

Setting Up Adroit to work with AmpCom over Modbus Ethernet/TCP

Application Note



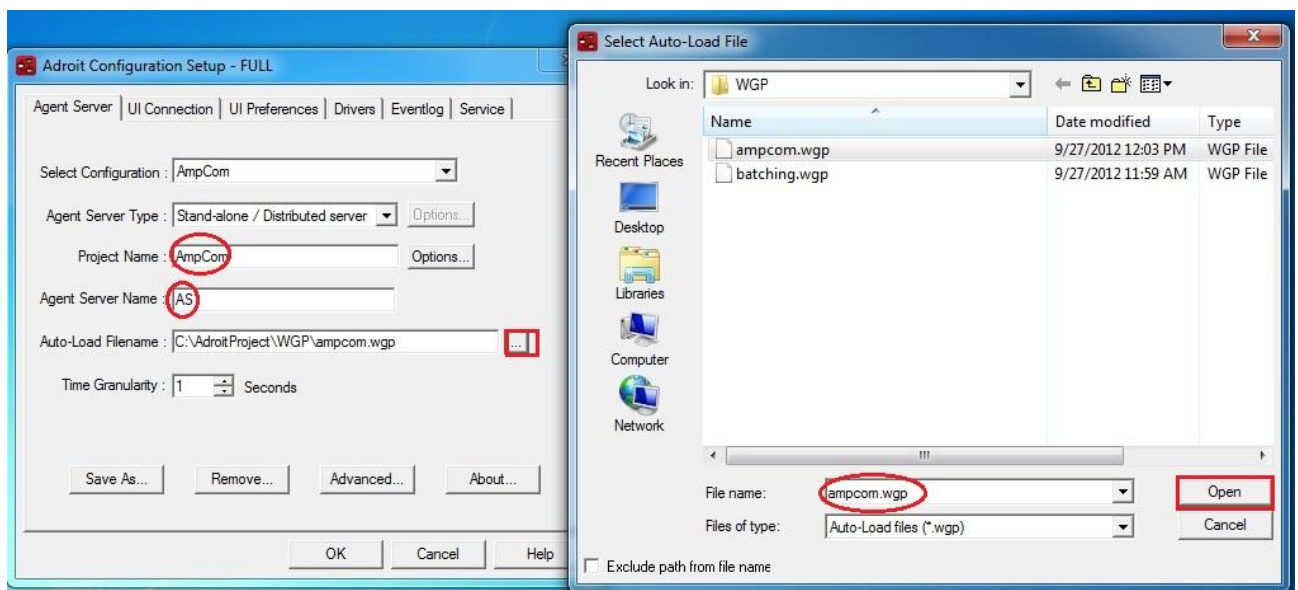
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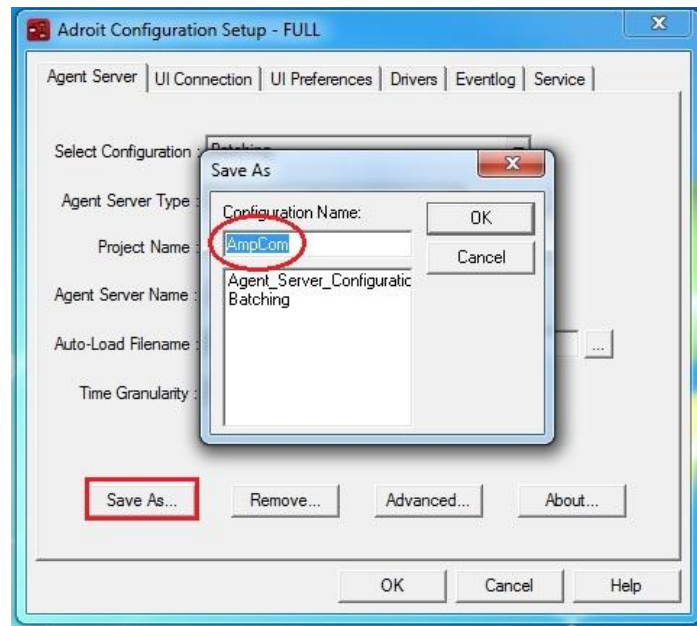
1 Creating Project and Setting Up of Driver

1.1 Setting up of Agent Server

- a) Go to **[Start Menu]**, click on **[All Programs] > [Adroit 7] > [Adroit Setup]**. 'Adroit Configuration Setup' window will open.
- b) Under the **[Agent Server]** tab, type in the following:
 Project Name: **AmpCom**
 Agent Server Name: **AS**

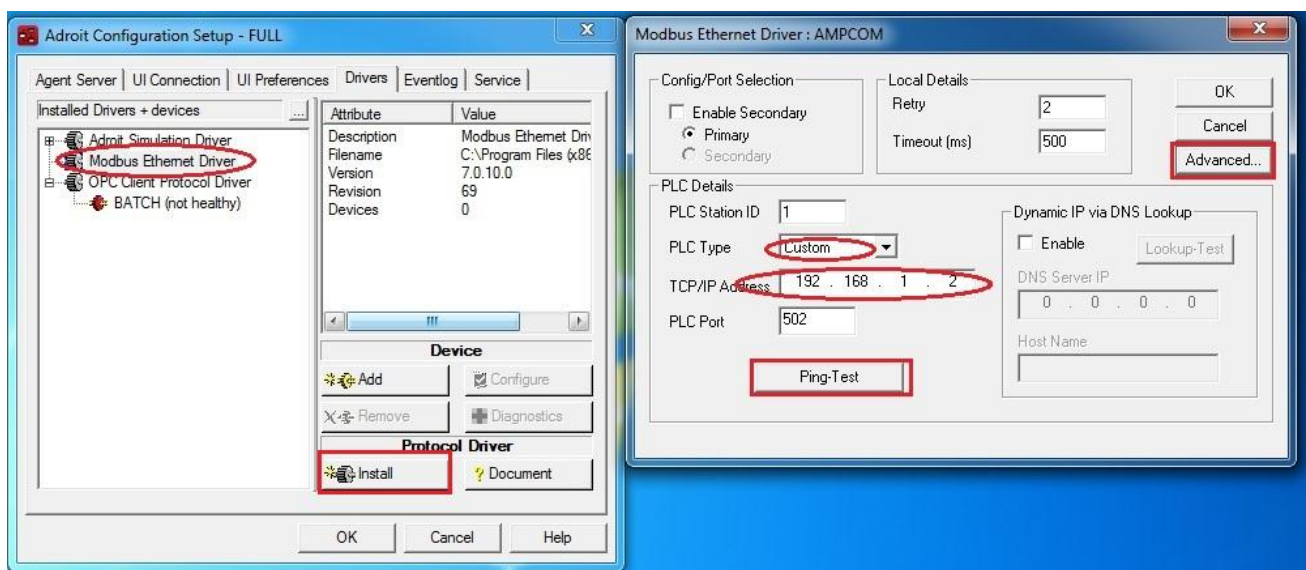


- c) Click the browse button [] along the 'Auto-Load Filename' row, the window for 'Select Auto-Load File' will open.
- d) Name the file '**ampcom**' and click **[open]**.
- e) Click on **[Save As...]**, and Type in '**AmpCom**' as the 'Configuration Name'.

