System Administration
Training Guide

S300 System Management

Acumatica

Certification Course Prerequisites

You will perform the hands-on exercises in your installed copy of Acumatica with the "Demo" DATA that is provided with the Acumatica installation package.

Prior to start the test, make sure to activate all the features of the Application using the Common Settings:

1. Open ***Enable/Disable Features*** form (CS.10.00.00)
    a. *Configuration > Common Settings > Licensing > Enable/Disable Features*
2. Click the **Modify** button from the tool bar
3. Confirm that the features are enabled/disabled as follows:

Field	Value
Organization	{checked}
Customer Management	{checked}
Project Management	{checked}
Time Reporting on Activity	{checked}
Finance	{checked}
Multi-Branch Support	{checked}
Inter-Branch Transactions	{checked}
Multi-Currency Accounting	{checked}
Deferred Revenue Management	{checked}
Subaccounts	{checked}
Fixed Assets Management	{checked}
VAT Reporting	{checked}
Invoice Rounding	{unchecked}
Support for Expense Reclassification	{unchecked}
Contract Management	{checked}
Tax Entry from GL Module	{unchecked}
ROT & RUT Deduction	{unchecked}
Consolidated Posting to GL	{checked}
Volume Pricing	{unchecked}
Distribution	{checked}
Inventory Subitems	{checked}
Automatic Packaging	{checked}
Warehouses	{checked}
Warehouse Locations	{checked}
Blanket Purchase Orders	{checked}
Drop Shipments	{checked}
Multiple Unit of Measure	{checked}
Misc	{checked}
Row-Level Security	{checked}

Field-Level Audit	{checked}
Avalara Tax Integration	{checked}
Address Validation	{checked}
Notification Module	{checked}

4. **Save** your changes

5. Click the **Activate** button from the tool bar

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Company Management

Learning Objects:

- *Learn to manage multiple companies in Acumatica ERP*
- *Learn how to use snapshot functionality of Acumatica ERP*
- *How to create test environments*

Acumatica ERP is an application with multi-tenancy architecture that allows servicing of multiple customers or tenants within a single instance. You can create new companies directly from the Acumatica application without using the Acumatica configuration wizard. To speed up new company implementations, you can create and use company templates that actually are company snapshots. Also, snapshots can be used to set up a test environment in which you can perform additional configuring or execute an irreversible operation (to view and analyze the consequences) before you apply these changes to your live system.

Support for Multiple Companies

Acumatica ERP is an application with multi-tenancy architecture in which a single instance of an application can serve multiple tenants. With ERP software, each such tenant is a separate company. When you use software with a multi-tenancy architecture, you can run one instance of the application with one instance of a database and give multiple companies web access to the same database.

The tenant companies, which you create in the same application, may have different configurations and may have their *own* data isolated and invisible to other companies. However, all tenants have the *shared* data contained in a special-use, built-in *system company* or a user-created *parent company*.

Tenant Companies

When you install Acumatica ERP application, you should create at least one tenant company. You can create more companies with the help of the Acumatica ERP Configuration wizard or directly from the Acumatica ERP application by using the Companies (SM.20.35.20) form. Because the functionality of creating new companies is available within the application, you can create multiple companies in the same application without logging off the application.

You can configure each company from scratch or create companies using templates based on snapshots. Once the company is configured, users can initialize it by importing or entering the data. A company's configuration settings and entered data are not accessible from other tenants of the same application.

Also, you can create a new company as a test environment that the users can then test for specific configuration changes applicable to the company. Test companies do not count toward the maximum number of allowed companies.

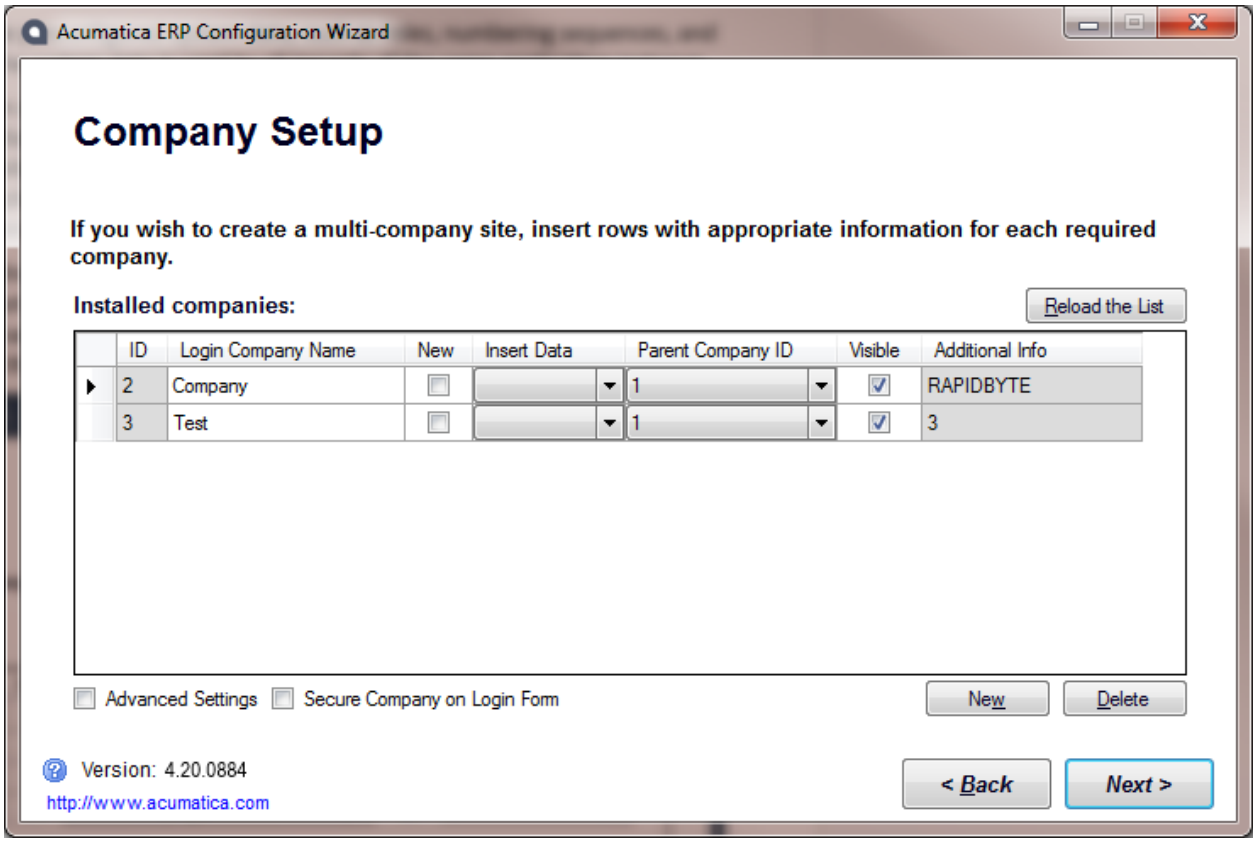
The System Company

When you install Acumatica ERP, the System company (with **Company ID**= *1*) is always created automatically.

The System Company contains the preconfigured system data, such as roles, numbering sequences, and the wiki-based documentation. The system data is used by all tenants of the same application instance.

The System Company is hidden on all end-user forms, including the Companies form. All other user-created companies inherit the initial configuration and system data (predefined data) from the System Company. That is, all the data available in System is visible to other companies in the same database. An application update or upgrade replaces all data available in the System Company, while the data created by users in user-created companies remains unchanged.

A snapshot created for a user-defined company includes all custom data available in the database for the company account and does not include any data contained in the System Company. When a snapshot is being restored in the same database or another database, it will use the system data from the System Company available in that database.



The Parent Company

If you would like to replace the preconfigured roles, numbering sequences, and other preconfigured data similarly for multiple new companies, you can create a *parent* company that will serve as a system company for your new companies.

To configure a custom parent company, create a new company and provide a name that clearly indicates how this company will be used, for example, *Parent* company. This company inherits all the data from the System Company. In the Parent company, override the preconfigured settings as needed and specify other configuration settings to be used in all the new companies. Then, when you create a new company by using the Acumatica ERP Configuration wizard, you specify the Parent company as the new company's parent company; the new company will inherit all the data from the Parent company, not the System Company. You can create new companies based on the parent company only by using the Acumatica ERP Configuration wizard.

If you create a snapshot of a company based on a custom parent that is not the System Company, this snapshot will not contain the parent's data; when it is restored in another database with no custom parent company, the custom parent's data will be replaced by the original system data. To fully restore such a company from its snapshot in another database, perform the following steps:

1. Create the first new company.
2. Restore the snapshot of the parent company in the first new company. This company will serve as the custom parent company
3. Create the second new company, and select the first company as the parent company for the second company.
4. Restore the company snapshot with all the required data in this new company.

