

**Description:** Guide to configuring event triggers in the Unified Data Manager.

**OS Requirement:** Win 2000, XP Pro, Server 2003, Vista, Server 2008, Windows 7

**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 event triggers 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.

## Event Triggers in Unified Data Manager

Event Triggers are triggers that are executed when a certain condition occurs. Triggers are used by ScriptWorX2006, BridgeWorX and ReportWorX to perform operations whenever the predefined event occurs.

Event Triggers are subdivided into the following categories: **Event groups, Event switches, Date/Time, Data, Alarm, File, NTEvent, and Database triggers.** Their use is always the same, and very simple. Having defined your trigger, you can easily browse for it via the Unified Data Browser opened from the supported applications that were enumerated above.

### Creating a New Event Trigger

1. Launch the Unified Data Manager by going to Start → Programs → ICONICS Tools → Unified Data Manager.
2. Expand Event Triggers.
3. In the tree-control in the left-hand pane, right-click on your desired type of Event trigger and select **New** → corresponding **Trigger Item**

**NOTE:** You can select to create a new Folder instead of a new Item. Folders are used to logically organize the Event Triggers.

### Common Configuration Elements

Although there are various triggers, they work in a very similar way and also their configurations contain common elements. Usually you are presented with three tabs.

**Trigger Properties** tab allows you specify **name, description** and **Trigger Conditions**. The trigger condition will ensure that

the trigger is available only when the selected tag has good quality and its value is not zero.

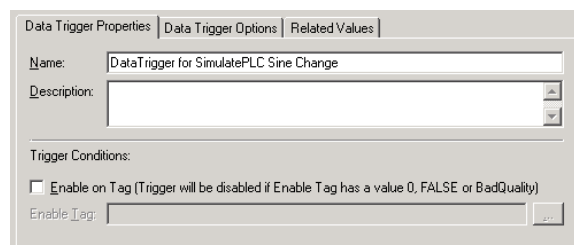


**Figure 1 - Data Trigger Properties**

**Trigger Options** tab is the main configuration part of the trigger. The appearance of the tab varies from one trigger to another. We will concentrate on these tabs in individual descriptions of the trigger types. Generally, you specify the condition when the trigger is fired.

**Related Values** tab is a place where you can specify values that can be read in ScriptWorX2006 script when the trigger fires the script, or from a BridgeWorX transaction.

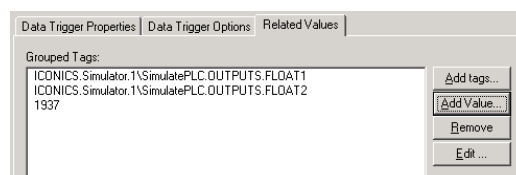


**Figure 2 - Data Trigger Related Values**

## Trigger Types

### Date/Time Triggers

Date/Time Triggers – executes an event periodically according to a specified recurrence pattern. The recurrence pattern can be daily, weekly, monthly or yearly. Each Date/Time trigger is represented in UDB as a date/time data tag.

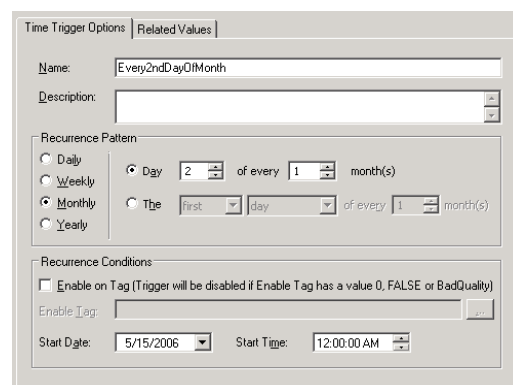


**Figure 3 - Time Trigger**



# Unified Data Manager - Event Triggers



## APPLICATIONS NOTE

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### Data Triggers

Data Triggers fire for any of the following three conditions:

- There is any **change** to the input tag
- The input data value becomes **TRUE**
- The input data value becomes **FALSE**

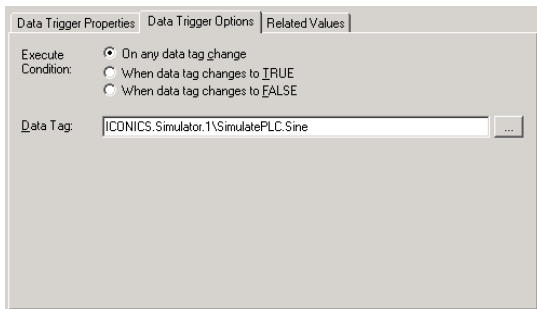


Figure 4 - Data Trigger Options

### Alarm Triggers

Alarm Triggers execute when a specified alarm condition is detected. To configure an alarm trigger, create a new alarm subscription and an alarm filter to correspond with the alarm trigger. The trigger executes based on the current alarm subscription/filter properties and upon one of the following conditions:

- An **Alarm** or an **Event** occurs
- A value **Return to Normal** after an alarm has occurred
- An alarm is **Acknowledged**

