

How to...

echocollect

Configuring a Softing echocollect to establish data exchange between a Siemens S7-300 and an Allen-Bradley ControlLogix



Version: E-032014-01

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1 Introduction

This document provides step by step instructions on how to establish data exchange between a Siemens S7-300 PLC and an Allen-Bradley ControlLogix PLC, using a Softing echocollect device.

General description of the presented example

- Both PLCs and the echocollect are in the same network.
- No program changes required on the PLCs. All the configuration is done on the echocollect.
- The data source tag on the ControlLogix is an array of 50 integers called **Data_to_S7**.
- The target data block on the S7-300 is **DB1**, defined also as an array of 50 integers.
- The data recipient tag on the ControlLogix is an integer called **Data_from_S7**.
- The source data block on the S7-300 is **DB2**, defined as one byte.

Software used

- Softing NetCon echo V4.33

Conventions

The following conventions are used throughout Softing customer documentation:

Keys, buttons, menu items, commands and other elements involving user interaction are set in bold font and menu sequences are separated by an arrow

Open **Start** → **Control Panel** → **Programs**

Buttons from the user interface are enclosed in brackets and set to bold typeface

Press **[Start]** to start the application

Coding samples, file extracts and screen output is set in Courier font type

`MaxDlsapAddressSupported=23`

Filenames and directories are written in italic

Device description files are located in *C:\StarterKit\delivery\software\Device Description files*

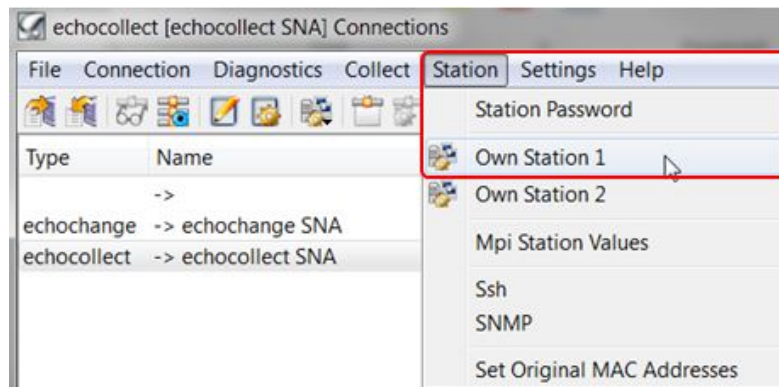


Note

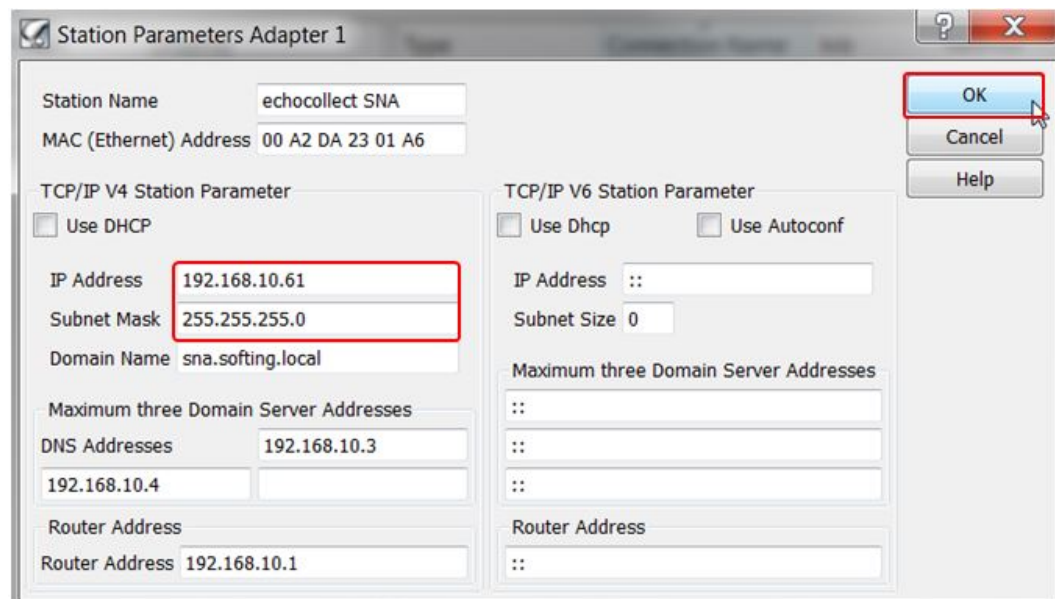
This symbol is used to call attention to notable information that should be followed during installation, use, or servicing of this device.

