



OCS Training Workshop

LAB1

Basic OCS Programming
and Configuration

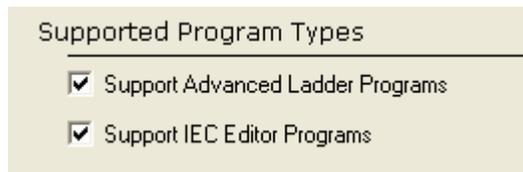
Lab 1: Basic OCS Programming and Configuration

Objective:

The objective of this lab is to give you the knowledge to use Cscape to create a program including hardware configuration, logic design and screen development in Advanced Ladder Programming as well as IEC 61131-3.

This foundation will then be used to help you expand your skills in the use of Cscape and the OCS.

To start with the selection of Type of program, go to Tools/Application Settings/Supported Types and select both the program types Advanced Ladder Program and IEC Editor Program.



1. Programming using Advanced Ladder Programming:

Step 1

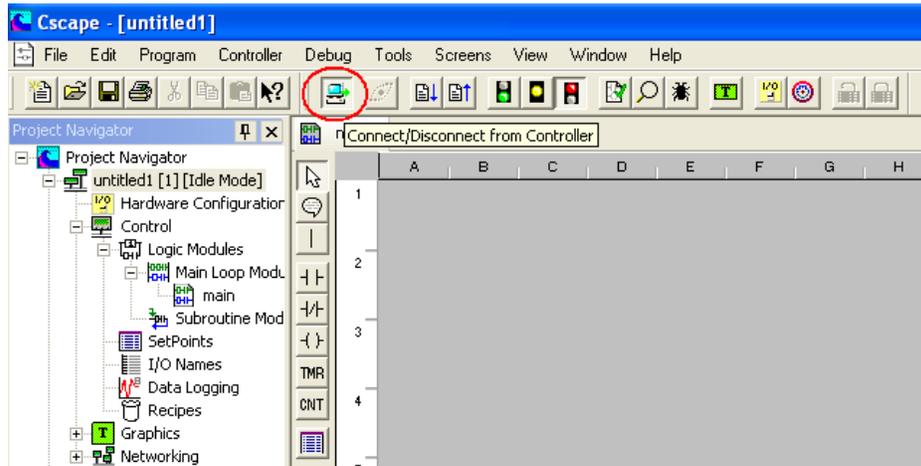
- **Connect the Demo Case to your PC.** Connect the 9 pin connector of programming cable to the USB Adapter provided. Connect the RJ45 connector to the OCS programming port 'MJ1'. Connect the USB adapter to USB port on your PC.

Step 2

- **Power up the OCS and start Cscape on your PC.** Connect power supply to the XL6e. Open Cscape programming software on your PC. A new, blank program called "untitled1" is automatically opened and should be automatically configured for your XL6e if the serial cable is properly connected.

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This can be known from the communication icons present at the tool bar. If the Connect/Disconnect icon is not visible then go to Tools/Application Settings/ Communications/ Configure and check you communication settings.

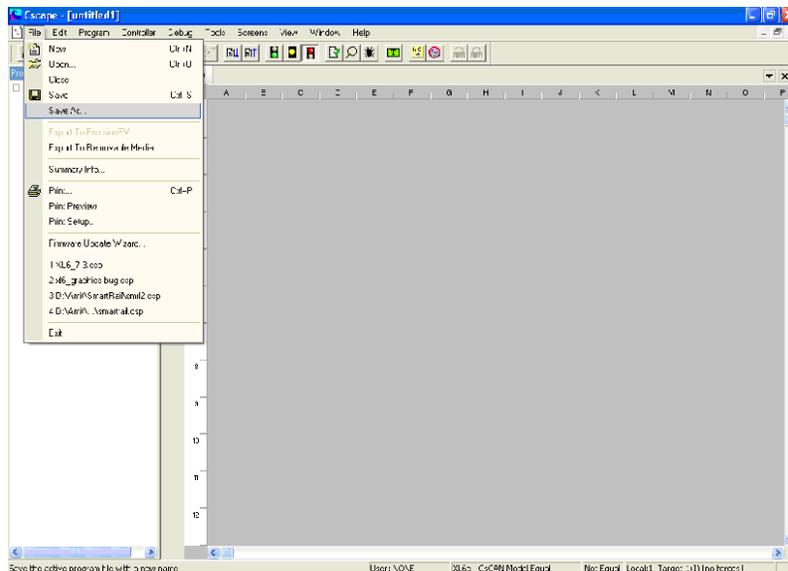


NOTE: Only the controller is automatically configured as described above. Any I/O will still have to be configured as described later in this lab.