Company Snapshots

In Acumatica ERP, you can create company snapshots containing your company's full or partial data. Snapshots can be saved locally in the same database, or at a specified network location. Later, the snapshots can be restored to another company. Snapshots can be used as company templates when you create in Acumatica ERP new companies that are similar in configuration. Also, you can use snapshots to set up a test environment for your company in which you test the configuration changes required for your company before you apply them to your live company.

Content Options

You can create a snapshot of the company configuration and data by using the Companies (SM.20.35.20) form. When you create a snapshot, you choose one of the following options, depending on the intended use of the snapshot:

- *Full*: All data related to the company
- *Full except attachments and wiki*: The full data related to the company, excluding attachments and wiki articles
- *Full except attachments*: The full data related to the company, excluding attachments
- *Settings and business accounts*: The company's complete set of configuration settings and business accounts

- *Settings only*: The company's configuration settings

When you are setting up a test environment for your company, you can choose from the first three options, which include the company's data in the snapshot. The options that do not include the data in the snapshot are mostly useful when you create company templates.

Also, you can specify whether to include all the published customizations performed in your application instance.

The contents of the snapshots, that is the SQL database tables that are included in the snapshot, are defined by snapshot configuration files with .esc extension. Usually these files are located in %Program Files%\Acumatica ERP\<instance name>\App_Data\SnapshotConfigs, where <instance name> is the name of the application instance website.

We recommend that you create a snapshot for a test company or as a backup only when no users are entering data or performing processing and no processing is scheduled. This arrangement ensures the consistency of the data because the database tables are copied one by one for a snapshot.

If you are going to use a snapshot in a company in the same database, you should include all customizations because any customization is database-wide. If you are going to restore the snapshot in an external database where no customization was performed, do not include customizations in the snapshot. If the external database has a different set of customizations applied, restoring the snapshot will likely fail.

Storage Options

Once the snapshot is created, it appears on the **Snapshots** tab of the Companies form. Company snapshots are stored in the database as companies with special company IDs (negative integers).

When you update the application and the database, the stored snapshots are updated.

To be exported to another company or to external storage, a snapshot should be *prepared*—that is, saved to a file. Prepared snapshots carry information about the version of the database and the version of the application, and can be restored in a new database only if the versions of the application and database match. A prepared snapshot can be prepared again immediately before exporting to make sure that all database updates (including the most recent ones) are reflected in the file.

You should consider available disk space on application server (in case of preparing a snapshot) and database space needed to create snapshots.

Visibility Options

Snapshots of a specific company that are stored in the same database are *visible* only to this company; that is, the snapshots can be restored only in the company of their origin. If needed, you can change the visibility of a snapshot to allow it to be restored to other companies in the same database. However, you can restore a snapshot with increased visibility to any other company only if you are logged into the company where the snapshot was created.

Restoration Options

To create a new company that is similar to an existing one, or to restore a company, you can choose a locally stored snapshot or import a snapshot from a local network or computer.

If you are going to restore a snapshot in the same database where it had been created, you should include all customizations in the snapshot. If you are going to restore a snapshot in a company where no customization had been applied, make sure **Include Customization** check box (on the **Restore Snapshot** dialog) is cleared to exclude customizations from the snapshot.

A snapshot restored in a company overwrites all the data in this company.

If you are going to restore the snapshot in an external database where a different set of customizations was applied, the restore operation will probably fail.

Company Templates

To speed up the implementation of new companies, you can create and use company templates. In Acumatica, you use the functionality of snapshots to create company templates.

You create snapshots by using the Companies (SM.20.35.20) form. A *snapshot* may contain all custom data available in the database for the company account or only some of the data

When a company snapshot is restored in a newly created empty company, this new company will contain all the data that you included in the snapshot. You can restore a snapshot in the same database where it was created or import it to another website and restore it in another database. Any snapshot can be used multiple times.

Keep in mind that exported snapshots are version depended. So it is important to export snapshots after successful upgrade to keep your custom Company Templates up-to-date.

How To: create a new company that is very similar in configuration to an existing company

1. Log into the company that will be used as a source of data.
2. On the **System** tab, click **Management**. In the left pane, navigate to **Manage** > **Companies**.

3. In the **Company ID** field, select the company whose snapshot you want to create.
4. On the form toolbar, click **Create Snapshot**, which opens the **Create Snapshot** dialog. In the **Description** field on the dialog, notice the automatically generated identifier of the snapshot.
5. In the **Export Mode** field, select *Settings only* to include the company's configuration settings only and exclude actual documents.
6. Select the **Include Customization** check box to include all published customizations in the snapshot.
7. Click **OK** to close the dialog and initiate the process of creating the snapshot, which will serve as a template for a new company.
8. On the Details toolbar of the Companies form, click **Prepare Snapshot** to export the snapshot as a file to a location on the network. You can later restore the snapshot in a company in another database. (This option requires **Storage Settings** option be set in **Update Preferences** (**SM.20.35.05**) form)

Note that a snapshot carries information about the version of the database where it was created, so before you restore a snapshot, make sure that the versions match.

How To: create multiple related companies with similar configurations

If you need to create multiple related companies with similar configurations, first configure the most typical one (which you will use as a prototype). At each stage of implementation, create a snapshot that includes the full data of the prototype company. If the companies are related businesses, you can enter business accounts that are used by more than one company and add them to another snapshot that can be used for each company.

When you create a snapshot, it appears on the list of available snapshots for the company on the **Snapshots** tab of the Companies form. Snapshots of a specific company, by default, are *visible* to (and can be restored in) only this company. However, if needed, you can change the visibility of the snapshots to allow these snapshots to be visible to (and restored in) other companies in the same database. Note that you can restore snapshots with increased visibility to other companies only if you are logged into the company that is the data source for the snapshot.

When you create another related company, choose the snapshot to be used as a template for the new company by following these guidelines:

- Choose a snapshot of a later stage of implementation if the new company is very similar to the prototype.
- Select a snapshot that features an earlier implementation stage if the new company is similar to the prototype only at some extent (to include only those configuration features that present in the new company).

How To: create multiple related companies by replacing some preconfigured settings

Suppose you need to create multiple related companies for which you need to replace some preconfigured settings (such as roles and numbering sequences), add custom reports and inquiries, and customize specific forms similarly. Preconfigured settings are provided by the System Company, which is

available in each installation as a hidden company with company ID *1*. These settings are available to each company created in the same database.

You can create a custom *parent* company that contains all the data that is shared between these companies. To configure a custom parent company, perform the following steps:

1. Create the company that will contain the shared data.
2. Change the preconfigured settings as needed, and configure other functionality that will be used in all companies.
3. Create a snapshot of the parent company with full data available.
4. Create a new company in the same instance of application by using the Acumatica ERP Configuration wizard. Specify the configured company as the parent for the new company; the new company will inherit all the data from the parent company.
5. Repeat Step 4 to add as many new companies as needed, all based on the custom parent company.

If you want to create a similar company in another instance of application by using the snapshot of a company based on the custom parent company, first restore the parent company from its snapshot. Then create a new empty company based on this custom parent company, and restore the snapshot with actual company data.

How to Set Up a Test Environment

Protecting data is very important for every business. We recommend that before you make any significant configuration changes or perform an irreversible operation, you perform the required changes in the test environment—that is, the test company that contains the full or partial data of your company. If you applied the changes to the test company successfully, only then you should apply them to your live company.

Acumatica ERP provides functionality that lets you quickly copy the whole company to a test company, or copy only partial data by creating a snapshot of your company with your chosen level of detail and restoring the snapshot to the test company.

