



ALARM WIZARD TUTORIAL

This tutorial will familiarize you with the aspects of the Alarm Wizard in Winbuild 2000. This tutorial assumes that you already know how to use Winbuild 2000. It is expected that you already know how to make screens, write BASIC code, have a basic understanding of the multi-tasking system and can easily navigate a Winbuild program. If you are unfamiliar with these topics, please study the following tutorials:

- Winbuild 2000 Intro WalkThrough
- Winbuild 2000-Advanced WalkThrough

STEP 1	
-------------------	--

Get started by creating a new program. **Save** the program as Alarms.OIB. This is an **important** step, because the Wizard needs to know the saved program name to generate screens and controls. Add the following tags to your new program:

	Tag Name	Source	Address	Type	Default
1	Tag1	Internal Volatile	W	Word	0
2	Tag2	Internal Volatile	W	Word	0
3	Tag3	Internal Volatile	W	Word	0
4	Tag4	Internal Volatile	W	Word	0

STEP 2	
-------------------	--

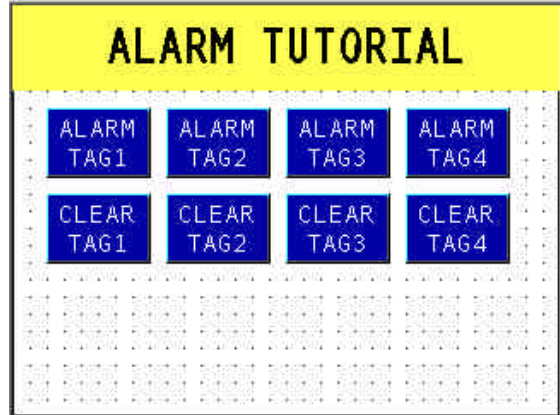
We will manipulate these tags to trigger alarm states. Normally, you would have tags associated with a driver or a task that would trigger an alarm when some condition occurred. For example, if you were monitoring a the servo fault status in your PC104-13A servo controller and had a tag called "Servo_Fault", you might be interested in capturing the fault with the Alarm system. In our examples we will manually control these fake "faults" by pressing buttons to make them appear and go away.

We will add 8 buttons that control these tags:

Set up the following "Button Properties":

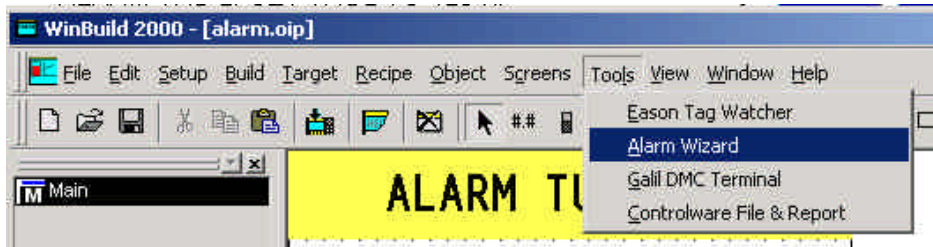
ALARM TAG 1: SET TAG1 TO 1234
ALARM TAG 2: SET TAG2 TO 1234
ALARM TAG 3: SET TAG3 TO 1500
ALARM TAG 4: SET TAG4 TO -200
CLEAR TAG 1: SET TAG1 TO 0
CLEAR TAG 2: SET TAG2 TO 0
CLEAR TAG 3: SET TAG3 TO 0
CLEAR TAG 4: SET TAG4 TO 0

Name this screen "Main".



STEP 3	
-------------------	--

Now it's time to fire up the Wizard. Select the TOOLS | ALARM WIZARD menu:

