
MFG Viewer	An employee outside of the production department who needs to view manufacturing processes, monitoring milestones and the statuses of specific production orders	• Tracks the progress of production orders to inform customers • Tracks the progress of production for projects
MFG Admin	A manufacturing administrator; this person may be a production manager or an employee of an IT department	Maintains and oversees all manufacturing settings

The following forms and reports show details about access to forms:

- *Access Rights by Role* (SM201025)
- *Access Rights by Screen* (SM201020)
- *Access Rights by Role* (SM651500)

Additional Information

For more information about user roles in the system, see *User Roles: General Information*.

Manufacturing: Other Improvements

In Acumatica ERP Manufacturing Edition 2022 R1, multiple improvements to the UI and manufacturing management processes have been introduced, as described below.

Changes in the Sort Order of Identifier Columns

On the following forms, the default sort order of identifier column values has been changed to descending:

- Bill of Material (AM2080PL): The **BOM ID** column
- Estimates (AM3030PL): The **Estimate ID** column
- Production Order Maintenance (AM2015PL): The **Production Nbr.** column
- *Production Order Details* (AM209000): The **Production Nbr.** column in the lookup table of the **Production Nbr.** box
- *Transactions By Production Order* (AM000011): The **Production Nbr.** column
- Vendor Shipments (AM3100PL): The **Shipment ID** column

The Visual BOM Command on the Bill of Material Form

The **Visual BOM** command has been added to the More menu of the *Bill of Material* (AM208000) form (see the following screenshot). A production manager clicks this command to open the *Visual BOM* (AM216000) form, where the manager can view details about a particular bill of material, such as materials and operations, in a tree view.
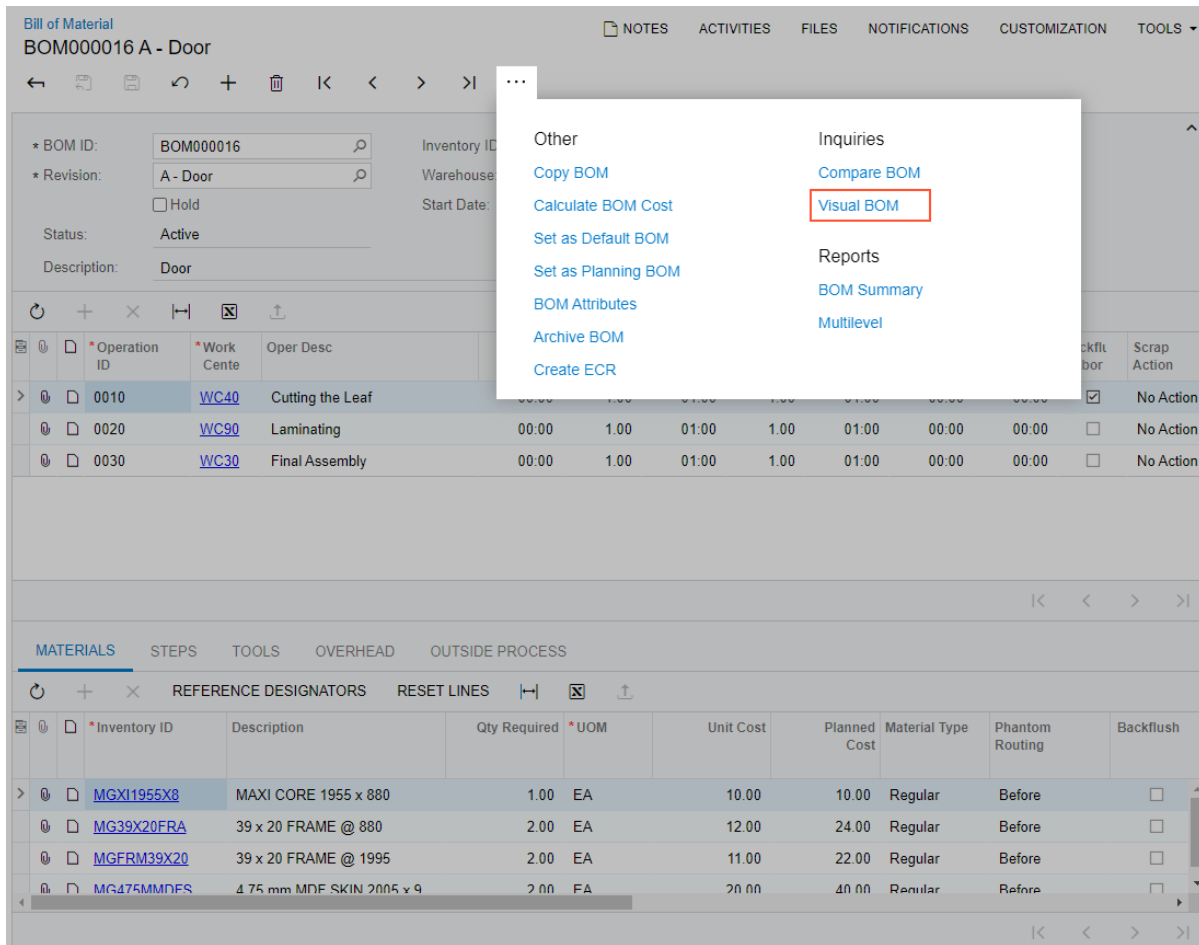
Figure: The Visual BOM command on the Bill of Material form

Redesign of the Work Centers Form

On the *Work Centers* (AM207000) form, the **General** tab has been added for better usability (shown in the following screenshot). Some elements have been moved to this tab from the Summary area (such as **Standard Cost** and **Basis for Capacity**). Also, new settings for operation delay times have been added (for details, see *Manufacturing: Planned Delay Times in Production Scheduling*).

Figure: The General tab on the Work Centers form

Support of the New Automated Warehouse Operations Engine

In Acumatica ERP Manufacturing Edition 2022 R1, the *Scan Materials* (AM300030), *Scan Move* (AM302010), and *Scan Labor* (AM302020) forms have been redesigned to support the new automated warehouse operations engine. (By using these forms, workers enter manufacturing transactions with a barcode scanner or a mobile device with barcode scanning support.)

Mobile: Support of Workspaces

In the Acumatica mobile app connected to an instance of Acumatica ERP 2022 R1, workspaces are now supported.

With the workspace support, a user can do the following in the mobile app:

- Find the required screens by browsing the workspaces
- View only those workspaces that are relevant to the user's role
- Perform typical operations (for example, create new records) for a screen directly from the list of screens in a workspace without needing to open the corresponding screen first
- Reorder workspaces
- Add KPI widgets from the dashboards to the main menu and to workspaces
- Navigate to detailed data by tapping a widget
- View the list of recent records that the user has opened both in the mobile app and in the Acumatica ERP instance
- Navigate to any of the recent records by tapping the corresponding tiles
- Define records and screens as favorites or remove them from favorites
- View the list of records marked as favorites both in the mobile app and in the Acumatica ERP instance
- Navigate to favorite records
- Reorder the list of favorite records and screens

The following screenshot shows the main menu of the mobile app. The menu contains a placeholder for adding KPI widgets (see Item 1 in the screenshot), the list of recently visited screens and records (Item 2), the list of screens and records marked as favorites (Item 3), and the tiles with the workspaces (Item 4).
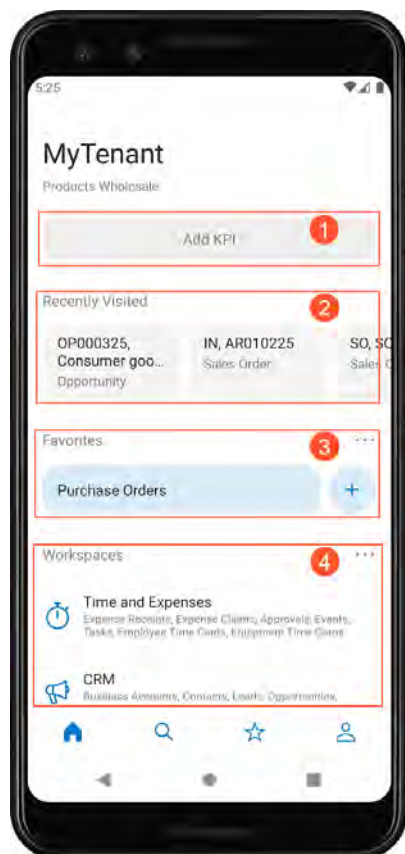
Figure: The updated main menu with workspaces

Each workspace contains a placeholder for adding KPI widgets (see Item 1 in the following screenshot) and the list of screens added to this workspace (Item 2).
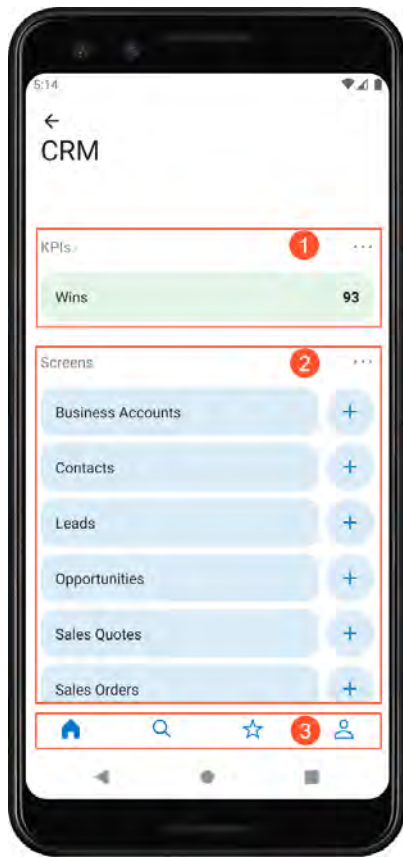
Figure: The CRM workspace of the mobile app

Also, the following buttons have been added to the bottom of the main screen (see Item 3 in the screenshot above):

- Home: Navigates to the main menu
- Search: Enables a search among records, screens. and workspaces
- Favorites: Opens the list of screens and records marked as favorites
- Settings: Opens the mobile app settings

A user can add new records by tapping the plus button to the right of the name of any screen. If other actions are available for a screen, the More (...) button is displayed instead of the plus button (see Item 1 in the following screenshot). The user can then select the required action on this menu (Item 2).
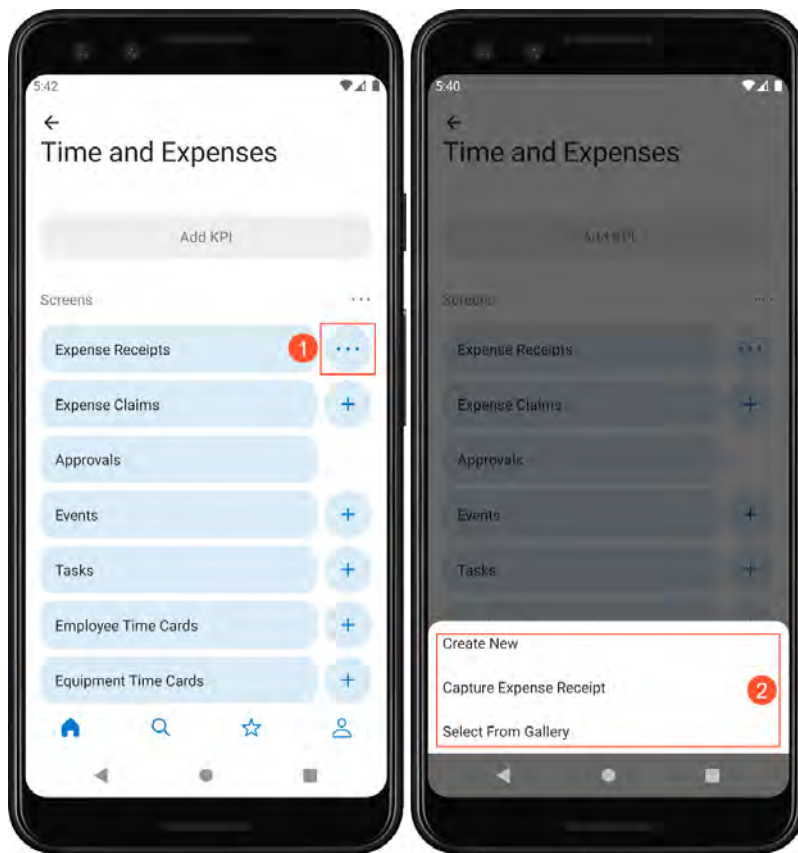
Figure: The More button and menu of a workspace

Individual User Settings Applied at the Mobile App Level

The settings described in this section are configured by a user of the mobile app and are applied to only this user's copy of the Acumatica mobile app.

To change the order in which the workspaces are displayed on the main menu of the mobile app, the user taps **Reorder Workspaces** on the More menu of the **Workspaces** section and drags the tiles with workspaces to the needed locations. Alternatively, the user can tap a tile with a workspace and drag it to the needed location.

> ⚠ Workspaces in the Acumatica mobile app do not coincide with workspaces in the corresponding instance of Acumatica ERP. Users configure mobile workspaces separately (see *Support of New Forms* below).

To change the order in which the screens are displayed in a workspace, the user taps **Reorder Workspaces** on the More menu of the **Screens** section and drags the tiles with screens. Alternatively, the user can tap a tile with a screen and drag it to the needed location.

Users can now add to the main menu of the mobile app and to each of the workspaces KPI widgets of the following types:

- Scorecard
- Meter
- Trend card

By default, no widgets are displayed. To add a widget, the user taps **Add KPI** and selects the required widget. Only widgets that are part of dashboards without parameters are available for selection.

> ⚠️ A user can see a widget only if the corresponding dashboard is visible and the user has the needed privileges to view this dashboard.

System-Wide Configuration and Customization

The configuration described in this section is performed by a user who has the *Administrator* or *Customizer* predefined role. The system applies this configuration to the mobile app connected to the current tenant in an Acumatica ERP instance for all users.

Support of New Forms

In the Acumatica ERP instance, the following forms have been added:

- *Mobile Workspaces* (AU220012): The customizer configures the list of workspaces on this form.
- *Mobile Workspace* (AU220013): The customizer configures the screens and widgets that should be added to the selected workspace on this form.

The following screenshot shows the *Mobile Workspaces* form with the default workspaces.

Mobile Workspaces   CUSTOMIZATION   TOOLS ▾

RESET TO DEFAULT MOBILE WORKSPACES

			Workspace ID	Display Name	Visible
>			MAINPAGE	MAINPAGE	☑
			TIMEANDEXPENSES	Time and Expenses	☑
			CRM	CRM	☑
			PROJECTS	Projects	☑
			PROJECTMANAGEMENT	Project Management	☑
			SALESORDERS	Sales Orders	☑
			PURCHASES	Purchases	☑
			USERSECURITY	User Security	☑
			SERVICES	Services	☑
			EQUIPMENT	Equipment	☑
			ROUTES	Routes	☑
			WAREHOUSEMANAGEMENT	Warehouse Managem...	☑
			MANUFACTURING	Manufacturing	☑

Figure: The default mobile workspaces

Notice that the form also contains the **MAINPAGE** workspace. This read-only workspace contains the settings of the main menu of the mobile app.

The following screenshot shows the *Mobile Workspace* form for the **CRM** workspace.

Figure: The CRM workspace

A workspace added on the *Mobile Workspaces* form is displayed on the main menu of the mobile app only if this workspace contains at least one screen or one KPI widget that is available to the mobile app user.

> The mobile app users can view a KPI widget or a screen only if they have the needed privileges to view the corresponding dashboard or access the underlying form.

Managing Workspaces in a Customization Project

The customizer can add to a customization project the following types of items:

- *MobileSitemapWorkspace*: This item contains general data, such as the name of a workspace, its sequential number, and its icon.
- *MobileSitemapWorkspaceItems*: This item contains the screens included in the workspace.
- *MobileSitemapWorkspaceWidgets*: This item contains the KPI widgets included in the workspace and its screens.

The customizer uses the Mobile Workspaces page of the Customization Project Editor to manage these items in the customization project.

To add a workspace to the customization project, the customizer clicks **Add New Record** on the page toolbar and selects the required workspaces in the **Add Workspace** dialog box, which is opened. Notice that this dialog box contains workspaces that the customizer has modified—that is, added a screen on the *Mobile Workspace* form, or added a new workspace or changed the order of workspaces on the *Mobile Workspaces* form.

To configure workspaces in the customization project, the customizer clicks **Manage Workspaces** on the page toolbar. This opens the *Mobile Workspaces* form, where the customizer can add or remove workspaces. The following screenshot shows the Mobile Workspaces page with the added **CRM** and **SalesOrders** workspaces.

Figure: The Mobile Workspaces page of the Customization Project Editor

Also, the **Manage Workspaces** button has been also added to the More menu of the Mobile Application page. Clicking this button redirects the customizer to the Mobile Workspaces page.

To update a workspace in the customization project, the customizer clicks the required workspace in the table and clicks **Reload from Database** on the page toolbar.

To remove a workspace from the customization project, the customizer clicks the required workspace in the table and clicks **Delete Row** on the page toolbar.

If the customizer adds a new screen to the mobile app by using the **Add New Screen** command on the Mobile Application page of the Customization Project Editor, the new screen is added to the **Other** workspace by default. To avoid this, the customizer needs to add this screen to one of the workspaces on the *Mobile Workspace* form.

Additional Information

For more information about the workspaces in the mobile app, see *To Manage the Workspaces of the Mobile App*.

Order Management: Sales with Blanket Sales Orders

Acumatica ERP 2022 R1 introduces the ability to create blanket sales orders for regular sales based on a long-term agreement between the selling company and the customer.

The blanket sales order functionality is available when the *Inventory and Order Management* feature is enabled on the *Enable/Disable Features* (CS100000) form.

General Information

The most representative business scenario for using blanket sales orders is the sale of large quantities of an item or multiple items that can be delivered in multiple shipments to different customer locations over a specified period. The blanket sales orders can be used for planning, forecasting, and monitoring purposes because the quantities that the user enters on a blanket sales order do not affect the item availability in the warehouse, unlike the quantities in regular sales orders.

A blanket sales order in Acumatica ERP has an order type for which the *Blanket Order* automation behavior is specified on the **Template** tab of the *Order Types* (SO201000) form. The predefined *BL* order type has been added to the system for the processing of blanket sales orders.

> ⚠️ In sales orders with the *Blanket Order* automation behavior, the project, field services, and manufacturing functionality is not available.

Lines of the blanket sales order are converted to child orders on the date you specify for shipping. A child order is a regular sales order with a link to the blanket sales order; the child order has an order type with the *Sales Order* automation behavior. The blanket sales order is completed when all child orders have been shipped.

The user can create a child order for a blanket sales order in one of the following ways:

- By clicking **Create Child Orders** on the form toolbar or the More menu of the *Sales Orders* (SO301000) form for a blanket sales order with the *Open* status (shown in the following screenshot).
- By selecting the *Create Child Orders* action in the **Actions** box in the Summary area of the *Process Orders* (SO501000) form, selecting the unlabeled check box for the blanket sales order in the table, and clicking **Process** on the form toolbar.

Figure: The Create Child Orders button

When the user invokes the creation of child orders, the system generates sales orders of the type that is specified in the new **Default Child Order Type** box on the *Order Types* form (**Child Order Settings** section) for the type specified for the blanket sales order.

> ⚠️ In the current version of the application, only order types with the *Sales Order* automation behavior can be specified as the default order type for child orders.

Preparation of a Blanket Sales Order

Suppose that a customer has ordered 120 boxes of apple jam, and the customer wants the jam to be delivered in 10 boxes to two locations at the beginning of each month over the following six months. On the *Sales Orders* (SO301000) form, the user enters the following data to prepare a new blanket sales order for the creation of child orders:

- The customer: The user specifies the customer in the Summary area.
- A description of the blanket sales order (optional): The user specifies the description in the Summary area.
- The expiration date (optional): The user specifies the expiration date of the blanket sales orders in the new **Expires On** box in the Summary area.
- The lines with the item: On the **Details** tab, the user adds two lines with the *APJAM* item (one line for each location) and specifies the item quantity as 60 for each line.
- Shipping location: The user specifies the locations of the customer in the **Ship-To Location** column for each line of the blanket sales order on the **Details** tab.
- Line splits: For both lines on the **Details** tab, the user creates multiple line splits for each scheduled order date, customer order number (optional), purchase order creation date (optional), and allocation (optional) for child orders. These line splits are created in the **Line Details** dialog box.

The sections below provide more detailed explanations of the expiration date, the line splits, and the shipping locations for blanket sales orders.

Expiration of a Blanket Sales Order

A user can specify an expiration date for any sales order whose order type has the *Blanket Order* automation behavior. The user can specify this date in the new **Expires On** box in the Summary area of the *Sales Orders* (SO301000) form (shown in the following screenshot).

The **Expires On** box is empty by default. The user can leave the box empty if no expiration date is known.

Figure: The Expires On box

When the current business date is later than the expiration date of the blanket sales order, the system displays a warning message in the Summary area. The order maintains the *Open* status. If the user tries to make changes in the order, the user will not be able to save those changes in the expired blanket sales order until the expiration date is changed to a later date.

Instead of extending the expiration date of the blanket sales order, the user can assign the *Expired* status to it in one of the following ways:

- Select the **Process Expired Order** command on the More menu of the *Sales Orders* form for the blanket sales order
- Select the *Process Expired Order* action in the Summary area of the *Process Orders* (SO501000) form, select the unlabeled check box for the order, and click **Process** on the form toolbar

The user can also create a schedule for the system to regularly perform the *Process Expired Order* action on the *Process Orders* form for all listed blanket sales orders.

> ⚠️ If the blanket sales order has any allocations of items, links to purchase orders, or payment applications, they are not removed when the order is assigned the *Expired* status. Instead, the system displays warning messages about the lines with allocations, links to purchase orders, and payment applications. The user should review and manually remove these allocations, links to purchase orders, and payment applications, or the user can extend the expiration date if the agreement with the customer will continue. If the user cancels a blanket sales order with the *Expired* status by clicking the **Cancel Order** command on the More menu, the allocations and the links to purchase orders are removed automatically.