A test environment can be set up in two stages:

1. Creating a new empty company
2. Populating it with data in one of the following ways:
    - By using a snapshot
    - By copying the original company
3. Changing the new company to the test company

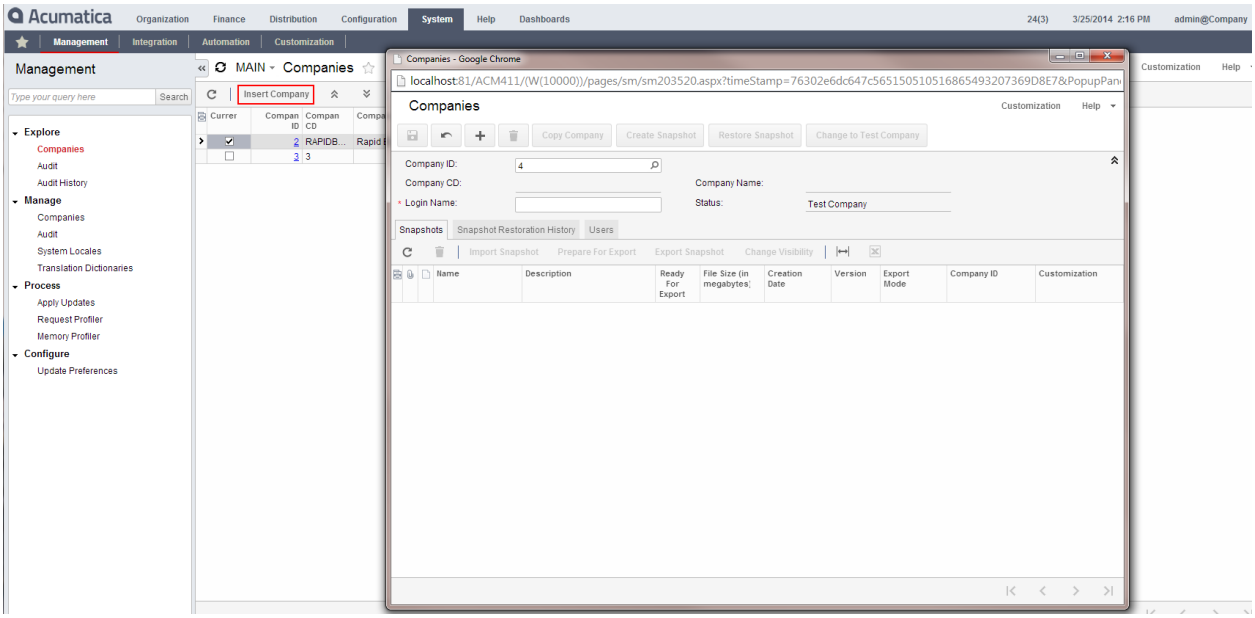
To Create a Test Company

1. Log in to the company for which you want to create a test environment.
2. On the **System** tab, click **Management**. In the left pane, navigate to **Explore** > **Companies**.
3. Click **Insert** to create a test company. The Companies (SM.20.35.20) form opens as a pop-up window. (This is a different Companies form that lets you enter or view information about one

particular company at a time.) Note the company ID, which the system automatically generates for the new company.

4. In the **Login Name** field, type the company name as it should appear on the login screen; choose a name that clearly indicates that this is a test company.
5. Click **Save** on the dialog toolbar. A new company is created with no data.

You can also create new company using **System** > **Management** > ***Manage*** > **Companies**.



To Create a Snapshot of Your Company

We recommend that you create the snapshot at a time when nobody is using the system for data entering or processing; this ensures that the snapshot will have consistent and valid data.

1. On the **System** tab, click **Management**. In the left pane, navigate to **Manage** > **Companies**.
2. In the **Company ID** field, select the company whose snapshot you want to create.
3. On the form toolbar, click **Create Snapshot**. This opens the **Create Snapshot** dialog. In the **Description** field on the dialog, notice the automatically generated identifier of the snapshot.
4. In the **Export Mode** field, select *Full except attachments and Wikis* to include the company's full data without attachments and wikis, which do not affect (and are not affected by) configuration changes. Alternatively, you can select *Full except attachments* or *Full*.

We do not recommend that you use the *Settings and Business Accounts* and *Settings Only* options. If you perform configuring in a company with settings only, some of the

configuration changes may seem as if they're allowed, although with actual data (documents), they would be prohibited.

5. Select the **Include Customization** check box to include all published customizations in the snapshot.
6. Click **OK** to close the dialog and initiate the process of creating the snapshot.

Creating a snapshot may take a significant amount of time, depending on the volume of data entered for the company.

7. On the Details toolbar, click **Change Visibility**. This will make it possible for you to later restore the snapshot to the test company.

To Restore the Snapshot

1. Log in to the company that served as a source of data for the snapshot.
2. On the **System** tab, click **Management**. In the left pane, navigate to **Explore** > **Companies**.
3. In the **Company ID** field, select the test company.
4. On the **Snapshots** tab, select the snapshot intended for the test company and click **Restore Snapshot** on the form toolbar. The **Restore Snapshot** dialog appears.
5. Select the **Include Customization** option if any customizations have been applied to the source company.
6. Click **OK** in the dialog to restore the data from the snapshot in the test company and close the dialog.

Not including published customizations in the snapshot may affect the consistency of data in the test company.

The operation may take a long time. Notice the green icon that appears on the form toolbar once the operation is completed successfully. (If a red icon appears, move the cursor over the red icon to view the description of the problem.)

To Copy Your Company to the Test Company

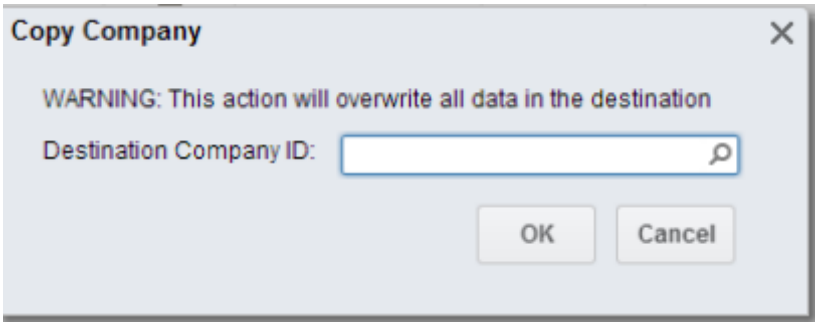
Instead of populating the test company by creating a snapshot of your company and restoring it in the test company, you can directly copy all the data of your company to the test company.

We recommend that you copy your company to the test company at a time when nobody is using the system to enter or process data.

To populate the test company by copying the full data from your source company, perform the following steps:

1. Log in to the company whose data you want to copy.
2. On the **System** tab, click **Management**. In the left pane, navigate to **Manage** > **Companies**.
3. In the **Company ID** field, select the company whose full data you want to copy.
4. On the form toolbar, click **Copy Company**. This opens the **Copy Company** dialog.

   The dialog displays the following warning:



5. In the **Destination Company** field in the dialog, select the test company by its ID.
6. Click **OK** to initiate copying of the data and close the dialog.

Copying the company may take a long time, depending on the volume of data entered for the company.

Hands on – Create a New Company

The exercise below will walk you through creating a new company ID.

1. Open ***Companies*** form (SM.20.35.30)
   a. *System > Management > Explore > Companies*
2. Click the **Insert Company** button
3. On the **Companies** window, populate the fields as follows:

Form Section	Field	Value
Summary Section	Company ID	{accept default}
Summary Section	Company CD	{accept default]
Summary Section	Login Name	Demo-{your name}
Summary Section	Company Name	{accept default}

4. **Save** your changes

The usernames created in your new company ID are always:

1. The user that created the new company. For example, if I am currently login using the credentials “jsmith/Acumatica” when creating the new company ID, the user “jsmith/Acumatica” will automatically be created in the new company ID.
2. The admin user. The default admin credentials for any new company ID is admin/setup.

5. Logout
6. Login into your new company ID.
7. The first step to any new company ID is to enable the common settings. Enable/disable the features as follows:

Field	Value
Organization	{checked}
Customer Management	{checked}
Project Management	{checked}
Time Reporting on Activity	{checked}
Finance	{checked}
Multi-Branch Support	{checked}
Inter-Branch Transactions	{checked}
Multi-Currency Accounting	{checked}
Deferred Revenue Management	{checked}
Subaccounts	{checked}
Fixed Assets Management	{checked}
VAT Reporting	{checked}
Invoice Rounding	{unchecked}
Support for Expense Reclassification	{unchecked}
Contract Management	{checked}
Tax Entry from GL Module	{unchecked}
ROT & RUT Deduction	{unchecked}
Consolidated Posting to GL	{checked}
Volume Pricing	{unchecked}
Distribution	{checked}
Inventory Subitems	{checked}
Automatic Packaging	{checked}
Warehouses	{checked}
Warehouse Locations	{checked}
Blanket Purchase Orders	{checked}
Drop Shipments	{checked}
Multiple Unit of Measure	{checked}
Misc	{checked}
Row-Level Security	{checked}

Field-Level Audit	{checked}
Avalara Tax Integration	{checked}
Address Validation	{checked}
Notification Module	{checked}

8. **Save** your changes
9. Click the **Activate** button from the tool bar
10. Logout and log back in your "Demo Data" company ID.

Hands on – Create and Restore a Snapshot

The exercise below will walk you through creating a snapshot of your Demo Data company ID and insert the snapshot into the Demo-{your name} company ID. We will be copying all the settings, all the master records, all the transactions and all attachment and wikis.