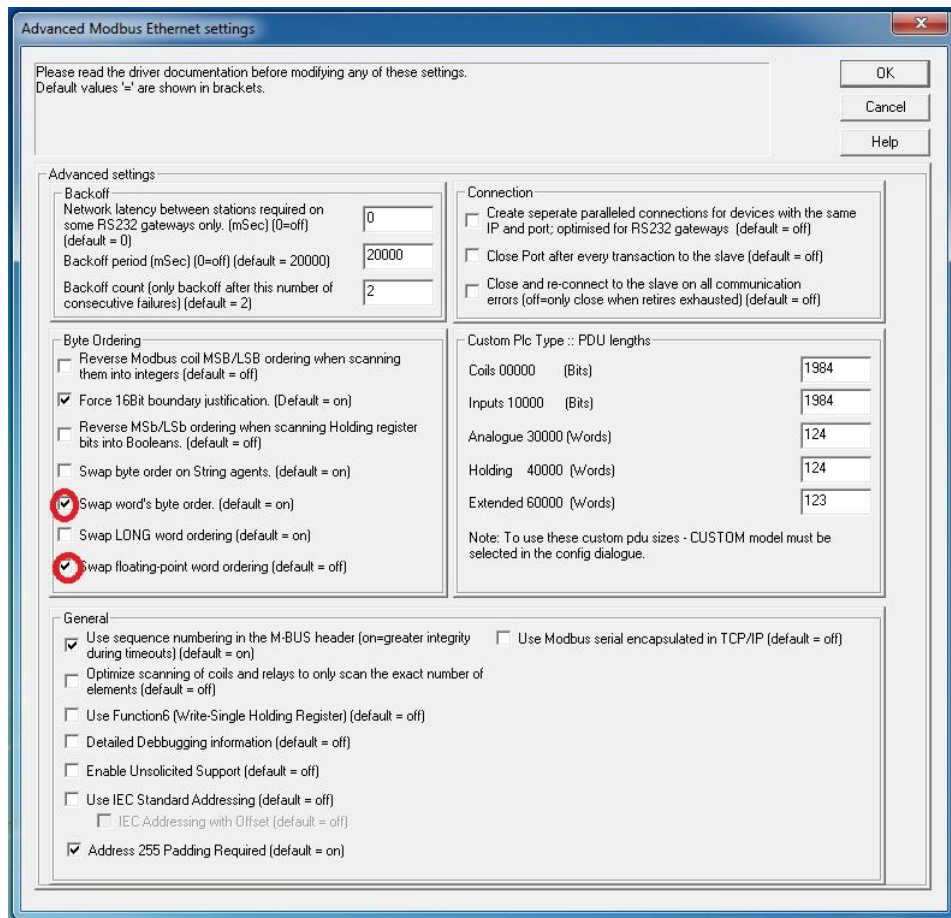


1.2 Setting Up of Driver

a) Now click on the tab **[Drivers]**.



- b) Hover the mouse over and right click on 'Modbus Ethernet Driver', then select **[Add Device...]**. If 'Modbus Ethernet Driver' is not on the list, click **[Install]** under 'Protocol Driver' to install the driver (the Adroit 7 installation disc is required).
- c) Type in '**AMPCOM**' as the name of the device.
- d) Referring to above snapshot, select '**Custom**' for the 'PLC Type', type in the '**IP address**' of the AmpCom device for the 'TCP/IP Address', leave 'PLC Station ID' and 'PLC Port' as '**1**' and '**502**' respectively.
- e) Click **[Ping-Test]** to verify if connection is successful.
- f) After successfully pinging the device, click **[Advanced...]**.



- g) **[Check]** both the boxes for 'Swap word's byte order' and 'Swap floating-point word ordering', the click **[OK]** to close the active window.
- h) Click **[OK]** to close the 'AMPCOM' window, then click **[OK]** again to close the 'Adroit Configuration Setup' window.

2 Starting Agent Server and Smart UI Service Manager

2.1 Starting Agent Server

- a) Go to **[Start Menu]**, click on **[All Programs] > [Adroit 7] > [Adroit Agent Server]** (if you do not have a license dongle click on **[Adroit Agent Server (time license)]**). 'Adroit Agent Server' window will now start. (a shortcut of 'Adroit Agent Server' could also be found on the desktop).

2.2 Starting Smart UI Service Manager

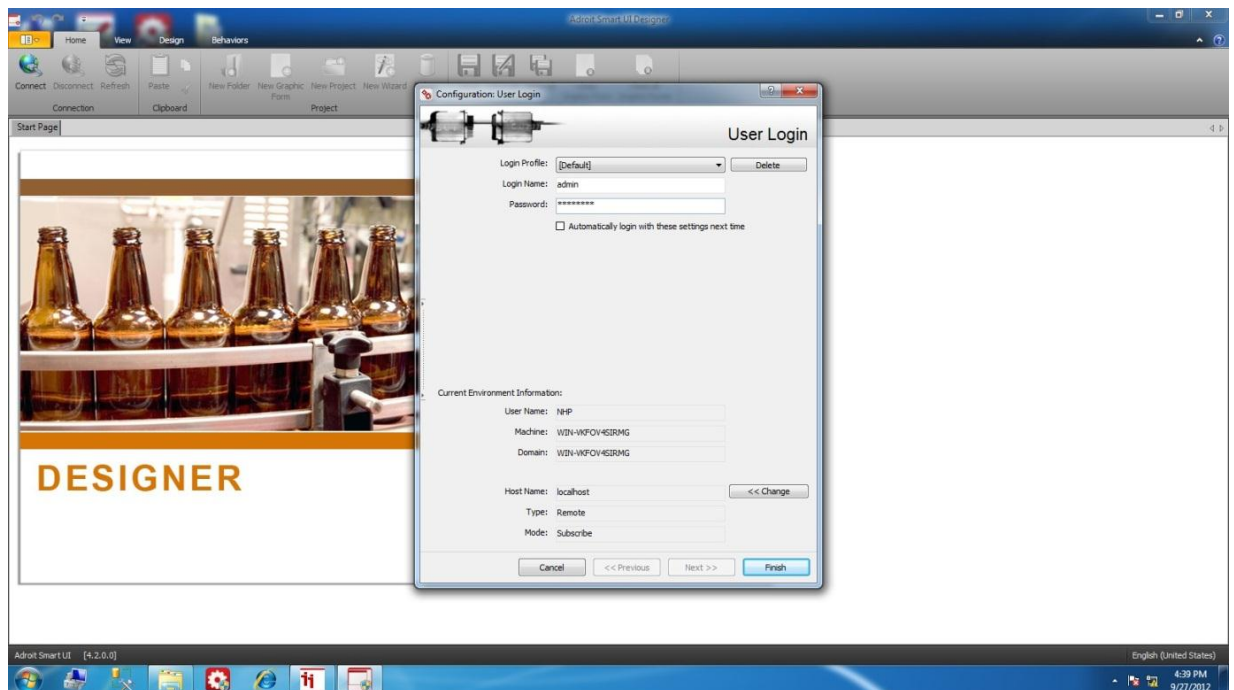
- a) Now go to **[Start Menu]**, click on **[All Programs] > [Adroit 7] > [Adroit Smart UI Service Manager]**. Make sure the 'SmartUI Service' is 'Running' by clicking the icon on the taskbar. ('SmartUI Service' is required when using 'Smart UI Designer').