Line Splits in the Line Details Dialog Box

On the **Details** tab of the *Sales Orders* (SO301000) form, a user can open the **Line Details** dialog box for any detail line by clicking the line and then clicking **Line Details** on the table toolbar. This dialog box can be used to split the item quantity of the line into *line splits*: smaller quantities with some different settings shown in separate lines of the dialog box.

Initially, when the user opens this dialog box for a line of a blanket sales order, the system displays only one line in the dialog box. The user can split the line in the dialog box into multiple lines and enter different data in any of the following columns for each line split: **Sched. Order Date**, **Sched. Shipment Date**, **Customer Order Nbr.**, **Allocated**, and **PO Creation Date**. The **Alloc. Warehouse** column is unavailable for editing because transfers between warehouses are not supported for the processing of blanket sales orders.

To create a new line in the **Line Details** box, the user reduces the value in the **Quantity** column of an existing line and presses Enter. The system automatically creates a new line with the remaining quantity of the item. The user can repeat the process with any line of the dialog box until it contains the needed number of line splits, each with the appropriate quantity and other settings. (See the screenshot below.)

By default, the current business date is automatically inserted in the **Sched. Order Date** column on the **Details** tab of the *Sales Orders* form for each line of a blanket sales order. If the user creates line splits with different scheduled order dates for the line, the system changes the value in the **Sched. Order Date** column on the **Details** tab to *<SPLIT>* for this line.

When the user has finished entering the line splits in the **Line Details** dialog box as well as other settings of the sales order, the user creates the child orders that correspond to the line splits. When the user clicks **Create Child Orders** on the form toolbar or the More menu (under **Processing**), the system generates a separate child order for each line split with a different scheduled order date as long as the scheduled order date is earlier than or the same as the current business date. If the **Sched. Order Date** column is empty in a blanket sales order line split in the **Line Details** dialog box, the system does not generate a child order for this line split.

The **Customer Order Nbr.** column in the **Line Details** dialog box is empty by default. If the user specifies a customer order number (see the first two lines in the following screenshot), the system inserts this customer order number into the **Customer Order Nbr.** box in the Summary area of the *Sales Orders* form for the generated child order.

Figure: Multiple line splits for a blanket order line in the Line Details box

Shipping Locations in Blanket Sales Orders

A value must be specified in the **Ship-To Location** column on the **Details** tab of the *Sales Orders* (SO301000) for each line of a blanket sales order. By default, the system copies this value from the customer location specified in the **Location** box in the Summary area of the *Sales Orders* form. The user can manually change the value in any line. In child orders, the value of the **Location** box in the Summary area is copied from the **Ship-To Location** column of the corresponding line of the blanket sales order. When the user creates child orders, the system generates a separate child order for each location and groups lines with the same location within one child order.

A new **Shipping Parameters to Apply** section has been added to the **Inventory Lookup** dialog box, which a user can open by clicking the **Add Items** button on the table toolbar of the **Details** tab. (See the following screenshot.) This section appears only if the selected order is a blanket sales order. The **Ship-To Location** box of this section contains the location to be copied to the **Ship-To Location** column for all lines that contain items that are added by using this dialog box. By default, the system inserts the value of the **Location** box in the Summary area of the *Sales Orders* for the sales order, but the user can select another customer location.

Figure: The Shipping Parameters to Apply section of the Inventory Lookup dialog box

Actions During the Creation of Child Orders

When a user initiates the creation of child orders on the *Sales Orders* (SO301000) or *Process Orders* (SO501000) form, the system does the following:

- Groups the line splits defined in the **Line Details** dialog box of the *Sales Orders* form for all lines of the blanket sales order according to grouping rules (described below).
- Creates child orders for each group of blanket sales order line splits that has a nonzero quantity and a scheduled order date earlier than or the same as to the current business date.

The system uses the following grouping rules for the line splits of the blanket sales order on the *Sales Orders* form:

- Line splits are placed in one group if they have the same values in all of the following columns of the **Line Details** dialog box:
  - **Sched. Order Date**
  - **Customer Order Nbr.**
  - **Ship-To Location**
  - **Tax Zone**
  - **Shipping Terms**
  - **Ship Via**
  - **FOB**
  - **Shipping Zone**
- If the **Customer Order Nbr.**, **Ship-To Location**, or **Tax Zone** column is empty for the line split of the blanket sales order, this line split can be grouped with only line splits for which the same column is also empty.

When a user initiates the creation of child orders after the creation of line splits in the **Line Details** dialog box of the *Sales Orders* (SO301000) form, a child order line is created for each line split of the blanket sales order. The quantity in the child order line is equal to the value in the **Blanket Open Qty** column in the dialog box for a corresponding line split.

> ⚠️ The state of the **Allocated** check box in the **Line Details** dialog box for a line split of a blanket sales order is transferred to the corresponding line of the child order. If the child order line is deleted or the quantity in the line is reduced, the allocated quantity of the item is returned to the blanket sales order line and remains allocated. If the allocation has been done in the child order line, the allocation will not be transferred to the blanket sales order line if the child order line is deleted, or the quantity of the line is reduced. In this case, only the quantity of the item in the blanket sales order line will be changed.

Once a child order is created for a blanket sales order line, the blanket sales order on the *Sales Orders* (SO301000) form is changed as follows:

- The **Customer** and **Currency** boxes in the Summary area become unavailable for editing. If the new **Use Currency Rate from Blanket Order** check box is selected on the *Order Types* (SO201000) form for the selected type of the blanket sales order, the currency rate of the blanket sales order is copied to the child orders. If the user changes the date of a child order, the system changes the currency rate of this child order to the effective currency rate for the selected date.
- The **Warehouse**, **UOM**, **Unit Price**, and **Ext. Price** columns for the blanket sales order line for which the child order has been created become unavailable for editing.
- The system updates the values in the following columns of the blanket sales order line: **Qty. On Orders**, **Blanket Open Qty**, and **Unshipped Qty**. Note that the values in the **Blanket Open Qty** and **Unshipped Qty.** columns are always *0* for lines with service items because the system does not track these quantities for service items.
- A link to the child order appears on the **Child Orders** tab of the *Sales Orders* form. On the **Child Orders** tab, the order amount is derived from the child order according to the child order currency rate. Therefore, this amount may not match with the amount of the blanket sales order line due to different currency rates.

The following limitations apply to blanket sales orders that have a linked child order:

- If at least one child order has been generated for a blanket sales order, the user cannot delete the blanket sales order or any line for which a child order has been generated.

- The user cannot make the quantity in the blanket sales order line less than the quantity that has been already transferred to child orders

The following rules apply to each generated child order on the *Sales Orders* form:

- The **Customer** and **Currency** boxes in the Summary area are unavailable for editing.
- The **Warehouse** and **UOM** columns on the **Details** tab are unavailable for editing for the lines of the child order.
- If the child order is canceled or deleted, the quantities of items in each line of the child order are returned to the quantities of the corresponding blanket sales order line.
- If a user decreases the quantity in a line of the child order, the difference between the reduced quantity and the original quantity is returned to the blanket sales order line split in the **Line Details** dialog box of the *Sales Orders* form. In the blanket sales order line, the system updates the values of the **Qty. On Orders** and **Open Qty** columns on the **Details** tab of the *Sales Orders* form.
- For lines of the child order that contain stock or non-stock items, the quantity of the item cannot be greater than the remaining value in the **Open Blanket Qty** column on the **Details** tab of the *Sales Orders* form for the related line split of the blanket order. For child order lines that contain service items, the quantity of the item can be greater than the quantity in the related blanket order line.

Add Blanket Sales Order Line Dialog Box

The **Add Blanket SO Line** button has been added to the table toolbar of the **Details** tab of the *Sales Orders* (SO301000) form, as shown in the following screenshot. This button appears for only sales orders whose order type has the *Sales Order* automation behavior. When a user clicks this button, the **Add Blanket Sales Orders Line** dialog box (also shown in the following screenshot) opens.
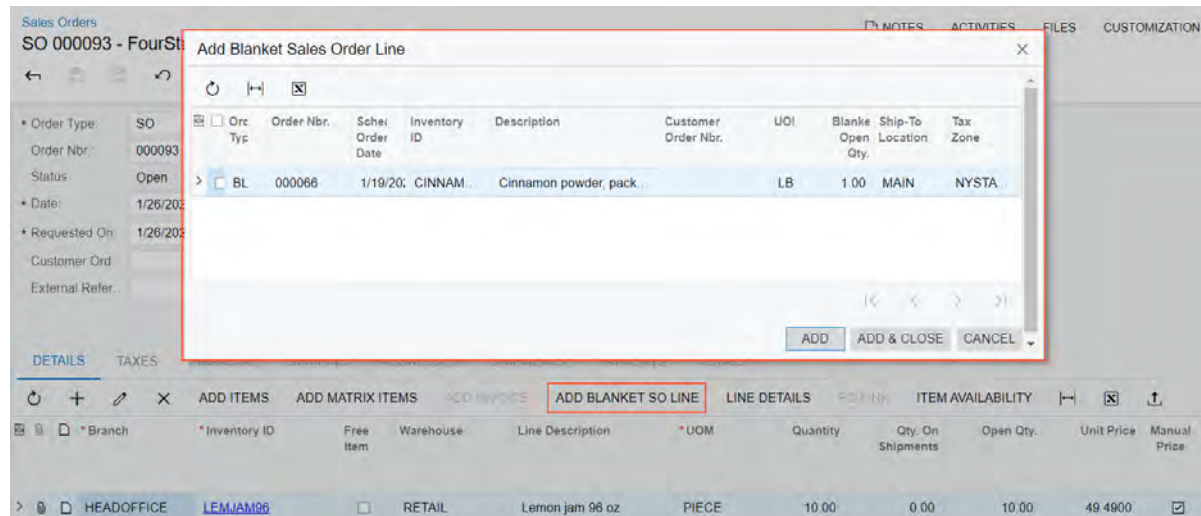
Figure: The Add Blanket Sales Order Lines dialog box

In the dialog box, the system displays line splits of blanket sales orders that meet the following criteria:

- The blanket sales order and the child order have the same customer.
- The blanket sales order and the child order have the same currency.
- The child order and the line split of the blanket sales order have the same shipping location.
- The child order and the line split of the blanket sales order have the same tax calculation mode.
- The child order and the line split of the blanket sales order have the same tax zone.
- The child order and the line split of the blanket sales order have the same customer order number if the customer order number is specified for the line split and child order.

- The value in the **Sched. Order Date** column for a blanket sales order line split is earlier than or the same as the date of the child order.
- The value in the **Blanket Open Qty** column for a blanket sales order line is greater than zero on the **Details** tab of the *Sales Orders* form.

When the user adds a line of the blanket sales order from the **Add Blanket Sales Orders Line** dialog box to a child order, the system copies the discount of the blanket sales order line. The payment applications of the blanket sales order are not copied to the child order.

Other Commands to Be Used for Blanket Sales Orders

For a blanket sales order, a user can click the following commands on the More menu and the equivalent buttons on the form toolbar of the *Sales Orders* (SO301000) form:

- **Reopen Order**: (available if the blanket sales order has the *Completed* or *Canceled* status): Causes the system to check the expiration date of the blanket sales order. Depending on the results of the check, the system assigns the order the *Open* status if the expiration date is later than the business date or the *Expired* status if the expiration date is earlier than the current business date.
- **Cancel Order**: (available if the blanket sales order has the *Open*, *Completed*, or *Expired* status): Assigns the *Canceled* status to the blanket sales order and removes any allocations and links to purchase orders. The blanket sales order cannot be canceled if at least one child order is linked to this order, or a payment has been applied to the order.
- **Delete**: Deletes the blanket sales order. The blanket sales order cannot be deleted if at least one child order is linked to this order, or a payment has been applied to the order.
- **Complete Order**: (available if the blanket sales order has the *Open* or *Expired* status and if at least one child order created for a blanket sales order line has a processed shipment): Causes the system to assign the *Completed* status to the order.
- **Prepare Invoice**: Causes the system to prepare invoices for all shipments in child orders that contain at least one line from the blanket sales order. If a child order has a confirmed shipment that does not contain lines of the blanket sales order, the system does not prepare an invoice for the shipment.
- **Print Blanket Sales Order**: Causes the system to prepare and open the new *Blanket Sales Order (SO641040)* report, which is a print-friendly version of the blanket sales order.
- **Email Blanket Sales Order**: Causes the system to email the blanket sales order. Before this command is used, an email notification template should be configured for sending a blanket sales order to a customer.

Purchase to Order in the Blanket Sales Order Line

For any line of the blanket sales order, a user can select the check box in **Mark for PO** column (which makes the line available to be added to a purchase order) and specify *Purchase to Order* in the **PO Source** column on the **Details** tab of the *Sales Orders* (SO301000) form. The state of the check box in the **Mark for PO** column is copied to the line splits created for the line on the **Details**. The user can clear the check box in the **Mark for PO** column for a line split. The system will not create purchase requests on the *Create Purchase Orders* (PO505000) for line splits with cleared check box in this column.

The **PO Creation Date** column has been added for the blanket sales order line on the **Details** tab and for line splits in the **Line Details** dialog box of the *Sales Orders* form. When the user adds a line of a blanket sales order, the system inserts the current business date into this column. (No value is required for the column.) If a blanket sales order line is marked for purchasing and the user clicks the **Create Purchase Orders** command on the More menu, the system selects blanket sales order line splits with a purchase order creation date that is earlier than or the same as the current business date and opens them on the *Create Purchase Orders* (PO505000) form. The user can create purchase orders for blanket order line splits.

When a child order is created for a blanket sales order line split with a link to a purchase order, the link to a purchase order is transferred to the child order. The link to the sales order is automatically updated in the related purchase order. If the quantity in the child order is reduced, the purchase order becomes linked to the blanket sales

order line for the reduced quantity and to the child order line. If a child order is deleted or canceled, the link to the purchase order returns to the blanket sales order.

When the user releases a purchase receipt associated with the purchase order, the item will be allocated to the child order. If the quantity of the purchase receipt is greater than the quantity linked to the child order, the excess quantity will be allocated in the blanket sales order line splits.

> ⚠ When a purchase receipt is released and the item becomes allocated in a child order, the system considers this allocation to be made directly on the child order. If the child order line is deleted or the item quantity is reduced, the allocation will be transferred to the line split of the blanket sales order.

Discounts in Blanket Sales Orders

In blanket sales orders, only manual and automatic line discounts can be applied. The **Discount Total** box does not appear on the Summary area of the *Sales Orders* (SO301000) form for blanket sales orders.

> ⚠ Group and document discounts are not applicable in blanket sales orders.

When a user creates a child order, the values in the **Discount Code** and **Discount Percent** columns specified for a line of a blanket sales order on the **Details** tab of the *Sales Orders* form are automatically transferred to the child order line. The discount amount is recalculated based on the quantity of the item in the child order line. If the user changes the quantity or unit price of the item in the child order line, the system automatically recalculates the discount amount by using the discount percent.

If a line of a child order is copied from a line split of a blanket sales order or was added to the child order by using the **Add Blanket Sales Order Line** dialog box, new automatic line, group, and document discounts are not applied to this line. If the user wants to calculate the automatic line, group, or document discounts for such lines, then the user can click the **Recalculate Prices** command on the More menu of the *Sales Orders* form. The system opens the **Recalculate Prices** dialog box (shown in the following screenshot). If the user selects the **Include Lines With Disabled Automatic Discounts** check box and clicks **OK**, the system clears the **Automatic Discount Disabled** check box in the lines of the child order that have a link to a blanket order and recalculates discounts for all lines in the child order.
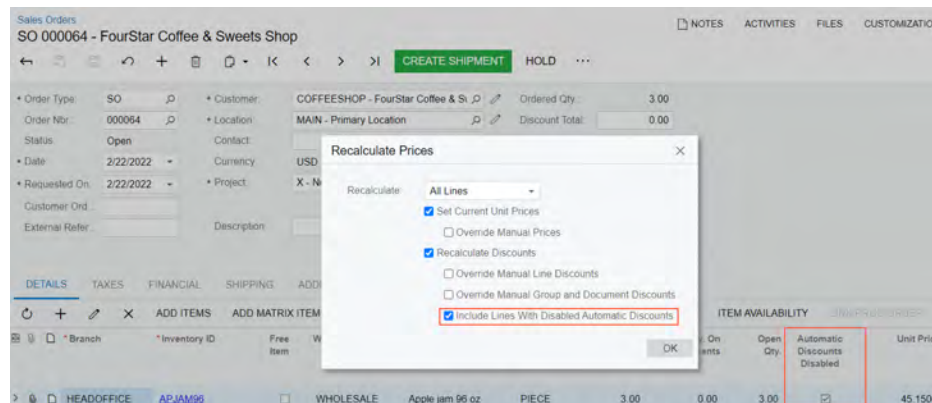
Figure: The Recalculate Prices dialog box

Tax Calculation in Blanket Sales Orders

In blanket sales orders, the taxes are calculated according to the tax zones specified in the **Tax Zone** column for lines of the order on the **Details** tab of the *Sales Orders* (SO301000) form. Therefore, a single blanket sales order can have different tax zones. When the user adds a line to the blanket order, the system copies the tax zone specified on the *Customer Locations* (AR303020) form for the customer location that is specified in the **Ship-To Location** column of the line. The user can manually change the value of the **Tax Zone** column for a line of the

blanket sales order. The system calculates summarized taxable amounts for each tax zone and then calculates taxes.

The taxes calculated for a blanket sales order are not transferred to child orders. When the child order is created, the taxes in this order are calculated the way they are calculated in regular sales orders. The user cannot change the tax amount manually and add new taxes in the blanket sales order.

A blanket sales order cannot have lines with both internal tax zones and tax zones that are external providers.

If the user calculates taxes via an external tax provider and the customer specified in the Summary area of the *Sales Orders* form for a blanket sales order has a predefined tax zone on the *Customer Locations* form, the system copies this tax zone to **Customer Tax Zone** box on the **Financial** tab of the *Sales Orders* form. In this case, the external tax zone is used to calculate taxes for all lines of the blanket sales order, and the **Tax Zone** column on the **Details** tab of the *Sales Orders* form cannot be edited in the lines of the blanket sales order.

When the user saves the blanket sales order, the system sends the information about the shipping location of each blanket sales order line and its address to the external tax provider. The external tax provider calculates the taxes based on the addresses specified for each shipping location of the blanket sales order lines.

The user can override the tax zone in a blanket sales order by selecting the **Override Tax Zone** check box on the **Financial** tab of the *Sales Orders* form. When the user selects the check box, the system opens the **Override Tax Zone** dialog box, in which the user can select a new tax zone. If the user overrides the tax zone, the taxes for all lines of the blanket sales order are calculated according to the newly specified tax zone.

Payments and Prepayments Applied to Blanket Sales Orders

A user can apply a payment or prepayment (credit memo) to a blanket sales order. The application can be made from the payment or prepayment on the *Payments and Applications* (AR302000) form, or the user can create a payment or prepayment directly on the **Payments** tab of the *Sales Orders* (SO301000) form.

If at least one child order is prepared for a blanket sales order, on the **Payments** tab of the *Sales Orders* form, the **Create Payment** and **Create Prepayment** buttons become unavailable.

Payment or prepayment applications on blanket sales orders are transferred to child orders. The transferred amount is shown in the **Transferred to Child Orders** column on the **Payments** tab of the *Sales Orders* form. On the *Payments and Applications* form, the transferred amount can be viewed in the **Transferred to Child Orders** column on the **Sales Orders** tab. The payment or prepayment applications on blanket sales orders cannot be transferred directly to the invoice.

When a user manually decreases the amount in the **Applied To Order** column on the **Payments** tab for a child order, the decreased amount of the application is returned to the blanket sales order.

For the blanket sales order, the **Create Payment** and **Create Prepayment** dialog boxes work the same way as they do for regular sales orders whose order type has the *Sales Order* automation behavior.

New Reports for Blanket Sales Orders

In Acumatica ERP 2022 R1, the *Blanket Sales Order Summary (SO610600)* and *Blanket Sales Order Details (SO610700)* reports have been introduced for blanket sales orders. The *Blanket Sales Order Summary* report provides information about blanket sales orders that is similar to the contents of the *Sales Order Summary* (SO610500) report. The *Blanket Sales Order Details* report contains extended information about blanket sales order lines and child orders.

Sales orders with order types that have the *Blanket Order* automation behavior are not included in the following reports:

- *Sales Order Summary* (SO610500)
- *Sales Order Details by Customer* (SO611000)
- *Sales Order Details by Inventory Item* (SO611500)
- *Sales Profitability by Item and Order* (AR671000)

- *Sales Profitability by Item Class and Item* (AR674000)
- *Sales Profitability by Customer Class and Customer* (AR675000)
- *Sales Profitability by Customer and Order* (AR672000)
- *Daily Sales Profitability* (AR676000)
- *Sales Profitability by Salesperson and Customer* (AR673000)
- *Sales Profitability Analysis* (AR409000)

Sales orders whose order types have the *Blanket Order* automation behavior are included in the *Order Register* (SO612000) report.

Blanket Sales Order Review Form

The new *Blanket Sales Order Review (SO403000)* inquiry form has been implemented to give users the ability to review blanket sales orders and their expiration dates if these dates have been specified. (This form is shown in the following screenshot.)

Blanket sales orders with the *Expired* status and blanket sales orders with the empty **Expires On** box in the Summary area of the *Sales Orders* form are shown in the inquiry results by default. The user can clear the **Include Expired Orders** and **Include Orders Without Expiration Date** check boxes in the Selection area of the form to exclude these orders from the inquiry results.