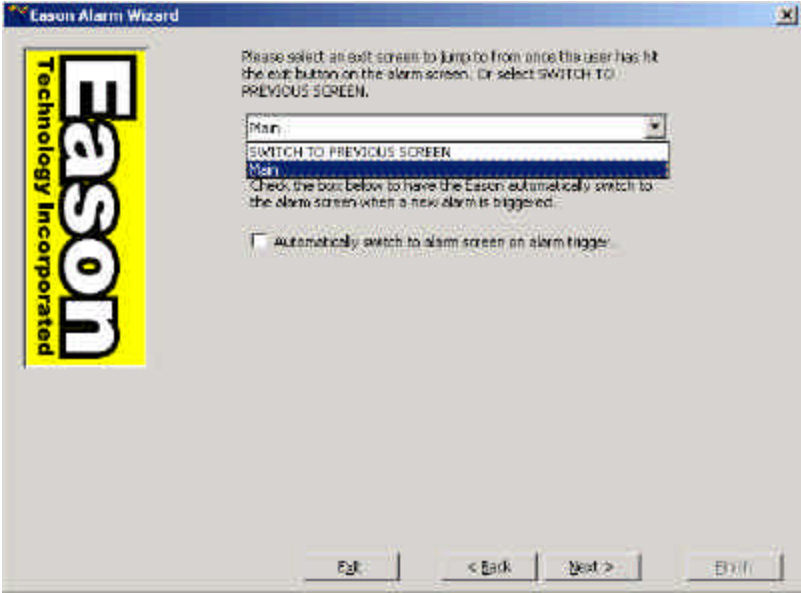


The following dialog boxes should appear. Click the "Next >" button.



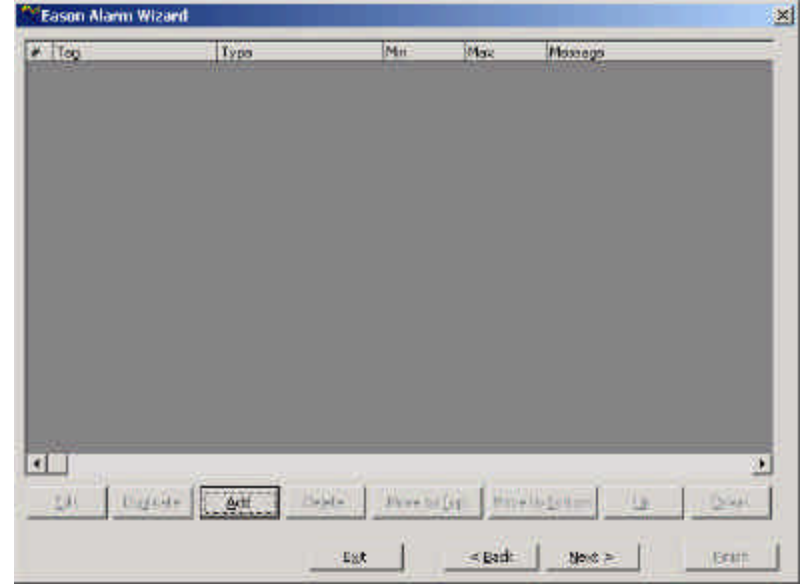
STEP 4	
-------------------	--

Select the screen that you want the alarm editor to return to. In our case, this will be the only other screen in the project: "Main". If you want, you can select "Switch to Previous Screen". This will return to whichever screen called the alarm editor.



STEP 5	
-------------------	--

Click the "Next>" button, you will enter the alarm tag editor.



STEP 6	
-------------------	--

Now let's add some alarm conditions. Click the "Add" button and the following dialog will appear:

Fill out the dialog as shown. This will result in an alarm that is generated when Tag1 "Is Greater Than or Equal to" 1000. This condition will trigger the alarm, and when the alarm display screen is activated, the message "Tag 1 exceeds 1000" will be displayed.

The screenshot shows a dialog box titled "Form1" with the following fields:

- Tag: Tag1 (dropdown)
- Tag Type: WORD (dropdown)
- Type: Is Greater Than or Equal to (dropdown)
- Min: -32768 (text field)
- Max: 1000 (text field)
- Message: Tag 1 exceeds 1000 (text field)
- Buttons: OK and Cancel

There are 5 different types of alarms:

- | | |
|-----------------------------|--|
| Is less than or equal to | Alarm is triggered if less than or equal to "Min" |
| Is greater than or equal to | Alarm is triggered if greater than or equal to "Max" |
| Is outside of | Alarm is triggered if greater than "Max" or less than "Min" |
| Is inside between | Alarm is triggered if less than "Min" and greater than "Max" |
| Is equal to | Alarm is triggered if equal to "Max" |

Click "OK".