Step 3

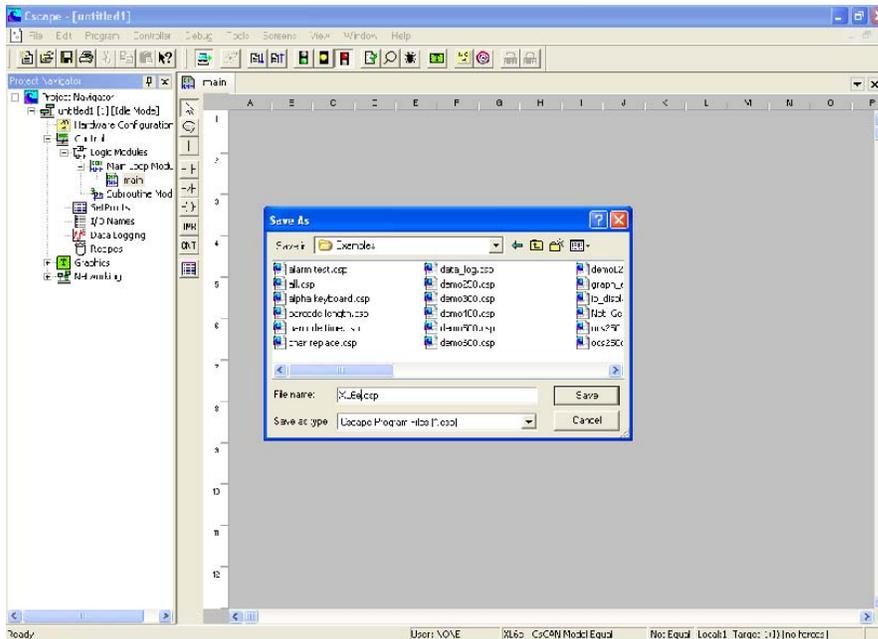
- **Save the 'untitled1' program with a new name.**

Click on the **File** menu and select **Save As...**



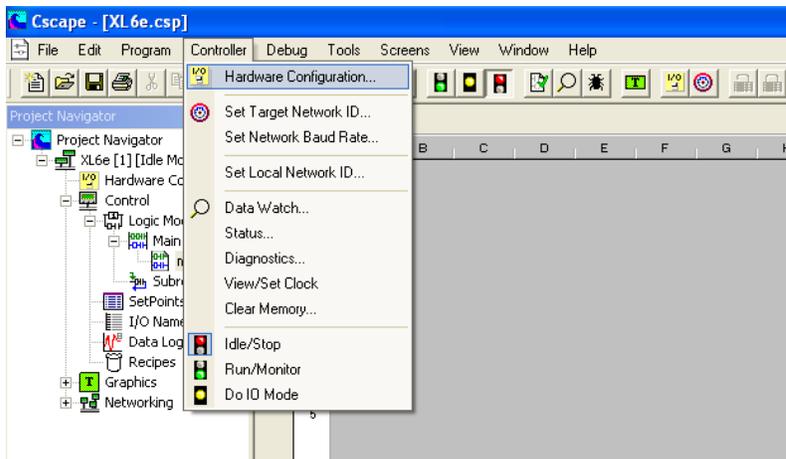
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Type your program name, such as XL6e.csp, in the File Name dialog box and click the Save button.



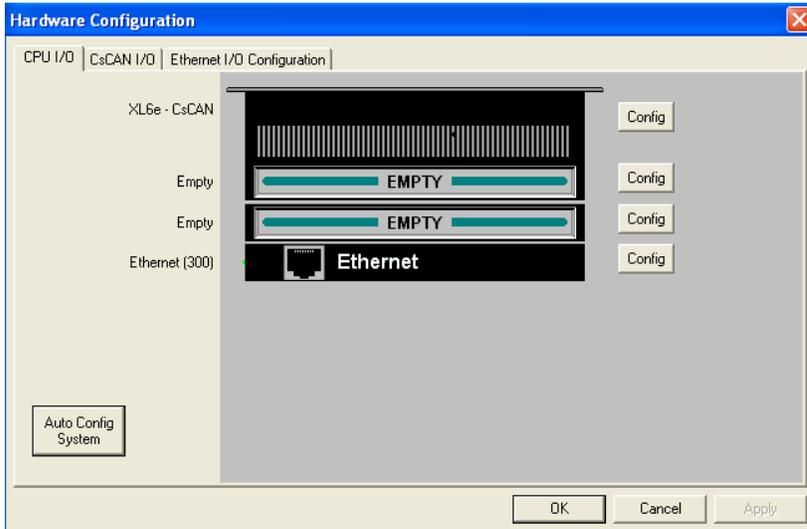
Step 4

- **Configure the OCS Controller**
Click on the **Controller** menu and select **Hardware Configuration**



