

Business Insights

SYSPRO 8

Reference Guide

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Business Insights

Exploring

Where it fits in?

Business insight tiles (also called insight tiles or just tiles) are essentially SQL scripts displayed in a tile format within a SYSPRO web view. These tiles are context-driven and let you act instantly on events, facilitating informed business decisions and sound business behavior.

Functionality

Business insight tiles can be used in various places, including:

- Main SYSPRO menu: to surface company information (e.g. the `total backorders for the company`)
- Specific programs: to provide a key field as the context (e.g. the `total backorders for a customer`)

Additionally, when you click on a business insight tile, you can drill down to more detailed information displayed in a list view that derives its context from the specific tile measurement parameters.

You can even create administration insights such as `failed transactions`, `users logged in`, etc.



Insight tiles can be imported using the **Tile Builder - Import** program and exported using the **Tile Builder - Export** program (accessible from within the **Insight Tile Definition** program).

Key Performance Indicators

KPIs on tiles can be used to highlight values approaching or exceeding pre-determined objectives or thresholds. This lets you proactively keep an eye on approaching targets. These targets could be a certain value, company-wide goal or a specific target agreed for a person or a role within the organization.

Therefore, the **Insight Tile Definition** program lets you create and deploy business insight tiles, as well as define specific thresholds for targets or key performance indicators (KPIs) and highlight these values within the tiles.

Terminology

Business Activity Query (BAQ)

SYSPRO Business Activity Queries are SQL views that are created in the relevant company databases and (because they are defined in SYSPRO) are recognized as data sources. They provide a view into the business data commonly used during the typical business management process. The queries are built and secured in the core ERP system and then surfaced to users via their enterprise reporting and connectivity solutions.

Data source

In the context of SYSPRO Business insight tiles and SYSPRO Business Activity Queries, a data source can be considered as one of the following:

- SYSPRO base table (e.g. [InvMaster](#))
- SYSPRO custom form table (e.g. [InvMaster+](#))
- SYSPRO Business View
- User defined base table (i.e. any base table in the current database that is not part of the standard SYSPRO database)
- User defined custom form table (i.e. any base table defined with a trailing [+](#) sign that doesn't form part of the standard custom table definitions)
- User defined views (i.e. any view in the company database that is not defined as a SYSPRO Business View)

Starting

Prerequisites

To use this feature, the following setup option(s) must be enabled:

System Setup

Program List > Administration > General Setup

- E.Net Service Details



The **SYSPRO 8 e.net Communications Load Balancer** service must be installed and running.

Security

You can secure this feature by implementing a range of controls against the affected programs. Although not all these controls are applicable to each feature, they include the following:

- You restrict operator access to *activities* within a program using the **Operator Maintenance** program.
- You can restrict operator access to the *fields* within a program (configured using the **Operator Maintenance** program).
- You can restrict operator access to *functions* within a program using passwords (configured using the **Password Definition** program). When defined, the password must be entered before you can access the function.
- You can restrict access to the eSignature *transactions* within a program at operator, group, role or company level (configured using the **eSignature Setup** program). Electronic Signatures provide security access, transaction logging and event triggering that gives you greater control over your system changes.
- You can restrict operator access to *programs* by assigning them to groups and applying access control against the group (configured using the **Operator Groups** program).
- You can restrict operator access to *programs* by assigning them to roles and applying access control against the role (configured using the **Role Management** program).

Restrictions and Limits

- Tile definition file names must end with `.SQL` and can only include the characters `A-Z`, `a-z`, `0-9` and `_` (underscore).

Solving

FAQs

Creation and maintenance

How do I create a new business insight tile?

You can either create a new business insight tile from scratch, or copy an existing one and then change the tile details:

1. Open the **Insight Tile Definition** program (*SYSPRO Programs > Administration > General Setup*).
2. To create a new tile definition:
 - Select the **New Tile** function.

To copy an existing tile:

- Select the applicable tile in the **Tiles** pane.
- Select the **Create From** function from the toolbar of the **Tile Builder** program.

The **New Tile** window of the **Tile Builder** program is displayed.

3. Configure the following tile details and select **OK**:
 - Tile description
 - Associated key type
 - Tile title
 - Variables



The variables will be replaced at run time using the output of the tile summary SQL script.