The inquiry provides some statistical information on each listed blanket sales order: the open quantity in the blanket sales order, the quantity in its child orders, the percent of the unshipped quantity, and the number of days before the expiration of the order. The user can click any blanket sales order in the inquiry results and then click the **Blanket Sales Order Details** button on the side panel in the right part of the form to view the selected blanket sales order in the format of the *Blanket Sales Order Details (SO610700)* report.

Figure: The Blanket Sales Order Review form

Other Information About Blanket Sales Orders

Stock items in the lines of blanket sales orders do not have any item plans and do not affect replenishment. Blanket sales orders do not affect the customer's balance.

Freight amounts are not calculated in blanket sales orders.

Payroll: Final Paychecks

In Acumatica ERP 2022 R1, a new type of paycheck, *Final*, has been implemented.

In previous versions of Acumatica ERP, a user had to calculate a regular paycheck as a settlement paycheck and manually add hours from the relevant paid time off (PTO) bank to empty that bank. Also, if the employment of an employee was terminated, the user had to manually deactivate the employee record on the *Employee Payroll Settings* (PR203000) form and update the employment history for that employee on the *Employees* (EP203000) form.

Starting in Acumatica ERP 2022 R1, the user can create a paycheck of the *Final* type by using the *Paychecks and Adjustments* (PR302000) form. The user can specify the termination date and termination reason for the paycheck; this information will be synchronized with the employment history of the employee. On paycheck calculation, the relevant PTO banks may be automatically disbursed, depending on the settlement rules specified for the particular PTO bank on the *PTO Banks* (PR204000) form. When the final paycheck is released, the employee record on the *Employee Payroll Settings* form automatically becomes inactive. Final paychecks can be voided in the same way as other paychecks can.

Changes to the PTO Banks Form

On the *PTO Banks* (PR204000) form, the **Settlement Rules** section has been added, as illustrated in the following screenshot. In the **On Settlement** box of this section, a user must select the rule that will be applied to the PTO bank when a final paycheck is calculated for an employee who is assigned this PTO bank. The following options are available:

- *Pay Balance* (default): The PTO bank will be automatically disbursed.
- *Keep Balance*: The system will preserve the balance of the PTO bank associated with the employee profile.
- *Discard Balance*: The system will empty the balance of the PTO bank but not disburse it to the employee.

Figure: The Settlement Rules section on the PTO Banks form

Changes to the Paychecks and Adjustments Form

In the Summary area of the *Paychecks and Adjustments* (PR302000) form, a new document type, *Final*, is now available for selection in the **Type** box. When this type is selected, the following new elements appear:

- **Termination Reason**: The reason the person's employment in the company was terminated. The following options are available: *Retirement*, *Layoff*, *Terminated for Cause*, *Resignation*, *Deceased*, and *Medical Issues*.
- **Eligible for Rehire**: A check box that the user selects if the employee is eligible for rehire after the employment termination.
- **Termination Date**: The date when the person's employment in the company was terminated. For a salaried employee, this date is set to the pay period's end date by default, but it can be changed.

The specified settings will also appear on the **Employment History** tab on the *Employees* (EP203000) and *Employee Payroll Settings* (PR203000) forms when the paycheck is released.

The new elements of the *Paychecks and Adjustments* form are shown in the following screenshot.

Figure: New elements for final paychecks

Also, the user can edit the date in the **Transaction Date** box for a paycheck of the *Final* type. For paychecks of the *Special* type, the **Transaction Date** box is no longer editable.

When the paycheck is calculated, in the table on the **Earning** tab, the system may insert (depending on the settlement rules specified for the relevant PTO banks) additional earnings detail lines with disbursed PTO hours and amounts. A warning will be displayed next to each of these lines, as shown in the following screenshot.

Figure: A warning on an earnings detail line

If a user voids a released final paycheck on this form, the PTO information becomes as it was before the final paycheck was calculated.

Changes to the Employee Payroll Settings Form

On the *Employee Payroll Settings* (PR203000) form, the **Employment History** tab has been added, as shown in the screenshot below. This tab contains the same table as the one on the **Employment History** tab of the *Employees* (EP203000) form.

The **Hire Date** and **Termination Date** elements from the **Employment Info** section on the **General** tab of the *Employee Payroll Settings* form have been moved to the Summary area of the **Employment History** tab of the same form.

Figure: Employment History tab

After the employee's final paycheck is released on the *Paychecks and Adjustments* form, the information on the **Employment History** tab of the *Employee Payroll Settings* form is updated correspondingly, and the **Active** check box in the Summary area of the form becomes cleared. The detail line created on this tab upon the release of the final paycheck is non-editable; if the paycheck is voided, the system deletes this detail line.

Changes to the Employees Form

The **Generate Time Cards** button was previously on the table toolbar on the **Employment History** tab of the *Employees* (EP203000) form. A user can now access the **Generate Time Cards** command on the More menu of that form (under **Actions**), as shown in the following screenshot.
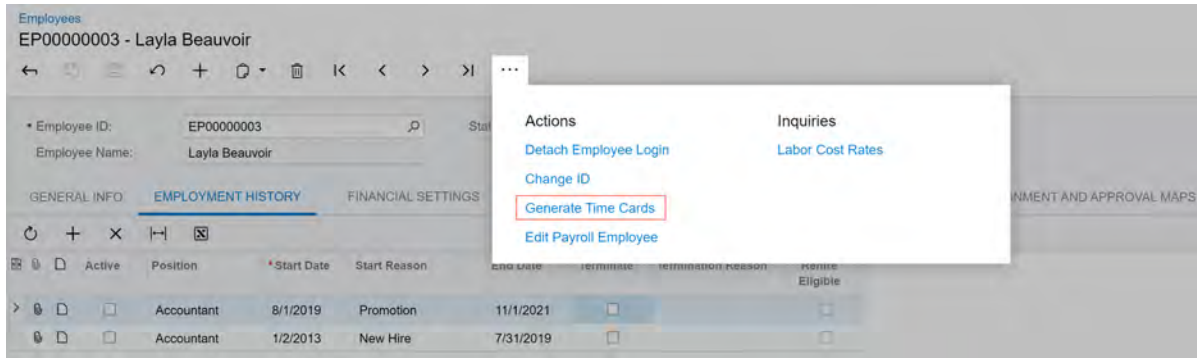
Figure: The Generate Time Cards command on the More menu

Payroll: Maximum Insurable Wage

In Acumatica ERP 2022 R1, the capability to set up a wage limit for a workers' compensation rate has been introduced. If this limit is set up, the system stops calculating the benefit associated with workers' compensation when the sum of employee earnings from the specified effective date to the current date reaches the limit.

Also, starting in Acumatica ERP 2022 R1, different workers' compensation rates can be set up for the same state but for different companies and branches.

Changes to the Workers' Compensation Codes Form

On the table toolbar of the **WCC Code** table on the *Workers' Compensation Codes* (PR209800) form, the **Maximum Insurable Wages** button has been added, as shown in the following screenshot.
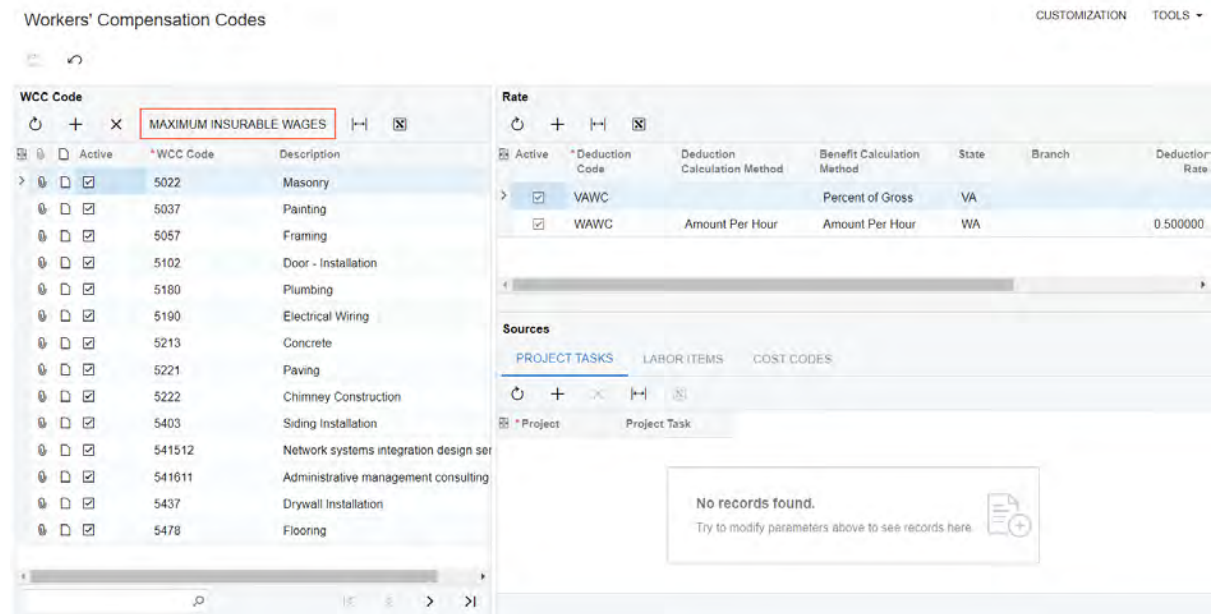
Figure: The new button

This button opens the **Maximum Insurable Wages** dialog box (shown in the following screenshot) that displays a list of wage limits in relation to combinations of deduction and benefit codes and states. Each record must have an effective date specified.
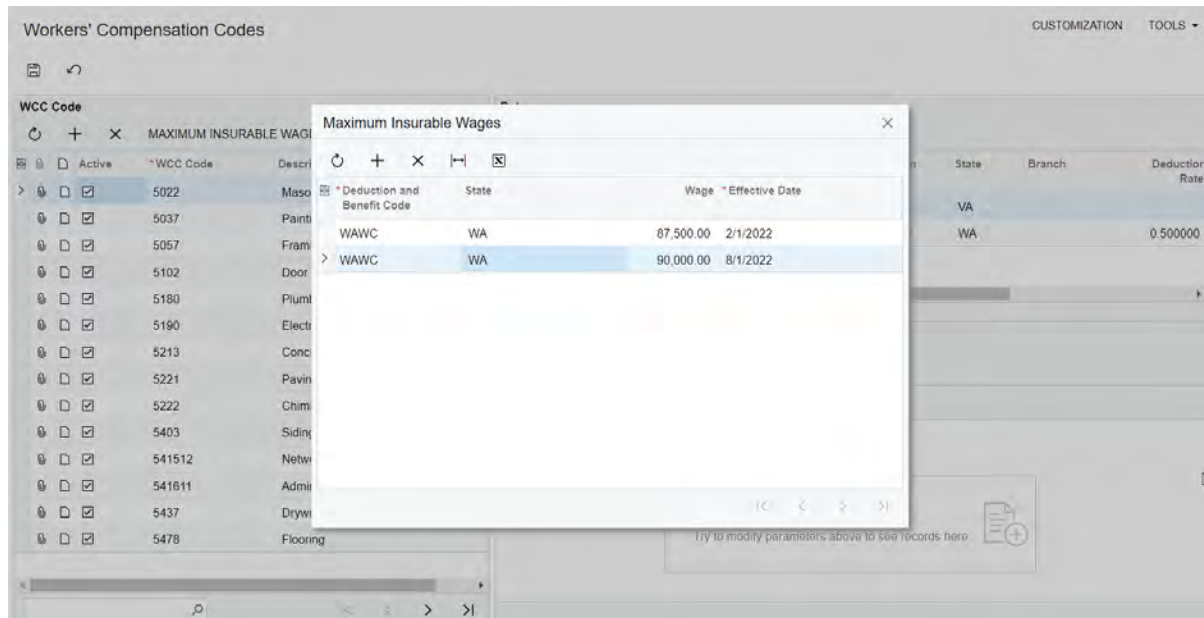
Figure: The Maximum Insurable Wages dialog box

The specified effective date defines the start of the period for which the system tracks if the wage limit has been reached. When the limit is reached, the system stops calculating the benefit associated with the particular deduction and benefit code and state.

Multiple records may be created for one combination of code and state, but each row must have a different effective date.

A user can add or remove rows or edit the information in the table; the changes will be synchronized with the data displayed on the **WCC Code** tab of the *Deduction and Benefit Codes* (PR101060) form.

Changes to the Deduction and Benefit Codes Form

On the **WCC Code** tab of the *Deduction and Benefit Codes* (PR101060) form, the **Maximum Insurable Wages** table has been added, as shown in the following screenshot.

Figure: The new table

This table displays a list of maximum wages to which the workers' compensation rate is applicable. Each row must have a different effective date. When the current date reaches the effective date specified in a row, the system resets the calculation of the wages to zero and starts it anew until it reaches the wage limit specified for this row or until it switches to the calculation for a different row with the next effective date.

Users can add or remove rows or edit the information in the table; the changes will be synchronized with the data displayed in the **Maximum Insurable Wages** dialog box that opens when a user clicks **Maximum Insurable Wages** on the *Workers' Compensation Codes* (PR209800) form.

Other Changes

The **Branch** column has been added in the following places in the system:

- In the **Rate** table on the *Workers' Compensation Codes* (PR209800) form
- In the **Rates** table on the **WCC Code** tab of the *Deduction and Benefit Codes* (PR101060) form
- On the **Workers' Compensation** tab of the *Paychecks and Adjustments* (PR302000) form

This column gives users the capability to specify different rates for the same state but for different companies and branches.

Platform: Ability to Manage Search Performance

Acumatica ERP 2022 R1 introduces the ability to select a condition to be used by default in the search box in some tables.

Configuration of a Search Condition

On the *Site Preferences* (SM200505) form, the **Table Settings** section has been added. The section includes the new **Search Condition** box. A system administrator can control which condition the system uses by default for the searches performed with the search box in tables, by selecting one of the available options (see the following screenshot):

- *Contains* (default): The system converts the *Contains* condition to the `LIKE '%X%'` inquiry in MS SQL; the search may take some time and cause performance issues. This option is offered to preserve backward compatibility.
- *Starts With*: The *Starts With* condition (`LIKE 'X%'` in MS SQL) works quicker when a user is searching for a record in a table.

Figure: The new Search Condition box on the Site Preferences form

If the administrator selected the *Starts With* option, the system uses this condition by default for these searches. If a search returns no results, the system notifies the user and provides a link the user can click to perform the search with the *Contains* condition instead; see the following screenshot.
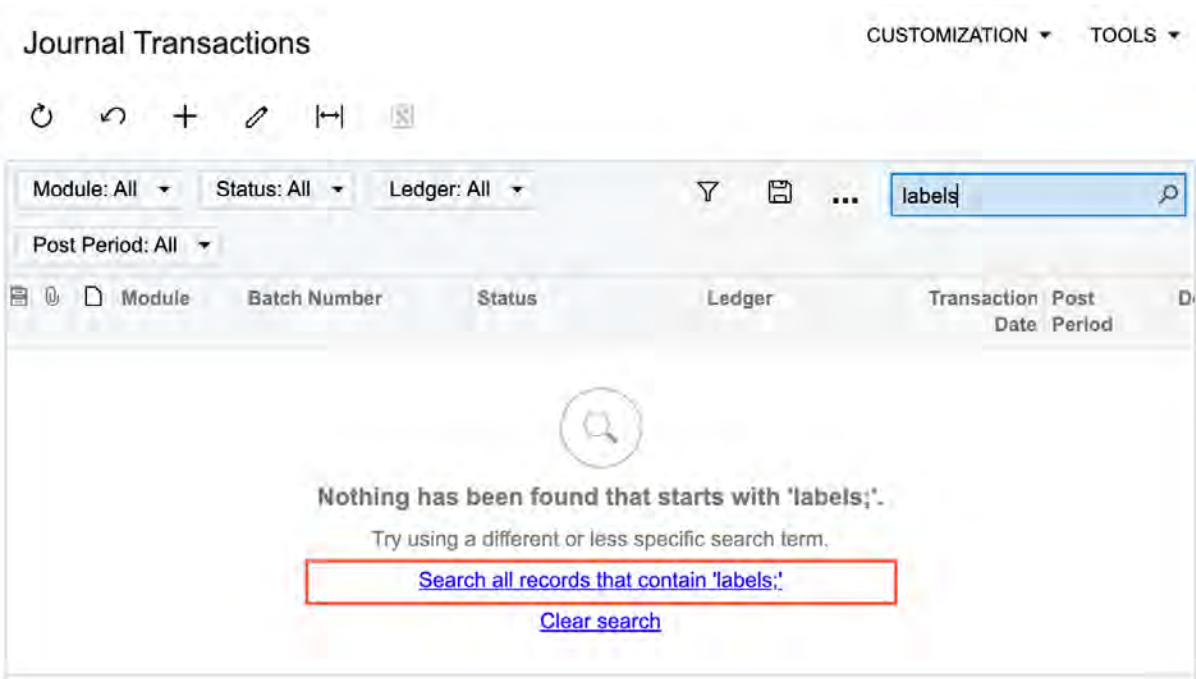
Figure: The system offers the link to perform the search with the Contains condition

Platform: DAC Schema Browser Improvements

In Acumatica ERP 2022 R1, multiple improvements in the DAC Schema Browser have been implemented. These improvements include both user interface and functional changes that make the use of the DAC Schema Browser more streamlined. The changes are described in the following sections.

Availability Updates
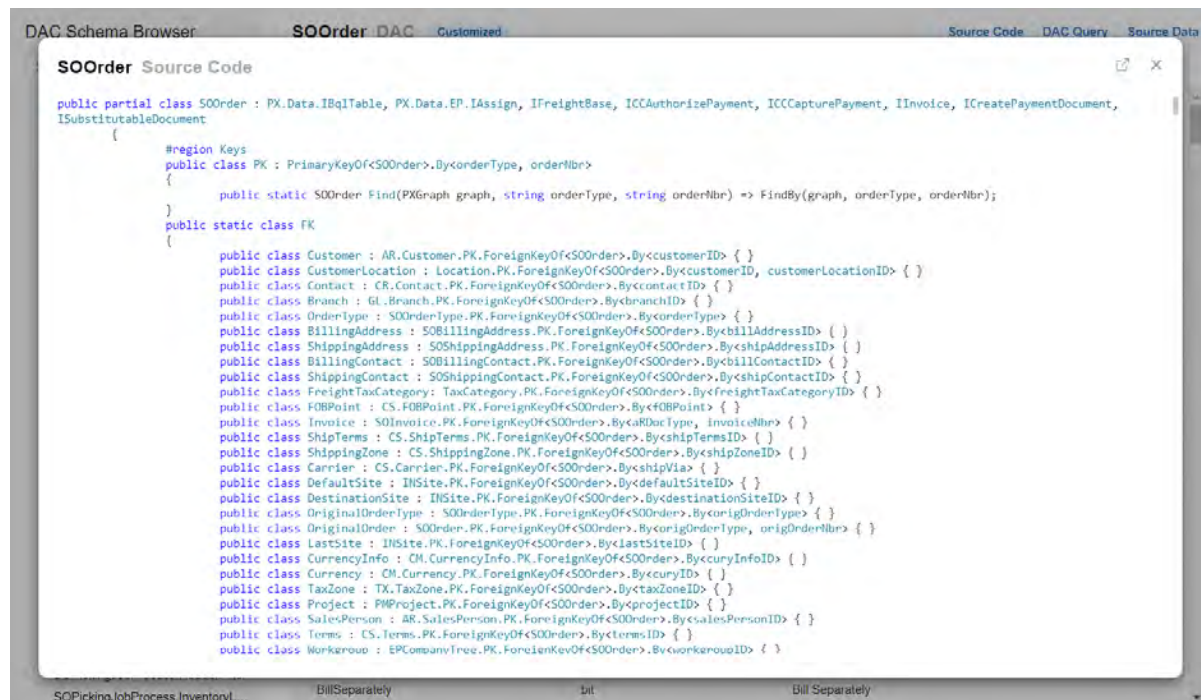
In an Acumatica ERP instance, customizers and users designing generic inquiries and reports can now access the DAC Schema Browser by doing one of the following:

- Typing *<instance_name>/dacBrowser* in the address bar of the browser
- Clicking the DAC Schema Browser tile on the main Help Portal page

Functional Updates

The page title bar of the DAC Schema Browser now contains the *Source Code* and *DAC Query* links. The *Preview Source Data* link has been renamed to *Source Data*. (This link is shown on the form only if the user account is assigned any of the following roles: *Administrator*, *Customizer*, or *Report Designer*.)

A user clicks the *Source Code* link to open the source code browser for the selected DAC (see the following screenshot).