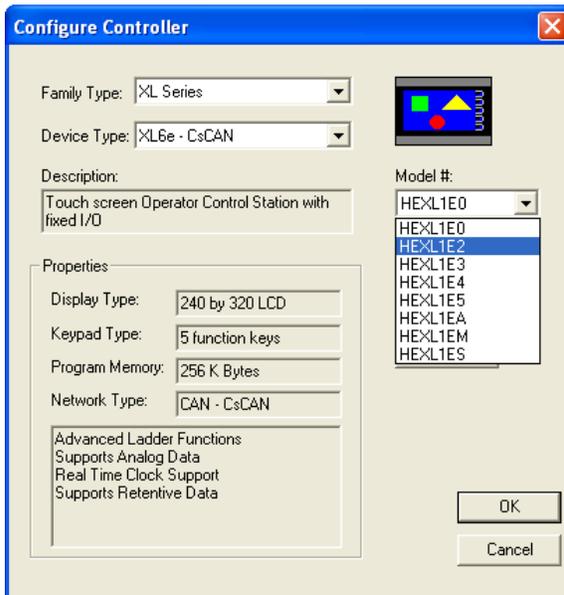
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If you are online with the OCS, use the **Auto Config System** button. Clicking it will automatically, configure the controller and any attached I/O if you are connected to the OCS properly.



Else, to do it manually:

1. Double click on the controller picture or click the 'Config' button next to it to open Configure Controller window
2. Select XL6e from the list and select the type of I/O card from Model#
3. Click OK



4. Click OK again to exit the I/O configuration.

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Step 5

➤ Save the program.

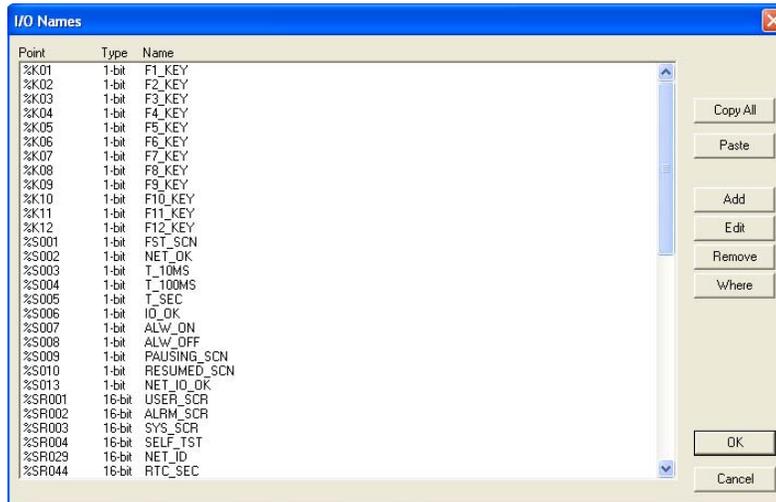
Click on the **File** menu and select **Save**.

Step 6

➤ Name some I/O points.

Click on the **Program** menu and select **I/O Names**.

- **Add** I/O points by clicking the 'Add' button and filling in the information.
- **Edit** an existing I/O point by finding it in the list and double-clicking it.



Add or edit the following I/O points:

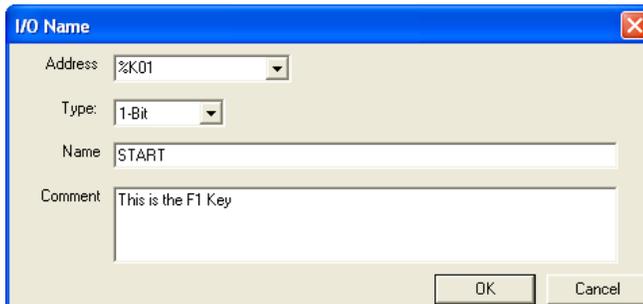
%K1 *START*: %K1 is named 'F1_KEY' by default so it will need to be edited instead of added. Configure for 1 bit.