3 Adroit Smart UI Designer

3.1 Login on to Adroit Smart UI Designer

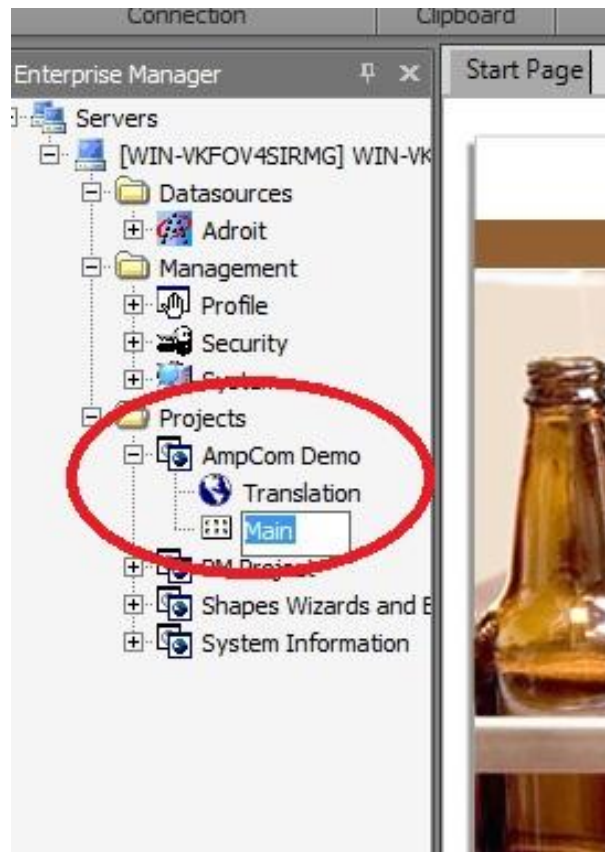
- a) Go to **[Start Menu]**, click on **[All Programs] > [Adroit 7] > [Adroit Smart UI Designer]**. A window will open as shown below.



- b) Type in the Windows's username (with administrative right) and password (a username with password is required). If you don't have one, set one up under Control Panel > User Accounts), then click **[Finish]**.
- c) You will now be logged on to the design environment.

3.2 Creating New Project and New Graphic Form

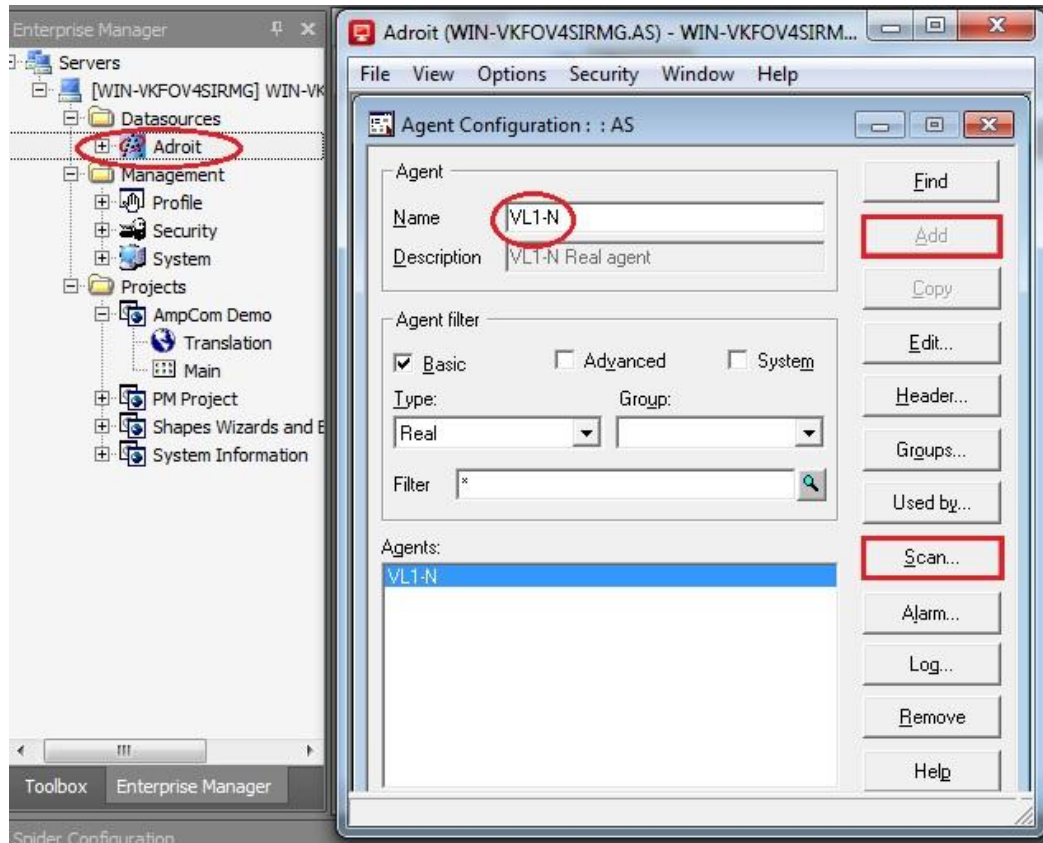
- a) Under the tab 'Enterprise Manager', right click on 'Projects' and select **[Add a Project]** to create a new project named '**AmpCom Demo**' as shown below.



