Digital Business Platform

SYSPRO 8

Reference Guide

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SYSPRO™

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Digital Business Platform

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The following provides a summary of the features and functionality available in *SYSPRO 8*.

2024

Application Designer Custom Form Fields

We have incorporated the ability to add custom forms and custom panes into an application that was designed and developed using the **Application Designer** program. This adds flexibility when developing programs and supports our no code strategy.

Data Model

The SYSPRO Data Dictionary has been enhanced to support custom data. The new **Merge User Defined Objects into Data Dictionary** utility allows you to include custom data objects (i.e., forms, tables, columns and indexes) and register them in the SYSPRO Data Dictionary.

These new data dictionary definitions are supported by the Business Activity Query (BAQ) builder, which now also caters for longer custom object names and aliases (up to 30 characters).

In addition, the **Data Model** feature offers the following:

- All custom forms and user object definitions are included in newly created company databases, thereby keeping them in sync across companies and simplifying the company creation process.
- All generic data capabilities or business objects have equal access to both standard SYSPRO data and custom data.

Extended Customer Data Object Names

To allow for increased flexibility when naming custom data objects and fields, as well as alias names within Business Activity Queries, the character limit has been increased to allow for 30-character names.

Application Designer Posting Business Objects

We have enhanced the **Application Designer** program by providing developers with multiple methods to interact with SYSPRO. Developers can now process transactions via business objects or web services and use business objects for master data.

This promises a significant reduction in the amount of script code required to perform transaction processing tasks.

eSignatures Configuration Business Object

We have added two new configurable business objects for Electronic Signatures that are designed for seamless third-party integration with SYSPRO. The ᴇSɪɢɴᴀᴛᴜʀᴇ Tʀᴀɴsᴀᴄᴛɪᴏɴ Sᴇᴛᴜᴘ[1] was developed to set up and maintain eSignatures whereas the ᴇSɪɢɴᴀᴛᴜʀᴇ Tʀᴀɴsᴀᴄᴛɪᴏɴ Qᴜᴇʀʏ[2] queries eSignature transactions.

Multimedia Categories Business Object

We are introducing two new multimedia business objects. The Sᴇᴛᴜᴘ Mᴜʟᴛɪᴍᴇᴅɪᴀ Cᴀᴛᴇɢᴏʀɪᴇs[3] business object allows third party integrators to create and maintain multimedia categories using SYSPRO'S API, while the Qᴜᴇʀʏ Mᴜʟᴛɪᴍᴇᴅɪᴀ Cᴀᴛᴇɢᴏʀɪᴇs[4] business object can be used to query multimedia categories. Both business objects ensure a seamless integration to SYSPRO using multimedia.

[1]Business object: COMSSG
[2]Business object: COMQSG
[3]Business object: COMSMC
[4]Business object: COMQMC

2022

Application Designer

SYSPRO's **Application Designer** feature is a suite within the SYSPRO core application that partners and customers can use to create new applications for the SYSPRO platform. These applications can in turn be used by end-users to further customize and personalize the application (e.g. add custom form fields, customized panes, etc.).

The **Application Designer** is designed to reduce the complexity of coding by providing a simple interface to the SYSPRO core functionality. It inherits and harnesses all SYSPRO's underlying security, enrichment and flexibility, and leverages the comprehensive library of SYSPRO business logic, UI controls and event handlers.

It lets developers extend the enterprise by creating newly-imagined solutions in both the *SYSPRO Desktop* and *SYSPRO Web UI (Avanti)* versions, saving cost and time in building out new SYSPRO platform solutions, as well as improving productivity and story-boarding.

SYSPRO Web UI (Avanti) Responsive UI Customization

A responsive and limitless design canvas has been introduced to improve the customization and personalization features within the *SYSPRO Web UI (Avanti)* version. This enables you to design or personalize user applications without layout limitations.

> ℹ️ In the *SYSPRO Desktop* version, this is equivalent to moving, positioning and resizing docking panes.

The *SYSPRO Web UI (Avanti)* architecture has been re-engineered to remove the column layout restriction and provide a more fluid and responsive design. This lets you position and resize your data objects without column layout style restrictions and allows you to personalize the layout of applications without needing to use the **Visual Designer**[1] program.

Visual Designer

The **Visual Designer**[2] program now provides a fluid design surface without a column layout option/section.