1. Open ***Companies*** form (SM.20.35.20)
    a. *System > Management > Manage > Companies*
2. The company ID information of the company you are currently logged in appear on the screen
3. Click on the **Create Snapshot** button
4. On the **Create Snapshot** window, populate the fields as follows:

Field	Value
Description	{accept default}
Export Mode	Full
Include Customization	<checked>
Prepare Data for Export	<unchecked>

5. Click the **OK** button to start the process.
6. When the snapshot process is completed, click the **Change Visibility** button. This allow the other company ID to be able to view this company ID snapshot.
7. From the **Company ID** field, click on the magnifying glass and select the company ID related to your Company Name "Demo-{your name}".
8. Click the **Restore** Snapshot button to start the restore snapshot process.
9. When the process is completed, logout.

10. Login into company ID: Demo-{your name}

11. Notice that all the settings and historical data were copied into this instance.

Multiple Locale Support

Acumatica ERP provides functionality you can use to perform localization to one locale or multiple locales. Also, you can maintain data and wikis in multiple languages if you will have multiple locales. The default locale of Acumatica ERP is U.S. English.

For a user, switching locales is easy: The user should choose a language when he or she logs into the system. Once the language is chosen and authentication is completed successfully, the user will view all the interface elements in the selected language and the default input language will be set to the selected language. Also the labels and other interface elements will be displayed with the writing direction specific for the selected language.

Generally, localization includes translation of the strings used on the application interface to the locale's language and usage of locale-specific settings.

Adding a New Locale

To add a new locale to the application, follow the steps below:

1. Open the **System Locales** (SM.20.05.50) form.
2. Click **Add Row** on the table toolbar to append a new row to the table.
3. In the **Locale Name** list, select the locale.
4. Type in the locale's name in the local language.
5. Provide a brief description for the locale in English.
6. Specify the position of this locale in the list of available locales on the login screen.
7. Specify that this locale is active to let it appear on the list of locales (languages) on the login screen.
8. Click **Save** on the form toolbar.

Applying Locale-Specific Settings

The following settings are subjected to localization: date and time format, format of numbers (character to separate decimal part, thousands, and so forth), and writing direction. These settings are not provided by the application itself. Once a user selects a language and logs into the system, the application switches to using resource libraries provided for the selected language by the operating system installed on the server.

Translating Application Strings

The current prevailing practice used for developing applications is to keep various strings used on the application interface as element or column labels, error messages, or warnings separately from the source code. These strings, stored in resource files, are loaded during program execution as needed. Translations of these strings to multiple languages can be also stored in the same files. When a user logs into the system and chooses the local language, only strings translated to this language will be used by the application.

Translation of these strings from the U.S. English used as the Acumatica ERP default language to any other language can be performed directly in Acumatica ERP by using the Translation Dictionaries (SM.20.05.40) form. If needed, the filtered list of strings may be exported by using the form to an Excel file, and after being translated somewhere else, it can be imported back.

Translating Wiki Articles

The Help wiki is created in the base language of Acumatica ERP, U.S. English. For a newly added locale, all articles will be displayed in this base language until you create locale-specific versions of the articles.

To create a localized version of the article:

1. Log into the system with the local language selected.
2. Locate the article in the wiki, and click **Edit** on the wiki toolbar.
3. Replace the article name in English with an article name in the local language.
4. Translate the text into the local language.
5. Save the article.

Only the versions of the article created in the selected locale will be listed on the **History** tab when you open the article in Wiki Editor.

Auto Updates

Learning Objects:

- *Learn how to apply software updates in SaaS Acumatica ERP environment*

Updating Acumatica ERP

You can update your Acumatica ERP instance to a new product version or build in one of the two ways: locally using Configuration Wizard or using the Acumatica ERP web interface.

We highly recommend that before you update to a newer product version, you back up all configuration files and databases used by the application instances of Acumatica ERP.

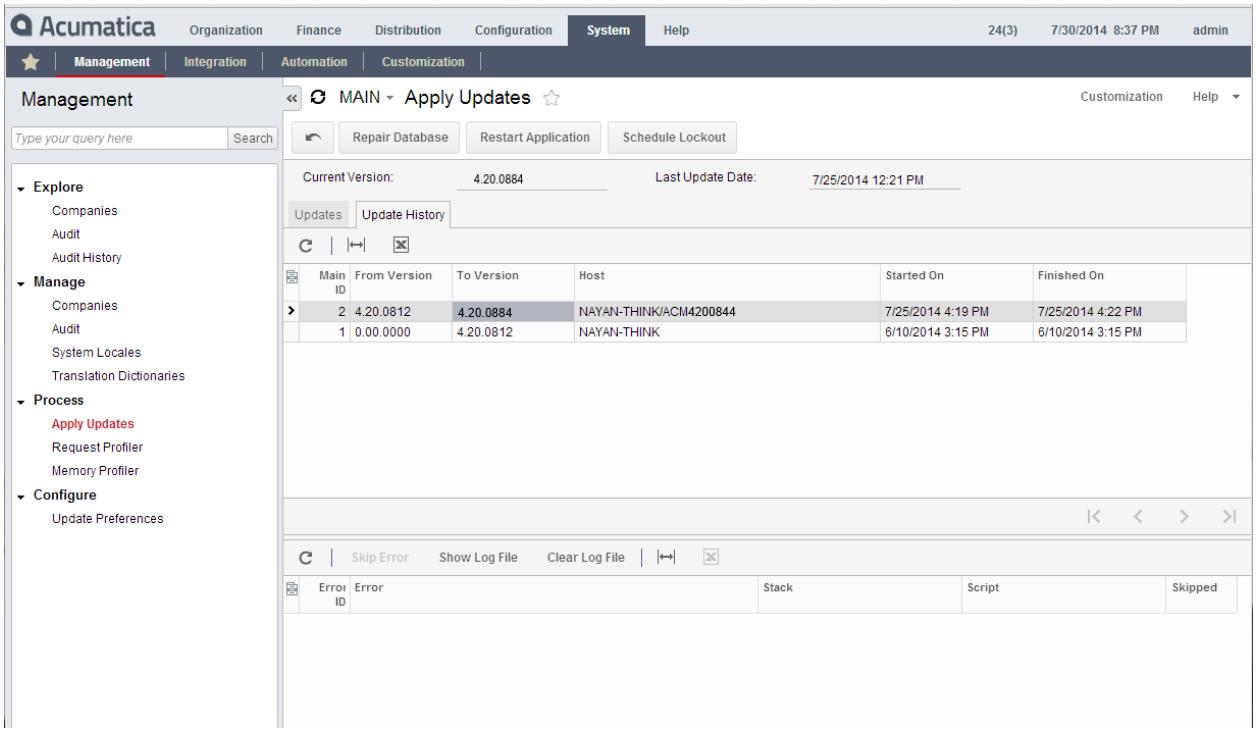
You can use Acumatica ERP web interface to update to a newer product version or build remotely.

When a new product update (a major version or a build) has been approved by Acumatica Quality Assurance team and released, a notification appears on the **About Acumatica** dialog box (**Help** > **About**) if you've got checking for updates turned on.

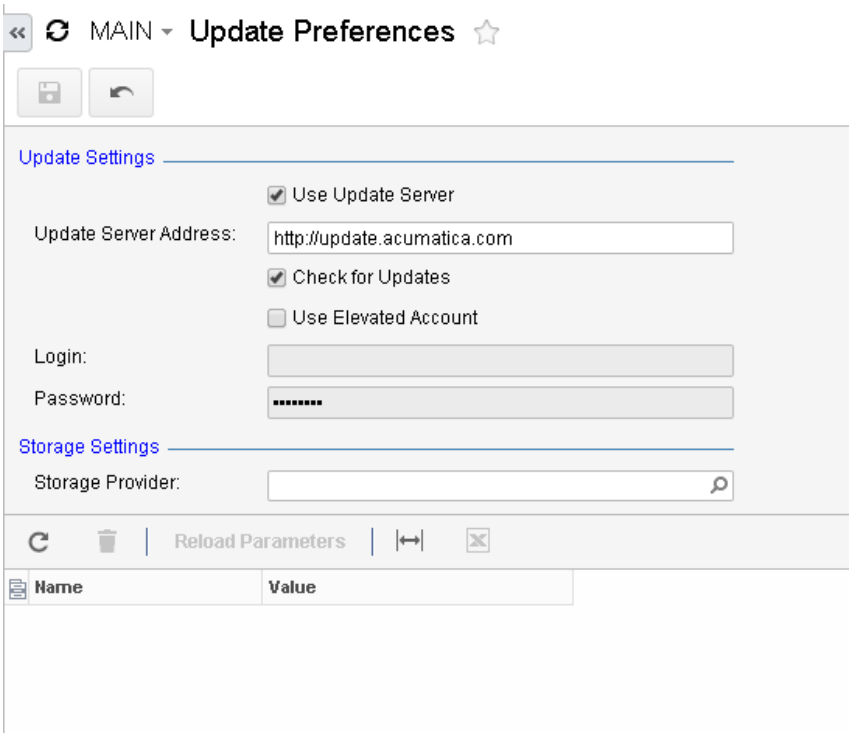
You use the Apply Updates (SM.20.35.10) form to view a list of available product updates, to install updates, and to view the update history.