STEP 7	
-------------------	--

Click "Add" again. Fill out the dialog as shown. Repeat this process until you have four alarms:

The screenshot shows a dialog box titled "Form1" with the following fields:

- Tag: Tag2 (dropdown)
- Tag Type: WORD (dropdown)
- Type: Is Equal to (dropdown)
- Min: -32768 (text field)
- Max: 1234 (text field)
- Message: Tag 2 equal 1234 (text field)
- Buttons: OK and Cancel

Form1

Tag: Tag3 Tag Type: WORD

Type: Is Inside between

Min: 1000 Min: -32768

Max: 2000 Max: 32767

Message: Tag 3 is between 1000 and 2000

OK Cancel

Form1

Tag: Tag4 Tag Type: WORD

Type: Is Less Than or Equal to

Min: -199 Min: -32768

Max: Max: 32767

Message: Tag 4 is less than -199

OK Cancel

STEP 8	
-------------------	--

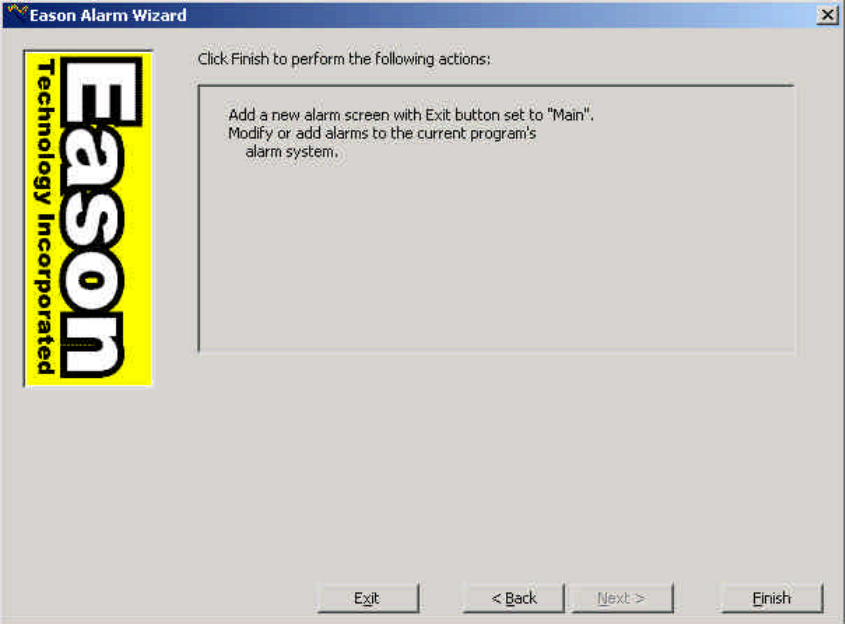
When you are finished, your Alarm wizard should look like this. If you have differences, highlight the alarm that you need to change and press the “Edit” button. You can revisit the dialogs that you entered the data in, and change them as you like.

#	Tag	Type	Min	Max	Message
1	Tag1	Is Greater Than or Equal		1000	Tag 1 exceeds 1000
2	Tag2	Is Equal to		1234	Tag 2 equal 1234
3	Tag3	Is Inside between	1000	2000	Tag 3 is between 1000 and 2000
4	Tag4	Is Less Than or Equal to	-199		Tag 4 is less than -199

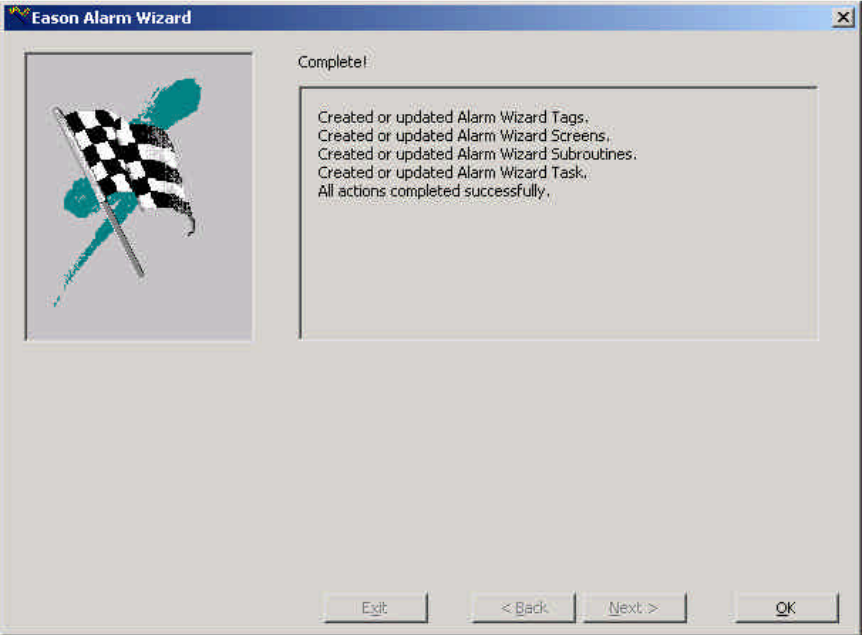
Once you are satisfied that all of your alarms are correct, press the “Next >” button.

