AssetWorX
Bulk Configuration using Excel

APPLICATION NOTE

August 2014

Description: Guide to using the Bulk Configuration Utility.
General Requirement: General knowledge of AssetWorX, Equipment Classes, and Microsoft Excel. Microsoft Excel must be installed.

Introduction

The Bulk Configuration Utility is a handy tool you can use to quickly add or update a batch of assets and other associated configuration objects, such as alarms and trending tags. The utility leverages an Excel spreadsheet as input.

Getting Started

1. Open the Bulk Asset Configurator by going to **Start** → **Programs** → **ICONICS** → **Tools** → **Bulk Asset Configurator**.
2. The first thing we need to do is create an Excel spreadsheet to use as our input. Click the **Bulk Asset Configurator with a blank new input file** button in the New Project section of the File ribbon and choose a location to create your Excel spreadsheet.
3. Click the **Open** button next to Input File to open the workbook in Excel.

NOTE: The Excel workbook contains one sample line in ClassInstantiation, ClassHistoryDefinitions, as well as in ClassAlarmDefinitions sheet to help you fill in the sheets properly. However, you must delete these lines before you try to execute the process of bulk configuration.

Adding New Assets

This section assumes you are using the example AssetWorX and Hyper Historian configuration databases. If you are not, replace the names below with names from your configurations. Copy and paste from Workbench-SL is highly recommended.

Let's assume we want to create four new instances of the "Ingredient charger" equipment class under Company → Foxboro bakery → North → Baking line.

1. In the input Excel workbook, go to the **ClassInstantiation** sheet.
2. Fill in these values:

TargetEquipment	InstanceName	EquipmentClass
Company\Foxboro bakery\North\Baking line	Charger1	Ingredient charger
Company\Foxboro bakery\North\Baking line	Charger2	Ingredient charger
Company\Foxboro bakery\North\Baking line	Charger3	Ingredient charger
Company\Foxboro bakery\North\Baking line	Charger4	Ingredient charger

3. Save the spreadsheet. You can leave Excel open.
4. Return to the Bulk Asset Configuration Utility. Clear the checkbox **Generate alarms** and **Generate history** in the Properties of the project.
5. Go to the **Home** ribbon, and click **Execute**. The utility will show you a log of its process. If everything completes successfully, click **Close**.
6. Open **Workbench-SL**, go to the **AssetWorX** provider, and expand down to **Company** → **Foxboro bakery** → **North** → **Baking line**. If Workbench-SL was already open at this location, right-click on **Baking line** and select **Refresh**.

   You should now see your four new assets under this line. You can explore each one and see that they are instances of the "Ingredient Charger" equipment class.

Propagating Equipment Class Changes

Let's assume we want to make a change to our "Ingredient Charger" equipment class and propagate that change to our four "ChargerN" assets.

We also want to add a parameter, and specify a different value for that parameter to each asset.

1. In **Workbench-SL**, expand **Equipment classes** → **Ingredient charger**.
2. Right-click on **Ingredient selector** and select **Add Equipment class property**.
3. Name your new property "MaterialTemperature". Change the **Source Type** to "Static Value". In the **Value** field, fill in this string without quotes: "/?Temperature?/"
4. Hit **Apply** when done.
5. In your Excel workbook, add a new column header called "Temperature" or rename the sample column *Parameter 1 Name*. (You may want to copy and paste from the Value field in step 3 to be sure it is spelled exactly alike, but remove the slashes and question marks.)
6. Fill in the new Temperature column like so:

TargetEquipment	Instance Name	Equipment Class	Temperature
Company\Foxboro bakery\North\Baking line	Charger1	Ingredient charger	58
Company\Foxboro bakery\North\Baking line	Charger2	Ingredient charger	42
Company\Foxboro bakery\North\Baking line	Charger3	Ingredient charger	38
Company\Foxboro bakery\North\Baking line	Charger4	Ingredient charger	100

7. Save the file, then return to the Bulk Asset Configuration Utility and hit the **Execute** button again. **Close** the log when the process has finished.
8. Go back to Workbench-SL and look at Charger1. (Right-click on it and hit **Refresh**, if necessary.) Its Ingredient Selector should now have a MaterialTemperature property with a value of 58. Your other "ChargerN" assets will have similar changes, and each will have its own value for Temperature as specified by the worksheet.

You can continue to make changes like this as often as needed. Whenever you make an update to an equipment class that you'd like to propagate to your existing assets, simply execute the Bulk Asset Configuration Utility, and all of the assets listed in that sheet will be updated. If you add parameters, you can add them as new columns and specify the values as needed.

Remember to save any changes to the Excel spreadsheet and apply any changes to your equipment classes. Also remember that small typos can make a big difference, so utilize copy and paste whenever you can.

Adding Historical Tags

Now let's assume we want to log some values for these assets into Hyper Historian. We need to edit the Ingredient charger equipment class to have an associated Hyper Historian tag, and then apply those changes to our assets.