2 NetCon echo – echocollect port network settings

1. Start NetCon echo and configure the network settings of the echocollect port to be used. We will use port 1 (Eth 1).
 - a. Click on **Station → Own Station 1**.

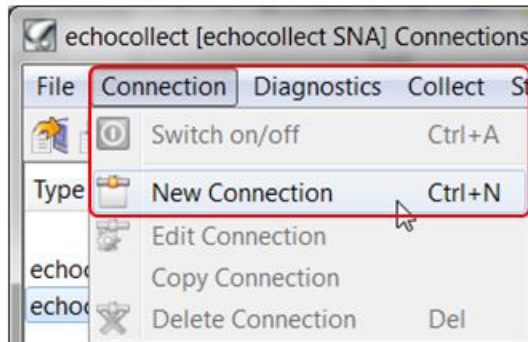


- b. As a minimum, the IP address and subnet mask are required. DNS and Router addresses may be necessary in some cases.

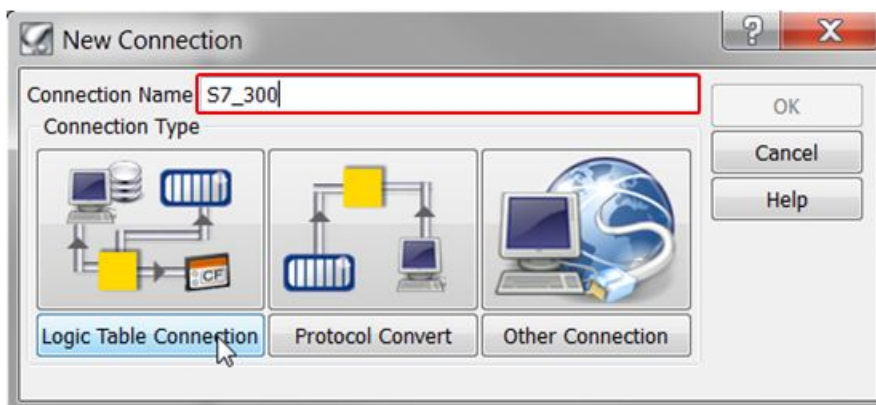


3 Create a connection to the S7-300 PLC

1. Click on **Connection** → **New Connection**.



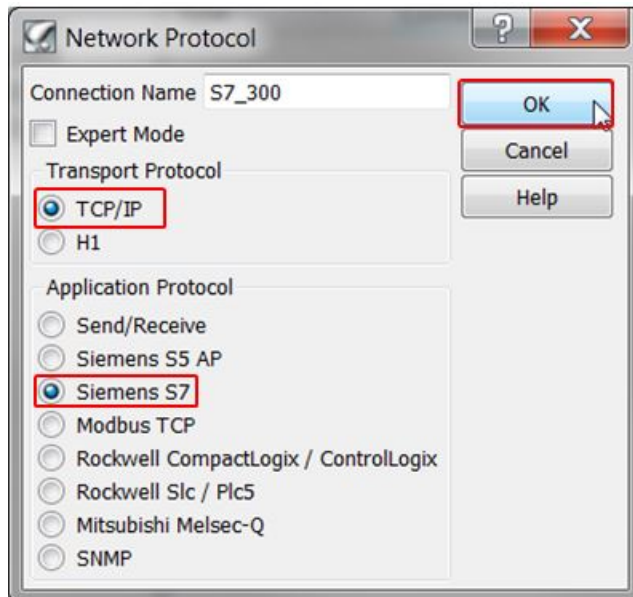
2. Enter a connection name.