Figure: The source code browser

A user clicks the *DAC Query* link to open a SQL query that the selected DAC executes (see the following screenshot).
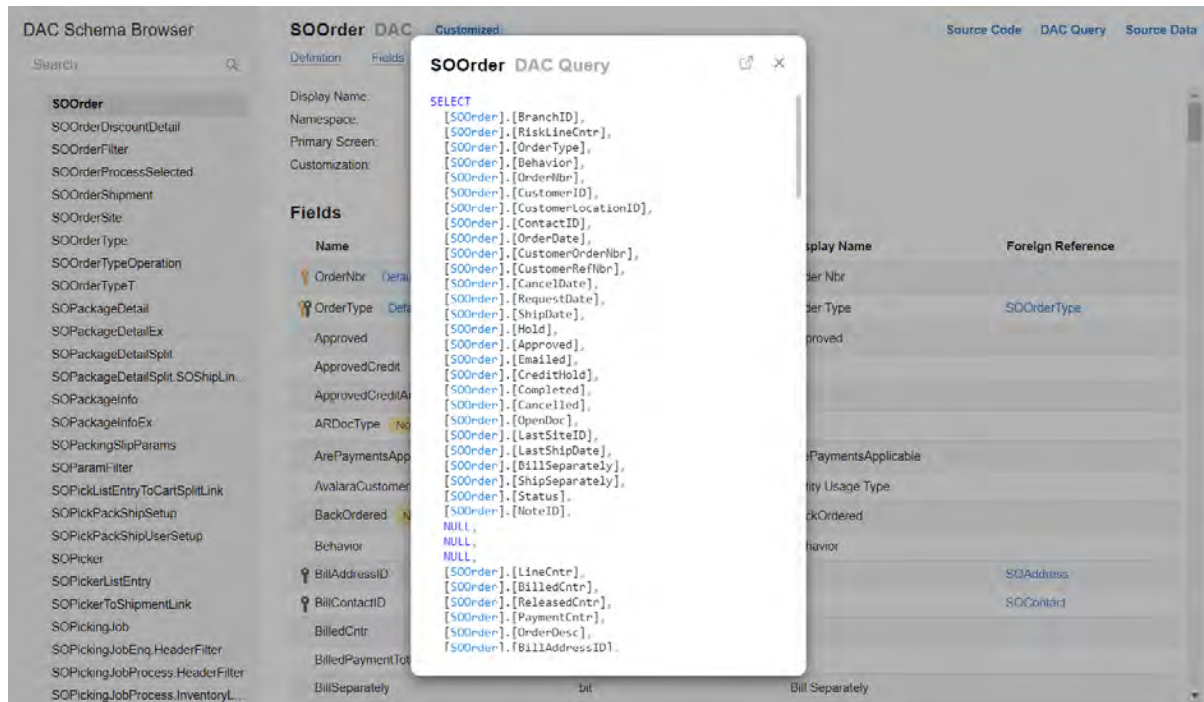
Figure: The DAC query

The search box now supports searching by the DAC's display name, as well as by its name.

User Interface Updates

In the **Fields**, **Incoming References**, and **Outgoing References** tables, every DAC label now has a tooltip with the full DAC name.

For DACs that are intended only for internal use (that is, the DACs with the `PXInternalUseOnly` attribute), the *Internal* tag has been added. Customizers should not use these DACs in their reports, generic inquiries, or customizations.

The headers in the tables freeze when users scroll the page.

Annotations have been added for the common fields that do not have XML comments specified for them. The following screenshot shows the annotation for the `CreatedByScreenID` field.
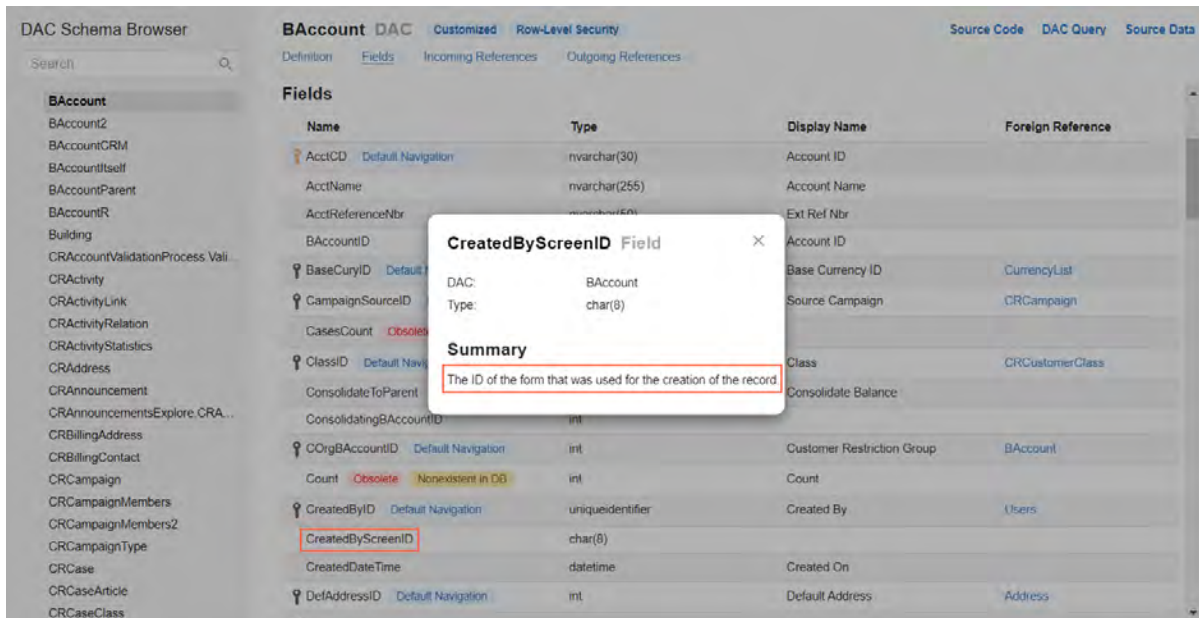
Figure: The annotation for the CreatedByScreenID field

Additional Information

For more information about the DAC Schema Browser, see *DAC Schema Browser*.

Platform: Enhancement To Chart Widget

Acumatica ERP 2022 R1 introduces the ability to display dates in ascending order on the X axis.

This ability can be useful to demonstrate changes in data within a period of time that ends with the last date in the data returned by the inquiry. For example, a user can design a widget that demonstrates the number of sales orders completed in the 10 days prior to the date of the last completed order.

Configuration of a Chart Widget

In the **Categories** section of the **Chart Settings** dialog box, the new *Date (Ascending)* option has been added to the **Sort By** drop-down list (as shown in the following screenshot). The option is available if a data field that represents a date is selected in the **Legend** box.
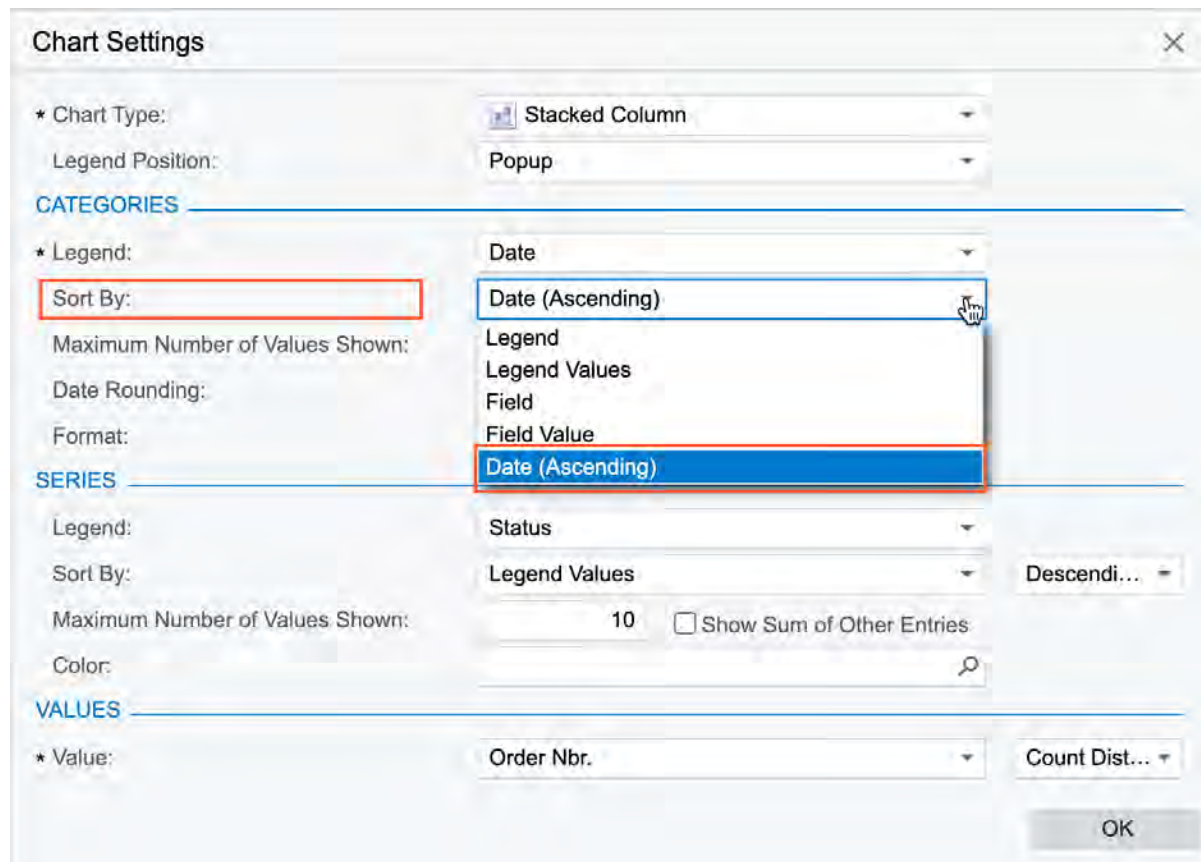
Figure: The Date (Ascending) option for a field that represents a date

With this option selected, the system will display the dates in ascending order on the X axis of the chart (as shown in the following screenshot).
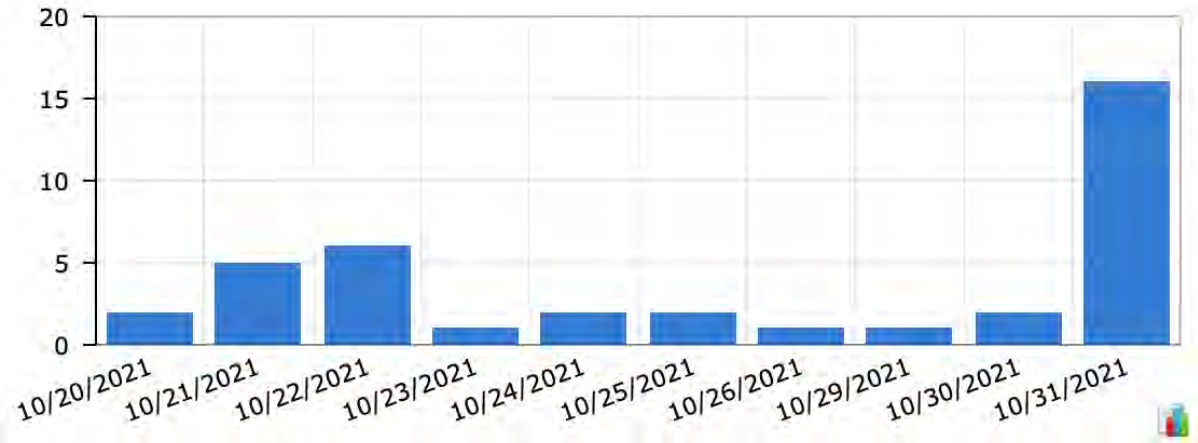
Figure: Dates in ascending order on the X axis of the chart

Platform: Improvements to the Tracking Fields Used for Business Events

With Acumatica ERP 2022 R1, the tracking of the data fields used for business events has been improved.

In earlier versions, for a business event with the *Trigger by Record Change* type, the system monitored the data changes made to the data included in the generic inquiry form or provided by a data entry form. If a value for a data field had been changed, the system stored the new and previous value of a data field.

If this business event had push notifications configured as a subscriber, the system sent a push notification each time a value of any field had changed, even if the field is not mentioned in trigger conditions. This resulted into multiple useless push notifications and could cause overflow of the processing queues.

Data Field Tracking

On the *Business Events* (SM302050) form, the **Fields to Track** tab has been added for the business events with the *Trigger by Record Change* type (see the following screenshot).

Figure: The new Fields to Track tab

By default, the system tracks all the fields used for configuring conditions on the **Trigger Conditions** tab of the form. That is, these fields are listed in the table of the tab. These rows cannot be modified or deleted. A user can add other data fields to the table to make the system track these fields.

If a generic inquiry is specified in the **Screen Name** box of the form, a user can manually add only data fields that were added to the **Results Grid** tab of the *Generic Inquiry* (SM208000) form.

To make the system track all the data fields, a user can select the **Track All Fields** check box above the table of the tab. In this case, the system displays a warning that this action may cause queue overflow and impair performance.

> (i) For the business events configured in previous versions of Acumatica ERP, the **Track All Fields** check box is selected by default.

Usage of the Field Values in Subscribers

If the user plans to use a previous value of a data field for configuring a subscriber of a business event, this field should be added to the table on the **Fields to Track** tab of the *Business Events* (SM302050) form. Otherwise, the system will not store or return a previous value for the field.

While a user is configuring a subscriber and intends to insert a placeholder for a previous value of a field, the system warns the user about the necessity of adding the data field to the list of the tracked fields (see the following screenshot).

Figure: The warning message for inserting a placeholder for the previous value

Projects and Construction: Support of Multiple Base Currencies in Projects

The *Multiple Base Currencies* feature was implemented in Acumatica ERP in 2021 R1, although it was not compatible with multiple other features, including *Projects*. Starting in Acumatica ERP 2022 R1, the project functionality can be used with the *Multiple Base Currencies* feature enabled. With the *Multiple Base Currencies* feature enabled on the *Enable/Disable Features* (CS100000) form, companies with different base currencies can be configured within one tenant; the system now verifies that the base currency specified in the project-related documents corresponds to the base currency of the branch.

Changes to the Enable/Disable Features Form

On the *Enable/Disable Features* (CS100000) form, the *Multiple Base Currencies* feature can be enabled if the *Projects* and *Multicurrency Projects* features are enabled.

Changes to the Projects Form

If the *Multiple Base Currencies* and *Multicurrency Projects* features are enabled on the *Enable/Disable Features* (CS100000) form, on the **Summary** tab of the *Projects* (PM301000) form, the **Base Currency** box appears in the **Project Properties** section (as shown in the following screenshot). In this box, the user specifies the base currency of the project. The system verifies that the selected base currency matches the base currency of the branch, which is selected in the **Branch** box on the **Summary** tab (in the **Billing and Allocation Settings** section). The user can change the base currency only if no project transactions have been posted to the project yet.

Figure: The Base Currency box on the Projects form

In the Summary area of the form, a user clicks the **View Base** button to review the project amounts on the **Revenue Budget**, **Cost Budget**, and **Balances** tabs in the base currency; to switch back to reviewing the amounts in the project currency, the user clicks the **View Cury** (see the following screenshots, which show the amounts on the **Revenue Budget** tab).

Figure: Project amounts in the base currency

Figure: Project amounts in the project currency

Changes to Project Transactions

If the *Multiple Base Currencies* feature is enabled on the *Enable/Disable Features* (CS100000) form, when a user manually enters a project transaction on the *Project Transactions* (PM304000) form, the system uses the base currency of a selected project as the base currency of each project transaction line.

A user can review the transaction line amounts in the base currency by clicking the **View Base** button on the table toolbar; to view the transaction line amounts in the project currency, the user clicks the **View Cury** button on the table toolbar.

Figure: Project transaction amount in the base currency

Figure: Project transaction amount in the project currency

Also, the following changes have been made to the logic of calculating the transaction amounts:

- If a project transaction produces a general ledger transaction, in the created GL transaction on the *Journal Transactions* (GL301000) form, the system uses the base currency of the branch from the project transaction line as the base currency in the created GL batch. The system copies the project transaction line amount in the transaction currency (that is, in the currency selected by the user in the project transaction line) and recalculates this amount in the base currency of the GL batch by using the default exchange rate type specified in the **GL Rate Type** box on the *Currency Management Preferences* (CM101000) form.

- If the system creates a project transaction on release of the general ledger transaction, the system uses the base currency of the project selected in the general ledger transaction line as the base currency of the created project transaction line. The system calculates the amount of the project transaction line in the base and project currency by using the default exchange rate type specified in the selected project in the **Currency Rate Type** box on the **Summary** tab of the *Projects* (PM301000) form. The same rules are used for the project transactions created during the running of an allocation process, and for the project transactions created on release of employee time cards.

The described calculation logic is now applied to project transactions regardless of whether the *Multiple Base Currencies* feature is enabled on the *Enable/Disable Features* form.

Changes to Project Billing

Now during project billing, in the created pro forma invoice on the *Pro Forma Invoices* (PM307000) form or in the accounts receivable invoice on the *Invoices and Memos* (AR301000) form, the system uses the default exchange rate type of the customer and customer location selected in the document to determine exchange rate for calculating the billing amounts in the base currency.

Known Limitations

The system currently does not support multiple base currencies in projects if the *Multicurrency Projects* feature is disabled on the *Enable/Disable Features* (CS100000) form.

Projects and Construction: Enhancements in Tracking Changes to Commitments

Starting in Acumatica ERP 2022 R1, a user can track changes to project commitments that have been created based on project drop-ship orders.

Change Orders for Project Drop-Ship Orders

Now a user can make changes to a project's commitments that have been created based on purchase orders of the *Project Drop-Ship* type. To make changes to a project drop-ship order, a user creates a change order on the *Change Orders* (PM308000) form. Then on the **Commitments** tab (which appears for change orders of a change order class that allows making changes to commitments), the user can do any of the following:

- Create a new project drop-ship order.

  To create a new document, the user adds a new row and selects *Project Drop-Ship* in the **Commitment Type** column. The system inserts the *New Document* status (see the following screenshot) in the line.

Figure: Creating new commitment via change order

- Add a new line to an existing project drop ship order.

  To add a line to existing document, the user adds a new row in the table, selects *Project Drop-Ship* in the **Commitment Type** column, and then selects the reference number of the project drop-ship order in the **PO Nbr.** column (or in the **Commitment Nbr.** column if the *Construction* feature is enabled). The system inserts the *New Line* status (see the following screenshot) in the line.

Figure: Adding a new commitment line via change order

- Adjust a line of an existing project drop-ship order.

To adjust a line in an existing document, the user clicks **Select Commitments** on the table toolbar, and in the **Select Commitments** dialog box, which opens, selects the unlabeled check box for the line (or lines) to be added to the change order (as shown in the following screenshot); then the user clicks **Add Lines & Close** in the dialog box.
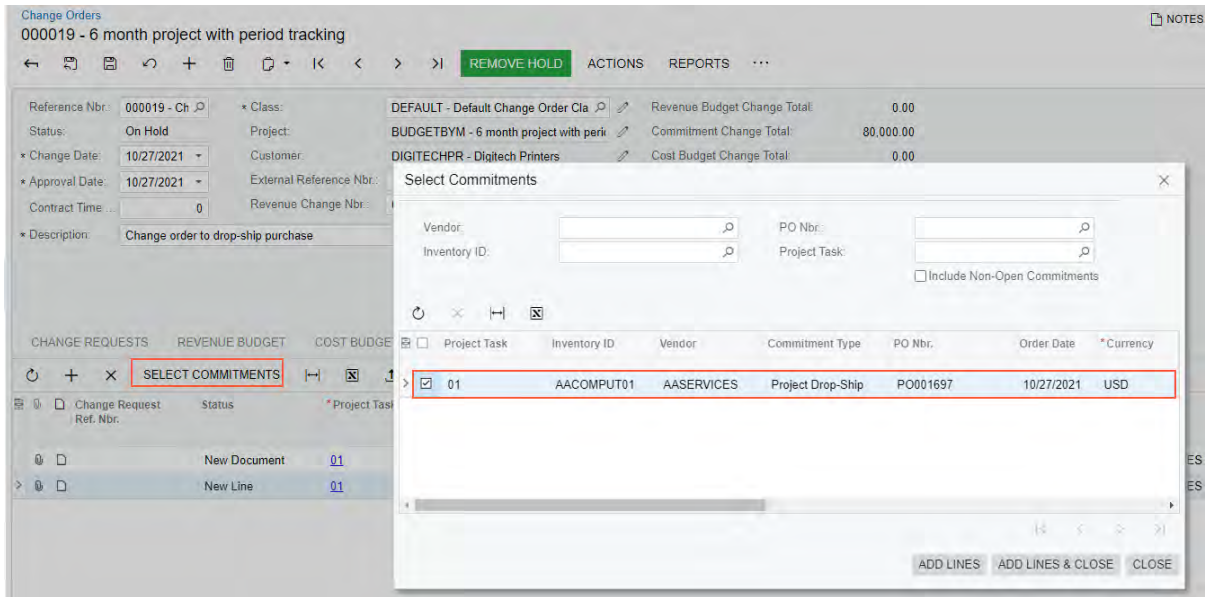
Figure: Selecting a commitment line to be adjusted

The system adds a line with the *Update* status, as shown in the following screenshot. In the added line, the user can adjust the line quantity and amount.
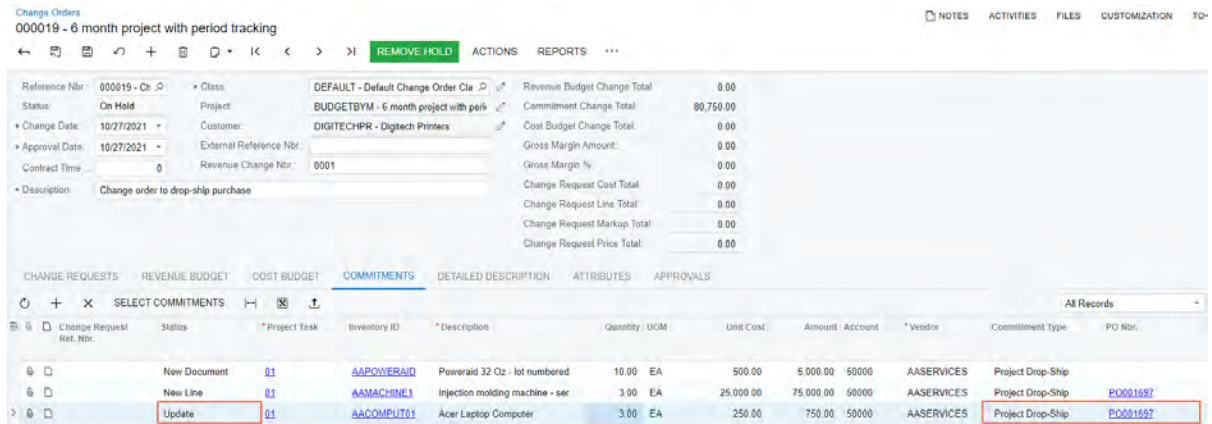
Figure: Adjusting a commitment line

When a user releases the change order, the system updates the related project drop-ship order or creates a new one, depending on the type of the commitment line. In the corresponding cost budget line of the project on the *Projects* (PM301000) form, the system updates the **Committed CO Quantity** and **Committed CO Amount** values based on updated commitment values.

