

Description: Guide to configuration of Recipes in Unified Data Manager

OS Requirement: Win 2000/2003/XP/Server 2000/Server 2003/Vista

General Requirement: N/A

Introduction

The Unified Data Manager (UDM) enables the centralized management of commonly used expressions, value sets, groups, alarm subscriptions, filters, recipes and event triggers across GENESIS32 and BizViz products. This document will help you understand recipes from the configuration point of view and will demonstrate how they are used.

In order to get global overview of all UDM functions you can see other application notes about this tool or the UDM whitepaper.

Recipes in the Unified Data Manager

A recipe is a named collection of parameters that is created and stored in the Unified Data Manager (UDM). Each parameter of a recipe can be assigned to an OPC tag. Value(s) you assign to a recipe's parameter can be stored to the UDM and downloaded to the OPC server to update the tag. You can use recipes to change the parameter value, set a minimum or maximum value, define a range, or – depending upon the data type – set an expression that defines the value used.

Recipes allow you to create a predefined list of parameters (ingredients), connect these to OPC tags, and add recipe items for each “flavor” of your product you plan to create. The recipe system is first configured in the Unified Data Manager and can then be used on PDAs (Pocket GENESIS) or in GENESIS32 using the Tree Control ActiveX and the Recipe Control ActiveX.

Note: You can also use pre-defined symbols in GraphWorX32's Symbol library or you can create your own controls based on recipe interface.

There are two main pieces to configure – Recipe and Recipe Item. A Recipe represents a product type (e.g. Blue shirt), whereas a Recipe Item represents its variations (e.g. navy blue, light blue, cobalt blue, indigo, etc.).

Creating a new Recipe

1. Launch the Unified Data Manager by going to Start → Programs → ICONICS Tools → Unified Data Manager.
2. Create a new configuration database by going to File → New.
3. Follow the configuration wizard to create an MS Access or MS SQL configuration database.

4. You should now have a new configuration database.
5. In the tree-control in the left-hand pane, right-click on Recipes and select New → Recipe

Note: You can select to create a new Folder instead of a new Recipe. Folders are used to logically organize the Recipes. In our example we created the folder *ColorSpace*.

Configuring a Recipe

1. Under the “Recipe Properties” tab you can specify the recipe's name, description, and unique ID. In this section, we will create colored inks based on the printer's CMYK color space (i.e. Cyan, Magenta, Yellow, and Black), therefore we have chosen to name our recipe CMYK.

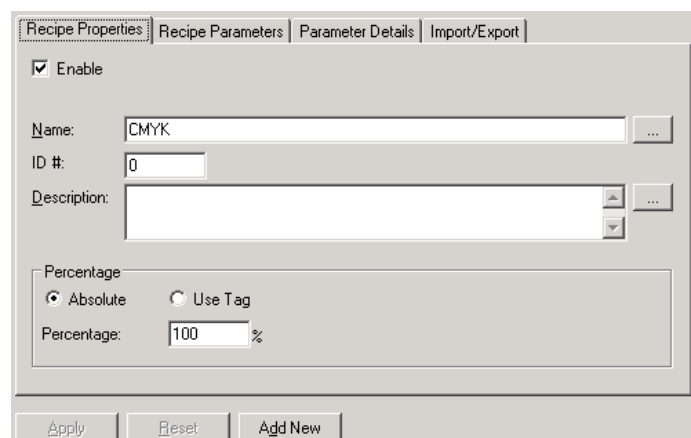


Fig 1: Recipe Properties

2. Under the “Recipe Parameters” tab select the output tags that you want to be affected when downloading a Recipe item. Click the “Add” button to open the ICONICS Unified Data Browser (UDB) where you can browse for your tags. The selected tags must be READ/WRITE.