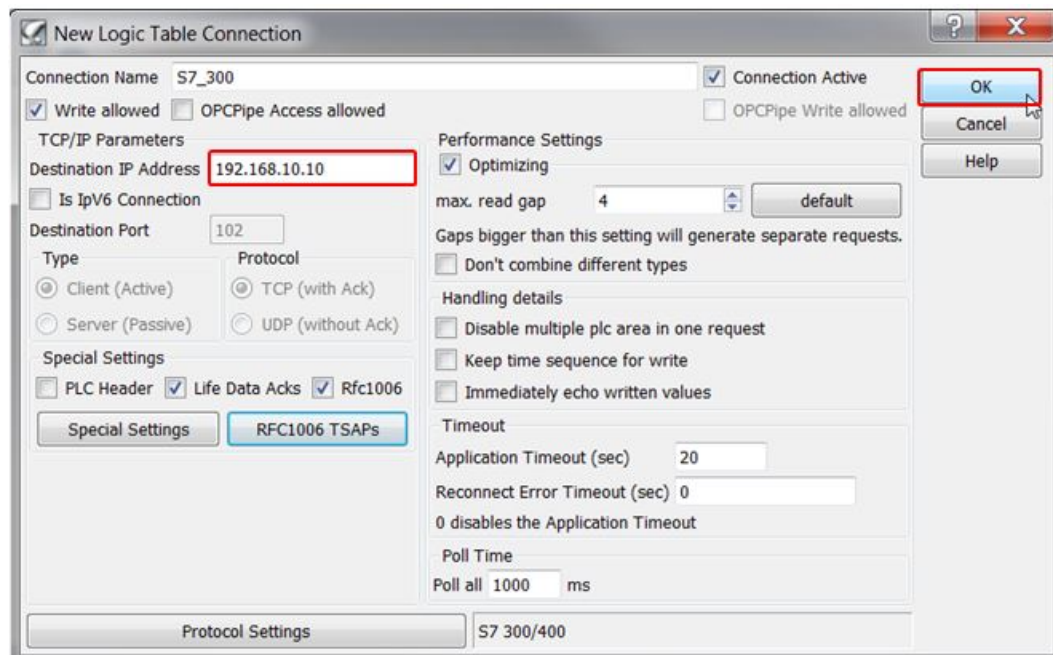
3. Click on **Logic Table Connection** and select the **PLC/Raw** and **Ethernet** options.



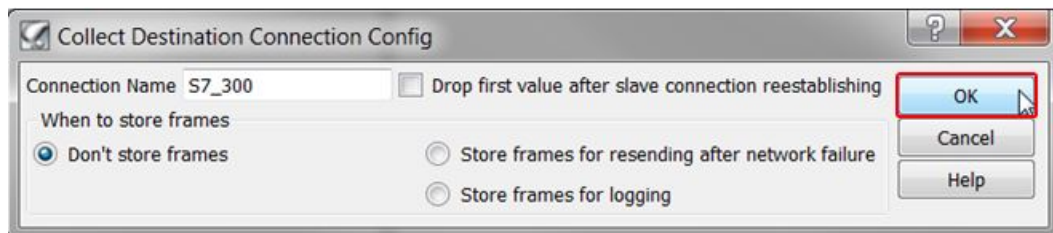
4. After clicking [OK], select the **TCP/IP** and **Siemens S7** options.