STEP 9	
-------------------------	--

You should come to a dialog that asks for you to finish the wizard. Click the "Finish" button.



A dialog box will appear that tells you the status of the completion of the wizard.



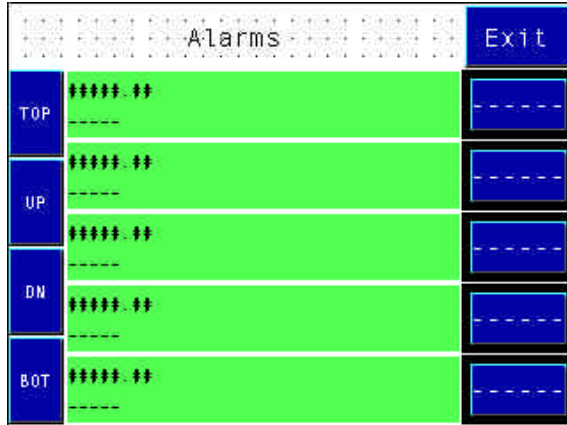
Click "Ok" and the Wizard will close.

STEP 10	
--------------------	--

A new screen named "SCR_0XALM" should have been generated. Using the Screen List, open that screen. It should look like this:

This screen displays a list box of triggered alarms. If you were to have more than four alarms, when triggered, they would scroll using the buttons on the left.

Buttons on the right are filled with the status of the alarm – this will become obvious when we run the program.

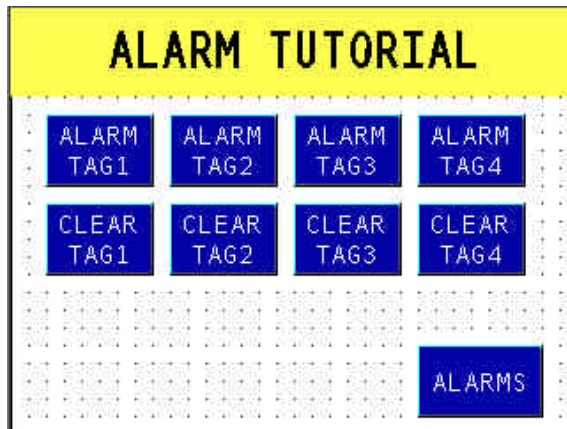


The button on the top right leaves the alarm screen.

STEP 11	
--------------------	--

We've go to add one more button on our Main screen to try out the program. So, switch to Main and add a button that goes to the screen "SCR_0XALM."

Click "Save" and click the "Compile, Download and Reboot" button so we can try this out.



STEP 12	
--------------------	--

Press the "Alarm Tag1" button then press the "Alarms" button. Alarm 1 should show up with a time and date stamp, and the description that you put into the wizard should be present.

Note that the button to the left of the alarm is labeled "ACK". Pressing this button acknowledges the alarm, and will keep it from being registered again. Go ahead and press the ACK button. Note that the ACK button changed to a "CLR" button. Press the "CLR" button. The alarm comes

back! This is because we cleared the alarm and the condition causing the alarm was still present, thus a new alarm was generated.

Press the Exit button to return to the Main screen. Press the Clear Tag1 button. Now go back to the alarm display screen and clear the alarm – it didn't re-register.

Go ahead and play with the rest of the alarms. Imagine that the alarms were actually monitoring a servo fault condition. We would know when it occurred, and what the fault was just by looking at the alarm display screen.