UI Changes

On the **Commitments** tab of the *Change Orders* (PM308000) form, the following changes have been made:

- In the **Commitment Type** column, the *Project Drop-Ship* type has been added, and the *Purchase Order* type has been renamed to *Normal Purchase Order*.

- In the **PO Nbr.** (or **Commitment Nbr.** if the *Construction* feature is enabled) column, the purchase orders of the *Project Drop-Ship* type are now available for selection.

Projects and Construction: Project Quote Improvements

In Acumatica ERP 2022 R1, the project quote functionality has been enhanced and improved. Now with a minimum of steps, users can create project quotes for multiple customers that are related to the same opportunity. Also, the layout of the *Project Quotes* (PM304500) form has been revised for a better user experience.

Multiple Customers Related to an Opportunity

On the *Project Quotes* (PM304500) form, a user now can change the business account, location, and contact in any project quote (primary or non-primary) that is assigned the *Draft* status, as shown in the following screenshot.
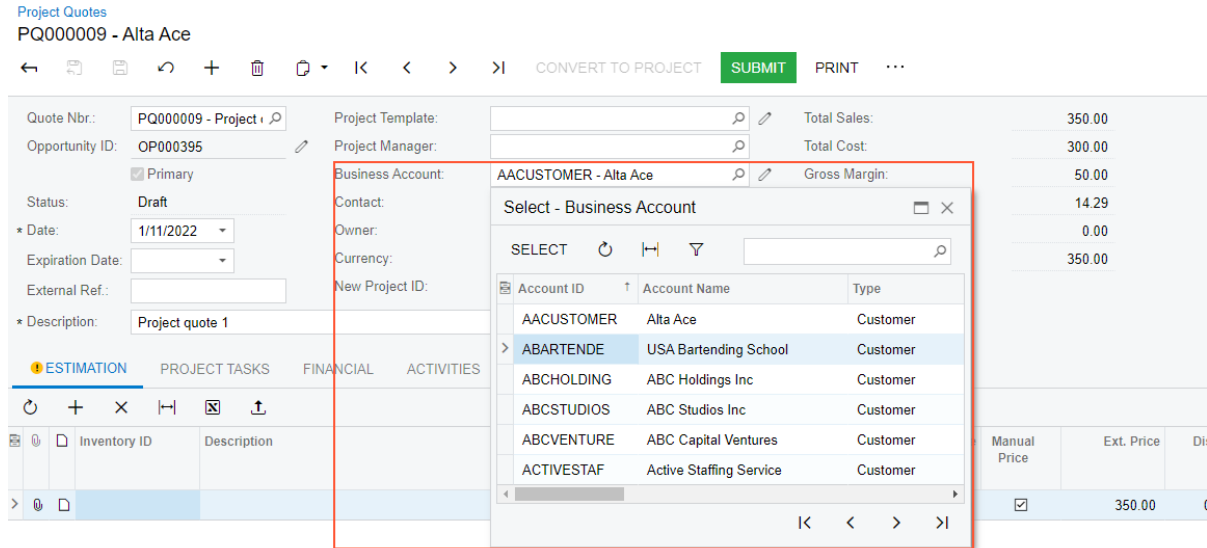
Figure: Business account in the project quote

With this functionality, the user can create project quotes for multiple customers and link these project quotes to the same opportunity (see the following screenshot).
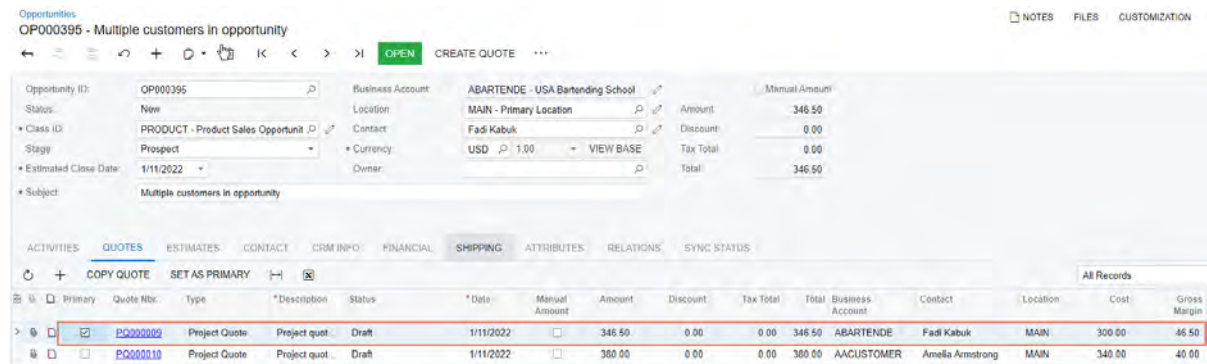
Figure: Opportunity linked to project quotes for multiple customers

UI Changes

On the *Opportunities* (CR304000) form, the following changes have been made:

- In the Summary area, the **Multiple Customers** check box has been removed.

- The **Multiple Customers** tab (which was shown if the **Multiple Customers** check box was selected) has been removed.
- On the **Quotes** tab, the **Business Account**, **Contact**, **Location**, **Cost**, **Gross Margin**, and **Gross Margin %** columns have been added.

Figure: UI changes on the Opportunities (CR304000) form

On the *Project Quotes* form, the following UI changes have been made:

- The name of the **Billing** tab has been changed to **Financial**.
- The new **Addresses** tab has been added.
- The **Ship-To Address** section has been renamed to **Project Address** and moved from the **Shipping** tab to the **Addresses** tab.
- The **Ship-To Contact** section has been deleted. As a result, if a project quote is defined as the primary quote of an opportunity, the data for the **Ship-To Info** section of the **Shipping** tab on the *Opportunities* (CR304000) form is populated with the settings of the business account.
- The **Address** section has been renamed to **Bill-To Address** and moved from the **Billing** tab to the **Addresses** tab.
- The **Contact Information** section has been moved from the **Billing** tab to the **Addresses** tab and renamed to **Bill-To Contact**.

Projects and Construction: Progress Billing Based on Quantity

In previous versions of Acumatica ERP, the projects billed by progress could be billed only based on the amount in the revenue budget lines. In Acumatica ERP 2022 R1, the functionality of progress billing has been extended. Now a project manager can configure a project so that the pro forma invoices or accounts receivable invoices will be prepared based on the pending quantities specified in revenue budget lines. To support progress billing based on quantity, the changes described below have been made.

Changes on the Projects Form

On the **Tasks** and **Revenue Budget** tabs of the *Projects* (PM301000) form, the **Progress Billing Base** column has been added, as shown in the following screenshot.
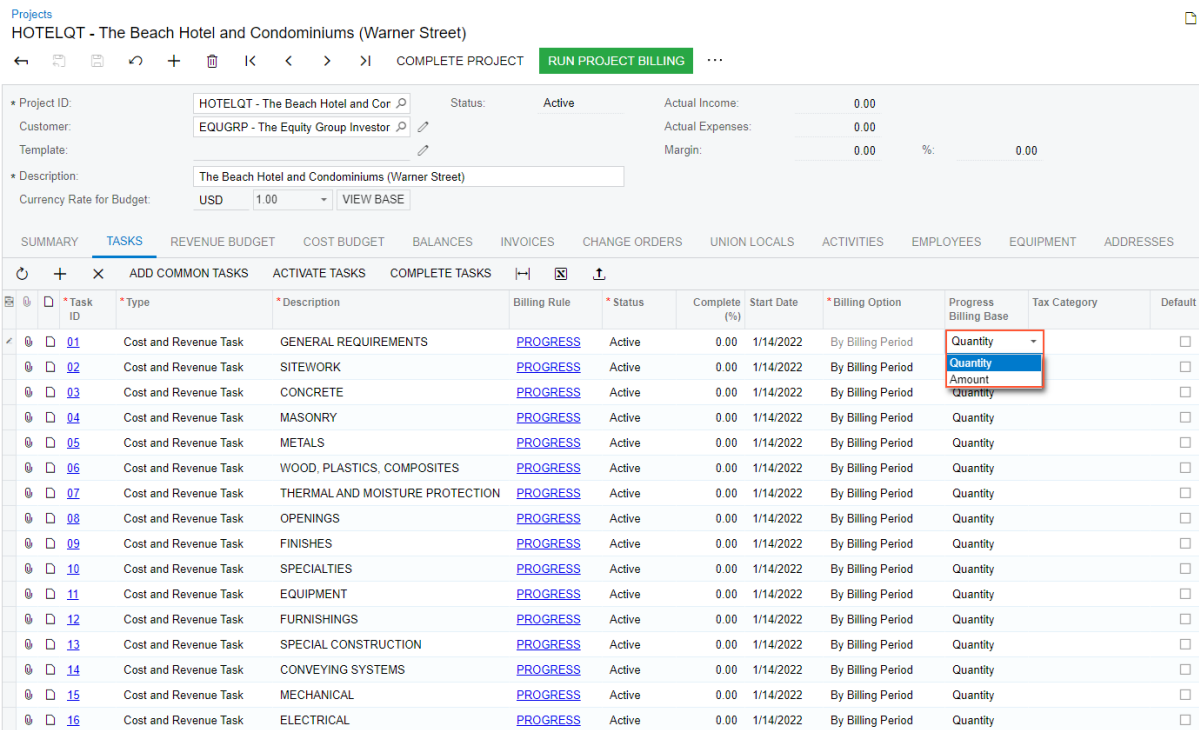
Figure: Progress billing base specified for a project task

In the **Progress Billing Base** column, a user specifies the basis of progress billing of this task or revenue budget line. The following options are available:

- *Amount*: The system bills the line based on its amount. This option corresponds to the progress billing process that has been used in previous Acumatica ERP versions. To bill the line based on the amount, the user specifies the pending invoice amount in the **Pending Invoice Amount** column on the **Revenue Budget** tab of the *Projects* form. The **Pending Invoice Quantity** column contains 0.00, and this value cannot be changed.

- *Quantity*: The system bills the line based on its quantity. The user must specify the number of units to be billed in the **Pending Invoice Quantity** column on the **Revenue Budget** tab of the *Projects* form, as shown in the following screenshot. The system calculates the value in the **Pending Invoice Amount** column automatically as the pending invoice quantity multiplied by the unit rate specified in the line. Also, the system automatically calculates the **Completed (%)** and **Performance (%)** values based on the budgeted and billed quantities in the revenue budget line. The calculated quantities and amounts will be copied

to the corresponding lines of the pro forma invoice or accounts receivable invoice created by the billing process.

Projects
HOTELQT - The Beach Hotel and Condominiums (Warner Street)

← 🖫 🖨 ↺ + 🗑 |< < > >| COMPLETE PROJECT **RUN PROJECT BILLING** …

* Project ID:	HOTELQT - The Beach Hotel and Cor 🔍	Status:	Active	Actual Income: 0.00
Customer:	EQUGRP - The Equity Group Investor 🔍 ✎			Actual Expenses: 0.00
Template:	✎			Margin: 0.00 %: 0.00
* Description:	The Beach Hotel and Condominiums (Warner Street)			

SUMMARY   TASKS   **REVENUE BUDGET**   COST BUDGET   BALANCES   INVOICES   CHANGE ORDERS   UNION LOCALS   ACTIVITIES   EMPLOYEES   EQUIPMENT

Project Task: [🔍]   ☐ Group by Task   Pending Invoice Amount Total: 9,296,282.91

↻ + ✕ VIEW TRANSACTIONS |↦ ⊠ ⬆

Original Budgeted Quantity	UOM	Unit Rate	Original Budgeted Amount	Revised Budgeted Quantity	Revised Budgeted Amount	Draft Invoice Quantity	Draft Invoice Amount	Actual Quantity	Actual Amount	Completed (%)	Pending Invoice Quantity	Pending Invoice Amount
15,000.00	HOUR	276.9500	4,154,250.00	15,000.00	4,154,250.00	0.00	0.00	0.00	0.00	85.00	12,750.00	3,531,112.50
2,800.00	HOUR	646.1300	1,809,164.00	2,800.00	1,809,164.00	0.00	0.00	0.00	0.00	72.00	2,016.00	1,302,598.08
1,350.00	HOUR	6,162.8400	8,319,834.00	1,350.00	8,319,834.00	0.00	0.00	0.00	0.00	40.00	540.00	3,327,933.60
7,890.00	HOUR	153.4400	1,210,641.60	7,890.00	1,210,641.60	0.00	0.00	0.00	0.00	33.00	2,603.70	399,511.73
10,000.00	HOUR	190.1300	1,901,300.00	10,000.00	1,901,300.00	0.00	0.00	0.00	0.00	29.00	2,900.00	551,377.00
10,000.00	HOUR	122.5000	1,225,000.00	10,000.00	1,225,000.00	0.00	0.00	0.00	0.00	15.00	1,500.00	183,750.00
2,850.00	HOUR	347.1400	989,349.00	2,850.00	989,349.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	HOUR	481.9800	1,638,732.00	3,400.00	1,638,732.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.00	HOUR	45,059.9700	8,110,794.60	180.00	8,110,794.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	HOUR	1,449.5000	1,449,500.00	1,000.00	1,449,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	HOUR	195.6800	1,134,944.00	5,800.00	1,134,944.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4,750.00	HOUR	72.7300	345,467.50	4,750.00	345,467.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
986.00	HOUR	706.8100	696,914.66	986.00	696,914.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	HOUR	3,910.7400	3,910,740.00	1,000.00	3,910,740.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10,000.00	HOUR	281.8400	2,818,400.00	10,000.00	2,818,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Figure: Pending invoice quantity specified for revenue budget lines

Changes on the Pro Forma Invoices Form

On the **Progress Billing** tab of the *Pro Forma Invoices* (PM307000) form, the following columns (shown in the screenshot below) have been added:

- **Revised Budgeted Quantity**: The revised budgeted quantity of the line, which is copied from the related revenue budget line of the project on the **Revenue Budget** tab of the *Projects* form.
- **Actual Quantity**: The actual quantity of the line, which is copied from the related revenue budget line of the project.
- **Previously Invoiced Quantity**: The running total of the **Quantity to Invoice** column on this tab for all the lines of pro forma invoices that have been created for this revenue budget line.
- **Quantity to Invoice**: The billing quantity of the line. On creation of the pro forma invoice line, the system copies the **Pending Invoice Quantity** value of the related revenue budget line of the project to this column if the revenue budget line is billed based on quantity. On release of the pro forma invoice, this quantity is copied to the prepared accounts receivable invoice.

> ⚠ If the related revenue budget line is billed based on amount, **Quantity to Invoice** is zero and cannot be changed.

- **UOM**: The unit of measure, which is copied from the related revenue budget line of the project.
- **Unit Price**: The unit price, which is copied from the **Unit Rate** column of the related revenue budget line.
- **Progress Billing Base**: The basis of project billing that has been used for this line.

Figure: Pro forma invoice with lines billed based in quantity

Changes on Other Forms

The **Progress Billing Base** column has been added on the **Tasks** tab of the *Project Templates* (PM208000) form.

Also, the **Progress Billing Base** box has been added on the **Summary** tab of the following forms:

- *Project Template Tasks* (PM208010)
- *Project Tasks* (PM302000)
- *Common Tasks* (PM208030)

Projects and Construction: Project-Specific Taxes

The tax jurisdiction used for the calculation of sales taxes and use taxes may depend on the location of the vendor or customer from which a document originates, and on the location of the site where the purchased or sold products or services were delivered. For example, a purchasing manager may purchase materials or services for a project from a vendor in a tax zone that differs from the tax zone of the project. In this case, the use tax must be calculated for the purchased materials based on the tax zone of the project.

Starting in Acumatica ERP 2022 R1, the system can be configured to use project-specific tax zones for calculating taxes and defining the ship-to addresses in project-related documents.

Changes to the Project Accounting Forms

On the *Projects Preferences* (PM101000) form, the **Calculate Project-Specific Taxes** check box has been added. If this check box is selected, in the project-related documents, the system uses the cost tax zone, revenue tax zone, and project address information that are specified in a project.

On the *Projects* (PM301000) form, the following UI changes have been made, as shown in the screenshot below:

- The new **Addresses** tab has been added.
- The **Project Address**, **Bill-To**, and **Bill-To Address** sections have been moved from the **Summary** tab to the **Addresses** tab.
- The **Tax Settings** section has been added. The **Cost Tax Zone** box specifies the tax zone to be used in the cost documents (such as bills, purchase orders, and subcontracts) related to the project. The **Revenue Tax Zone** box specifies the tax zone to be used in the revenue documents (such as invoices and sales orders) related to the project. A user can specify project-specific tax zones if the **Calculate Project-Specific Taxes** check box is selected on the *Projects Preferences* form.

Figure: Project tax settings on the Addresses tab

Documents with Project-Specific Taxes

If the **Calculate Project-Specific Taxes** check box is selected on the *Projects Preferences* (PM101000) form, the system uses the project-specific tax zones in project-related documents that are created on the following forms:

- *Pro Forma Invoices* (PM307000)
- *Opportunities* (CR304000)
- *Project Quotes* (PM304500)
- *Sales Orders* (SO301000)
- *Invoices* (SO303000)
- *Invoices and Memos* (AR301000)
- *Purchase Orders* (PO301000) if the **Require Single Project per Document** check box is selected on the *Accounts Payable Preferences* (AP101000) form
- *Subcontracts* (SC301000) if the **Require Single Project per Document** check box is selected on the *Accounts Payable Preferences* (AP101000) form
- *Bills and Adjustments* (AP301000) if the **Require Single Project per Document** check box is selected on the *Accounts Payable Preferences* (AP101000) form

- *Expense Receipt* (EP301020) if the **Allow Mixed Tax Settings in Claims** check box is selected on the *Time and Expenses Preferences* (EP101000) form
- *Expense Claim* (EP301020) if the **Allow Mixed Tax Settings in Claims** check box is selected on the *Time and Expenses Preferences* (EP101000) form
- *Service Orders* (FS300100)
- *Appointments* (FS300200)
- *Cash Sales* (AR304000)

Changes to the Rules of Shipping Address Selection

If the **Calculate Project-Specific Taxes** check box is selected on the *Projects Preferences* (PM101000) form, the address in the **Ship-To Address** section of the project-related documents is determined by using the following rules:

- If a project-related document is generated from a parent document, the address settings in the **Ship-To Address** section are copied from the **Ship-To Address** section of the parent document.
- If a project-related document is entered manually, the system copies the address settings (including the empty values) from the **Project Address** section of the *Projects* (PM301000) form.
- If a document that is not related to any project is entered manually, the system copies the address settings from the customer location or vendor location.

If the **Calculate Project-Specific Taxes** check box is cleared, the system copies the address settings from the customer location or vendor location.

The system updates the shipping address in an existing document as follows:

- If the **Calculate Project-Specific Taxes** check box is selected, the system updates the **Ship-To Address** section only if the project has been changed.
- If the **Calculate Project-Specific Taxes** check box is cleared, the system updates the **Ship-To Address** section only if the location has been changed.

Upgrade Notes

If the organization has previously used the *Tax Zone* customization package, the package must be unpublished before the upgrade. Then during the upgrade, the system will make the following changes:

- For each project, the `Project.TaxZoneID` value from the customization package will be copied to the **Revenue Tax Zone** (`Contract.RevenueTaxZoneID`) and **Cost Tax Zone** (**Contract.CostTaxZoneID**) boxes on the *Projects* (PM301000) form.
- The **Calculate Project-Specific Taxes** check box (`PMSetup.CalculateProjectSpecificTaxes`) on the *Projects Preferences* (PM101000) form will be selected.

If the organization has not used the *Tax Zone* customization package, the **Calculate Project-Specific Taxes** check box on the *Projects Preferences* form will be cleared by default.

After an upgrade, the system administrator must select or clear the **Calculate Project-Specific Taxes** check box on the *Projects Preferences* form, depending on the organization's business requirements.

System Administration: Enhancements to Email Processing

Acumatica ERP 2022 R1 introduces multiple enhancements to the functionality related to email processing.