5. Enter the IP address of the S7-300 and click [OK].

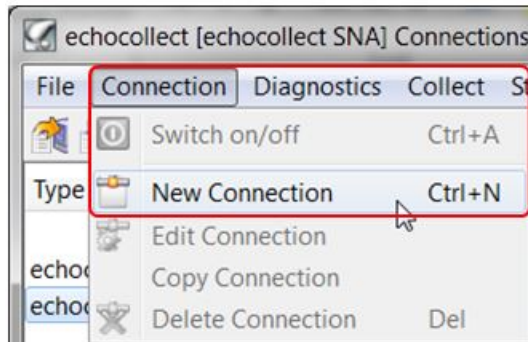


6. Click [OK] again.

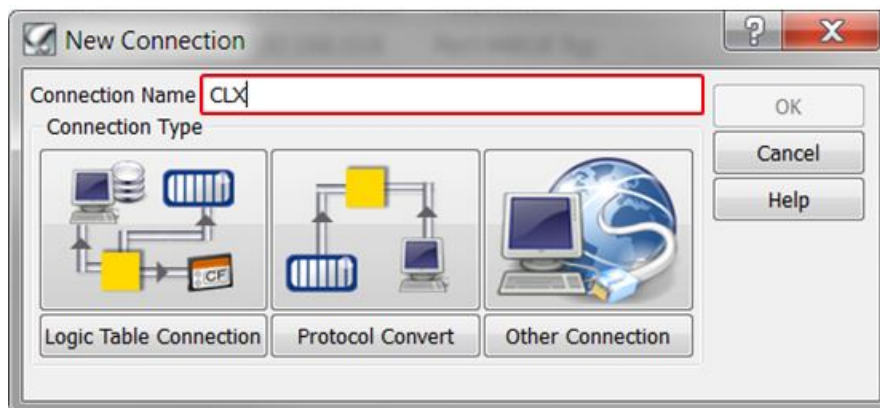


4 Create a connection to the ControlLogix PLC

1. Click on **Connection** → **New Connection**.



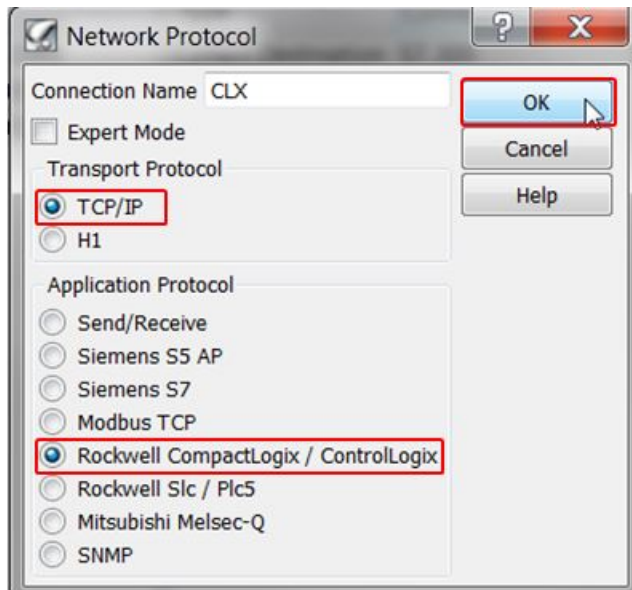
2. Enter a connection name.



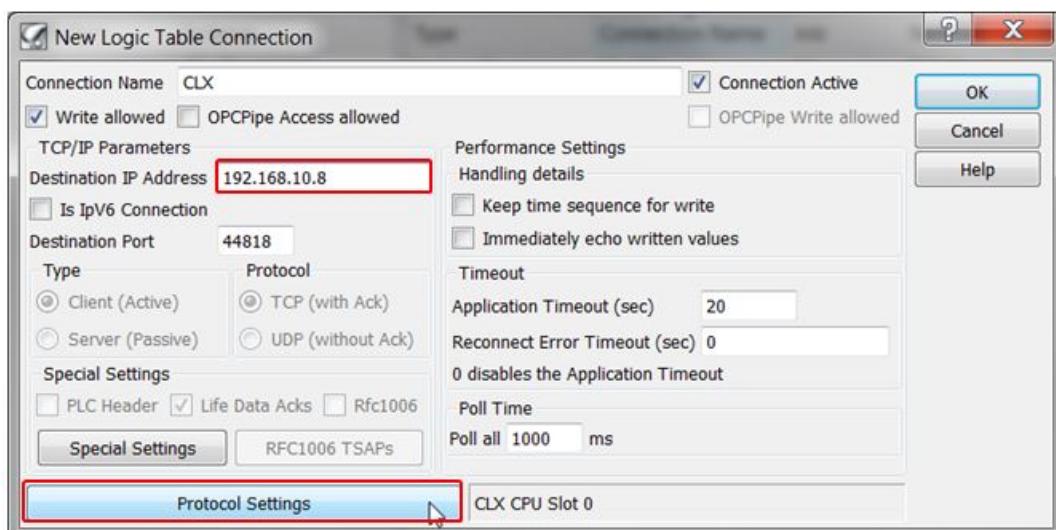
3. Click on **Logic Table Connection** and select the **PLC/Raw** and **Ethernet** options.



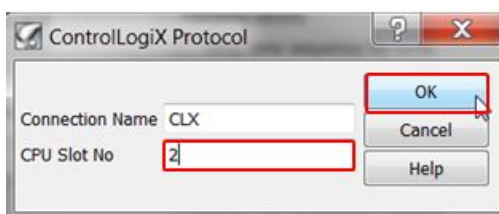
4. After clicking **[OK]**, select the **TCP/IP** and **Rockwell CompactLogix / ControlLogix** options.



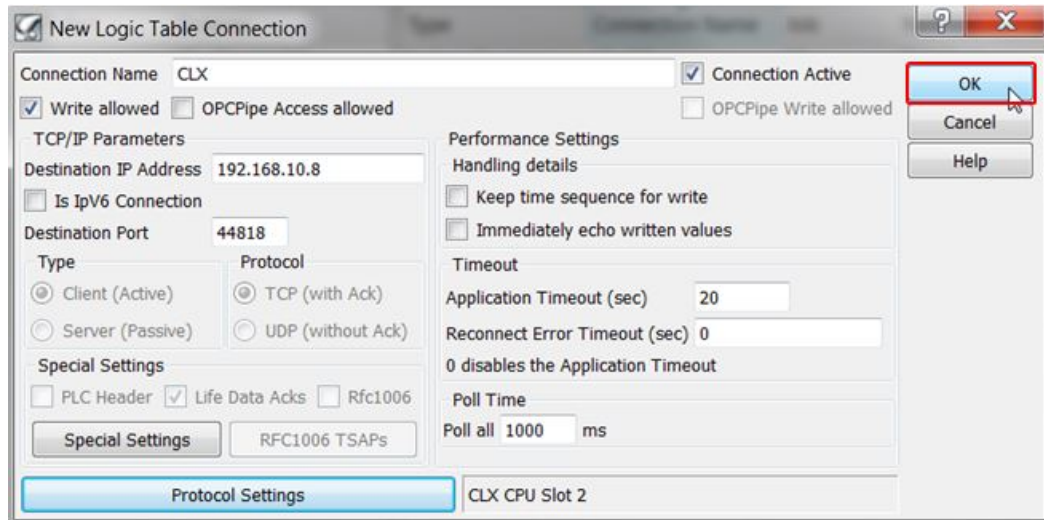
5. Enter the IP address of the ControlLogix PLC and then click on **[Protocol Settings]**.