4. Select the **Edit Tile Summary** function to configure the SQL script that is used to render the summary tile values – including the main tile value, together with optional subtitle and footer values.

You can use a simple-to-use interface to have the SQL statement generated, or you can define a custom SQL script, which provides more flexibility when presenting sophisticated information.

5. Select the **Save and Close** function.

You are returned to the **Insight Tile Definition** program.

6. Select the **Edit Tile Detail** function to configure the SQL script that is used to render the detail list view column values. These values are displayed when clicking on the tile to zoom into the details.

You can use a simple-to-use interface to have the SQL statement generated, or you can define a custom SQL script, which provides more flexibility when presenting sophisticated information.

7. Preview the tile in the **Insight Tile Definition** program.
8. Assign KPIs by selecting the **Add** hyperlink of the applicable column in the **Tiles** list view.



Once the business insight tile has been created, it can be assigned to a workspace using the **Visual Designer** program.

How do I define the data source for a business insight tile?

1. Open the **Insight Tile Definition** program (*SYSPRO Programs > Administration > General Setup*).
2. Select the **New Tile** function to create a custom tile.

The **Tile Builder** program is launched.

- a. Enter the tile details within the **New Tile** window.
- b. Select the **Edit Tile Summary** function.

The **Tile Builder - SQL Definition** program is displayed.



You can also manually edit the SQL statement by selecting the **Edit Tile Detail** button. This displays the **SQL Query Script** pane.

- c. From the **SQL Select** pane, use the **Select data source** function at the **Primary data source** field to indicate the anchor data source.

The **Data Sources** program is displayed.

- d. Select the relevant table from the **Data Sources** list view.

Once you have selected the data source it is displayed in square brackets next to the **Primary data source** field in the **Tile Builder - SQL Definition** program.

- e. Select the **Save and Close** function to exit the **Tile Builder** program.

3. Exit the **Insight Tile Definition** program.

How do I specify the data to be used for the business insight tile value?

1. Open the **Insight Tile Definition** program (*SYSPRO Programs > Administration > General Setup*).
2. Create a custom tile (or select an existing business insight tile).

The **Tile Builder** program is launched.

- a. Select the **Edit Tile Summary** function.

The **Tile Builder - SQL Definition** program is displayed.



You can also manually edit the SQL statement by selecting the **Edit Tile Detail** button. This displays the **SQL Query Script** pane.

- b. From the **SQL Select** pane, indicate the anchor data source at the **Primary data source** field.



You can use the **Select data source** function to search for and select the data source using the **Data Sources** program.

- c. Once the main data source has been defined, select the **Select column** function at the **Value** field.

The **Data Sources** program is launched.

- d. Select the relevant column from the **Columns for Data Source** list view.

Once you have selected the column, the column name is displayed next to the **Value** field in the **Tile Builder - SQL Definition** program.

- e. Select the **Save and Close** function to exit the **Tile Builder** program.

3. Exit the **Insight Tile Definition** program.

Why do some business insight tiles need key types?

Certain business insight tiles (e.g. **Number of users logged into SYSPRO** or **Total Accounts Receivable balance for the company**) only display holistic information and therefore don't require any context (i.e. defined parameters or keys).

While other tile types are context driven and therefore require additional information (such as keys or parameters) to display the appropriate values.

FOR EXAMPLE:

- Customer outstanding balance

When a business insight tile is added to the **Customer Query** program to display the current customer balance, the customer key (from the **ArCustomer** table) is required so that the relevant condition can be included in the SQL statement.

How are keys passed to the tile at run time?

The SYSPRO user interface gathers a list of the key fields provided in the various forms and toolbars. Therefore, when a user selects a tile, the list of keys together with their current values, are then passed to the tile.

You can access the key value and use it within your SQL query by defining an appropriate key type field against the tile.

FOR EXAMPLE:

For the **Customer balance for a customer** business insight tile, you could do the following:

- Define the **Key type** field as **Customer**.

This means, that if there is a customer key available at run time then the value can be used by the SQL query of the tile to select the current customer code.