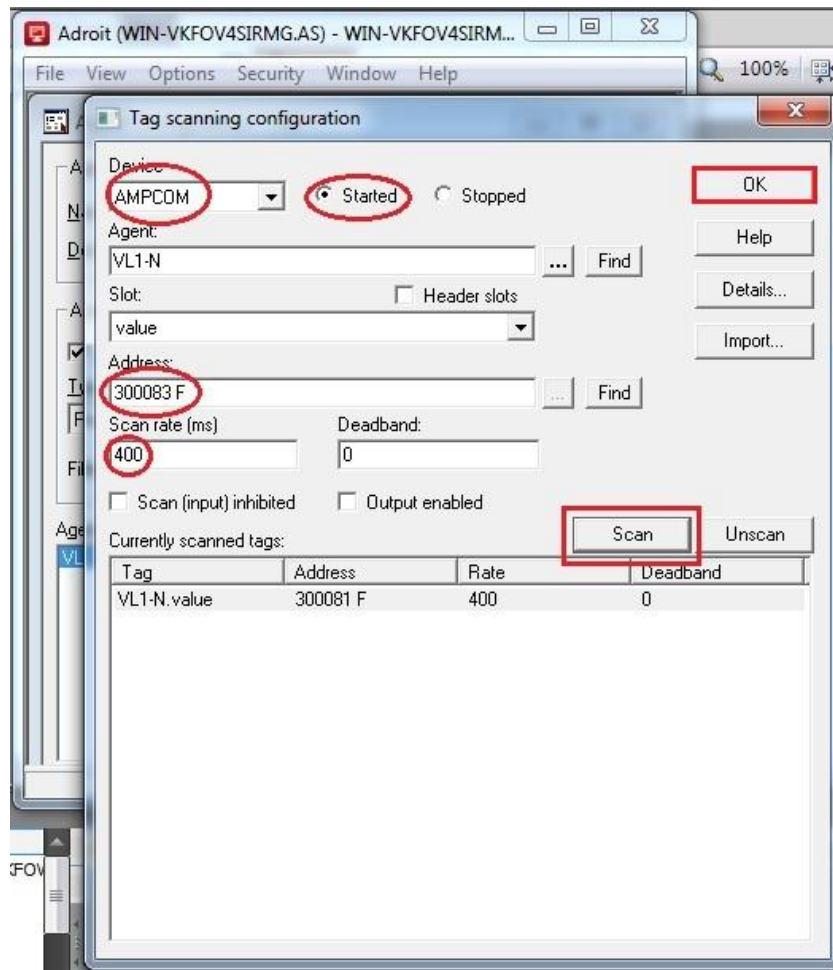
- b) Next, right click on 'AmpCom Demo' that is just created and select **[Create Graphic Form]**, then rename it as '**Main**'.

3.3 Creating and Scanning Tag to Display Value

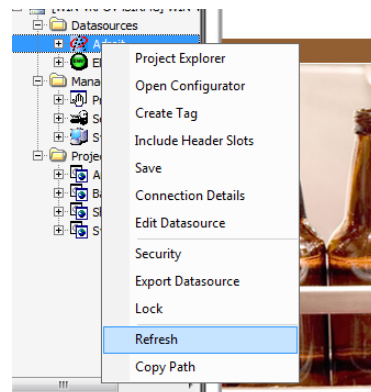
- a) Hover over and right click on 'Adroit' under 'Datasources', then select **[Open Configurator]**. The 'Agent Configuration' window will open.



- b) Under 'Agent filter' > 'Type:', click the dropdown box and select **[REAL]**.
- c) Under 'Agent' > 'Name', type in '**VL1-N**', then click **[Add]**.
- d) An agent named 'VL1-N' is then added to the box near the bottom of the window.
- e) Now click on **[Scan...]**. A window on 'Tag scanning configuration' will open as shown on the following page.

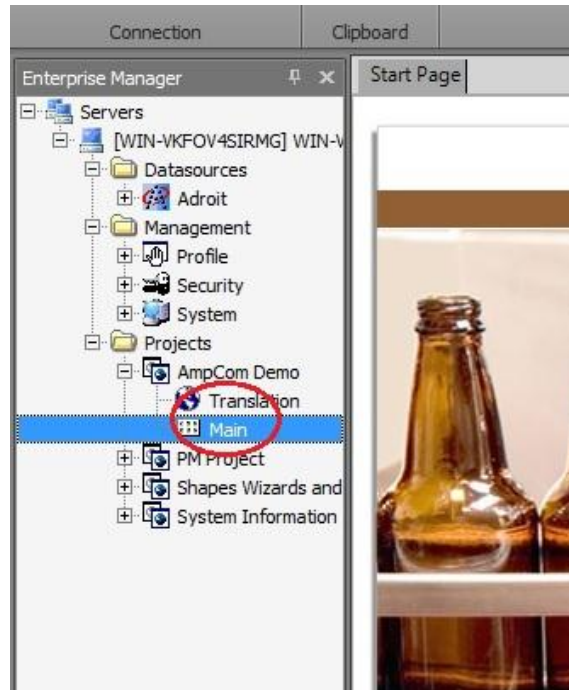


- f) Under 'Device', click the dropdown box and select **[AMPCOM]** that was previously created. Click **[OK]** if prompted to 'Create it automatically'.
- g) Next, click the radio button next to **[Started]**. Adroit will now start to scan the device.
- h) Type in '**300083 F**' for 'Address:' (Refer to the AmpCom User Manual for all the available READ Registers), '**400**' for 'Scan rate (ms)', then click on **[Scan]**.
- i) Under 'Currently scanned tags:', 'VL1-N' will appear to have been scanned.
- j) Click **[OK]** to close the current window, and then close the window on 'Agent Configuration'.
- k) Click the **[Enterprise Manager]** tab, right click on 'Adroit' under the 'Datasources' folder and select 'Refresh'.