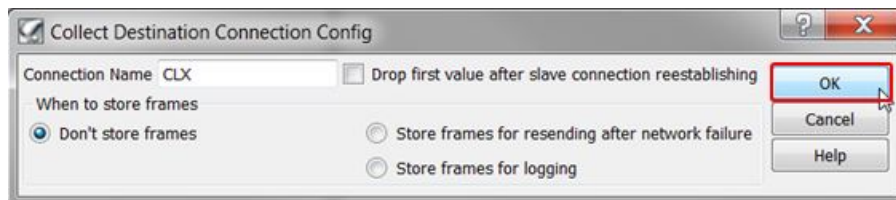
6. Enter the CPU slot number (2 in our example) and click **[OK]**.



7. Click **[OK]**.

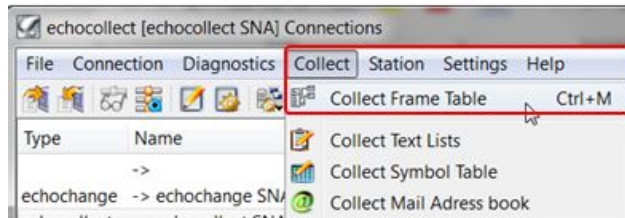


8. Click **[OK]** once again.

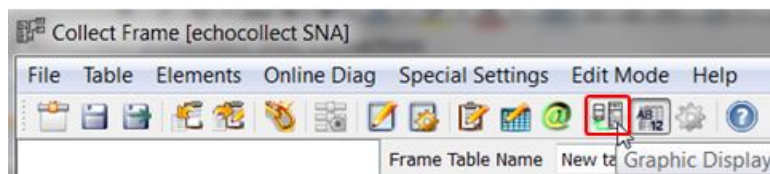


5 Create the table to establish data transfer from "Data_to_S7" (CLX) to "DB1" (S7-300)

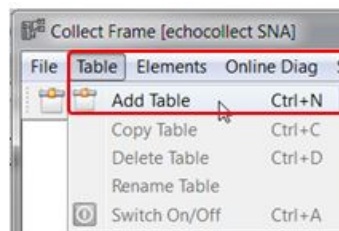
1. Click on **Collect** → **Collect Frame Table**.



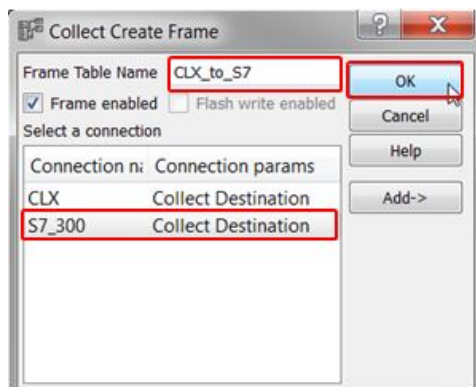
2. Click on **Graphic Display**.



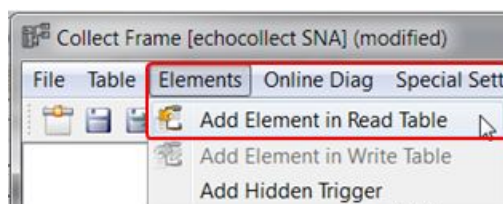
3. Click on **Table** → **Add Table**.



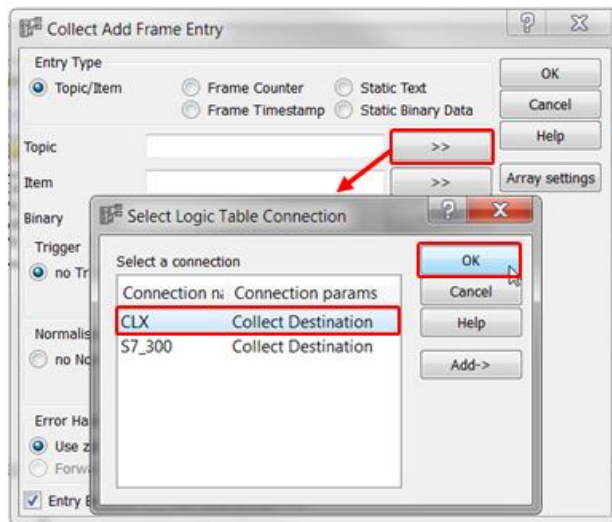
4. Enter a name for the mapping table, select the target PLC connection (S7_300), and click **[OK]**.