To update to a newer product version or build, do the following:

1. Log in to Acumatica ERP.
2. On the **System** tab, click **Management**. In the navigation pane, click **Process** > **Apply Updates**.
3. On the **Updates** tab, do the following:
    - In the **Major Version** box, select the product version to which you want to update.
    - In the list of available updates, select the latest product build of the selected version, and then click **Download Package** in the table toolbar. When the download is complete, the **Ready to Install** check box is automatically selected, as shown in the screenshot below.
    - In the table toolbar, click **Install Update**. A background process starts that copies Acumatica ERP software components to the server computer, and then updates the application instances and the databases.



The update settings are specified in the Update Preferences form. You can select the update server, specify the elevated account for installing updates, turn on or turn off checking for updates, and specify the storage settings.



Auto Updates Forms Reference

Update Preferences

You use this form to manage software updates. You can configure how updates will be stored and whether updates should be imported from the server that stores approved Acumatica ERP updates.

Apply Updates

You can use this form to manage application updates on the website. You can repair database if installation process stopped before completing. You also can restart website, download package for later user, upload earlier downloaded package and install the update using this form.

Hands on – Apply Updates

This exercise will walk you through apply a newer build to your site.

1. Open ***Apply Updates*** form (SM.20.35.10)
    a. *System > Management > Process > Apply Updates*
2. On the **Updates** tab, populate the fields as follows:

Field	Value
Major Version	All Versions
Restriction key	4.20.0912 *

*You can leave the Restriction Key blank if you simply want to update to the latest version or you can type the build number you would like to apply. The build number could differ depending when you will be taking this certification test, select a build number higher than the one you are currently on.

3. Press the TAB button on your keyboard. The build 4.20.0912 should appear in the grid.
4. Click the **Download Package** button.
5. When the download process is completed, click the Install Update button.
6. The **Update Confirmation** window will appear to confirm that you want to apply the update. Click the **Yes** button to confirm. The process will start and your site won't be available during the update process. The site will come back up automatically after the update is completed.
7. Log back in

8. Open ***Apply Updates*** form (SM.20.35.10) again
    a. *System > Management > Process > Apply Updates*
9. On the **Update History** tab, you can notice the update logs

Performance Monitoring and Troubleshooting

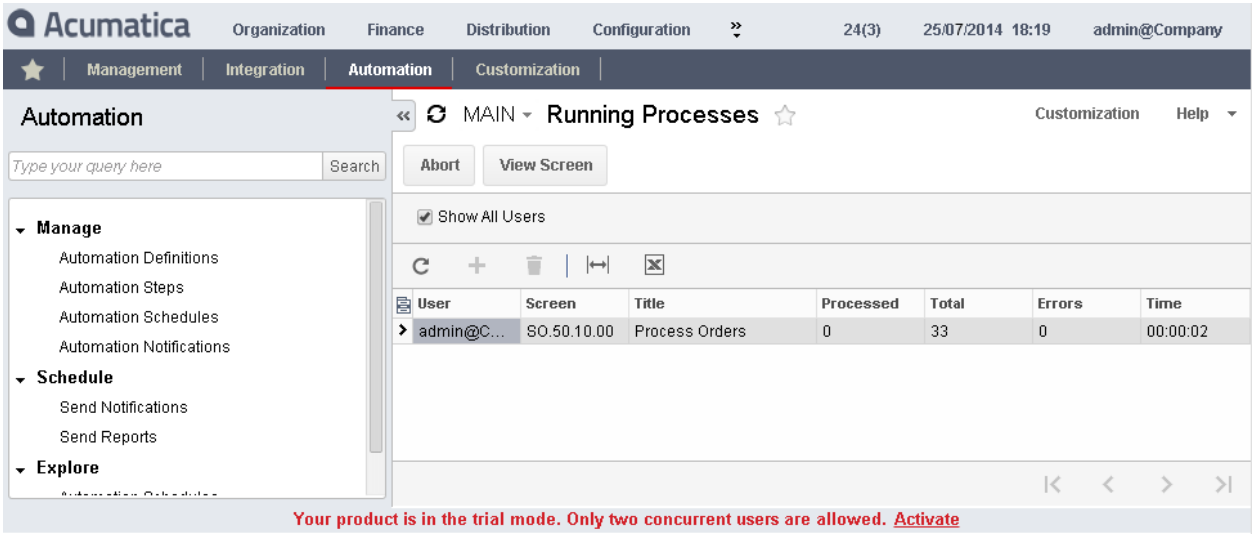
Learning Objects:

- *Learn how to use tools available in Acumatica ERP to gauge and troubleshoot system performance issues*

Acumatica ERP provides tools to monitor system level processes that are running at a given point in time, see which users are running them and how they are affecting the system resources. There are also tools to monitor response times between two disparate Acumatica systems at a granular level.

Finding out who is running which processes and for how long?

Running Processes (SM.20.30.15) form allows you to monitor any long running processes in the system. To access this form, on the **System** tab, click **Automation**. On the navigation pane, click **Explore -> Running Processes.**



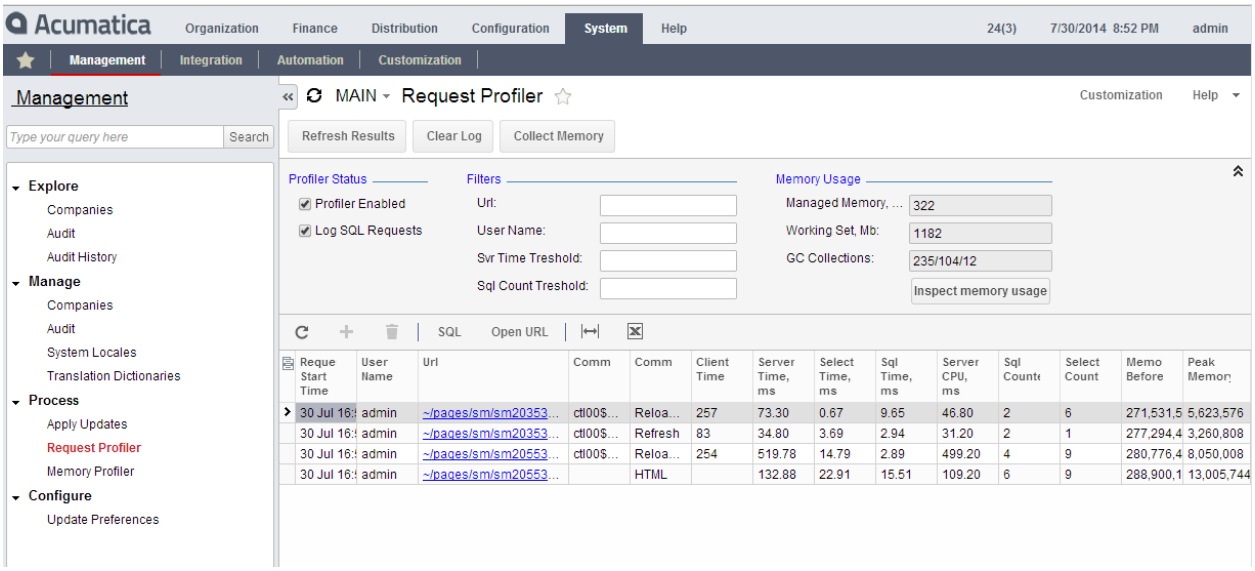
Whenever any long running process is started in Acumatica, it is shows up in this form. As an administrator or person with enough permission can then control this process. Administrator or user with permissions can stop the process from completing using the **Abort** button provided on top the form. They can even drill into the given process by selecting it and clicking on **View Screen** button.

Show All Users checkbox when checked lists processes from all users in the bottom grid. The grid includes columns that shows the user running the process , which screen the process belongs to, title of

the screen running the process, total number of rows, rows processed so far, number of rows that were in error, and amount of time elapsed so far (in seconds).