In addition to being able to drag and move data objects on the design surface, you can now also resize them, even when they span sections.

User Personalization

The application view lets you personalize the layout of an application without having to use the **Visual Designer**[3] program.

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[1]Program: IMPFRZ
[2]Program: IMPFRZ
[3]Program: IMPFRZ

In addition to being able to drag and move data objects, you can now also resize them.

> You can't remove or add data objects; you can only resize them or place them in different locations.

There is also now a clear differentiation of data objects as they will no longer blend into each other and are fixed in size. If the content is larger than the assigned space, automatic scroll-bars are displayed once you hover over the data object.

The ability to personalize a web view is controlled using the **AVANTI - ALLOW PERSONALIZATION OF WEBVIEWS** security activity (disallowed by default) and can be applied by operator (**Operator Maintenance**) or by role (**Role Management**).

> You can also reset your user personalization using the **Reset Layout** option that is available from the **Customize** icon.

Considerations

- To activate moving and resizing, hover over the data object or on the edges of the data object.

- You can't resize a data object from the top, as this area is used for moving it around the page (i.e. when the cursor turns into a hand).

- You can enable a lock icon to prevent further moving or resizing (the icon is displayed in orange when enabled and black when disabled).

2021-R2

Operator customization across any machine

To provide operators with the same customization experience across any machine (and in the event of a pod loss in a *SYSPRO Cloud ERP* environment) the following customization settings per operator are now retained in SQL within the SysSettings table of the system-wide database:

- System-wide personalization settings
- Recent Programs
- Favorites
- Other SYSPRO menu personalization

When an operator logs into SYSPRO and the **PERSIST OPERATOR UI SETTINGS TO SQL** option is enabled, the system checks the SQL system database for any customized operator settings defined and returns these if found. If these settings are not found during the start-up process, the system checks the file system (`\Base\Settings`) and, if found, copies these to the SysSettings table and returns the settings to the SYSPRO instance.

Advantages of storing this data in the database include:

- Centralized access to all related data
- Simplified portability of data and backup strategy
- Improved performance
- Provision for enhanced scalability in future releases

Role customization across any machine

To provide operators within defined roles with the same customization experience across any machine (and in the event of a pod loss in a *SYSPRO Cloud ERP* environment) the following role customizations are now retained in SQL within the system-wide database:

- Role customization files (e.g. `\Settings\Role_xxx`, stored in the SysRoles table)
- Role menu files (stored in the SysMenu table)

When operators within a defined role log into SYSPRO, the system checks the SysRoles and SysMenu tables for any customized role settings or menus defined and returns these if found. If these settings are not found during the start-up process, the system checks the file system (`\Base\Settings`) and, if found, copies these to the respective SQL database tables and returns the saved settings to the SYSPRO instance.

Advantages of having this data available from the database include:

- Centralized access to all related data
- Simplified portability of data and backup strategy
- Improved performance
- Provision for enhanced scalability in future releases

2020-R2

SYSPRO Avanti Power Tailoring

New power tailoring functionality in *SYSPRO Web UI (Avanti)* lets you customize the platform to suit your own personal requirements:

Customize applications

SYSPRO Web UI (Avanti) lets you customize applications (such as adding scripts to change the behavior of form fields or grid data) or extend the capabilities of any application to display more information, either from the SYSPRO database or from any external application.

All applications in *SYSPRO Web UI (Avanti)* or SYSPRO generally comprise grids, form fields, charts, notepads and toolbar buttons. You can also add user-defined customized panes to any application which can contain a grid, form or a number of other types of controls.

To customize aspects of the SYSPRO application in the core product, you would previously right-click on a form field, toolbar, grid column header or docking pane window title, which enabled you to access the **VBScript Editor**, add a customized pane or to generally access customization capabilities.

All customization capabilities in *SYSPRO Web UI (Avanti)* are controlled by a single program: **Customize Application** which you can access from the **Settings** icon in any application. The program is only available if the VBScript security option is enabled and are not logged in as a role.