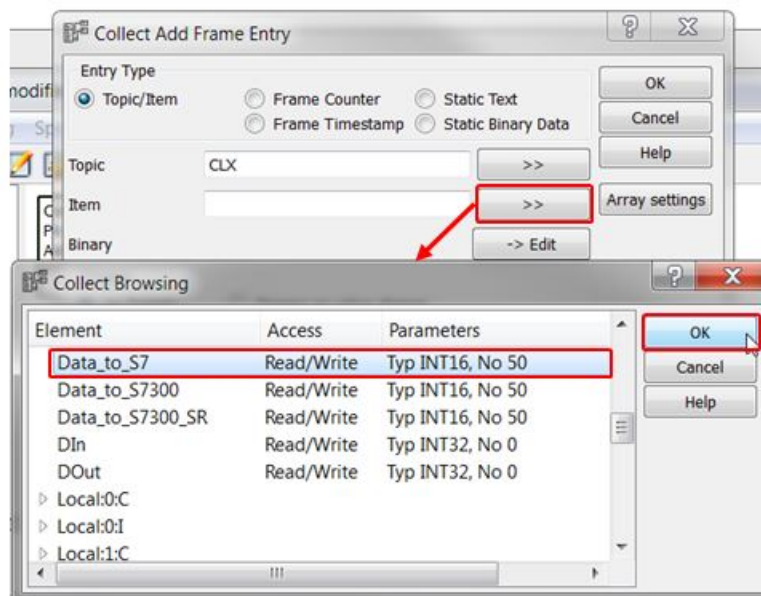
5. Click on **Elements** → **Add Element in Read Table**.



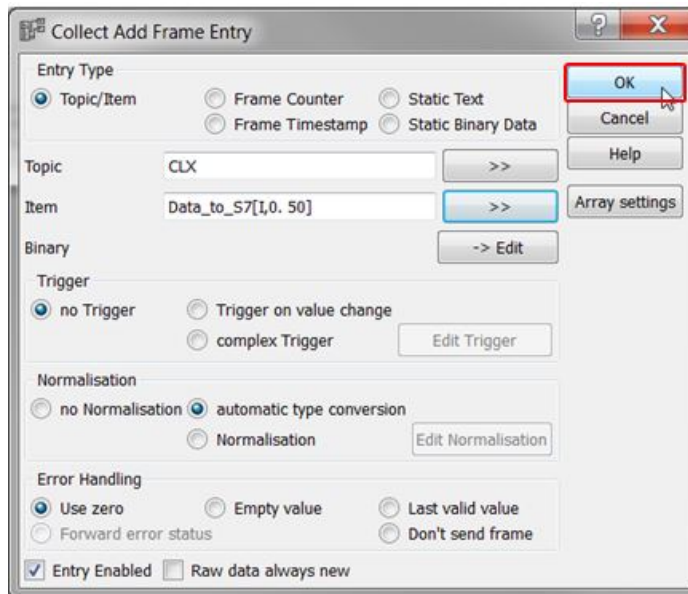
- Click on the [>>] button next to **Topic** to select the data source connection (CLX) and click [OK].



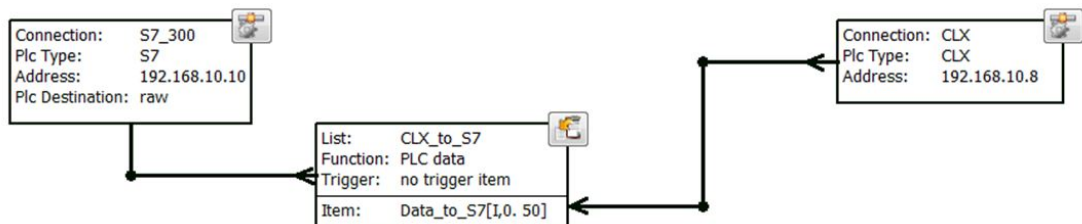
- Click on the [>>] button next to **Item** to select the data source tag (**Data_to_S7**, in our example).