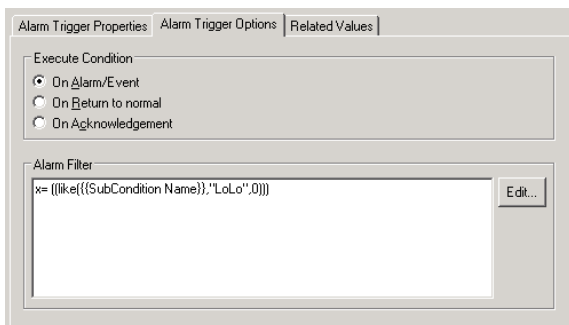


Figure 5 - Alarm Trigger

### File Triggers

File Triggers are events that are file system related. These events include: On **File Create**, On **File Delete**, On **File Length Change**, On **File Last Write Time Change**, On **File Last Access Time Change**, On **File "Hidden" Attribute Change**, On **File "Read Only" Attribute Change**, On **Subfolder Create**, On **Subfolder Delete**, On **Subfolder "Hidden" Attribute Change**, On **Subfolder "Read Only" Attribute Change**, and **Subfolder Recursive Monitor**.

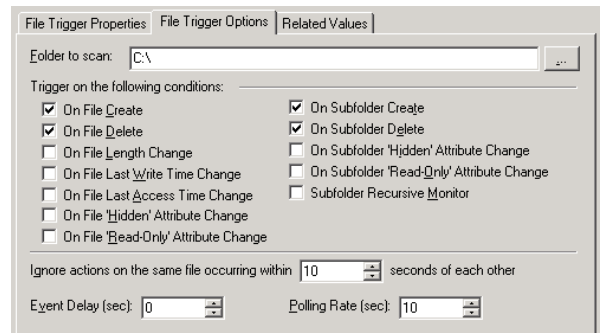


Figure 6 - File Trigger

### NT Event Triggers

NT Event Triggers occur based on new entries in the Windows event log. Following are the fire conditions that can be monitored in various **Categories** and **Subcategories**:

- New **Error Event** is posted to the Windows event log
- New **Warning Event** is posted to the Windows event log
- New **Information Event** is posted to the Windows event log
- New **Success Audit Event** is posted to the Windows event log
- New **Failure Audit Event** is posted to the Windows event log."

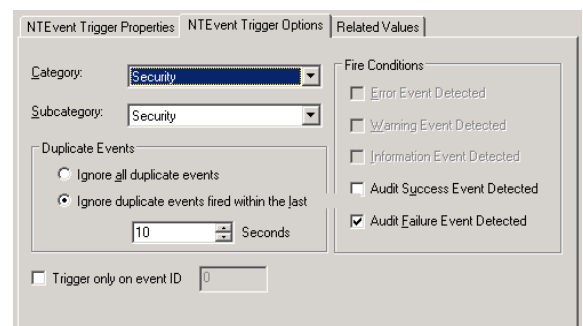


Figure 7 - NT Event Trigger

### Database Triggers

Database Triggers fire when changes are detected in specified database tables. You need to create connection to the database and the Table/Query you want to use for this trigger. The trigger fires when any of the fire conditions **become true** or while the fire condition **remains true**.



Database Trigger Properties Database Trigger Options Related Values

Database Connection Info: Provider=SQLOLEDB.1;Integrated Security=SSPI;Persist Security Info=False;Initial Catalog=master;Data Source=(local)

SQL Query to execute: SELECT \* FROM dbo.spt\_values

Polling Rate (sec): 120 Query Timeout (sec): 60

Fire trigger when result of SQL Query: has more than 100 records

☒ Fire On True ☐ Fire While True Interval (sec): 10

Figure 8 - Database Triggers

Event Groups

Events Groups and Event Switches are not additional types of triggers but have special combinatory functions. An Event group allows different type of triggers to be grouped together under one trigger. Event group triggers will fire when **an event trigger from its list of triggers is executed**. Each event group is represented in UDB as an event data tag.

Event Group Properties Event Group Options

Triggers:

| Index | Name                                      |
|-------|-------------------------------------------|
| 0     | trg_data:RandomTimeSine                   |
| 1     | trg_time:FiveSecTrigger                   |
| 2     | trg_awk:ExamAlarmSubscription.OnLoLoEvent |
| 3     | trg_db:spt_values                         |
| 4     | trg_file:RootFolderChange                 |

Add... Remove Edit... Move Up Move Down

Figure 9 - Event Groups

Event Switches

Event Switches contain a list of triggers and an input value tag. A single event from the list of tags is selected among different triggers based on the input value, allowing **only one trigger from the trigger list** to redirect to Event Switch type trigger. These triggers are accessible over the network. Each event switch trigger type is accessible from UDB as an event switch data tag.

Event Switch Properties Event Switch Options

Index Tag: ICONICS.Simulator.1\SimulatePLC.OUTPUTS.BIT8

Triggers:

| Index | Name                                      |
|-------|-------------------------------------------|
| 0     | trg_data:RandomTimeSine                   |
| 1     | trg_time:FiveSecTrigger                   |
| 2     | trg_awk:ExamAlarmSubscription.OnLoLoEvent |
| 3     | trg_db:spt_values                         |
| 4     | trg_file:RootFolderChange                 |

Add... Remove Edit... Move Up Move Down

Figure 10 - Event Switch Options