NOTE: The **Generate history** box must be checked in the Bulk Asset Configuration Utility on the Properties tab in order for history tags to be created.

1. In your Excel workbook, go to the **ClassHistoryDefinitions** sheet.
2. Add one row with these values (note, we are purposely not filling in every cell on this row):

EquipmentClass: Ingredient charger
Property: Ingredient selector\MaterialTemperature
GenerateHistory: TRUE
IsCollected: 1
LoggingGroup: Sample Logging Group
CollectorGroup: Collector Group (1 second)

NOTE: The Property here must already exist in your Equipment Class. The ClassHistoryDefinitions sheet will not add it.

3. Save the file, then return to the Bulk Asset Configuration Utility and hit the **Execute** button again. **Close** the log when the process has finished.
4. Go back to Workbench-SL to the **Hyper Historian** provider (or the **Quality AnalytiX** provider, if you have AnalytiX installed). You should now see under Data Collections a tree of folders that mirrors the AssetWorX tree, and if you expand down to Company → Foxboro bakery → North → Baking line → Charger1 → Ingredient Selector and select MaterialTemperature you'll see that it's logging the MaterialTemperature property of your ChargerN assets.

If necessary, you can add values into more of the columns in the ClassHistoryDefinitions sheet to further customize your historical pens.

Adding Alarms

In addition to trending the MaterialTemperature property, now we also want to have an alarm when it gets too high.

NOTE: The **Generate alarms** box must be checked in the Bulk Asset Configuration Utility on the Properties tab in order for history tags to be created.

1. In your Excel workbook, go to the **ClassAlarmDefinitions** sheet.
2. Add one row with these values (note, we are purposely not filling in every cell on this row):

EquipmentClass: Ingredient charger
Property: Ingredient selector\MaterialTemperature
GenerateAlarm: TRUE
LimitOrDigital(L/D): L
HiLimit: 50
HiMsgText: Temp High
HiSeverity: 500
HiRequiresAck: 1

3. Save the file, then return to the Bulk Asset Configuration Utility and hit the **Execute** button again. **Close** the log when the process has finished.
4. Go back to Workbench-SL to the **AlarmWorX64 Server** provider. You should now see a number of new alarms under your configuration that are named things like "Company/Foxboro bakery/North/Baking line/Charger1/ Ingredient Selector". Select one of those alarms to see that it has an input of your Ingredient Selector property and has a High alarm configured. You can also expand the Areas tree and see that you now have areas that mimic your AssetWorX tree.

If necessary, you can add values into more of the columns in the ClassAlarmDefinitions sheet to further customize your alarms.

Options

Non-Active Databases

The Bulk Asset Configuration Utility will edit your active configuration databases by default. To have it update other databases, edit the **Database Connections** in the Properties tab of the Bulk Asset Configuration Utility.

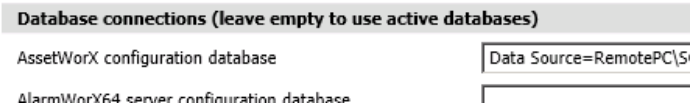

Figure 1 - Database connections

Configuring for Remote Services

If your AssetWorX or Hyper Historian is on a remote machine you can edit the **Tag prefixes** to include the remote machine name.

You can easily find the right syntax by hitting the "…" button next to one of the prefix fields and browsing under FrameWorX Network and your desired server for either AssetWorX or Historian tags.

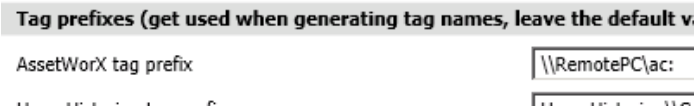

Figure 2 - Tag prefixes

Create, Update, or Delete

By default the Bulk Asset Configuration Utility will create new items, update existing items, or delete nonexistent items. If you would like to prevent it from doing one or all of these, uncheck the appropriate box in the **Options** section.

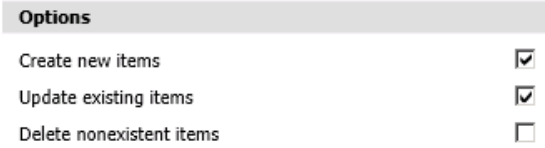

Figure 3 - Create, Update, or Delete

Simulating Configuration

There are times when you will want to see what sorts of changes the Bulk Asset Configuration Utility will make before you actually commit them, such as if you are making changes to a running system, or making a large number of changes at once. In these situations, a simple typo in your spreadsheet can cause large problems once the utility is executed.

In this case, you can check the **Simulate instantiation** box in the Options section.

Checking this box will provide you with a log of the changes that will be made, but the changes will not actually take effect. Once you have looked through the log to be sure it is making the right changes you can uncheck this box and execute again.