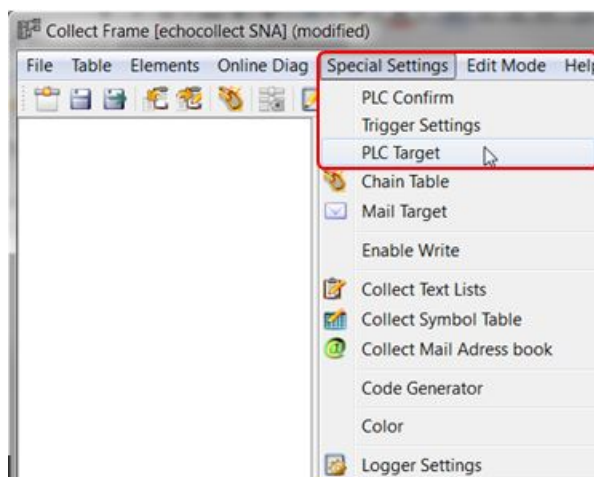
8. Click **[OK]**.



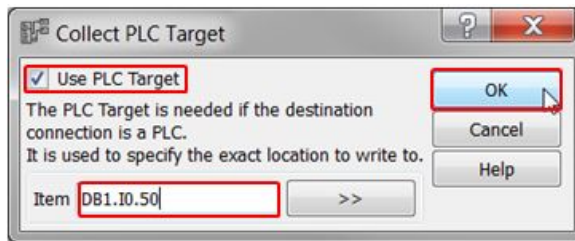
9. So far, your table should look similar to this:



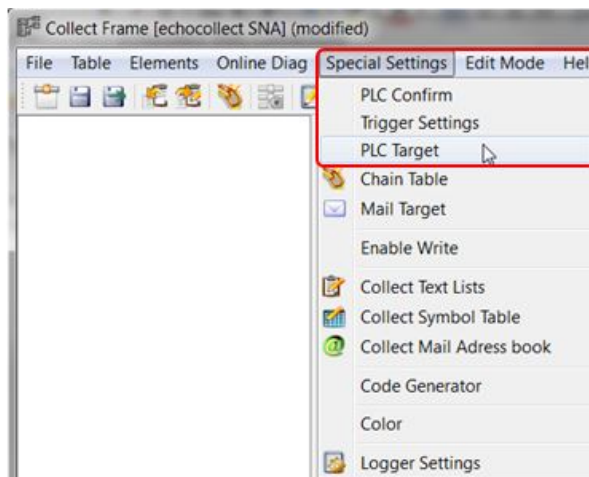
10. To select the target data block on the S7-300, click on **Special Settings → PLC Target**.



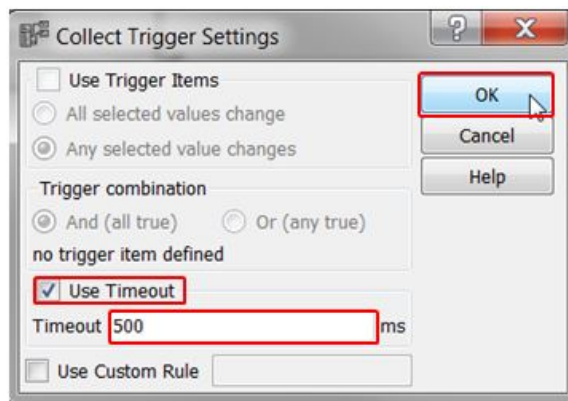
11. Then check **Use PLC Target** and enter the address of the S7-300 target data block.



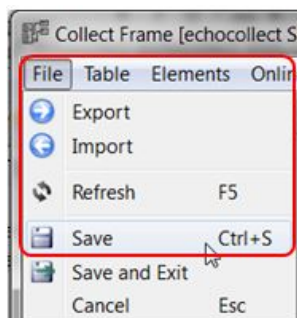
12. To enable the data exchange, create a timed trigger in the echocollect. Click on **Special Settings** → **Trigger Settings**.