The program provides the following capabilities:

- List views
  - Add a custom column
  - Edit a VBScript
  - Apply conditional formatting
  - Add or remove a grid column's visibility
  - Remove a custom column
- Form fields
  - Edit a script for a form or form field in the application
  - Add or remove a field's visibility in SYSPRO
  - Remove a custom form field
- Toolbar buttons
  - Edit a script for any toolbar button used in the application
- Custom form fields

- ◻ Create or modify a custom form field

  - ◻ Add a custom form field to the application

  - ◻ Add a field from an associated master table to a form

  - ◻ Add a scripted field to a form

- Additional components

  - ◻ Create your own customized pane or component

  - ◻ Add a pre-built component to the application

- Customized panes

  - ◻ Edit or remove any existing customized panes

  - ◻ Reset the layout for the application

Considerations:

- You can also access the **Customize Application** program with identical capabilities from the gear icon in core SYSPRO..

- In *SYSPRO Web UI (Avanti)*, it is typically a two-stage process for a web view to be enhanced with new content or controls:

  - Customize the application to add capabilities.

  - Modify the web view using the **Visual Designer**[1] to position the new controls or content.

Define personal settings

Individual operators can define the following personal preferences in *SYSPRO Web UI (Avanti)* by selecting the **Personal Settings** option from the settings icon on the home page:

- Define the company date for all operators, or temporarily for the current run of *SYSPRO Web UI (Avanti)*.

  > This is dependent on the operator having the correct security access.

- Reset the saved settings for window positions and grid layouts.

  SYSPRO Web UI (Avanti) automatically saves window positions and changes to grid layouts by operator. However, you can now reset these to their default values using the links provided.

- Configure your own **Office 365** credentials.

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[1]Program: IMPFRZ

Modify a grid

You can modify the contents of any *SYSPRO Web UI (Avanti)* grid by using the following capabilities:

- **Conditional formatting**

  This lets apply formatting against any column in the grid based on simple rules.

- **Custom columns**

  You can add columns to the grid based either on custom form fields or from master table data.

  > The custom columns that can be added are determined by the *keys* that are available in the grid columns.

- **Column sum** | **Column average** | **Row count**

  You can select any numeric column to be either *summed* or *averaged*.

  If you select to display a row count, this is then displayed in the grid footer for the first column in the grid.

- **Edit a macro**

  You can create a script to execute against the grid for various events, such as when the grid is populated with content, or when a grid's contents are about to be submitted to the database.

Add toolbar items to a web view

You can add toolbar items to a web view using the **Visual Designer**[1].

Select the **Add toolbar item** option from the left or right-hand side of the **Visual Designer**[2] to add items to the left or right-hand side of your web view.

> Toolbar buttons correspond to their equivalent in the core SYSPRO product.

Automate startup parameters

You can configure *SYSPRO Web UI (Avanti)* to automatically run a program when you log into the system. Open the browser URL and append a question mark, followed by startup parameters using the following syntax:

```
?StartupParameters=/prog=xxxxxx /link=y
```

where `xxxxxx` indicates the name of the program and `y` indicates the entry to be used in the program.

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[1]Program: IMPFRZ
[2]Program: IMPFRZ

> **FOR EXAMPLE:**
>
> If you want to automatically launch the **Customer Query** program for customer 1 when opening **SYSPRO Web UI (Avanti)**, your browser URL should reflect the following syntax:
>
> ```
> ?StartupParameters=/prog=ARSPEN /link=1
> ```

The login page is displayed first if you haven't enabled the **Keep me signed in** option on the login page. The program defined in the startup parameter is then launched once you are successfully authenticated.

Automate tasks

You can now create a series of tasks (i.e. programs) in **SYSPRO Web UI (Avanti)** that can be executed sequentially by selecting the **Task Automation workspace** option from the settings icon on the home page.

> **FOR EXAMPLE:**
>
> You may want to create a month end procedure that must run a series of programs one after the other. This can be automated so that when you start to run the task group, all programs are automatically run one after the other until the group is complete.

A task item can run a program or report and can be scheduled to run on a certain day and, optionally, recur daily, weekly or monthly. Programs can also be automated so that they apply specific values to form fields.

When a task group has completed, the executed tasks are then displayed in the **Task Messages** grid.

Move and re-size modal windows

Applications in **SYSPRO Web UI (Avanti)** are designed to display most information in a single page and, where appropriate, the use of pop-up windows enables additional information to be surfaced.

> **FOR EXAMPLE:**
>
> You can view **Movements** and **Warehouse history** lists as pop-ups in the **Inventory Query** program.