%K2 *STOP*: %K2 is named 'F2_KEY' by default so it will need to be edited instead of added. Configure for 1 bit.

%Q1 *RUN*: Configure for 1 bit

%D1 *Stopped_Screen*: Configure for 1 bit

%D2 *Running_Screen*: Configure for 1 bit



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Step 7

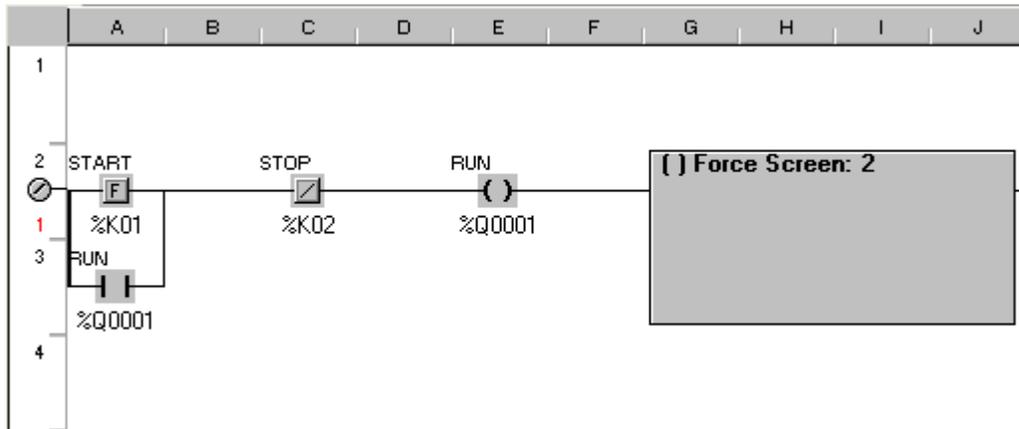
➤ **Program the following rung:**

1. Select and drop the two normally open contacts.
2. Select and drop the normally closed contact.
3. Add the vertical connecting branches.
4. Select and drop two normally open coils.

Step 8

➤ **Add the element names.**

1. Double click on each element in the rung.
2. Select the name or address from the drop down list. Name the last coil %D2 and specify it as a Force Screen.
3. Click OK



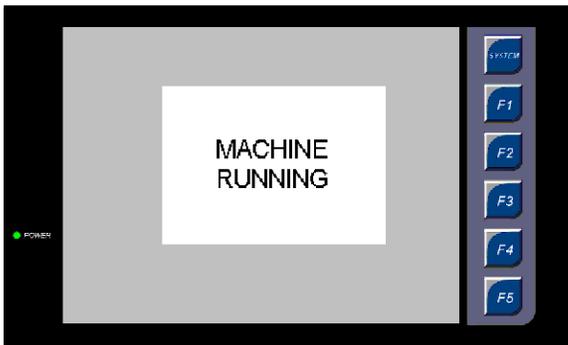
Ladder configuration is completed.

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Step 9

➤ **Add words to Screen 2.**

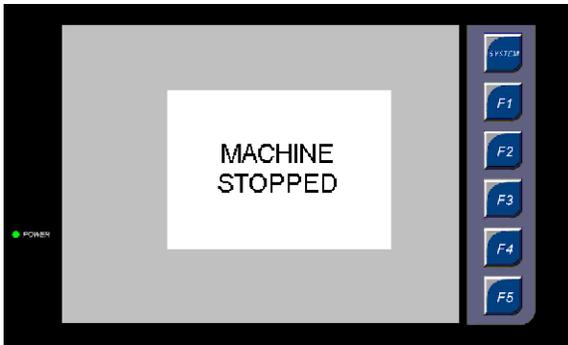
1. The Graphics Editor can be opened by double clicking the screen in the ladder logic.
2. Click Edit Screen.
3. Insert Static Text at the top center of the screen. Edit the text to display MACHINE RUNNING
4. Note that the size of the box will need to be stretched and the font sized should be increased from the default.
5. Close the graphics editor.
6. Click OK



Step 10

➤ **Add Screen 1**

1. Click on the **Screens** menu and select **View / Edit Screens...**
2. Repeat steps 3 – 6 from above. Change text to display MACHINE STOPPED



Step 11

➤ **Save the program.**

CONGRATULATIONS! You have finished writing your first OCS program. Now move on to LAB 2 and learn additional skills or read further to know about using IEC Editors.