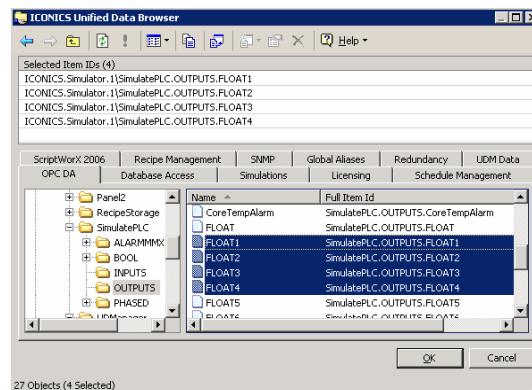


Fig 2: Browsing for recipe parameter tags

- On the “Parameter Details” tab you can specify details of the previously added parameters. You can go through all the parameters using either a drop down list or the arrows situated next to parameter number. In this example, we prepared four parameters (Cyan, Magenta, Yellow, and Black) that represent the inks that will be mixed to make our desired color.

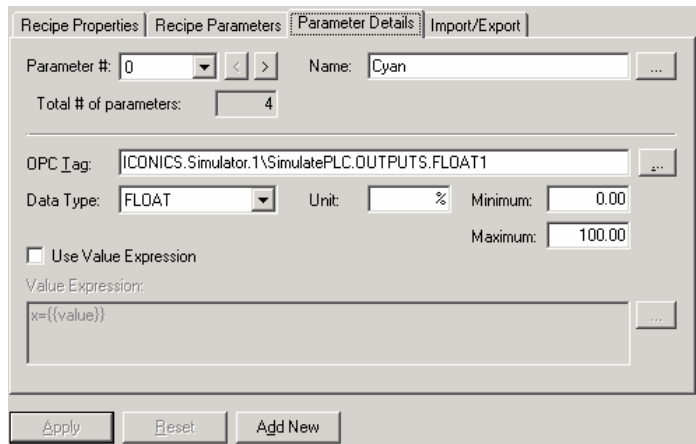


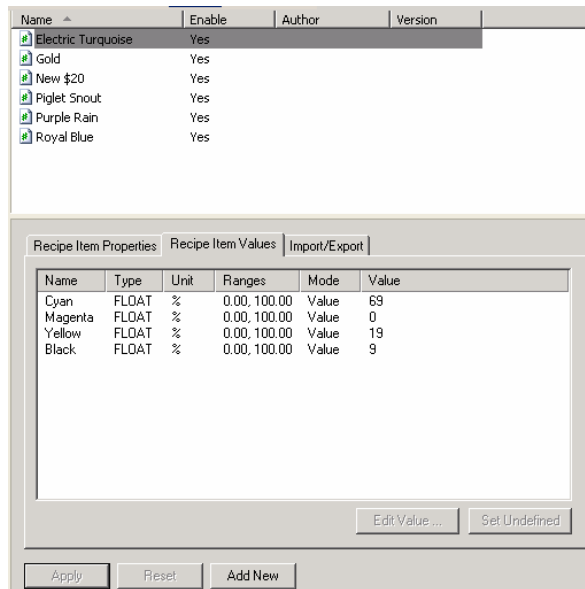
Fig 3: Parameter Details

Apart from specifying the name you can modify the OPC tag path, data type, units, and maximum / minimum amount of ingredients allowed to be used in this recipe.

Moreover you can manipulate the original value of a single ingredient in the recipe using the “Use Value Expression” option. Here you can use an expression to change the original values for your ingredients.

Configuring a Recipe item

- Once you have a Recipe defined you can create a new Recipe Item (a particular color variation, in our example) by right-clicking on the Recipe in the tree-control and selecting New → Recipe Item.
- The “Recipe Item Properties” tab gives you opportunity to enrich the item with descriptions, version information, and other details.
- On the “Recipe Item Values” tab you can set values for the variation of your product. Each Recipe parameter can be assigned one value in each Recipe Item. When a user chooses to download this Recipe Item these values will be downloaded to the tags that were selected when defining the parameters of the Recipe.