Sample SQL Preamble:

```
declare @Customer varchar(${Customer.Length})
set @Customer = '$Customer'
```

The variable `${Customer.Length}` will be replaced at run time with the length of the customer key in SYSPRO (currently 15 characters).

The variable `$Customer` that will be replaced at run time by the actual customer key.

SQL Condition:

```
Customer = @Customer
```

Sample SQL query script:

```
--SQL=Generated
--SQL=Preamble
declare @Customer varchar(${Customer.Length})
set @Customer = '${Customer}'

--SQL=Select
select
  @Customer as 'SubTitle',
  CurrentBalance1 as 'Value'
from
  [ArCustomerBal] with nolog
where
  Customer = @Customer
GO
```



If you select a key type and then edit the tile summary SQL, an appropriate SQL preamble will be provided. The SQL preamble shows how to take the key of the item at run time and create a SQL variable that can be used in the SQL select statement condition (WHERE statement).

Due to this automatic SQL preamble creation, we recommend that you select the key type before defining your tile summary SQL or tile detail SQL.

Exporting and Importing business insight tiles

How do I export business insight tiles?

You can export standard and custom business insight tiles as follows:

1. Open the **Insight Tile Definition** program (*SYSPRO Programs > Administration > General Setup*).
2. Select the **Export** function to launch the **Tile Builder - Export** program.
 - a. Select the business insight tiles that you want to export by using the check box.
 - b. Select the **Export Selected Tiles** function.

The **Export Tile Target** window is displayed.

 - i. Specify the format and location of the tiles you want to export.
 - ii. Select the **Export Tiles** function.
 - iii. Close the **Export Tile Target** window.
 - c. Exit the **Tile Builder - Export** program.
3. Exit the **Insight Tile Definition** program.



You can export individual or multiple tiles as a consolidated ZIP file or as separate files, i.e. one file per tile.

How do I import business insight tiles?

1. Open the **Insight Tile Definition** program (*SYSPRO Programs > Administration > General Setup*).
2. Select the **Import** function to launch the **Tile Builder - Import** program.
 - a. Specify the format and location of the tiles that you want to import
 - b. Select the **Import Tiles** button.
The copied or extracted business insight tiles are then displayed within the **Tiles** list view.
 - c. Highlight the business insight tiles you want to import and select the **Import Selected Tiles** function.
3. Exit the **Insight Tile Definition** program.



- You can import individual or multiple tiles using a consolidated ZIP file or separate files, i.e. one file per tile.
- You can only import custom business insight tiles. Standard tiles can't be imported.

What is the default location to which business insight tiles are exported?

When exporting single files, the default server target folder is `...\WORK\Tile_Import_Export` (this folder is created if it doesn't exist at the time of the export).

If you are exporting to a ZIP file, then the default server target file name is `...\WORK\Tile_Import_Export\Tile_Package.ZIP`.

Alternatively, you can select different folders and file names if required.



In a client-server environment, the files are exported to the temporary folder on the client computer by default, but this can be changed.

Working with KPIs on business insight tiles

How do I add key performance indicators (KPIs) to a business insight tile?

The following explains how to add key performance indicators to a business insight tile:

1. Open the **Insight Tile Definition** program (*SYSPRO Programs > Administration > General Setup*).
2. From the **Tiles** pane, highlight the tile for which you want to add KPIs.
3. Depending on the level at which the tile must be deployed, select the **Add** or **Edit KPI** hyperlink of the appropriate column:
 - **System KPI**
This lets you add or maintain the tile at system-wide level (i.e. all operators will be able to see the tile).

- **Company KPI**

This lets you add or maintain the tile at company level (i.e. all operators that have access to the defined company will be able to see the tile).

- **Role KPI**

This lets you add or maintain the tile at role level (i.e. operators within the defined role(s) will be able to see the tile).

- **Operator KPI**

This lets you add or maintain the tile at operator level (i.e. only the operator for whom the tile is created will be able to see the tile).

The **Tile KPI Maintenance** program is launched.

4. From the **Items** pane, select the **Add** or **Edit** function of the **Edit** column.

The **KPI Properties** pane is then available for editing.

5. Edit the KPI properties as required.
6. Select the **Save KPI** function.
7. Exit the **Tile KPI Maintenance** program.
8. Exit the **Insight Tile Definition** program.