How to find out and measure different screen requests from various user

Acumatica provides **Request Profiler (SM.20.50.70)** form to view all the screen command requests and the amount of time each requests takes to complete. This is very useful particularly to see what commands on the screen takes least or maximum amount of time. To access this form, on the **System** tab, click **Management**. On the navigation pane, click **Process -> Request Profiler**



This form lets you filter only the requests that are of interest to you by allowing to filter by Screen ID, Username, Command Name, and Command Target. This helps person monitoring for specific situation to quickly zero onto only requests that he/she are interested in. The buttons at the top of the form allows controlling the generation of log by starting, stopping, clearing and refreshing (flushing) request generated in the system.

Site administrator can control availability of Request Profiler functionality by adding appSettings key into the website's configuration file.

```
<add key="PerformanceProfilerEnabled" value="true" />

<add key="SqlProfilerEnabled" value="true" />
```

Column Name	Description
Request Start Time	Request originating date and time
Url	Url of the form that generated the request

CommandTarget	Command object of the screen from where request originated
CommandName	Command name that generated the request
Server Time, ms	Webserver time to complete this request
Client Time	Total round-trip time in ms to complete this request
Server CPU, ms	Webserver CPU time spent to service this request
SqlCounter	Number of SQL requests generated by this request
SqlTime,ms	SQL server time spent to service this request
User Name	User originating this request
Memory Before	Working Set of memory in bytes just before this request on webserver
Peak Memory	Maximum memory usage in bytes recorded during servicing of this request on webserver

Hands on – Abort Processes

This exercise will walk you through aborting a running process

We will now start a process that we know takes a few minutes:

1. Open ***Companies*** form (SM.20.35.20)
    a. *System > Management > Manage > Companies*
2. The company ID information of the company you are currently logged in appear on the screen
3. Click on the **Create Snapshot** button
4. On the **Create Snapshot** window, populate the fields as follows:

Field	Value
Description	{accept default}
Export Mode	Full
Include Customization	<checked>
Prepare Data for Export	<unchecked>

5. Click the **OK** button to start the process

Now let's go quickly abort this process:

6. Open ***Running Processes*** form (SM.20.15.30)
    a. *System > Automation > Explore > Running Processes*
7. Select the Companies running process and click the **Abort** button to abort the process

Hands on – Request Profiler

This exercise will walk you through starting and stopping the profiler

1. Open ***Request Profiler*** form (SM.20.50.70)
    a. *System > Management > Process > Request Profiler*
2. Click on the **Profiler Enabled** and **Log SQL Requests** checkboxes
3. Navigate on different webpage of your Acumatica system – click on at least 3 different pages.
4. Open ***Request Profiler*** form (SM.20.50.70) again
    b. *System > Management > Process > Request Profiler*
5. You will notice the system shows all the screen command requests and the amount of time each requests takes to complete.
6. Uncheck the **Profiler Enabled** and **Log SQL Requests** checkboxes and the **Clear Log** button to erase the statistics.

Managing Customizations

Learning Objects:

- *Learn how to manage customizations in Acumatica ERP*
- *Learn how to deploy customizations from test/development to production systems in Acumatica ERP*

Acumatica allows changing the look and the functionality of forms. Consultants and IT professionals can create, configure, and maintain custom user interface elements for Acumatica applications, as well as the functionality of the modules developed with Acumatica Studio.

Acumatica Customization: Basic Concepts

Customization Project

A *project* is a set of steps designed to customize either Acumatica ERP or another application developed in Acumatica Studio and used by a company. A step might be, for instance, adding a user interface (UI) element on a form. Within a project, the UI and form elements with their properties can be customized, and additional program code can be implemented that changes some application logic. Specialists who will work on customization projects should be assigned the *Customizer* role, which allows them to use Acumatica's customization tools.

Various UIs and business processes can be optimized within a project. All customization requirements are previously defined and formulated by the company's managers. As a result of a finished project, the project's customization code is developed and the company's production application is updated—that is, customization code is merged with the existing application code.

Page Design Mode

Page Design mode is a state you can use when working with a form to adjust the properties of UI form elements (that is, input fields, check boxes, panels, and buttons), add new elements onto the form, and hide existing elements. Newly added elements can be bound with data fields simultaneously added to an appropriate database table.

A *form template* is one of the form structures predefined by Acumatica developers. You can easily add UI elements onto the form templates.

A form can be programmed to react to certain events—for example, when the user clicks buttons that should invoke appropriate pop-up forms. The UI elements of pop-up forms and their properties can also

be changed. These pop-up forms will also be displayed and ready for UI customization when you enter Page Design mode.

In Page Design mode, you can also perform a *functional customization*, which means adding custom code that changes the application's business logic and database structure.

Customization Session

Every time you log in, open a customization project, and enter Page Design mode, a new *customization session* is started. When each customization session begins, new customization code is created or the existing project's customization code is opened for editing. (With existing code, Page Design mode starts automatically, right after you select the project name, for all the forms already changed within all of the project's previous customization sessions.)

During a customization session, you can change the appearance of Acumatica forms by adding or removing UI elements. You can also alter system behavior with custom events, add and modify system objects, change objects' properties, and add custom code fragments to the application. The system automatically updates the project's customization code when you use the Acumatica customization tools to make changes to the application. You can also manually edit the project's customization code during the current customization session and save these changes.

The customization session ends when you close the current project. When you continue the project's customization process and start a new customization session, the system automatically loads the project's customization code, which includes saved changes from all previous customization sessions. After you open a project in Page Design mode, you can view and edit all changes made to the application within the project by customizers. Multiple customizers may not publish the same project simultaneously.

Customization Stages

Using customization tools, you can fit an Acumatica application to your specific business requirements. To make the customization process consistent, controllable, and predictable, we recommend that you divide the customization into the following key stages:

- The **planning stage** involves defining the scope of the customization and assigning the *Customizer* role to the appropriate Acumatica users.
- The **development stage** entails splitting the customization into steps within the customization project and performing the customization requirements in each step.
- The **deployment stage** involves the following actions:
    - Checking the project's customization code for errors (validation)
    - Publishing the project (that is, merging the project's customization code with the source application code) in the customizer's application instance
    - Testing the results of the customization on the customizer's application instance
    - Downloading the validated and tested project's customization code to an external XML file
    - Uploading the project's code to the company's production application

- Publishing the project's customization code in the company's production application (that is, updating the production Acumatica application with a customized version) and testing the results of the customization at runtime

Planning Stage

The customization planning stage starts with identifying the desired changes to the current version of the Acumatica application and defining the requirements of those changes. After analyzing the defined requirements, you should—along with the entire customization team—estimate the customization scope. In the process, you will identify what components of the Acumatica application should be changed, make a detailed list of changes, and split the changes into particular customization steps.

Defining the customization scope starts with a thorough review of the Acumatica application, as well as a study of business processes, to find the gap between existing and new business processes. This information will help you identify changes to be made to the current version of the Acumatica application.

Application Review

Before planning any changes to the Acumatica application, you should fully understand the logic implemented in the current version of Acumatica application and review its source code. To view the application code, you can use the Source Code Browser capability, included in the Acumatica customization tools.

Business Process Evaluation

To estimate the customization scope, you need to carefully review your current business processes and identify differences between the changed business requirements and the possibilities that the current Acumatica application version gives users. To begin your business process review, identify all relevant business processes. For each, identify the following:

- The user roles that participate in this process.
- The operations that users perform within this business process (in the proper order).
- The data that users add, view, select, and modify when performing these operations.
- The workflow rules—including conditions, constraints, and necessary data verifications performed—when users fulfill these operations.

Next, you start planning necessary changes to the current version of the Acumatica application. Split the customization planning into the following steps:

- Identifying what changes in data presentation are required
- Figuring out what changes in workflow rules should be made, including conditions, constraints, and necessary data verifications
- Identifying what changes to user access rights are required

Identifying Changes in Data Presentation

Planning changes to the presentation of data starts with comparing the data involved in the business process and the data provided by the current version of Acumatica application to its users. To identify necessary changes to the Acumatica application, you should answer the following questions:

- What data do Acumatica application users need to work with, if any, that is not provided in the current version of the Acumatica application?
- What data, if any, does the current version of Acumatica application display to its users that is no longer required?

Identifying Changes in Workflow Rules

In this step, you compare the operations performed by the users who participate in the business process and the capabilities provided by the current version of the Acumatica application. To identify the necessary changes to the Acumatica application, you should answer the following questions:

- Does the business process include any operations performed under certain conditions that are not implemented in the Acumatica application? If so, what are these?
- What data verifications does the business process require that are not performed in the Acumatica application? What specific data should be verified?
- Which constraints influence the way the users perform the operations involved in the business process, and the data required to perform these operations?