Name	Type	Unit	Ranges	Mode	Value
Cyan	FLOAT	%	0.00, 100.00	Value	69
Magenta	FLOAT	%	0.00, 100.00	Value	0
Yellow	FLOAT	%	0.00, 100.00	Value	19
Black	FLOAT	%	0.00, 100.00	Value	9
Electric Turquoise					
Royal Blue					

Fig 4: Recipe Items

Note: In our example we created six Recipe Items. Each item makes up one color like so:

Electric Turquoise (69%, 0%, 19%, 9%)
 New \$20 (8%, 0%, 9%, 22%)
 Gold (0%, 16%, 100%, 0%)
 Piglet Snout (0%, 17%, 19%, 7%)
 Purple Rain (23%, 50%, 0%, 46%)
 Royal Blue (71%, 53%, 0%, 12%)

Recipes in a GraphWorX32 Display

Once you have created your recipes, you will need an interface where you can use them. This interface is usually provided in a GraphWorX32 display by the Tree Control ActiveX, the Recipe Control ActiveX, and several pick action buttons to manipulate Recipes.

Note: There are predefined symbols in GraphWorX32 Symbol library that can simplify the deployment of your recipes. For instance, the *Default Recipe* symbol is a set of all controls necessary to use recipes in runtime mode already bound together in one symbol.

Configuring Recipe Control ActiveX

- Launch GraphWorX32 by going to Start → Programs → ICONICS GENESIS32 → GraphWorX32 → GraphWorX32.
- Click on the “Recipe ActiveX” button  in the ActiveX toolbar to place the grid control on the design surface.
- Double click on the grid control to open the “Recipe ActiveX Properties” dialog box, as shown below.

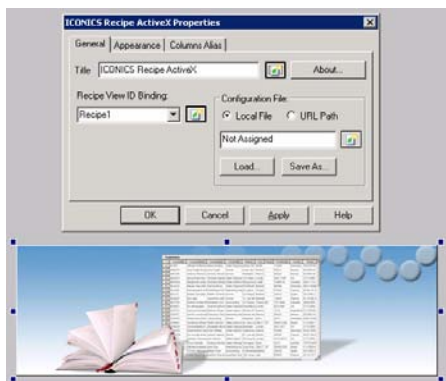


Fig 5: Recipe ActiveX Properties

- Enter a title and Recipe View ID. Alternatively you can use the browse buttons to the right of these two text boxes to select global aliases for these values from the Unified Data Browser.

Note: The Recipe View ID can be any value, but it must be the same in the grid, tree control, and pick action buttons to have your display operate correctly. The Recipe View ID binds all these elements together.

- Use the “Appearance” tab to modify the display of the grid, and the “Column Alias” to rename the column names, if desired.

Configuring Tree Control ActiveX

- Click on the “TreeExplorer ActiveX” button  in the ActiveX toolbar to add that control to the design surface.
- Double click on the tree control to open the “TreeExplorer ActiveX Properties” dialog box and click on the “Tab Configuration” tab.
- Click on the “Insert Tab” button. Select the new tab, then enter a Tab Name, set the Tab Type to “Recipe Explorer”, then type same the Recipe View ID you used in the Recipe ActiveX.

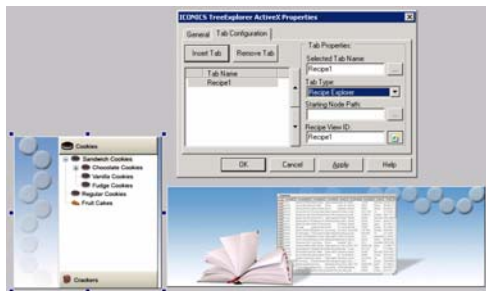


Fig 6: TreeExplorer ActiveX Properties

Pick Action buttons

To manipulate recipes during runtime add some Recipe Pick action buttons to the design surface as follows:

- Click on the “Button” button  in the Dynamics toolbar, then click and drag a button on the design surface.
- Under the “Pick” tab, select “Recipe Action” from the Action list box, and select one of the Button Types.
- Set the Recipe View ID Binding to be the same Recipe View ID as your recipe ActiveX controls.