Enhancements to the Creation of an Email Activity

On the *Email Activity* (CR306015) form, a user can specify the recipients of the email in the any of the following boxes: **To**, **CC**, and **BCC**. When the user opens the lookup table to select a contact in the corresponding box, the user can now view the type of the entity (*Contact*, *Employee*, or *Lead*) whose email address is available for selection (as shown in the following screenshot).
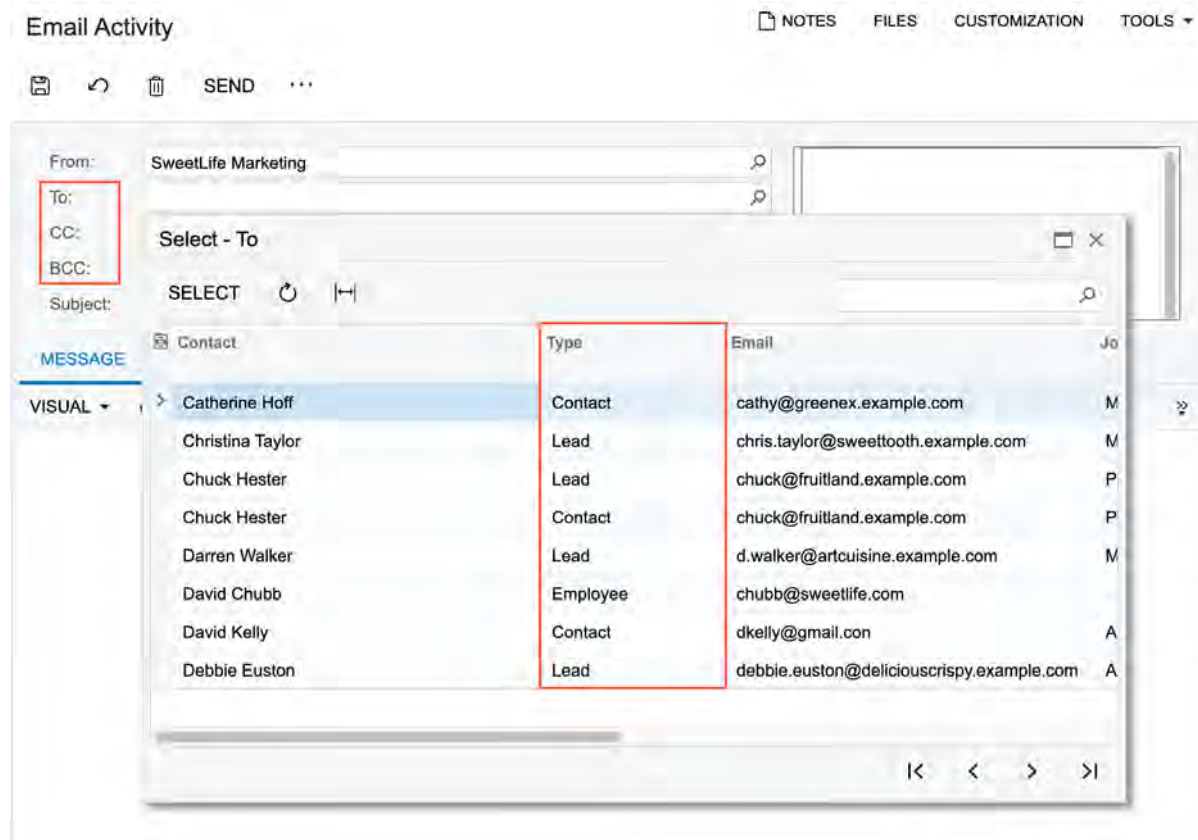
Figure: Entity type for recipients

When the user saves the email for the first time, the system no longer requires values to be specified in the **To**, **CC**, **BCC**, and **Subject** boxes. If the user does not fill in the **Subject** box and saves the email, the system inserts *(No subject)* in the box (as shown in the following screenshot).

Figure: (No subject) inserted in the Subject box

Also, the system will automatically save the email each time the user adds an image or attaches a file to the email.

The **Send** button on the form toolbar is available even if any of the following boxes are empty: **To**, **CC**, **BCC**, and **Subject**. If a user does not specify at least one recipient and clicks the **Send** button, the system displays a warning to notify the user that at least one recipient has to be specified. If the user clicks the **Send** button with the **Subject** box empty, the system inserts *(No subject)* in the box and sends the email at once or adds it to the processing queue.

The **Select Source** button has been replaced with the **Select Template** button. The **Select Template** button is available if the selected email activity has the *Draft* status and is associated with a related entity. That is, on the **Details** tab of the *Email Activity* form, the **Mail Status** box has the *Draft* value, and an entity is specified in the **Related Entity Description** box (as shown in the following screenshot).

Figure: The Select Template button

When a user clicks the **Select Template** button, the system opens the **Select Template** dialog box, where the user can select the notification template whose content will replace or be appended to the text entered on the **Message** tab of the *Email Activity* form.

Enhancements to the Sending Process

Acumatica ERP 2022 R1 also provides enhancements to the process of sending user emails. On the *Email Preferences* (SM204001) form, the **Send User Emails Immediately** check box has been added. It is cleared by default (as shown in the following screenshot).

Figure: The cleared Send User Emails Immediately check box

The **Send User Emails Immediately** check box is available for selection if the **Suspend Email Processing** check box is cleared on the same form. If a user selects the **Suspend Email Processing** check box, the system clears the **Send User Emails Immediately** check box (if it was selected) and makes it unavailable for selection.

If the **Send User Emails Immediately** check box is selected, when a user clicks **Send** on the *Email Activity* (CR306015) form for an email, the system sends the email at once and assigns it the *Processed* status.

If the check box is cleared, the system adds the email to the sending queue and assigns the email the *Pending Processing* status.

Regardless of the state of the **Send User Emails Immediately** check box, the system immediately sends the service emails for which corresponding notification templates were specified on the *Email Preferences* (SM204001) form (as shown in the following screenshot).
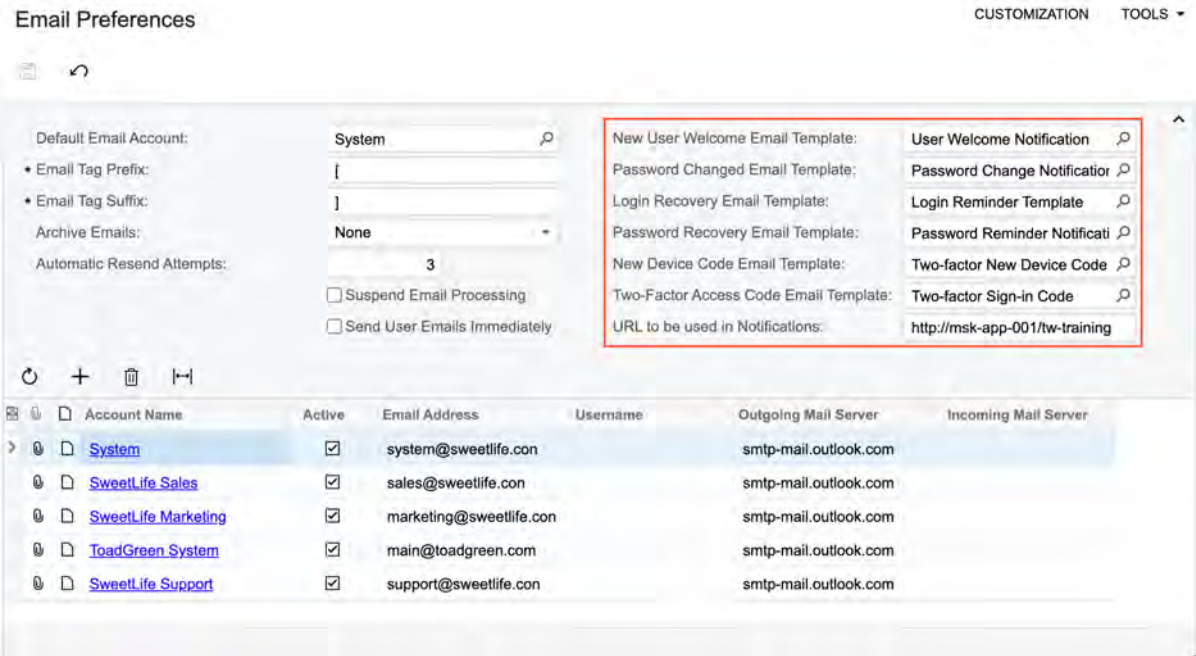
Figure: The list of notification templates for the service emails that the system sends at once

Enhancements to the Processing After Email Receipt

If users of the system access an email by using external mail clients, they can change the read status of an email on the mail server used by the company. With Acumatica ERP 2022 R1, for each system email account that is using IMAP protocol, a system administrator can configure how the system should process the collected emails on the email server after collecting them.

On the *System Email Accounts* (SM204002) form, the **After Receiving** box has been added on the **Service** tab (as shown in the following screenshot). The following processing options are available in the drop-down list:

- *Mark Email on Server as Read* (default): The system marks the email as read on the email server, regardless of its read status.
- *Leave Email on Server Untouched*: The system does not change the read status of the email on the email server.
- *Delete Email on Server*: The system deletes the email on the email server, regardless of its read status.

Figure: The new Receiving section

Redesigned Inquiry Forms That List Emails

The following inquiry forms have been replaced with generic inquiry forms with the same names but different form identifiers:

- *Incoming (CO409000)*
- *Draft (CO409010)*
- *Sent (CO409080)*
- *Outgoing (CO409020)*
- *Deleted (CO409090)*
- *Archived (CO409030)*

> (i) The form reference topics for these forms will be deprecated.

A user can access the new generic inquires from the **Time and Expenses** workspace. The workspace now features a new tile that gives users the ability to create a new email activity. The following screenshot shows the **Time and Expenses** workspace with the list of the new generic inquiry forms and the added **New Email Activity** tile.
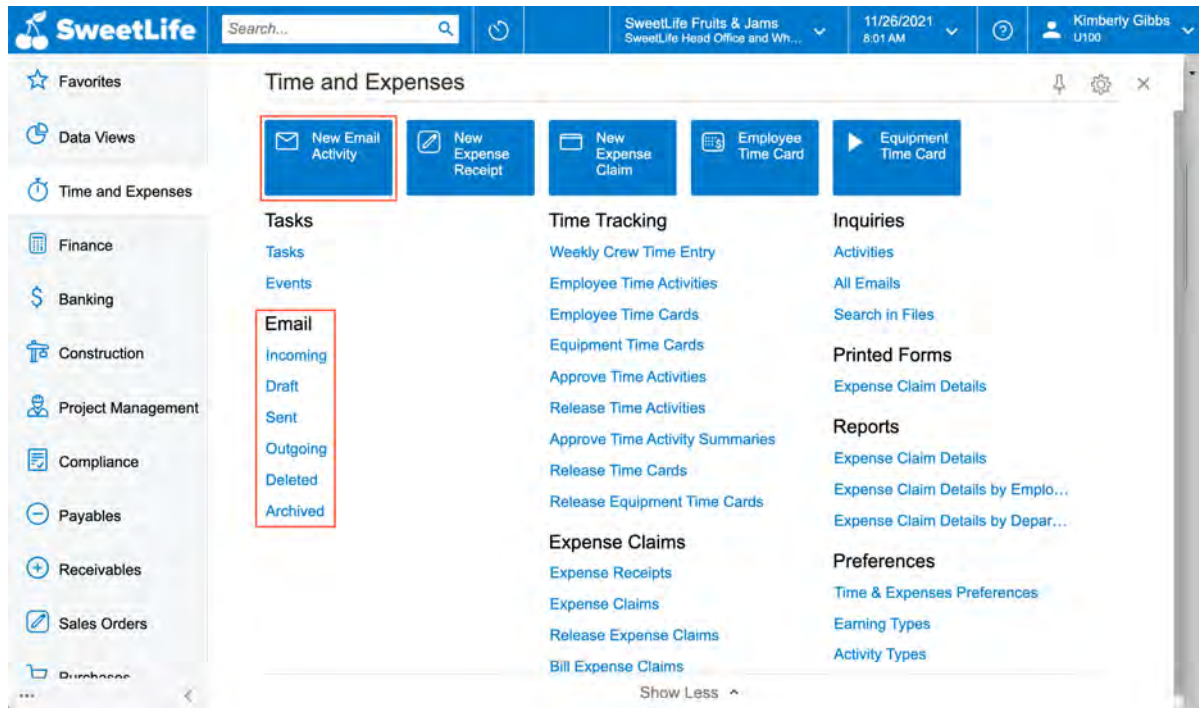
Figure: The new tile and the generic inquiries related to email processing

In the inquiry results of the new generic inquiry forms, the system highlights the unread emails with bold formatting. For each new inquiry, a side panel with the **Email Activity** tab has been added. A user can click an email in the list and view (and edit, if needed) the settings of the email activity while remaining on the generic inquiry form. The following screenshot shows the side panel for the new *Outgoing (CO4092PL)* generic inquiry form.
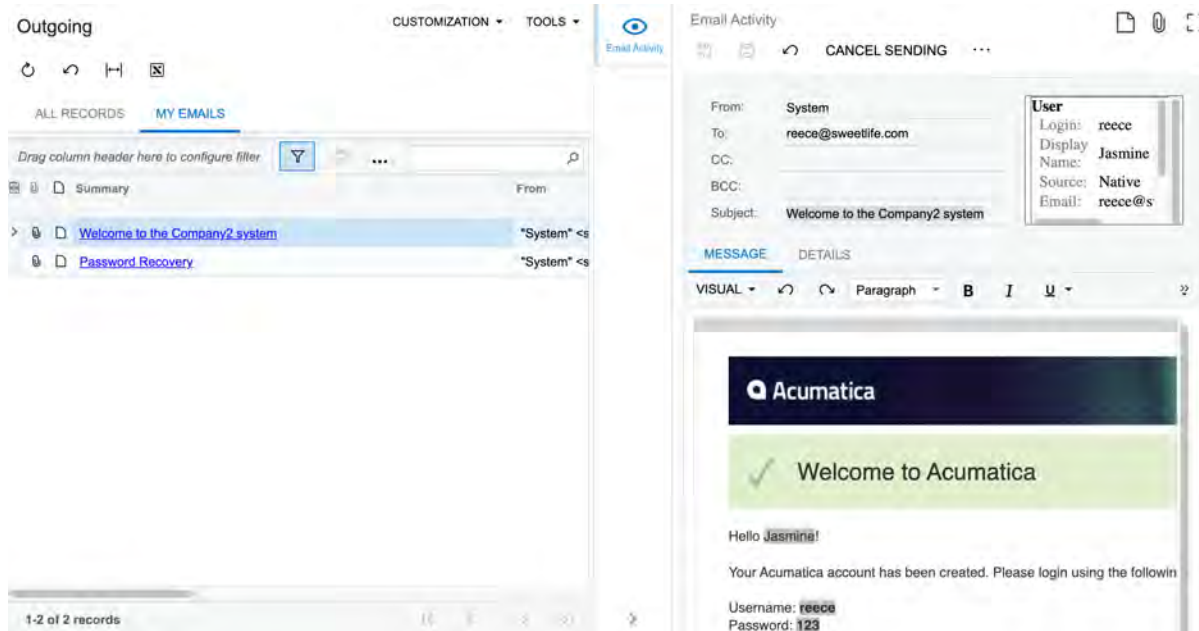
Figure: The new Outgoing inquiry with the side panel

⚠️ When a user clicks an unread email and then reviews it on the side panel, the system marks the email as read.

System Administration: Submitting Performance Logs to Support

Acumatica ERP 2022 R1 introduces the ability to mark a set of log records with a unique tag.

Submission of Performance Logs

In earlier versions of Acumatica ERP, the **Send Diagnostics & Usage Data to Acumatica** check box was introduced on the *Site Preferences* (SM200505) form. With the check box selected, the diagnostic information is collected and sent to Acumatica. The collected data is used to improve the customer experience, as well as to enhance the products and services of Acumatica. This data transmission takes place in the background without affecting current tasks or the performance of Acumatica ERP instance.

In 2022 R1, for licensed instances where the collection of diagnostic information is enabled, a user can make the system collect more detailed information about the last ten actions of a user who is experiencing a performance issue.

This user opens the **Acumatica Trace** page by clicking **Tools > Trace...** on the title bar of the form on which the issue is occurring. In the upper right corner of the page, the user clicks **Submit Logs**. The system collects SQL requests and exceptions for the last ten actions of the user and marks this collection with a unique tag. The system sends the information to Acumatica and displays the tag to the user so that the user can save it (see the following screenshot).
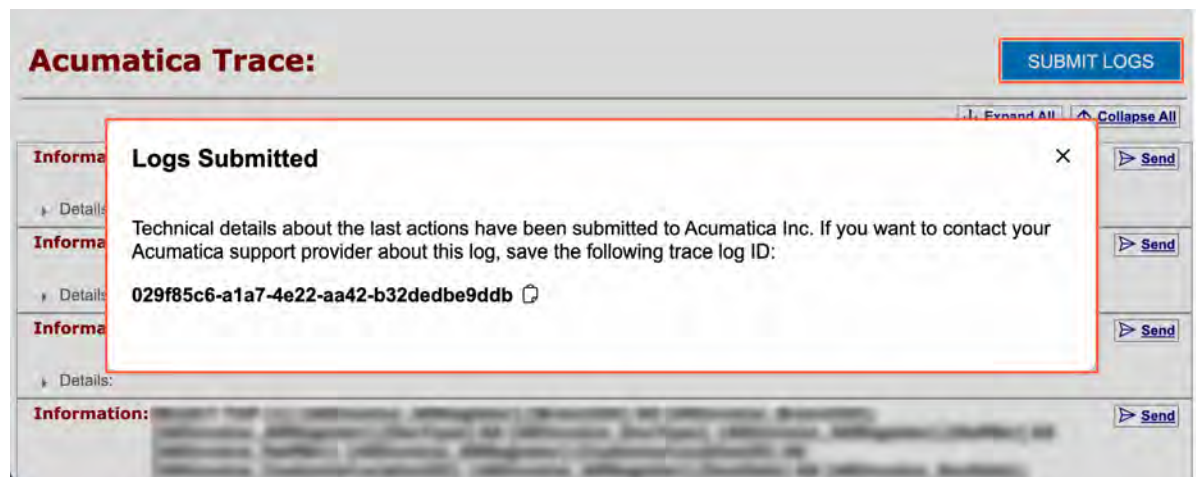
Figure: The submission of performance logs

If an administrator of the company decides to report the issue to its Acumatica support provider, they can specify the tag in the support request. The tag will help to identify the diagnostic information related to the case.

Changes to the Profiler Dialog Box

The *Request Profiler* (SM205070) is an embedded tool that can be used to troubleshoot performance-related issues in Acumatica ERP or an Acumatica Framework-based application. A user can access the tool from any Acumatica ERP form by clicking **Tools > Profiler** on the form title bar. The system opens the **Profiler** dialog box.

In 2022 R1, the **Export Last** button has been removed from the dialog box. A user clicked the button to initiate the export of the most recent requests for the current user's session, even if the Request Profiler was not enabled before the issue occurred. Now the user should use the **Submit Logs** button on the **Acumatica Trace** page.

Also, the *Request Profile* link was replaced with the **Open Request Profiler** button in the **Profiler** dialog box (see the following screenshot). When a user clicks the button, the system opens the *Request Profiler* (SM205070) form and filters the requests on the **Requests** tab by the currently logged in user.
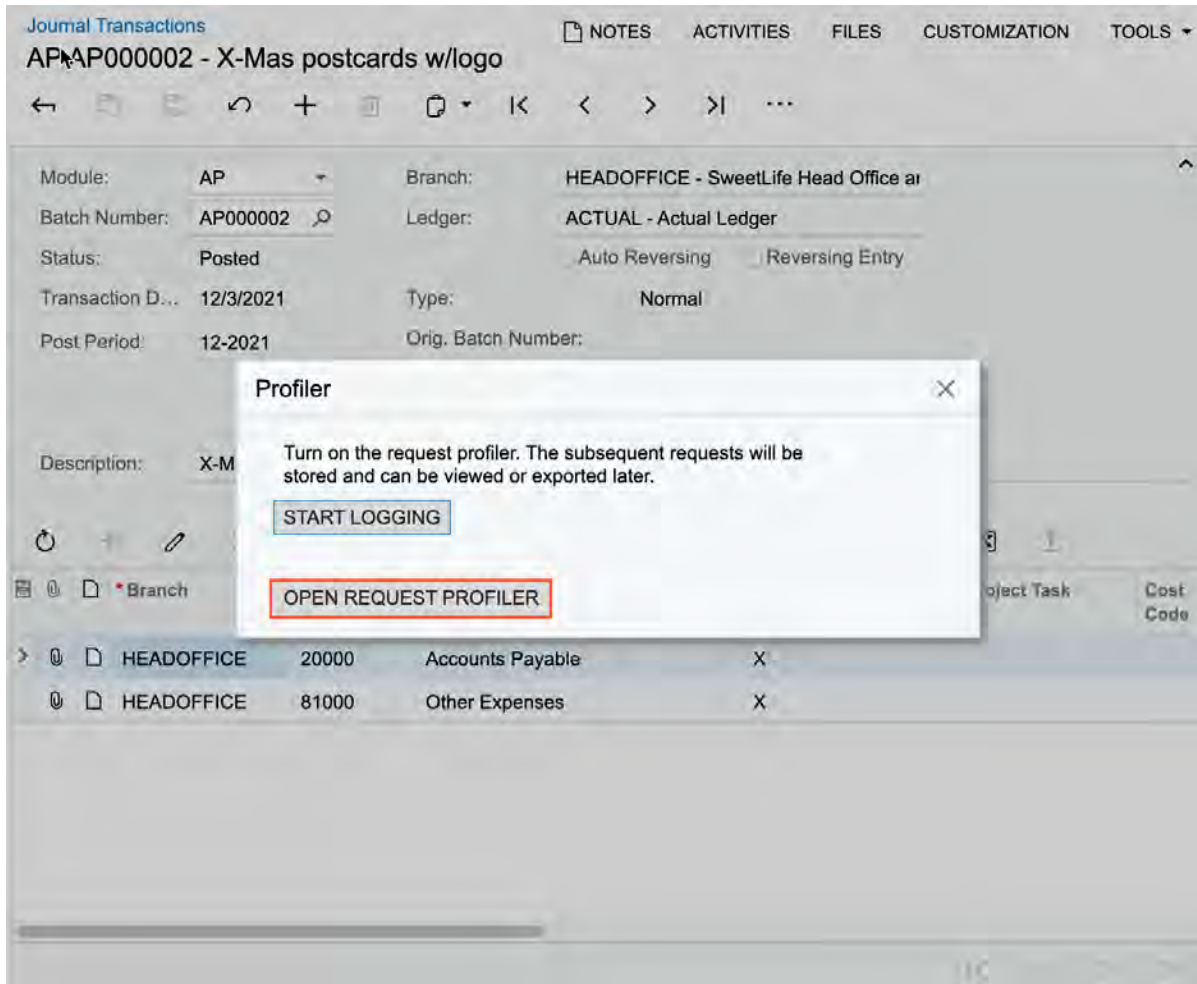
Figure: The new button in the Profiler dialog box

System Administration: Changes to Licensing of Test Tenants

In Acumatica ERP 2022 R1, several changes have been introduced to the licensing of test tenants.

In Acumatica ERP, a user can create a virtually unlimited number of test tenants. Test tenants are used to set up test environments that can be used for training purposes or for testing the system before performing potentially hazardous operations.