Analyze the answers to these questions, which will help you estimate the changes required to add the necessary customizations to the Acumatica application.

Identifying Changes in User Access Rights

Depending on your planned changes to the workflow rules, you may need to define access rights to system objects for users who participate in parts of the workflows. To identify the necessary changes in the user access rights, you should answer the following questions:

- What changes to the current user access rights are required?
- Are there some new Acumatica user roles or user groups that will be required to perform some steps within the changed business processes?

You will also need to define appropriate access rights for users involved in customization development and deployment.

Planning Changes in Data Presentation

If any data required in the business process is not available in the current version of the Acumatica application, you might decide to change the data structure and make the required data available for user entry and viewing on the Acumatica application forms.

Before adding new logic to the Acumatica application, you might need to re-examine its existing code using the Source Code Browser. Before making changes to the user interface (UI), you should list changes in data presentation for each form of the current application version that requires changes. Estimate and allocate the needed changes in the volume of data available for Acumatica application users.

Acumatica customization tools do not provide any means for adding new forms to the Acumatica application. If some new forms are necessary, you can develop them within Acumatica Studio and bind them to the product application as an add-on.

When planning the changes in data presentation, you need to determine the following:

- Acumatica application forms that need to be modified.
- User interface elements—input fields, check boxes, panels, or buttons—that need to be added or removed from the Acumatica application forms.
- Changes in data sets associated with these forms and UI elements.

Using Acumatica customization tools, you can change the data structure when you add new user interface elements onto a form. Because most form modifications involve adding UI elements onto a form and linking them to new data fields, you can add UI elements to a form more easily. The UI customizations are eased by the visual customization tools, which facilitate all the operations of adding new UI elements onto Acumatica forms and linking them to a source of data.

If any user interface element should be removed from the user's view, you can hide it on the form. (The Acumatica customization tools do not enable you to completely delete a UI element that was available on a form in the original version of the Acumatica application.)

When a more complex customization is required and the necessary data is not provided by the data member object associated with the current form, you can add a new user interface element onto the form and associate the data member object with it, or add custom code that changes the structure of the data tables associated with the Acumatica application forms. The customizations may include changes to the data management classes and attributes. The Code Editor form facilitates this type of customization.

Planning Changes in Workflow Rules

In addition to changes made to the Acumatica application data structure and user interface elements, you can add custom logic and functions that meet the changed business requirements. These rules should be formalized before you develop new code.

To formalize rules, describe the new functions, conditions, data verifications, and constraints that are required in the customized version of the Acumatica application. The best approach to adding custom code is to map it to the Acumatica application forms and check that the added code will not break the current application version or interfere with application features that should not be affected by the customization. For this purpose, you should carefully review the existing code of the Acumatica application using the Source Code Browser.

You can add new events, functions, data verifications, and constraints to the Acumatica application to implement the new business logic in the customized version. These modifications involve using the Code Editor included in the Acumatica customization tools. To control the user data input to the UI elements, you can add input masks by changing the properties or attributes of the data field associated with the element. This can be easily done with the visual customization tools accessible via the Acumatica application forms in Page Design mode.

Delegating the Customization Role Privileges to the Acumatica Users

Finally, decide which users will access the Acumatica customization suite tools and perform the Acumatica application customizations.
First, it is necessary to divide the customization process into preparing the project's customization code (as a rule, within a customizer's application instance) and updating the company's production application. (We do not recommend that customization development be performed on a production application.) No constraints are needed when a customization project is being developed in the customizer's own application instance, except for the requirements of not publishing more than one project simultaneously, as well as not publishing simultaneously of the same project by more than one customizer

In each customizer's application instance, customizer privileges can be granted to many customizers, but it is optimal to have no more than two customizers per instance. As for customizers who work on a company's production application, one to three users with the *Customizer* role is usually enough, depending on the actual customization scope and the company's scale.

Consider the following common requirements:

- Customization privileges can be granted to the Acumatica application users only by assigning them the built-in *Customizer* role.
- The users who will be granted the *Customizer* role must be authorized Acumatica internal users.
- The list of users permitted to perform customization should be kept as short as possible to avoid significant system performance degradation.

Development Stage

In this stage, you will develop the customization, which involves implementing your planned changes using Acumatica's customization tools. Whether on your own or with other members of the *Customizer* role, you will modify the Acumatica application's appearance and logic to meet the requirements you have defined. Usually, each customization step involves the customization of one form of the Acumatica application, and you may have multiple steps per form, depending on the scope of the changes.

Development Guidelines

For a verifiable, manageable, and predictable customization process, we recommend that you follow these guidelines during the development process:

- Create the customizer's application instance, which represents a standard installation of Acumatica ERP with the same release that the company's application uses, and consists of the website and the database. All further actions must be performed on this instance.
- Split every form customization into elementary steps, such as adding a user interface element or creating a new event.
- Validate the changes performed after completion of every step.
- Save the validated changes to an external file before you move on to the next step.
- Remove the unsuccessful customization, if necessary.

Multiple customization projects with same customized components causes conflict and cannot be published. If you need to further customize the production version of the application after the project has already customized it, you must un-publish the project and make all needed new customization steps part of the same project.

Customizing a Form

You will use the Acumatica Customization Tools to perform the steps of the customization project. These tools allow you to modify the appearance, behavior, and logic of Acumatica application forms. To begin working with these tools, you create a new customization project or open the existing one.

The customization of a form is usually split into the following steps:

- Performing the user interface (UI) customization: This might involve adding or removing the elements, or changing their properties and locations. The visual customization tools automate the processes of adding elements onto the form, changing their properties, and removing them from the form.
- Performing the functional customization: This entails changing the structure of data fields associated with the form, adding custom events, or modifying the Acumatica application business logic associated with the customized form. To perform functional customizations, you usually add custom code to the Acumatica application using the Code Editor form.
- Checking the performed customization for errors (validation): To ensure that the changes made to the form's user interface are error free, compile the Acumatica application code, incorporating the changes made to the form's UI and business logic.
- Saving the customization project to the database: To persist the current project and make the customization data available for use in the future. The current project's customization code can also be downloaded to an extra XML file, if needed—for instance, to have an archive copy or to upload customization data to another customizer's application instance or to the company's production application with the aim to publish and test, or update the application with customization changes.
- Removing any unsuccessful customization code: To remove the code, you can edit the project's customization code and manually delete the erroneous data. Alternatively, you can upload the code saved in the external file to continue the customization process from a point when the project's customization changes had been verified (validated) and established.

Saving and Restoring Customization Data

As mentioned, you can preserve changes you made to an Acumatica form during customization by saving the customization project's code, and Acumatica customization tools enable you to remove changes performed in one customization step or multiple steps.

To manage the project's customization code, you can use the following possibilities:

- Save the project's customization code to the database: Choose the *Save Project to Database* command from the **Customization** menu, or use the relevant options available in the Customization Data Editor or Code Editor.
- Download the project's customization code to an external file.
- Restore the last compiled customization by means of reloading the project's customization code from the last successful compilation. This option can be chosen when the customization performed within a single customization step fails code compilation. To restore the last compiled project's customization, choose *Reload Project from Database* from the **Customization** menu.
- Upload the project's customization code from the external file saved after the last successful project's customization step.

Deployment Stage

During customization deployment, the customizer applies all the changes made to the Acumatica application version. As a rule, the customizer uses his or her own *application instance*: a local instance of the application with a separate database. This instance, including the database structure, must have the same Acumatica application configuration as the company's production application where the project's customization will be further deployed. As a rule, the same configuration means that the customizer's application instance represents a standard installation of Acumatica ERP with the same release.

After finishing the customization project, the customizer validates and publishes it in the local application instance to test the project's results. If the test results are successful, the customizer downloads the project's code to an external XML file and uploads it to the company's production application. The customizer then validates and publishes the uploaded project. The customizer could instead send this file to another specialist who performs this final work.