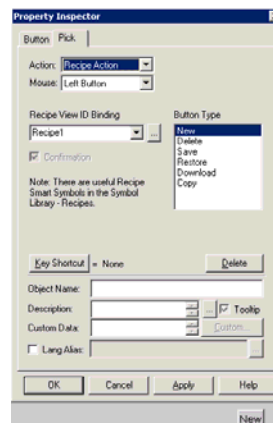


Fig 7: Recipe button Pick tab

There are six recipe actions: “New”, “Delete”, “Save”, “Restore”, “Download”, and “Copy”. If you want to add all of these buttons, repeat the procedure above five more times. If you don’t intend to customize your buttons, then you can use the ICONICS symbols library to add a set of buttons in one fell swoop. Here’s how.

- Click the View menu and select “Toggle Symbols Toolbar” (Ctrl+Shift+S) to view the symbols library.
- Double click on the “Recipes” folder and then **RECIPES.SDF** to view the Recipe symbols.
- Drag and drop the “RecipeButtons” control onto your page.
- Double click on the “RecipeButtons” control to set the Recipe View ID Bindings.

NOTE: Many of the controls in the Symbols library are meant to be used as is. If you ungroup the RecipeButtons control to examine the binding of a button, it removes the binding of the control as a whole.

Recipes in action

Having created recipes in the UDM and a GraphWorX32 display you are ready to start working with your Recipes. If you want to see the effects of these recipes on your OPC tags, you may want to add them to your display as process points before entering Runtime.

- To display a recipe, navigate to that recipe in the tree control. If you want to switch to another recipe, you may need to right-click on the Recipes node in the tree and select the “Refresh” command.

- To modify a recipe value, click on the “Value” text box in the grid, enter the value desired and press the Enter key. Without pressing the Enter key, your value may not be saved. Click the “Save” button in the toolbar.
- To send these values to the OPC tags use the “Download” button.

Note: The Save button saves changes to the UDM database, but doesn’t propagate those changes to the OPC tags. The Download button both saves the values to the database and loads them into the appropriate OPC tags.

- At this point you may create recipes using the “New” button or by entering data into the UDM and examining the effect of the different buttons and control features.

Pocket Recipes

With Pocket Recipe you can perform many of the tasks on a Windows Mobile device that you’ve already seen on your desktop. Pocket Recipe is a reduced feature set version of the Recipe grid and tree control. With Pocket Recipe, you can display the state of a recipe, create a recipe, modify or edit the recipe’s parameters, delete a recipe, and when you are done download the changes to your Recipe or OPC server.

To view recipes on a handheld:

- On the handheld, open “GenBroker Easy Setup” and configure your handheld to communicate with the recipe server.
- Tap on the icon for “Pocket Recipe”. When connected, all of the recipes on that server will appear as shown below.

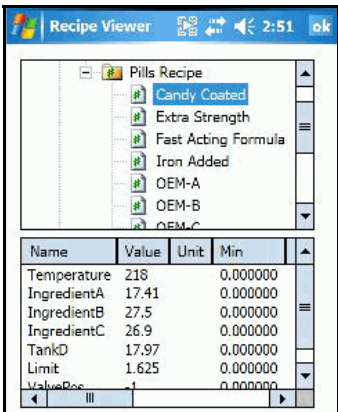


Fig 8: Pocket Recipe gives you access to the recipes on your server

- Tap on a folder to view the recipes contained within, then tap on the recipe of interest to see its parameters.

To edit a recipe value:

- Press and hold your stylus on the recipe name and select “Edit Value” from the context menu.
- Enter the new value into the “Insert New Value” text box; then tap the “OK” button. The value will appear on your handheld, but is not yet saved to the server.
- To save your value(s), select the recipe, press and hold until the context menu appears, then select “Save”.

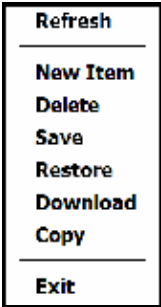


Fig 9: The Pocket Recipe context menu duplicates the RecipeButtons functionality on your desktop

The value isn't automatically saved when you edit a parameter value in the recipe properties pane (lower pane). When you move to a different recipe, Pocket Recipe will ask you if you want to save the values. When you save a changed value, the new value is written to the UDM database. If you want to send your recipe changes to the OPC server, save the values and then download them.