Why can't I enter a specific target value when defining KPIs for a tile?

You can't select a target value for **Minimizing** or **Maximizing** type tile goals. You can only use a fixed target value if the selected type goal is defined as **Target Value**.

What happens if I change the icon on an existing business insight tile?

If you change the icon on an existing tile, then the warning icon overrides the existing icon when the warning value has been reached or exceeded.

Similarly, the critical icon will override the warning icon if the critical threshold is reached or exceeded.

Deploying business insight tiles

How do I deploy a business insight tile?

1. Select the **Design Web View** (or **Edit Web View**) option from the **Customize and control this application** icon (⚙️).



This icon is available on the toolbar of the main SYSPRO window, as well as on each SYSPRO program's toolbar.

2. From the **Visual Designer** program, select the **Add layout section** function.

3. From the **Configure new layout section** window, select **Tile Section**.
4. Optionally enter a **Section title** at the **Widget title** placeholder and assign an icon to the tile if required.
5. Select the **Add section** function.
6. Click in the **Add tile** block (designated by the  icon).
A list of KPI and Metric categories are displayed.



The number of available insights are indicated by a number in brackets alongside each tile category.

7. Drill down into the relevant category and select the tile you want to deploy.
8. *(Optional)* Define the following for the tile:
 - Width
 - Text
 - Tile background color
 - Icon
9. Select the **Add tile** function to assign the tile to the current layout section.
Continue adding tiles to the current layout section or to a new layout section.
10. Select **Save and Exit**.
Your tile will be displayed in the web view, immediately showing the appropriate insight information.

Why are custom tiles created in SYSPRO 7 Update 1 not in the `\Base\Samples` folder?

In **SYSPRO 7 Update 1** and **SYSPRO 8** standard tiles are shipped in the `\Base\Samples` folder and custom tiles are designed to be located in `\Plugin\CustomStore` folder.

Some custom tiles may have been created by copying and renaming existing tiles in `\Base\Samples` folder instead of moving the custom tile to the `\Plugin\CustomStore` folder.

During the minor database upgrade to **SYSPRO 8 2021 R2** (or later) these non-standard tiles are detected and automatically migrated to the `\Plugin\CustomStore` folder with the appropriate file prefix. Standard tiles located in `\Base\Samples` and custom tiles in `\Plugin\CustomStore` are also uploaded to the new system-wide [AdmTileDefinition](#) table.

In addition, once each custom tile has been uploaded to SQL, the custom tile definition files in `\Plugin\CustomStore` are moved to the `\Plugin\CustomStore\Tile_Backup` folder.



If any problems are found during the tile upload process, the tile definition file is moved to the `\Plugin\CustomStore\Tile_Backup_Upload_Failed` folder. An explanation of the failure is stored in a separate file with the file suffix `_Upload_Failed_Reason.TXT`.

Using

Categories and Insights

Standard SYSPRO **Business Insights** (i.e. those shipped with the product) include a number of categories, each comprising a list of specific insights:

Financial KPI

- Average Days to Pay by Branch
- Average Days to Pay by Company
- Average Days to Pay by Customer
- Average Value of Invoices by Branch
- Average Value of Invoices by Company
- Average Value of Invoices by Customer
- Average Value of Invoices by Customer Class
- Average Value of Invoices by Geographic Area
- Average YTD Invoice Value by Company
- Average YTD Value of Invoices By Branch
- Average YTD Value of Invoices By Customer
- Average YTD Value of Invoices By Salesperson
- Customer Days Outstanding by Branch
- Customer Days Outstanding by Company
- Customer Days Outstanding by Customer
- Customers on Hold By Branch
- Customers on Hold by Company
- Customers on Hold by Customer Class
- Days Since Last Sale by Company
- GP Margin as % of Sales by Branch
- GP Margin as % of Sales by Company
- GP Margin as % of Sales by Customer
- Return on Asset by Company
- YTD Sales vs Target for Customers
- Number of Backorders for Company

KPI Customer Management

- Average days to pay for branch
- Average days to pay for customer
- Receivables days outstanding for branch
- Receivables days outstanding for customer