Changes to Licensed Instances

Starting in 2022 R1, the following changes have been introduced that affect test tenants:

- The number of concurrent users is limited by the license. Earlier, it was limited to two concurrent users regardless of the license.
- A watermark has been added to all printed forms and reports (see Item 1 in the following screenshot).
- An informational strip is displayed at the bottom of the screen (Item 2).

Figure: A printable invoice with a watermark; the informational strip

Also, a user will need to confirm their understanding of the limitations of a test tenant each time the user signs in to the tenant, as shown in the following screenshot.
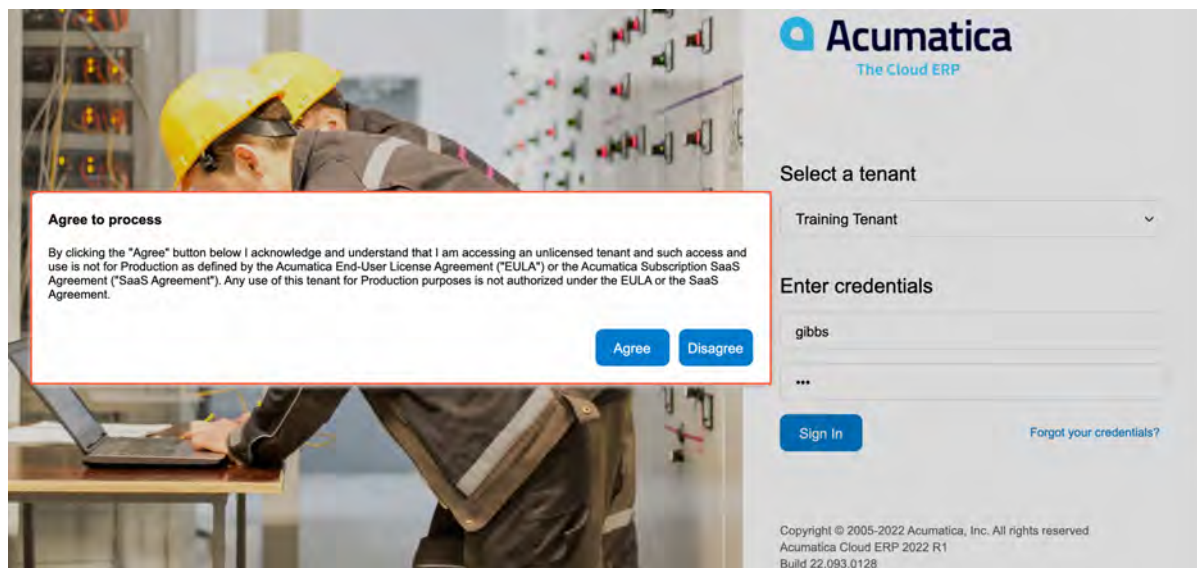
Figure: Confirmation dialog box for signing in to a test tenant

For details on managing tenants, see *Tenants: General Information*.

Changes to Trial Instances

Initially, Acumatica ERP is installed in trial mode; that is, no license has been applied to the instance. In trial mode, a user can enable and use any feature, but the mode has some limitations related to the number of tenants and concurrent users.

In Acumatica ERP 2022 R1, in addition to existing limitations, a watermark has been added to all printed forms and reports. For details, see *Preparing an Instance: Activation and Licensing*.

Known Issues with the Limitations

In some cases ,user sign-in to a multitenant instance may be configured to use an external identity provider, and access to the tenants may be restricted through the selection of the **Secure Tenant on Login Screen** check box on the Tenant Setup page of the Acumatica ERP Configuration Wizard. In this case, for a production tenant, the system may display the dialog box for the user to confirm their understanding that they are signing in to a test tenant, and the system may not display this dialog box for a test tenant.

If silent logon is configured, the confirmation dialog box is not displayed.

Customization: Checking the Certification Status of Customization Projects

The publication of customization projects that are not certified by Acumatica can affect the performance of Acumatica ERP instances. To prevent this, starting with Acumatica ERP 2022 R1, the system verifies the certification status of the customization projects that customizers create or upload to their Acumatica ERP instances.

> ⚠️ This functionality is available for only licensed Acumatica ERP instances and is disabled by default. To use it, a customizer should contact the company's Acumatica ERP support provider.

If this functionality is in use, the customizer can check the certification information for the customization projects by invoking a dedicated command, and the system will display the result of the check on the *Customization Projects* (SM204505) form. If a project is not certified or its certification status cannot be verified, the system displays a warning icon to the right of the customization project name. The following screenshot shows the warning icons and the warning that is displayed when a customizer hovers over the warning.

Figure: A warning for a customization project

We recommend that a customizer not publish a customization project with the *Not Certified*, *Not Verified*, or *Not Certified For Current Version* certification status. If the customizer decides to publish such a project, the system also displays a warning during publication.

> ⚠️ A customization project can have the *Not Verified* certification status if it has been uploaded to the instance before the upgrade to 2022 R1, if it has been created manually, or if it has already been certified but a customizer has modified it.

Changes to the Customization Project Form

On the *Customization Projects* (SM204505) form, the following elements have been added:

- **Certification Status**: This column displays the certification status of each uploaded customization project. Currently, a customization project can have one of the following statuses:
  - *Certified*
  - *Not Certified*
  - *Not Verified*
  - *Not Certified For Current Version*
- **Initials**: If the customization project is a part of an ISV solution, this column displays the initials assigned to this solution. The initials are also included in the `project.xml` file.

- **Validate Certification Status**: This command has been added to the More menu. The customizer uses the command to check the certification status of all the customization projects.

Customization: Deprecation of the Legacy Automated Warehouse Operations Engine

Starting in Acumatica ERP 2021 R1, the new Automated Warehouse Operations Engine have been introduced. In Acumatica ERP 2022 R1, it completely replaces the legacy Automated Warehouse Operations Engine which has been deprecated. For more information, refer to the *Legacy WMS Engine to be Deprecated in 2022 R1 Community* announcement.

The advantages of the new Automated Warehouse Operations Engine:

- Improved customization capabilities
- More structured, modular code that is easier to read and write
- Multiple architectural improvements

The new Automated Warehouse Operations Engine is required for the *Paperless Picking* feature introduced in Acumatica ERP 2021 R2. For more information, refer to the *Order Management: Paperless Picking* article in the Acumatica ERP 2021 R2 Initial Release Notes.

After an upgrade to Acumatica ERP 2022 R1:

- All the customers who enabled the Warehouse Management feature on the *Enable/Disable Features* (CS100000) form before the upgrade to Acumatica ERP 2022 R1 will be automatically moved to the new Automated Warehouse Operations Engine.
- The upgrade to the new engine will not affect the standard (core) functionality.

The customization packages used to customize any of the following screens may NOT work after the upgrade to Acumatica ERP 2022 R1 if they are not reworked for the new Automated Warehouse Operations Engine:

- *Pick, Pack, and Ship* (SO302020)
- *Receive and Put Away* (PO302020)
- *Scan and Issue* (IN302020)
- *Scan and Receive* (IN301020)
- *Scan and Transfer* (IN304020)
- *Scan and Count* (IN305020)
- *Item Lookup* (IN202520)
- *Storage Lookup* (IN409020)
- *Scan Labor* (AM302020)
- *Scan Materials* (AM300030)
- *Scan Move* (AM302010)

For details on customizing with the new Automated Warehouse Operations Engine, see the *Customization: Upgraded Automated Warehouse Operations Engine* article in the Acumatica ERP 2021 R1 Initial Release Notes and the *After the upgrade to Acumatica ERP 2022 R1 and later, customization packages used to customize Automated Warehouse Operations Engine forms may stop working* article in the Community.

Developer Documentation: Improvements in Developer Guides

In Acumatica ERP 2022 R1, the documentation for developers has been extended and improved as described below.

Project Accounting DAC Reference

The DAC Reference now includes the descriptions of the project accounting data access classes. These descriptions are available in *PX.Objects.PM Namespace* and *PX.Objects.PJ DAC Reference*. A user can also find an overview of the project accounting DACs in *Overview of the Project Accounting DACs*.

New and Updated Examples in the Integration Development Guide

In the Integration Development guide, for the following entities, REST API examples have been added or updated:

- `AccountDetailsForPeriodInquiry`
  - *Get General Ledger Transactions for Some Period*
- `Bill`
  - *Create a Bill for Particular Lines of a Purchase Receipt*
- `BusinessAccount`
  - *Retrieve the List of Business Accounts*
- `Contact`
  - *Retrieve the List of Contacts*
  - *Link Multiple Contacts to a Customer*
- `Employee`
  - *Create an Employee*
  - *Retrieve Information about an Employee*
- `InventorySummaryInquiry`
  - *Get a Summary of an Inventory Item*
- `Invoice`
  - *Retrieve the List of Invoices*
  - *Release an AR Invoice*
  - *Specify the Tax Zone for an Invoice*
- `Opportunity`
  - *Create a Sales Order from an Opportunity*
  - *Create a Business Account from an Opportunity*
- `Payment`
  - *Create an AR Payment*
  - *Retrieve Payments One by One*
- `PurchaseReceipt`
  - *Release a Purchase Receipt*
- `SalesOrder`
  - *Create a Shipment from a Sales Order*
- `ServiceOrder`

- *Retrieve a Service Order*
- `Shipment`
  - *Read the Tracking Number from a Shipment*
  - *Write the Tracking Number to a Shipment*
  - *Update the Freight Cost or Price*
  - *Create Separate Shipments for Each Sales Order*
- `StockItem`
  - *Retrieve Stock Items with Attributes*
  - *Retrieve Unit Conversion Rules from a Stock Item*
  - *Retrieve Stock Items with Prices and Quantities by Warehouse*
- `TaxCategory`
  - *Update a Tax Category*
- `TimeEntry`
  - *Read Employee Time Activities*
- `Vendor`
  - *Retrieve the List of Vendors*
  - *Create a Vendor*

These examples are also available in the `IntegrationDevelopment\Help` folder of the *Help-and-Training-Examples* repository in Acumatica GitHub.

Integration: Custom Push Notification Destinations for Commerce Connectors

In previous versions of Acumatica ERP, only the predefined *Commerce* push notification destination could be used for sending push notifications to commerce connectors. In Acumatica ERP 2022 R1, a developer can use custom push notification destinations for commerce connectors. If the list of generic inquiries in the *Commerce* destination is sufficient for a connector or the developer needs to add to this destination multiple generic inquiries, the developer can use the predefined *Commerce* notification destination. If the developer needs a completely different list of generic inquiries to send push notifications for, the developer can create a custom push notification destination.

Using a Custom Push Notification Destination

To use a custom push notification destination for a commerce connector, the developer does the following:

1. On the *Push Notifications* (SM302000) form, creates a custom push notification destination of the *Commerce Push Destination* type.
2. For each processor class that supports real-time synchronization through push notifications, in the `PushDestination` property of the `BCProcessorRealtime` attribute, specifies the name of the custom push notification destination.

   The following code shows an example of the attribute for the customer processor class.

   ```
   ...
   [BCProcessorRealtime(PushSupported = true, HookSupported = false,
     PushSources = new String[] { "BC-PUSH-Customers" },
     PushDestination = WCCaptions.PushDestination
   )]
   public class WooCustomerProcessor : BCProcessorSingleBase<WooCustomerProcessor,
     WooCustomerEntityBucket, MappedCustomer>, IProcessor
   {
     ...
   }
   ```

For details on the implementation of real-time synchronization for a commerce connector, see *To Implement Push Notifications for a Commerce Connector*.

Integration: Selection of Fields for Push Notifications

In previous versions of Acumatica ERP, if a generic inquiry was added to a push notification definition, any change of any field of this generic inquiry triggered a push notification. In Acumatica ERP 2022 R1, a developer can specify particular fields whose changes will trigger push notifications.

Suppose that for each shipment whose status has been changed, the developer needs to send the shipment number, status, date, warehouse, customer name, quantity, and weight. The developer does not want to receive a push notification when other fields except the status are changed because this could cause performance issues. On the *Push Notifications* (SM302000) form, the developer selects only the **Status** field for tracking in the **Fields** table on the **Generic Inquiries** tab, as shown in the following screenshot.

Figure: A field selected for tracking

The developer can also specify particular fields to be tracked for a built-in definition by selecting the fields in the **Fields** table on the **Built-in Definitions** tab of the *Push Notifications* form.

For details about the creation of push notification definitions, see *To Configure Push Notifications*.

Platform API: Improvements in the PXDBTimeStamp Attribute

In Acumatica ERP 2022 R1, the logic behind the `PXDBTimeStampAttribute` attribute has been improved.

If the `RecordComesFirst` property of the `PXDBTimeStamp` attribute is set to *true*, the record's own timestamp is now preferred over the other timestamps (such as a graph timestamp and a timestamp that is stored in the `PXTimeStampScope.Persisted` collection of the current operation that is performed in a separate thread). This change has been introduced because using the timestamp field of the record is the safest option when executing the `UPDATE` statements.

This change affects custom DACs only if a developer turns on the `RecordComesFirst` option by specifying `[PXDBTimestamp(RecordComesFirst = true)]` or invoking the `PXTimeStampScope.SetRecordComesFirst(typeof(YourDAC), true)` method. Otherwise, the code of custom DACs is not affected because the `RecordComesFirst` property is *false* by default.

For example, the following scenario was not failing even though it worked incorrectly in an operation performed in a separate thread:

1. In Graph 1, reading from the document (for example, a purchase order) was performed.

2. Via Graph 2, the document was updated (for example, a PO receipt updated the quantities of the related purchase order).

3. In Graph 1, the document was processed, even though the instance of the document was out of date because the updates from Step 2 were not applied to the instance.

With the improved logic in Acumatica ERP 2022 R1, the *Another Process has updated the document* error now occurs and data consistency issues do not happen.

Thus, we recommend that the developer sets the `RecordComesFirst` property of the `PXDBTimeStap` attribute to *true* if the developer is updating a single document from multiple graphs to avoid data consistency issues.

Related Changes in the PX.Objects.PO Namespace

The following changes have been made to the `PX.Objects.PO` namespace due to this improvement:

- The `RecordComesFirst` property has been set to *true* for the main PO table.
- The `POLineR` and `POLineUOpen` projections have been moved to separate files.
- Validation of the status on release of a PO receipt has been added.
- Validation of the status on release of a PO landed cost has been added.

Platform API: Support of Server Timing API

In Acumatica ERP 2022 R1, support for the Server Timing API has been added. This allows the developers to see all performance metrics related to a request-response cycle in a single and familiar place such as browser Developer Tools.

In a development environment (namely, if the site is running on IIS Express or IIS with the `<add key="hosting:environment" value="Development" />` setting in the `appSettings` section in the Web.config file), the performance metrics logging is turned on by default. In a production environment, it is required to turn on the performance metrics logging with the **Start Logging** button in the **Profiler** dialog box, which is displayed after **Tools > Profiler** is clicked. The same action can be done by selecting the **Log Requests** check box in the **Request Logging** section of the Request Profiler (SM205070) form.

For example, in Google Chrome, Chrome Developer Tools allows the developer to view the timing of Acumatica ERP processes. On the **Network** tab of Chrome Developer Tools, after an Acumatica ERP page is selected, the **Timing** tab of the panel contains the server timings, as shown in the following screenshot.
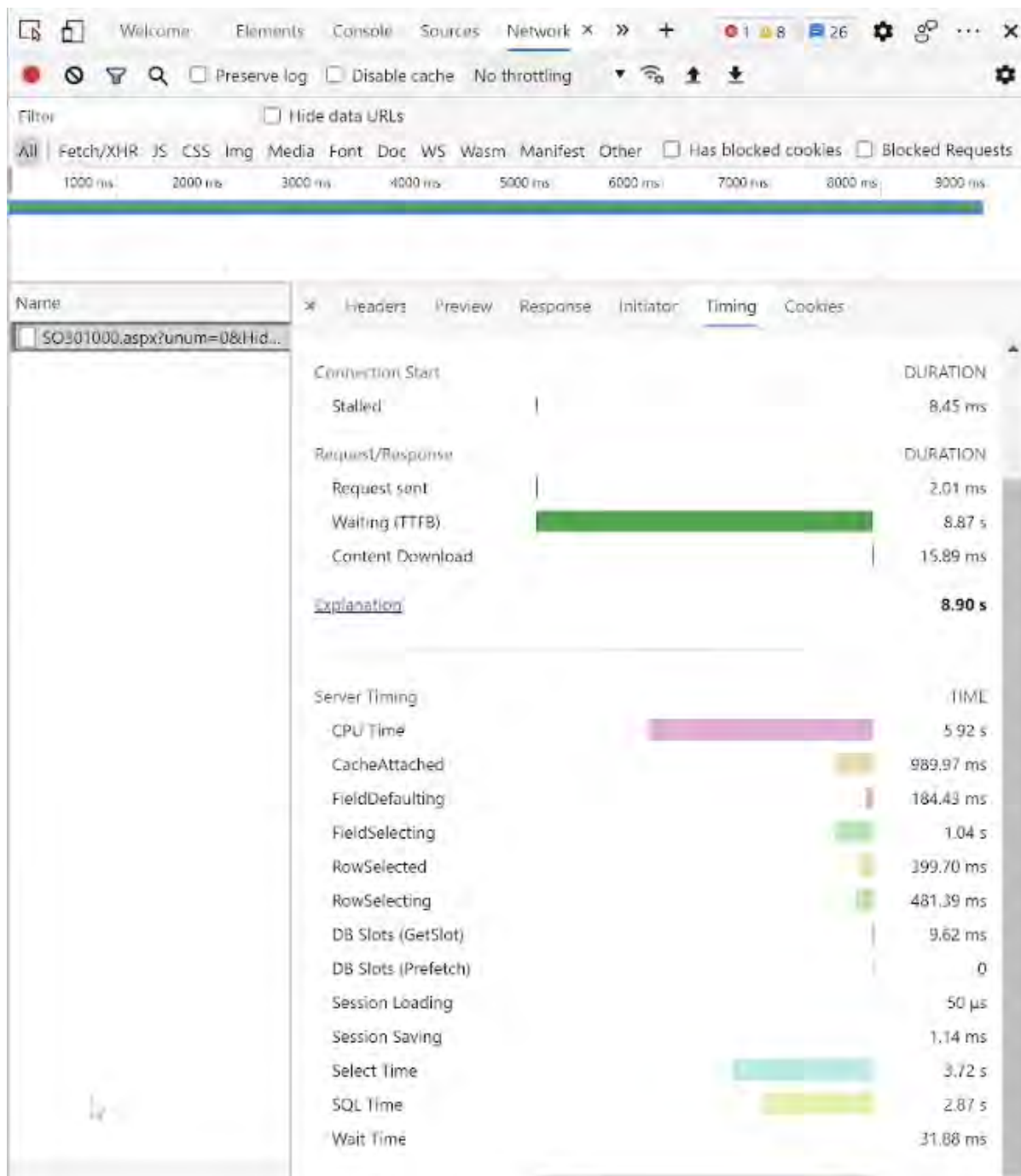
Figure: Chrome Developer Tools with Server Timing

Platform API: Support of Multicurrency in Purchase Order-Related Forms

In Acumatica ERP 2022 R1, purchase order-related forms have been moved to the latest version of the multicurrency generic graph extension, which is available in the `PX.Objects.CM.Extensions` namespace. The namespace includes `MultyCurrencyGraph` abstract classes and attributes. The main DACs of the graphs that implement the latest version of the multicurrency functionality have their `Cury` fields marked with `PX.Objects.CM.Extensions.PXDBCurrencyAttribute`. The call of `FindImplementation<IPXCurrencyHelper>()` for these graphs returns an object whose type is a successor of `MultyCurrencyGraph`.

For more details on inserting a document into a graph that supports the latest version of the multicurrency functionality, see *Platform API: Insertion of a Multicurrency Document*.

The `MultyCurrencyGraph` namespace provides `MultyCurrencyGraph` abstract class. A developer may need to reuse this multicurrency functionality in a custom form.

For details on implementing multicurrency support on a custom form, see *Platform API: Implementation of the Multicurrency Support on a Custom Form*.

Platform API: Technical Improvements in Inventory and Order Management

This section describes improvements that have been implemented in the code of the inventory and order management functional areas.

Database-Related Changes

In Acumatica ERP 2022 R1, the following changes have been made to the database:

- The `ReceiptType` (or `POReceiptType`) field has been added to following tables: `POCartReceipt`, `POReceiptSplitToCartSplitLink`, `POReceiptSplitToTransferSplitLink`, and `POAccrualSplit`.
- The `OrigReceiptType` column has been added to the `POReceiptLine` table.
- The indexes that used the links to the `POreceipt` table have been modified.
- The `CostType` field has been added to the `INTranCost` table. The field represents a type of inventory cost. The `CostType` field should be used instead of the `IsVirtual` field. Possible values of the field are the following:
  - `N`: Normal
  - `D`: Drop-Ship
  - `P`: Drop-Ship PPV
  - `T`: Transfer

The following changes have been made to the code:

- The primary key of the `POReceipt` DAC is now extended with the `ReceiptType` field.
- The `POReceiptType` field has been added to the `BillDetail` entity of the Default web service endpoint of 18.200.001 and 20.200.001 versions. The `POReceiptType` field is now a required field to link the `BillDetail` entity with the `POReceipt` entity.
- The **Receipt Type** box was added to the *Unreleased Material Allocations* (AM305500) and *Asset Summary* (FA402000) forms, and to the **Add LC** dialog box of the *Bills and Adjustments* (AP301000) form.
- The code of creating a purchase order from other entities (located in the `POCreate.cs` file) has been significantly refactored. The customization of this procedure is now easier and more flexible and does not require the customizer to copy existing code to the extensions.