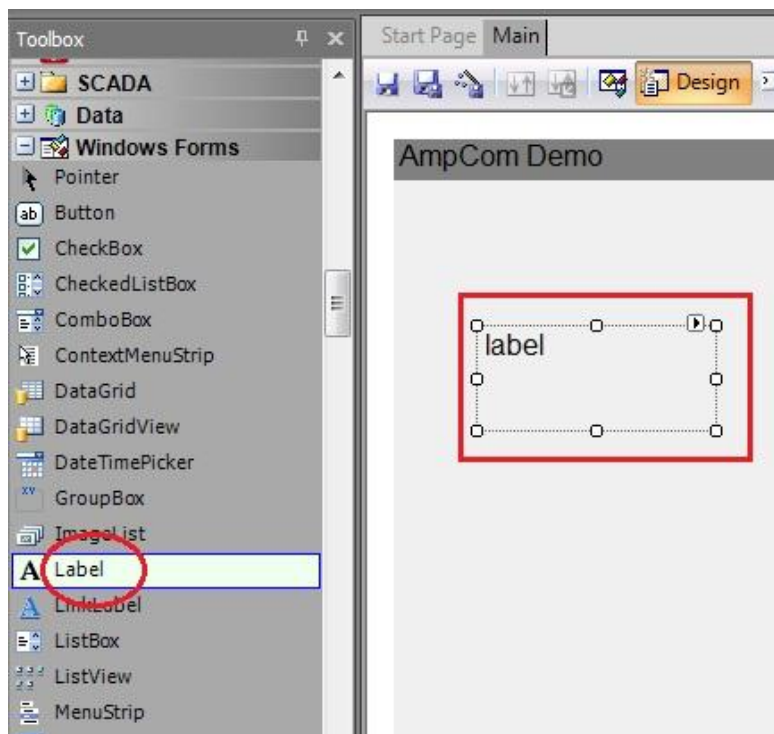


3.4 Creating Label to Display Value

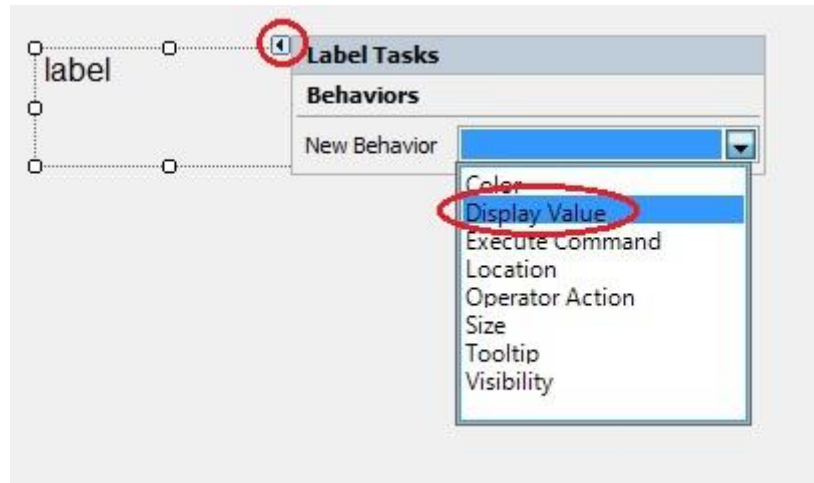
- a) Double click on **[Main]** graphic form that was created earlier. The graphic form will open and will become active.



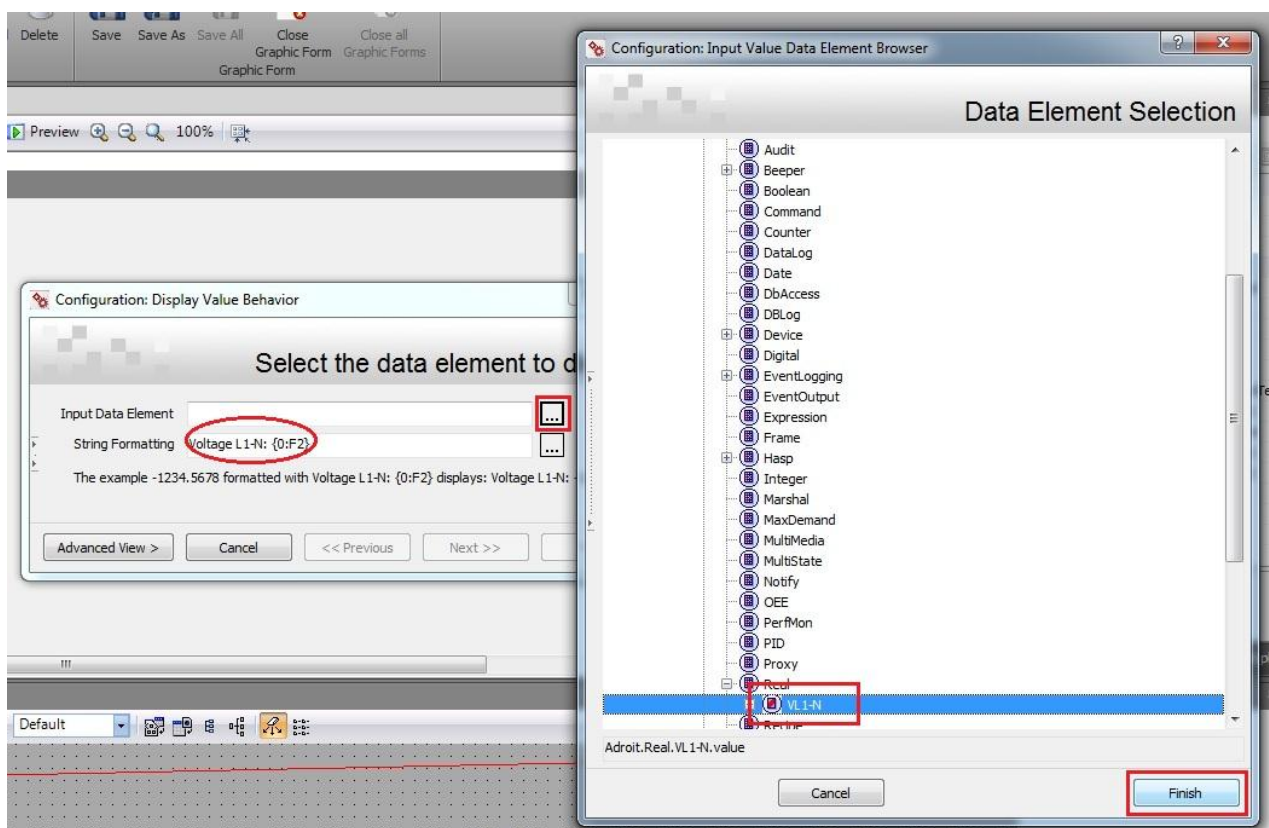
- b) Click the **[Toolbox]** tab and browse to 'Windows Forms', and then click on **[Label]**.
- c) Move the cursor across to the graphic form and draw a box to create a 'label'.