Lists such as these are displayed by default in pop-up windows that can be re-sized and repositioned in the browser. However, you can change this behavior using the **Visual Designer**[1] to make these lists appear in the single page.

Some windows are displayed as *modal*, meaning that you can't click behind the window and that you must first complete the task within the current window before returning to the previous screen.

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[1]Program: IMPFRZ

You can now move and re-size these modal windows as required. The position and size of the window is then automatically remembered so that it is repositioned to the same location when the window is displayed again.

> Modal window positions for *SYSPRO Web UI (Avanti)* are saved on the application server in the text file `\Settings\AVANTI\ModalWindowsAdditional_operator.txt`.

SYSPRO Avanti Software Development Kit

The **SYSPRO Avanti Software Development Kit** lets developers create their own applications that connect to *SYSPRO Web UI (Avanti)*.

A **Microsoft Visual Studio** extension (included in the SDK) provides templates for new projects (and controls used within those projects) together with a number of development productivity features. In addition, the extension allows for debugging of *SYSPRO Web UI (Avanti)* plugins and supports the creation of bespoke cards.

The **SYSPRO Avanti Software Development Kit** supports a variety of use cases, from basic customization and scripting in *SYSPRO Web UI (Avanti)*, to entire embedded applications in the *SYSPRO Web UI (Avanti)* infrastructure.

You can still use VBScript customization for simple user interface customization and automation, but for more complex scenarios the **SYSPRO Avanti Software Development Kit** provides a powerful solution.

The benefits of this SDK over VBScript customization includes:

- Better performance.
- Full development environment of **Microsoft Visual Studio** with productivity extension.
- Intellisense and code completion.
- Live debugging of code with breakpoints.
- Access to the entire *SYSPRO Web UI (Avanti)* API.

> Resources will be made available on the **SYSPRO Learning Channel**.

2020-R1

SYSPRO Rules Engine
Notifications and Actions

The usability of the **SYSPRO Rules Engine** has been extended to include the following actions within the **Rules Administrator** of *SYSPRO Web UI (Avanti)*:

Action	Description
Email	This action lets you send an email.
Workflow Action	This action lets you call into a **SYSPRO Workflow Services** operation.

2019-R2

SYSPRO Rules Engine

The **SYSPRO Rules Engine** helps you streamline your business processes by acting as a sophisticated *if/then* statement interpreter (i.e. rule translator).

A set of services monitor your SYSPRO transactions in real time and (once a specific set of rules is defined) they analyze and determine when something you're interested in happens. Your configured actions required by each rule are then processed accordingly.

Rules are applicable to all SYSPRO transactions, regardless of where they originate (e.g. *SYSPRO Desktop*, *SYSPRO Web UI (Avanti)*, *SYSPRO Espresso*, etc.).

Benefits:

Incorporating rules that monitor your SYSPRO database log enable the following capabilities:

- **Stay informed**

  Always be aware of what's happening in your business by configuring rules that inform you when specific transactions take place.

  > **FOR EXAMPLE:**
  >
  > When a customer reaches their credit limit, SYSPRO can push a notification to **SYSPRO Web UI (Avanti)**, begin a conversation using the **SYSPRO Bot** and surface a **SYSPRO Harmony** beat.

- **Automate processes**

  Automate actions that are required when particular events occur.

  > **FOR EXAMPLE:**
  >
  > Track the history of a specific database column.

- **Predict outcomes**

  Use predictions supplied by the **SYSPRO 8 Machine Learning** service within any part of a rule.

  The **SYSPRO Rules Engine** automatically picks up any active AI Models focused on the same table as your target table, making these outputs available within your list of variables.

  This lets you add conditions to a rule, as well as use prediction outcomes in your actions.

  > **FOR EXAMPLE:**
  >
  > If the probability of a purchase order being late is higher than 80%, then push a **SYSPRO Harmony** beat that states '`There is an 87% change that order 000164 will be late`'.

Rules Administrator

The **Rules Administrator** lets you create and maintain rules within *SYSPRO Web UI (Avanti)*.

You can define the following parts for rules:

Part	Description
Target	This indicates the table (and operation on the table) that should initiate a rule.
Variables	These are used to define or manipulate any values required in the **Conditions** or **Actions**. They include fixed values (e.g. strings, integers, dates) C# snippets and SQL retrieval.
Conditions	This is a set of conditional expressions that must be met before any actions are performed. To execute a specific action, conditions act as triggers that are initiated according to how the condition was configured.
Actions	Actions are executed when the rule conditions are met.