Improvements in Update Operations

In previous versions of Acumatica ERP, a lot of unnecessary `UPDATE` operations were performed across the system when `PXFormulaAttribute` and `PXUnboundFormulaAttribute` were used with aggregation to the parent record. Usually, formulas with these attributes are supposed to sum some amounts or quantities. In previous versions, the attributes were triggered on every `RowUpdated` event and updated the parent every time (for example, if some string field is updated). These unnecessary `UPDATE` operations were removed to improve performance.

For example, when the `SOLine.Description` field was updated, the updates of the `SOOrder` object were performed, although the update of the `SOLine.Description` field did not impact the `SOOrder` object in any way. Now the update of the `SOLine.Description` field does not cause the update of the `SOOrder` object. But when the `SOLine.OrderQty` field is updated, the `SOOrder.OrderQty` is also updated because it depends on the line value via the formula.

Note that the code that implicitly depends on setting the `PXCache.Current` of the parent DAC after updating a child DAC record may be affected by these changes.

Improvements in Events

The events used by shipments and orders have been split: The new `GotShipmentCorrected` and `GotShipmentConfirmed` events are now used for the `SOOrder` entity, and the `ShipmentConfirmed` and `ShipmentCorrected` events are used for shipments.

Web Services: Changes in OData 4 Support

In Acumatica ERP 2022 R1, it has become possible to use the OData 4 interface to query data from data access classes that do not have a primary key. For example, data from the `PX.Objects.AP.APSetup`, `PX.Objects.AR.ARSetup`, and `PX.Objects.GL.GLSetup` setup data access classes can be returned via OData 4 now.

Workflow: Improvements in Workflow API

In Acumatica ERP 2022 R1, Workflow API has been improved as follows:

- A developer can specify the location of an action in a category: An action can be placed first, last, or before or after a specified action by using the `Placement` parameter of the `WithCategory` method. Examples are shown below.

  In the following code example, the `putOnHold` action is placed before the `releaseFromHold` action inside the `processingCategory` category.

  ```
  actions.Add(g => g.putOnHold, c => c
  .WithCategory(processingCategory, Placement.Before, g => g.releaseFromHold));
  ```

  In the following code example, the `putOnHold` action is placed last inside the `processingCategory` category.

  ```
  actions.Add(g => g.putOnHold, c => c
  .WithCategory(processingCategory, Placement.Last));
  ```

- A developer can subscribe an event handler to a change in a set of fields by using the `OfFieldUpdated` and `OfFieldsUpdated` methods. An example is shown in the following code.

  ```
  handlers.Add(handler => handler
    .WithTargetOf<ARInvoice>()
    .OfFieldsUpdated<OnUpdateStatusFields>()
    .Is(g => g.OnUpdateStatus)
    .UsesTargetAsPrimaryEntity());

  ...
  public class OnUpdateStatusFields : TypeArrayOf<IBqlField>
    .FilledWith<ARInvoice.hold, ARInvoice.creditHold, ARInvoice.printed,
    ARInvoice.dontPrint, ARInvoice.emailed, ARInvoice.dontEmail,
    ARInvoice.pendingProcessing>
  ```

  In the code above, the `OnUpdateStatus` event handler is subscribed to the change of any of the fields declared in the `OnUpdateStatusFields` class.

Workflow: Composite States in Workflows

In Acumatica ERP 2022 R1, composite states are supported in workflows. A composite (or parent) state is a state that contains an ordered sequence of nested states and transitions to and from these states. With composite states, a customizer can specify common settings (actions, fields to be updated, and transitions) for a group of states only once, in the composite state that includes these states.

Use of Composite States

For each of the states inside a composite state, the customizer can do the following:

- Specify which of these states should be skipped by using skip conditions
- Specify transitions to the next state inside the composite state instead of transitions to a specific state
- Specify transitions to the state that immediately follows the composite state, if this composite state is itself a nested state in another composite state
- Override the settings inherited from the composite state, if needed

These capabilities make workflow customization much easier. Customizers do not need to explicitly specify target states for transitions. Thus, if they add or remove states in the workflow or change the order of states, they do not need to modify all the affected transitions.

Additional Information

For more information about composite states in the user interface, see *Workflow Editor*, *To Add a Workflow*, and *To Define a Composite State in a Workflow*.

For more information about composite states in the workflow API, see *To Define a Composite State in a Workflow*.

Workflow: Composite States (UI)

This topic describes the implementation of composite states in the user interface.

The following screenshot shows the default workflow of the *Invoices* (SO303000) form on the State Diagram: Default Workflow page of the Customization Project Editor. The composite state (see Item 1 in the screenshot) contains nested states (Item 2) that are part of a typical invoice workflow, as well as transitions (Item 3) to and from the composite state and the nested states. Notice that the *Balanced* nested state also contains transitions (Item 4).
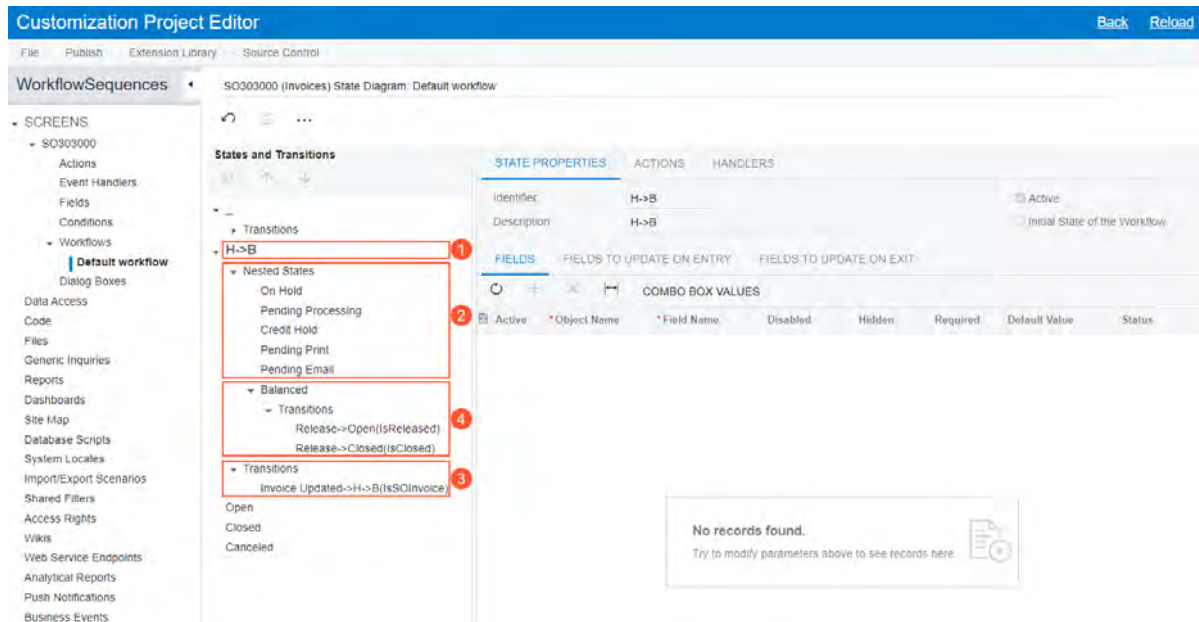
Figure: A composite state in the invoice workflow

> ⚠️ For workflows with nested states, the diagram view of the workflow is not available, and the **Diagram View** command has been removed from the More menu of the Workflow pages. Also, for forms with workflows with nested states, the **Customization** menu does not contain the **Show State Diagram** command.

Use of Skip Conditions

An entity created on a form cannot be in a composite state; it can only be in one of its nested states. When an entity enters any nested state in a composite state, the system checks the skip condition specified for this state, if one has been defined. If the condition is fulfilled, the system does the following for the current state:

1. If the current state is the initial state of the workflow, assigns the default values for the fields as specified on the **State Properties** tab of the Workflow page for the form

2. Does not check the fields that should be updated when the entity enters the state and leaves it

3. Does not check any of the workflow settings, and moves the entity to the next state inside the composite state

If no skip condition is specified, the system uses the typical workflow for this state. This means that the transitions are triggered only by actions or event handlers, and the system does not check the skip condition again while the entity remains in this state.

Update of Fields of a State

For all types of workflows, on the Workflow pages, the **Fields to Update on Entry** and **Fields to Update on Exit** tabs have been added to the **State Properties** tab. On these tabs, a customizer specifies which fields should be updated when an entity enters a particular state and when the entity leaves this state.

Before a transition is performed, the system checks the following:

- For the target state, the fields that should be updated when the entity enters the state
- For the original state, the fields that should be updated when the entity leaves the state

Changes to the User Interface

In the **State and Transitions** pane of the Customization Project Editor, for workflows that do not have composite states by default, the transitions are now grouped in the **Transitions** node. The following screenshot shows the tree view of the default workflow for the *Opportunities* (CR304000) form.

Figure: The default opportunity workflow

On the Workflow page for a customized or custom workflow, the following changes have been implemented:
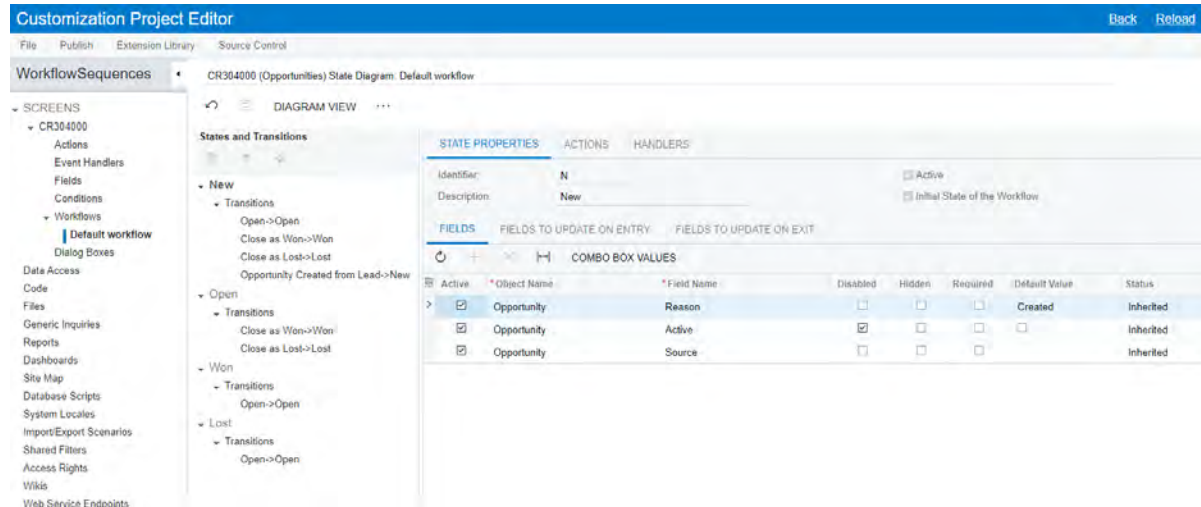
- On the More menu, the **Change Parent State** command has been added. It opens a dialog box in which the customizer can select the parent state for the current state.

  This command is also available for workflows that do not have composite states yet. If a customizer selects a parent state for any state of such a workflow, this parent state becomes a composite state.

  If you specify a parent state, the state you are creating becomes a nested one for this parent state. If this parent state is not a composite state yet (that is, it does not contain any nested states), it becomes a composite state.

- In the **State Properties** tab, the following elements have been added:
  - **Skip Condition**: A box in the Summary area of the tab that specifies the condition that the system checks when an entity enters any nested state in a composite state. If the condition is fulfilled, the state is skipped. The box is displayed only for a nested state.
  - **Next State**: A read-only box in the Summary area of the tab that specifies the state to which an entity will move if the skip condition is fulfilled and the entity skips the current state. The box is displayed only for a nested state.
  - **Fields to Update on Entry**: A tab that contains the list of fields that should be updated when an entity enters the state. This tab is also available for workflows without composite states.
  - **Fields to Update on Exit**: The tab that contains the list of fields that should be updated when an entity leaves the state. This tab is also available for workflows without composite states.
- In the **Add State** and **Add Predefined State** dialog boxes, the **Parent State** box has been added.

  If the customizer specifies a parent state, the added state becomes a nested one for this parent state. If this parent state is not a composite state yet (that is, it does not contain any nested states), it becomes a composite state. If the customizer leaves this box empty, the state is added to the bottom of the list of states on the **States and Transitions** pane.
- In the **Target State** box of the **Add Transition** dialog box, the *@Next* and *@ParentNext* options have been added. When specifying the target state of the transition, the customizer selects *@Next* to specify the next state in the composite state and *@ParentNext* to specify the next state of the parent state.

An Example of Using a Composite State

Suppose that the customizer wants to add a new state, *Postponed*, to the workflow for the *Invoices* (SO303000) form after the *Credit Hold* state; the customizer then wants to specify the skip condition for it and add a transition from this state to the next state in the workflow. The customizer performs the following steps:

1. On the Conditions page, creates a condition to make sure that the value in the **Cash Discount** box equals *0*.

2. On the More menu, clicks **Add State**.

3. In the **Add State** dialog box, specifies the following settings:

   - **Identifier**: Y
   - **Description**: *Postponed*
   - **Parent State**: *H->B*

4. Clicks **OK** to close the dialog box.

   The system adds the *Postponed* state after the last of the nested states (*Balanced* in this case).

5. Uses the arrows on the toolbar of the **States and Transitions** pane to move the added state after the *Credit Hold* state.

6. Clicks the *Postponed* state, and then selects the created condition in the **Skip Condition** box of the **State Properties** tab.

   If the condition is fulfilled (that is, if the value in the **Cash Discount** box equals *0*) and a document enters the *Postponed* state, it then skips this state and automatically moves to the next state (*Pending Print* in this case).

7. On the More menu, clicks **Add Transition**.

8. In the **Add Transition** dialog box, which is opened, clicks **Create** and specifies the following settings for the action:

   - **Action Name**: DiscountApproved
   - **Display Name**: Discount Approved
   - **Category**: *Processing*

9. Clicks **OK** to close the dialog box.

10. In the **Target State** box of the **Add Transition** dialog box, selects *@Next*.

    This setting indicates that the transition will lead to the next state in the sequence (*Pending Print* in this case).

11. Clicks **OK** to close the dialog box.

    The system adds the transition to the **Transitions** node of the *Postponed* state.

12. On the **Fields to Update on Exit** tab for this state, adds the *Cash Discount Date* field and sets its value to *=Now()*.

    Each time a document leaves this state—that is, when the document moves to another state because a transition has been triggered (in this case, the transition triggered by the *Discount Approved* action)—the value of the *Cash Discount Date* field changes to the current date.

13. Saves these changes.

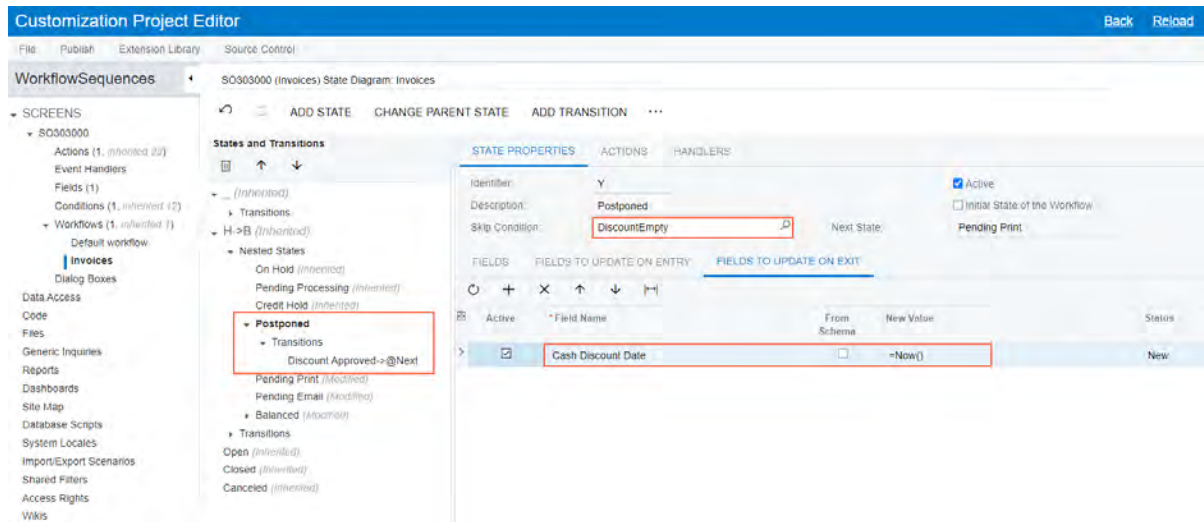The workflow with the added state is shown in the following screenshot.

Figure: The added Pending Approval state

Workflow: Composite States (API)

This topic describes the implementation of composite states through the use of the workflow API.

Implementing a Composite State

A developer can add a composite state by using the `AddSequence` method in the lambda expression of the `WithFlowStates` method. The developer should specify the name of the composite state as the type parameter of the method. In the lambda expression provided for the `AddSequence` method, a developer can add the states that are a part of the composite state by using the `WithStates` method. The states in the composite states are declared the same way as they are declared in the `AddFlowStates` method.

To specify that a state should be skipped in the composite state, the developer should call the `IsSkippedWhen` method in the state definition. The condition that determines whether the state should be skipped is specified in the parameter of the `IsSkippedWhen` method.

An example of a composite state declaration is shown in the following code.

```
.WithFlowStates(fss =>
{
 fss.Add(initialState, flowState => flowState.IsInitial(g => g.initializeState));
 fss.AddSequence<State.HoldToBalance>(seq =>
  seq.WithStates(sss =>
   {
     sss.Add<State.hold>(flowState =>
     {
      return flowState
        .IsSkippedWhen(conditions.IsNotOnHold)
        .WithActions(actions =>
        {
         ...
        });
     });
     sss.Add<State.creditHold>(flowState =>
     {
      return flowState
```

```
        .IsSkippedWhen(conditions.IsCreditHoldChecked)
        .WithActions(actions =>
        {
         ...
        });
     });
                            sss.Add<State.balanced>(flowState =>
     {
      return flowState
        .WithActions(actions =>
        {
         ...
        });
     });
                        }));
 }
```

In the code above, the `HoldToBalance` composite state is declared. The composite state includes the `hold`, `creditHold`, and `balanced` states. The `hold` state is skipped when the `IsNotOnHold` condition is true. The `creditHold` state is skipped when the `IsCreditHoldChecked` condition is true. The `balanced` state is never skipped.

Declaring a Transition for a Composite State

A developer can define the following transitions involving a composite state:

- A transition from any state of a workflow to the composite state.
- A transition from a composite state to any state of a workflow.

  All of these transitions are inherited by the states of a composite state.

- A transition from a specific state of the composite state to any state of the workflow.
- A transition from a composite state to itself so that the workflow engine can search for a proper state and check the conditions again.

  To define such a transition, in the `Add` method for the transition, specify the target state that is the same as the source state.

- A transition from one state of a composite state to the state defined after it.

  To define such a transition, in the `Add` method for the transition, call the `ToNext` method.

- A transition from a state in a child composite state to the next state in the parent composite state if the composite state is defined inside another composite state. To define such a state, in the `Add` method for a transition, call the `ToParentNext` method.

> ⚠ A composite state cannot be the initial state of the workflow. A developer must specify a transition from an initial state to the composite state.

The following code shows an example of the transitions involving a composite state.

```
.WithTransitions(transitions =>
{
 transitions.AddGroupFrom(initialState, ts =>
 {
  ts.Add(t => t.To<State.HoldToBalance>()
    .IsTriggeredOn(g => g.initializeState)); // To default sequence
 });
 transitions.AddGroupFrom<State.HoldToBalance>(ts =>
 {
  ts.Add(t => t
```

```
    .To<State.HoldToBalance>()
    .IsTriggeredOn(g => g.OnUpdateStatus)
    .When(conditions.IsARInvoice));
  ts.Add(t => t
    .To<State.open>()
    .IsTriggeredOn(g => g.OnReleaseDocument)
    .When(conditions.IsOpen));
        }
}
```

In the code above, the following transitions are declared:

- A transition from the initial state to the `HoldToBalance` composite state
- A transition from the `HoldToBalance` composite state to itself
- A transition from the `HoldToBalance` composite state

Updating an Existing Composite State

To update a composite state, a developer should use the `UpdateSequence` method in the `WithFlowStates` method. In the `WithStates` method of the `UpdateSequence` method, the developer can add, update, or delete a state by using the `Add`, `Update`, or `Delete` method respectively. To specify the location of the state in the updated composite state, the developer should use the `PlaceAfter` method.

The following code shows an example of an updated composite state.

```
.WithFlowStates(states =>
{
 states.UpdateSequence<State.HoldToBalance>(seq =>
  seq.WithStates(sss =>
  {
   sss.Add<State.pendingApproval>(flowState =>
   {
    return flowState
     .IsSkippedWhen(conditions.IsApproved)
     .WithActions(actions =>
     {
      ...
     })
     .PlaceAfter<State.hold>();
   });
  }));
})
.WithTransitions(transitions =>
{
 transitions.AddGroupFrom<State.pendingApproval>(ts =>
 {
  ts.Add(t => t
   .To<State.HoldToBalance>()
   .IsTriggeredOn(g => g.OnUpdateStatus));
  ts.Add(t => t
   .ToNext()
   .IsTriggeredOn(aproveAction)
   .When(conditions.IsApproved));
  ts.Add(t => t
   .To<State.rejected>()
   .IsTriggeredOn(rejectAction)
   .When(conditions.IsRejected));
```

```
  });
});
```

In the code above, the `pendingApproval` state is added to the `HoldToBalance` composite state and placed after the `hold` state. Three transitions are added from the `pendingApprovel` state.

Fixes and Enhancements

You can find fixes and minor enhancements introduced in Acumatica ERP 2022 R1 in the following document: *Acumatica ERP 2022 R1 Release Notes: Fixes and Enhancements*.