- d) On the 'label', click on the tiny **[play]** button to bring up the 'Label Tasks' window, and then click on the dropdown box and select **[Display Value]**.

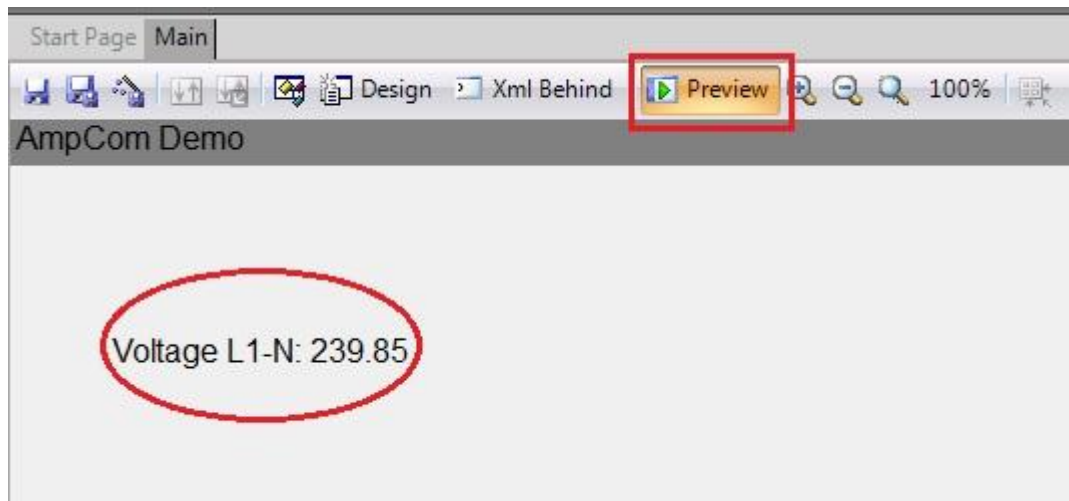


- e) The window on 'Configuration: Display Value Behaviour' will pop up as shown below.



- f) Type in '**Voltage L1-N: {0:F2}**' for 'String Formatting'.
- g) Click on the browse button **[...]**, the window on 'Configuration: Input Value Data Element Browser' will open.

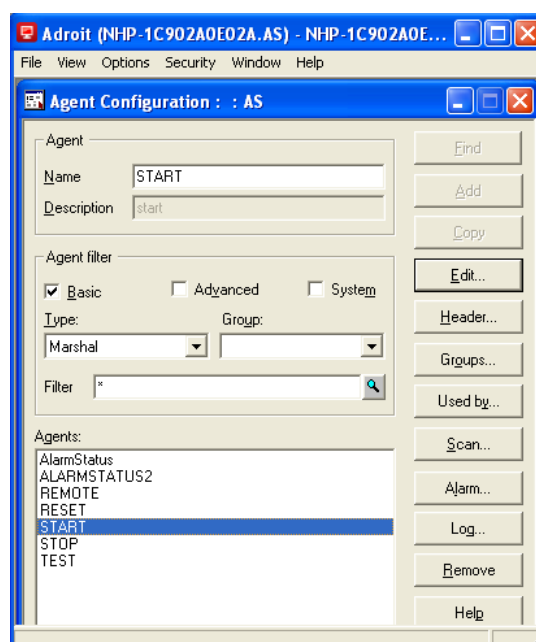
- h) Under **[Datasources]** > **[Adroit]** > **[Agentgroup]**, expand **[Real]** and select **[VL1-N]**, and then click **[Finish]**.
- i) Click **[Finish]** again to exit from the active window.
- j) Along the toolbar at the top of the graphic form, click **[Preview]**.
- k) The 'label' will now display the value of the device 'AMPCOM' at address '300081' as shown below.



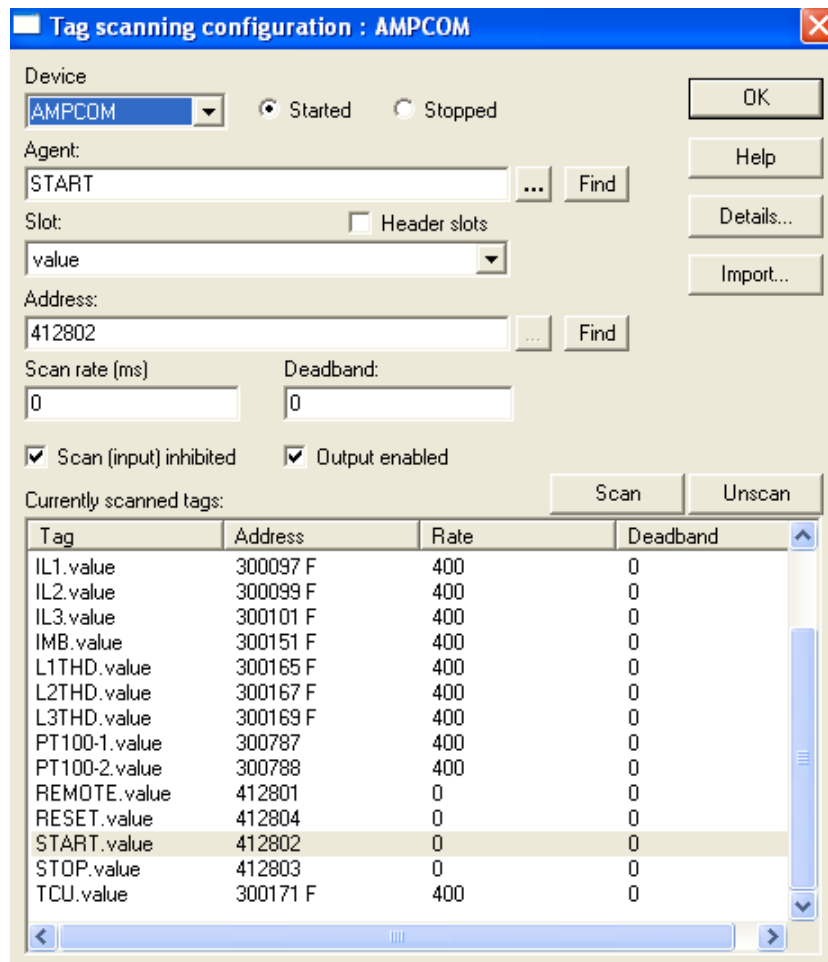
Click on the 'Design' to go back into designing phase.