KPI Financials

- Average YTD invoice value for branch
- Average age of stock based on FIFO buckets
- Average age of stock based on inventory movements
- Average days to pay for company
- Customer balance as a percentage of total debtors balance
- Days cover for stock code
- Inventory FIFO current month value for stock code
- Inventory FIFO previous month 1 value for stock code
- Inventory FIFO previous month 2 value for stock code
- Inventory current cost current month value for stock code
- Inventory current cost previous month 1 value for stock code
- Inventory current cost previous month 2 value for stock code
- Inventory last cost current month value for stock code
- Inventory last cost previous month 1 value for stock code
- Inventory last cost previous month 2 value for stock code
- Inventory warehouse costing current month value for stock code
- Inventory warehouse costing previous month 1 value for stock code
- Inventory warehouse costing previous month 2 value for stock code
- Percentage of total debtors balance for branch
- Receivables days outstanding for company
- Return on assets for company
- Value of stock on hand for warehouse
- WIP Ledger balance summary

KPI Marketing and Sales

- Average YTD invoice value for company
- Average YTD invoice value for salesperson
- Average invoice value for branch
- Average invoice value for company
- Average invoice value for customer
- Average invoice value for customer class
- Average invoice value for geographic area
- Days since last sale for company
- GP margin as percentage of sales for branch
- GP margin as percentage of sales for company
- GP margin as percentage of sales for customer

KPI Operations

- WIP at a glance labor cost
- WIP at a glance labor issued
- WIP at a glance material cost
- WIP at a glance material issued
- WIP at a glance total WIP
- WIP at a glance total hours booked

Metric Customer Management

- Average YTD invoice value for customer
- Customers on hold for a branch
- Customers on hold for company
- Customers on hold for customer class

Metric Lot Batch Management

- Number of lots nearing expiry for company
- Number of lots nearing expiry for stock code
- Number of lots nearing expiry for warehouse
- Number of lots on hold for company
- Number of lots on hold for stock code
- Number of lots on hold for warehouse

Metric Marketing and Sales

- Cycle time customer order processing
- Number of backorder lines for branch
- Number of backorder lines for customer
- Number of backorder lines for salesperson
- Number of backorder lines for stock code
- Number of backorders for branch
- Number of backorders for company
- Number of backorders for customer
- Number of backorders for customer selection
- Outstanding orders for customer

Metric Operations

- Number of active jobs
- Number of active jobs for customer
- Number of active jobs for stock code

File locations

Standard tiles

Standard tiles shipped as part of SYSPRO are stored in the `\Base\Samples` folder and named `UX_Tile_??????_xxxxx.SQL`, where:

- `??????` is a unique 6-character **TileID**.
- `xxxxx` is a short description of the tile (no spaces), e.g. `UX_Tile_SOR001_Backorders_For_Company.SQL`.

Custom tiles

From **SYSPRO 8 2021 R2** onwards, custom tile definitions reside in the system-wide `AdmTileDefinition` table.

During the first minor database upgrade performed once **SYSPRO 8 2021 R2** (or later) is installed, any custom tile definition files stored in the `\Plugin\CustomStore` folder will be uploaded to the SQL table and the tile definition file will nbe moved to `\Plugin\CustomStore\Tile_Backup` folder.

If any problems are found during the tile upload process, the tile definition file is moved to the `\Plugin\CustomStore\Tile_Backup_Upload_Failed` folder. An explanation of the failure is stored in a separate file with the file suffix `_Upload_Failed_Reason.TXT`.

Affected programs

The following indicates areas in the product that may be affected by implementing this feature:

Setup programs

Insight Tile Definition

SYSPRO Programs > Administration > General Setup

This program is the platform from where you can:

- View existing business insight tiles
- Create new tiles
- Assign KPIs
- Manage SQL scripts
- Import and export tiles

Tile Builder

SYSPRO Programs > Administration > General Setup

This program lets you create and maintain business insight tiles.

Import programs

Tile Builder - Import

This program can be accessed from within the **Insight Tile Definition** program and is used to import business insight tiles.

Export programs

Tile Builder - Export

This program can be accessed from within the **Insight Tile Definition** program and is used to export business insight tiles.



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