AI Integration

You can now use predictions supplied by the **SYSPRO 8 Machine Learning** service within any part of a rule.

> **FOR EXAMPLE:**
>
> The **SYSPRO 8 Rules Engine Service** automatically picks up any active machine learning models focused on the same table as your target table, making these outputs available within your list of variables.
>
> This lets you add conditions to a rule (e.g. if the probability of a purchase order being late is higher than 80%, then continue to the actions) as well as use conditions in your actions (e.g. a Harmony message could state: 'There is an 87% chance that order 000164 will be late').

Notifications and Actions

A number of new actions can now be executed by the **SYSPRO 8 Rules Engine Service**:

Action	Description
Avanti Notifications	These are messages sent to an operator in *SYSPRO Web UI (Avanti)*.
Espresso Notifications	These are messages sent to an operator in *SYSPRO Espresso*.
SYSPRO Bot Messages	These are messages sent to an operator on the **SYSPRO Bot** (using the proactive messaging feature).

Action	Description
Delete Rule	This deletes a rule after all its actions have executed (useful for once-off rules).
Disable Rule	This disables a rule after all its actions have executed.

Sample Rules

A number of sample rules have been added to the **Rules Administrator**:

LCT shipment might arrive late

Description	Notifies an operator that a shipment might arrive more than 10 days late.
Actions	- Sends an Avanti notification - Posts a Harmony beat
Uses	Sample Machine Learning model `LctDaysLate`.

Job status rule

Description	Notifies an operator if a new job will be Late or On time.
Actions	Sends an Avanti Notification.
Uses	Sample Machine Learning model `JobStatus`.

New stock code added

Description	Notifies an operator when a new stock code is added to the inventory list.
Actions	- Posts a Harmony beat - Sends the SYSPRO Bot a proactive message - Sends an Avanti notification

WIP Material Cost

Description	Notifies an operator when the actual material cost exceeds the expected material cost.
Actions	- Posts a Harmony beat - Sends the SYSPRO Bot a proactive message - Sends an Espresso notification - Sends an Avanti notification

AR Invoice Late Payment Predicted

Description	Notifies an operator when a late invoice payment is predicted for a customer.
Actions	- Posts a Harmony beat - Sends an Avanti notification
Uses	Sample Machine Learning model `CustomerInvoicePayDays`

Sales order return reason

Description	Notifies an operator why sales orders over a certain value might be returned.
Actions	Sends an Avanti notification.
Uses	Sample Machine Learning model `LostSaleReason`

Predict supplier payment

Description	Predict supplier payments.
Actions	Sends an Avanti notification
Uses	Sample Machine Learning model `ApInvoicePayment`.

2018-R2

Avanti Workspaces

Workspaces are customizable dashboards in *SYSPRO Web UI (Avanti)* that supply user roles with everything they need to perform their tasks efficiently and effectively.

They are essentially web views for roles and can contain anything that can be designed in the Visual Designer (e.g. Business Insights, Program Tiles, Charts, Flow Graphs, Cards, Grids, Forms, and any customized panes associated with the role itself).

A workspace is a way of grouping tasks or processes together in a way that is meaningful or relevant for an individuals role (i.e. similar to a **Favorites** menu, except that it is defined at a role level).

Benefits:

- Users have access to a single, customizable and personalized workspace.
- A single dashboard provides a view of the activities, actions and events most relevant to the user.

Avanti Flow Graphs

The **Avanti Flow Graph Designer** lets you add flow graphs to programs as well as create custom flow graphs to streamline your daily activities. A flow graph typically contains programs, reports and tiles that form part of a business process that you can navigate by selecting the flow graph entities.

2018-R1

Web Views

Web Views are self-contained HTML5 pages that can include **Fields**, **Charts**, **Cards** and **Tiles**.

They provide a complete picture on a single screen and have been designed to display the most important information in a manner that is intuitive and simple to use.

You can design and customize your own **Web Views** using the **Visual Designer**[1] program. Once deployed, these **Web Views** can be viewed by pressing `F11` in the program for which one was created.

SYSPRO ships template **Web Views** with the product, which are located in the `\Base\Samples` folder of your SYSPRO installation.

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[1]Program: IMPFRZ

SYSPRO