3.5 Creating and Scanning Tag to Write Value

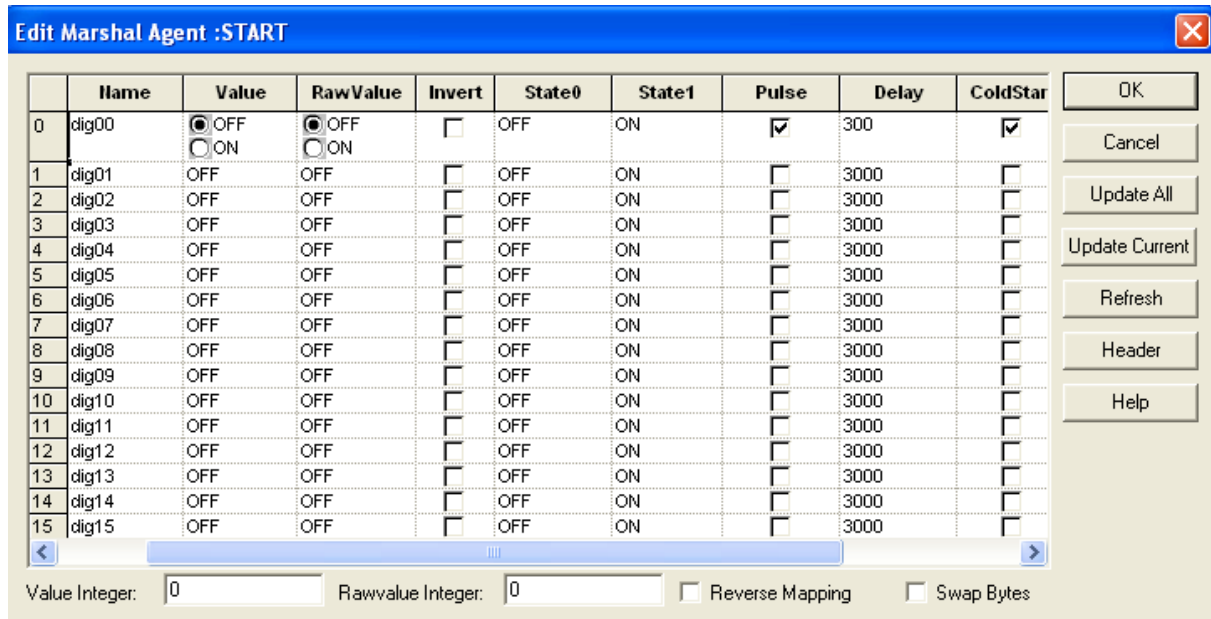
- a) Hover over and right click on **[Adroit]** under **[Datasources]**, then select **[Open Configurator]**. The 'Agent Configuration' window will open.



- b) Under 'Agent filter' > 'Type:', click the dropdown box and select [**Marshal**].
- c) Under 'Agent' > 'Name', type in '**START**', then click [**Add**].
- d) An agent named 'START' is then added to the box near the bottom of the window.
- e) Now click on [**Scan...**]. A window on 'Tag scanning configuration' will open as shown on below.



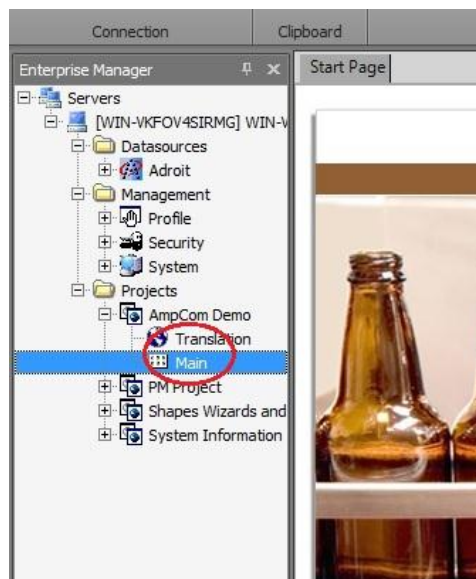
- f) Under 'Device', click the dropdown box and select [**AMPCOM**] that was previously created. Click [**OK**] if prompted to 'Create it automatically'.
- g) Next, click the radio button next to [**Started**]. Adroit will now start to scan the device.
- h) [**Check**] the 'Scan Inhibited' and 'Output enabled' boxes.
- i) Type in '**412802**' for 'Address:' (Refer to the AmpCom User Manual for all the available WRITE Registers), '**0**' for 'Scan rate (ms)', then click on [**Scan**].
- j) Under 'currently scanned tags:', 'START' will appear to have been scanned.
- k) Now double click on the [**START.value**]. A window 'Edit Marshal Agent: START' will come up on the screen as shown on the following page.



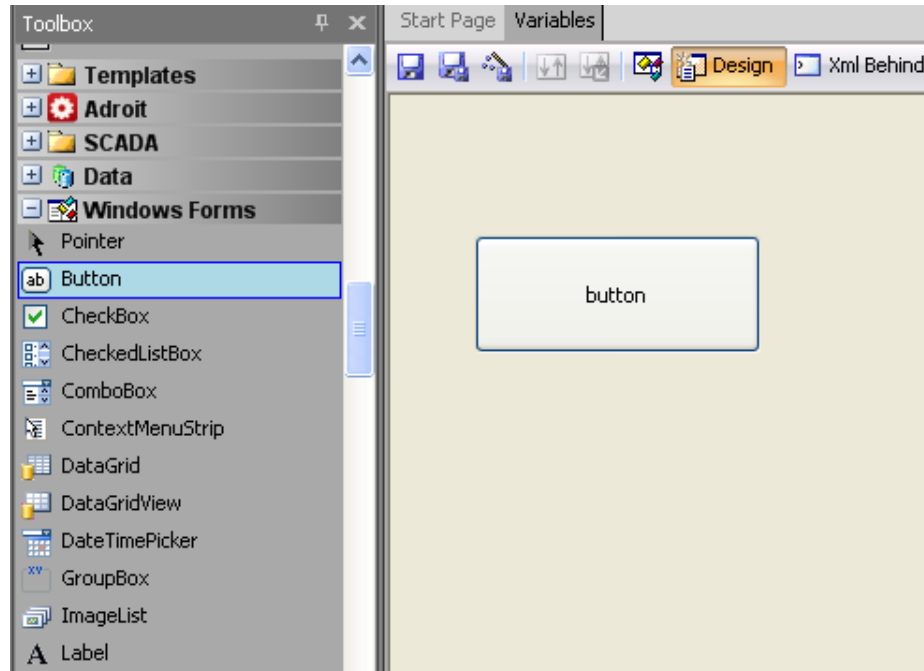
- l) Along the 'digi00' row, **[Check]** the boxes for 'Pulse' and 'ColdStart', then make sure 'ColdStart value' is set to **[Off]**.
- m) Set 'Delay' to '300' as shown above.
- n) Click **[OK]** to close the active window.
- o) Click **[OK]** again to close the current window, and then close the window on 'Agent Configuration'.
- p) Click the **[Enterprise Manager]** tab, right click on 'Adroit' under the 'Datasources' folder and select 'Refresh'.