The customizer begins the customization deployment stage by downloading validated, published, and tested customization code to an external XML file. Within the company's production application, the customizer (or another specialist with the **Customizer** role) does the following actions:

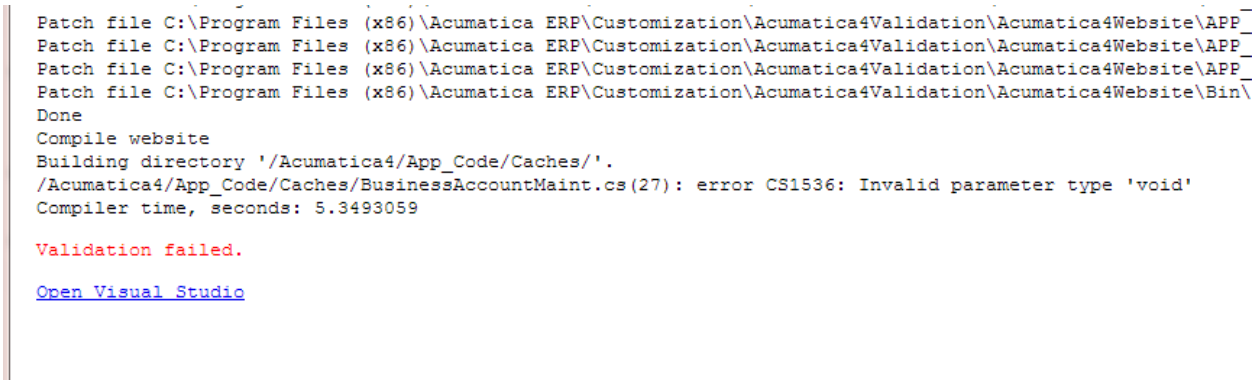
- Uploading the XML-file code to the application
- Validating and publishing the customization project; updating the current application version
- Removing the customization project from the company's application, if the published customization was unsuccessful or the current customization project's code is to be replaced with another one

Validating and Publishing the Project Locally

You perform the essential validation step in your local application instance to ensure that the customization changes do not conflict with the current application version. During this step, you merge the Acumatica application code with the project customization code, so that the changes made during development will take effect. The system reports any errors that occur during validation. If the customization fails validation, you must troubleshoot the customization or delete it from the database.

To validate the changes of the customization project and publish the changes in your application instance, perform the following actions:

- To start validation, on the **Customization** menu, select *Validate and Publish*. The validation results window shows the code compilation results.
- To view the validation results, browse the opened window. If the customization validation fails, the window displays the list of errors. The screenshot below illustrates an example of error messages.



To fix errors, do either of the following:

1. To return to the customization code from the last successful customization, refuse the publication; then upload the appropriate XML file by using the Customization Data Editor.
2. To discard the customization changes, refuse the publication. Then correct or delete the project customization code through the Project Editor, Customization Data Editor, or Code Editor.

After successful validation, you can publish the customization project, which adds the customization code to the current version of application instance, yielding a new version with the validated changes. To publish the validated customization project, on the validation results window, click **Publish**. To ensure that the local application has been customized correctly, you should thoroughly test the application.

Downloading the Project to an External XML File

After you test the finished customization project, you must download the customization code to an external XML file for uploading this code to the company's production application. Use the Customization Data Editor to perform the download and upload actions.

Uploading the XML-file Code and Updating the Production Application

You can update and use the project customization code in only the same application configuration on which it was developed. Thus, after you have developed and thoroughly tested a customization with your application instance, you can deploy it to the production instance (or to multiple instances) with the same Acumatica application configuration; for Acumatica ERP, the customizer's instance and the production instance must have the same release number. To deploy the customization, use the external XML file created in the previous step.

If the customizer's application instance for Acumatica ERP has another release number than the company's production application to be customized, you should upgrade the application with the earliest release date. You can upgrade any customized application without invoking the Undo Publish procedure, which is performed automatically. If the upgrade finishes successfully, the Validate and Publish procedure starts after the first website opening. Invoke the Undo Publish procedure only if validation fails, which can happen due to incompatibility of the customization and the new Acumatica ERP version code. In this case, you should revise the customization code of the project to eliminate the incompatibility issues.

To deploy a successful customization to a production application instance, do the following:

- Upload the customization file on the target application where you must deploy the customization, by using the Customization Data Editor.
- Validate and publish the customization to apply the customization (merging the customization code with the main application code) on the target application and make it available for users of the Acumatica application.

Removing an Unsuccessful Customization from the Production Application

If the published customization was unsuccessful (for example, it doesn't meet user requirements) or you must replace the code of the customization project, you should cancel the publication of the customization. To do this, select *Undo Publish* on the **Customization** menu. The customization code is not deleted, but the application does not use it. If necessary, you can then partially or completely remove the unpublished customization code from the production application through the Project Editor window.

Granting User Access Rights for Customization

To make it possible for Acumatica users to customize Acumatica applications, grant these users the appropriate access rights to Acumatica system objects by assigning them the built-in *Customizer* role.

You cannot assign a user to the *Customizer* role if either of the following conditions occurs:

- The user has a guest account—that is, for the user on the Internal Users (SM.20.10.10) form, the **Guest Account** check box is selected on the **Options** tab.
- The user is assigned to a guest role: a role for which the **Guest Role** check box is selected on the Roles (SM.20.10.05) form.

Including a User in the Customizer Role

If you have administrative rights within the application to be customized, you can assign the *Customizer* role to a user. To do this, proceed as follows:

1. Open the System Management module on the Navigation menu, expand the Security Management node, and open the Internal Users form.
2. On the **User Information** tab, in the **Username** lookup field, select the Acumatica user to whom the role should be assigned.
3. To assign this user to the *Customizer* role:

    - On the **Membership** tab, click **Add Row**.
    - In the **Role Name** field, select *Customizer*.
    - On the Form toolbar, click **Save** to save the changes to this user.

If the specialist handles development of the customization project and update of the production application (deployment), you must grant the *Customizer* role to the specialist in both the specialist's application instance and the production application instance.

Hands on – Creating a Customization Project

This exercise will walk you through creating a simple customization project and reviewing its components.

1. Open ***Leads*** form (CR.30.10.00)
    a. *Organization > Customer Management > Work Area > Enter > Leads*
2. Click on the **Customization** menu and select **Open Customization Project**
3. In the Select Working Project dialog, Click the **New** button.
    a. Enter a project name like "LeadBirthYear" and click Ok to return to the lead entry screen.
4. Click on the **Customization** menu and select **Enter Page Design Mode**
    a. You will notice the screen will blink and as you move the mouse over controls on the screen their border colors change indicating you are in design mode.
5. You are going to add a new field called "BirthYear" to the *Contact* section of the Details tab

6. Right click in the Contact area and in the popup menu context, select **Add Input Control**
7. Click on the **Add...** button since we will be adding a new field
8. Leave the Dac Name and Database Table fields to the default values, but enter "BirthYear" for the Field Name and "Birth Year" for the DisplayName.
9. For Field Type use "DBInt(int)". This will make sure we are adding a field to the database for tracking this information. Notice the Mapped to database check box will get automatically checked. Click **OK**
10. Make sure ControlType is **NumberEdit** and click **OK**
11. You should now see the field you added with "0" as its default. Drag and drop it below the Fax field.
12. Click on the **Customization** menu and select **Save Project to Database**
13. Click on the **Customization** menu and select **Exit Page Design Mode**
14. Now Navigate to page SM.20.45.10 **(System > Customization > Manage > Customization Projects)**
15. Find the Project LeadBirthYear in the Project Name field
    a. Notice how the system created your project and automatically developed DACs(data access class) for your new field. It also generated the c# Graph interface for handling Events related to your custom project. The ASPx Page changes are also saved. Finally your field addition to the Contact Table is saved in the "Table" changes object.
16. Validate and publish the project and try it out.

Hands on – Export Customization Project to Package File

This exercise will walk you through exporting customization projects. This can be helpful when you want to export your project from your local system and import it into a production environment.

1. Navigate to page SM.20.45.10 **(System > Customization > Manage > Customization Projects)**
2. Find the Project LeadBirthYear in the Project Name field
3. Click on **Edit XML** button
    a. Notice the XML structure has all the information about your entire project
4. Click **Download Package** and system will give you a ZIP file that will contain all your customization details of your project

Hands on –Removing Published Customizations

This exercise will walk you through removing published customization projects.

1. Before we can remove a project, let's make sure it's not published.
    a. Navigate to page SM.20.45.10 **(System > Customization > Process > Publish Customization)**
    b. See if your project is Published (if published check box is checked next to your project)
    c. If your project is published, select it using the select check box next to your project and then click in **"Undo Website Customization"**
2. Navigate to page SM.20.45.10 **(System > Customization > Manage > Customization Projects)**
3. Find the Project LeadBirthYear in the Project Name field
4. Click on **Delete** button

Hands on –Deploy Customizations from a Package File

This exercise will walk you through deploying a customization project from a packaged file. You would normally follow these steps while connecting to your remote production system.

1. Navigate to page SM.20.45.10 **(System > Customization > Manage > Customization Projects)**

2. Click on **"From File"** button
3. Click on **Choose** button and find the ZIP file we previously exported in the prior hand on exercise.
4. Click **Upload**
5. Lookup the Project Name and you should now see the project on your list
6. Publish using "**Validate and Publish**"