3.6 Creating Button to Write Value

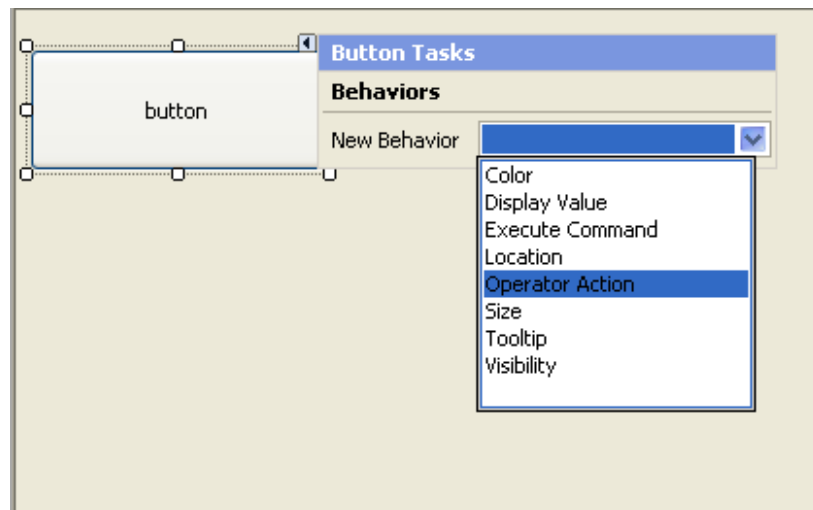
- a) Double click on **[Main]** graphic form that was created earlier. The graphic form will open and will become active.



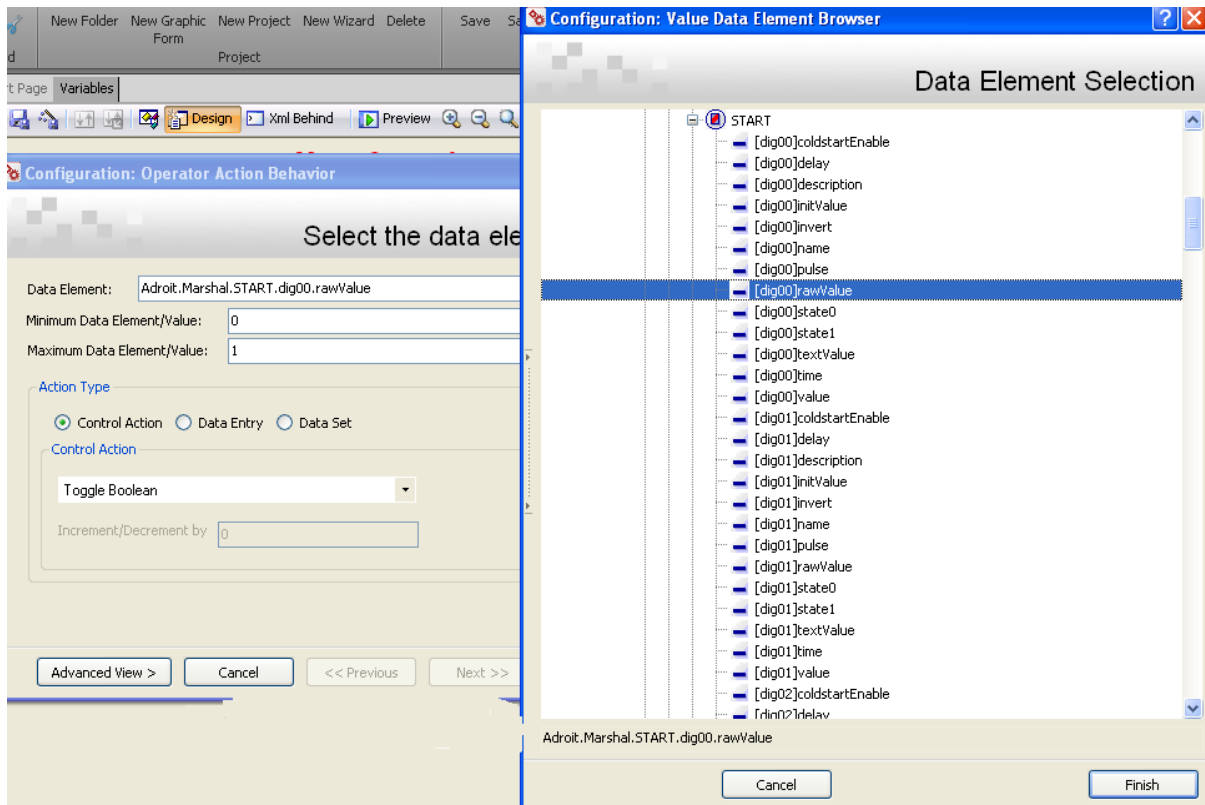
- b) Click the **[Toolbox]** tab and browse to 'Windows Forms', and then click on **[Button]**.
- c) Move the cursor across to the graphic form and draw a box to create a 'button'.




- d) On the 'button', click on the tiny **[play]** button to bring up the 'Button Tasks' window, and then click on the dropdown box and select **[Operator Action]**.



- e) The window on 'Configuration: Operator Action Behavior' will pop up as on the following page.



- f) Click on the browse button , the window on 'Configuration: Input Value Data Element Browser' will open.
- g) Under **[Datasources]** > **[Adroit]** > **[Agentgroup]**, expand **[Marshal]** and then Expand **[START]**, and then select '**[digi00]rawValue**' and then click **[Finish]**.
- h) Select **[Control Action]** as the 'Action Type'.
- i) Click on the dropdown box for 'Control Action' and select **[Toggle Boolean]**.
- j) Set 'Minimum Data Element/Value:' to '0', 'Maximum Data Element/Value:' to '1'.
- k) Click **[Finish]** again to exit from the active window.
- l) Click the **[Save Button]** on the Smart UI Designer to save the graphic form.
- m) Along the toolbar at the top of the graphic form, click **[Preview]**.
- n) Press the **[Start]** button and ensure Virtual Input 1 is active. Note, this button has been set up as a pulse and will not latch once pressed.