13. Then check **Use Timeout** and enter the trigger frequency in milliseconds.

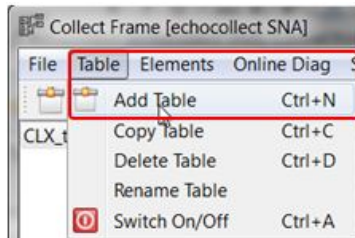


14. Save the table by clicking on **File** → **Save**.

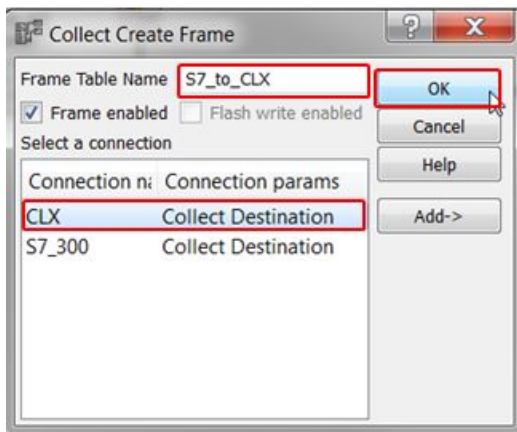


6 Create the table to establish data transfer from "DB2" (S7-300) to "Data_from_S7" (CLX)

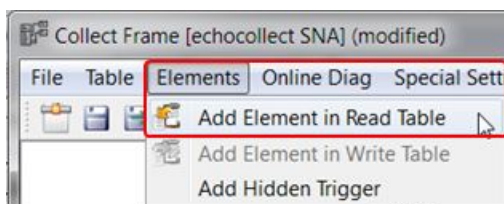
1. Click on **Table** → **Add Table**.



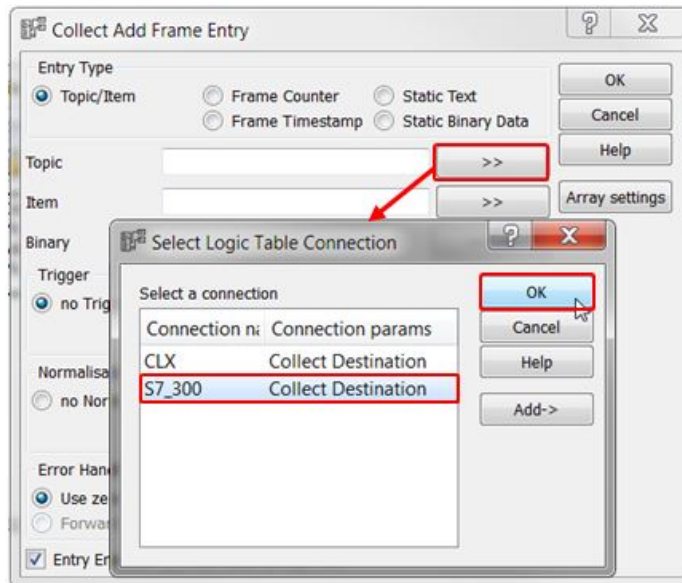
2. Enter a name for the mapping table, select the target PLC connection (CLX), and click **[OK]**.



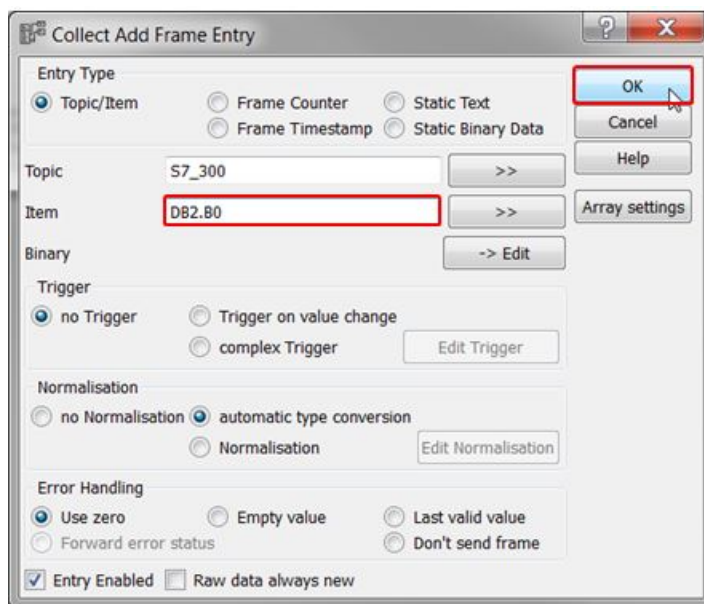
3. Click on **Elements** → **Add Element in Read Table**.



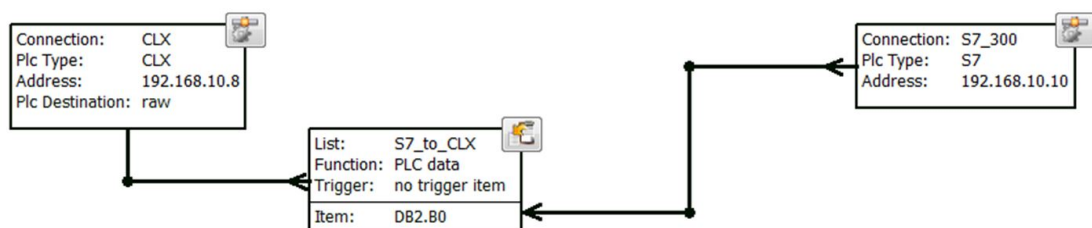
- Click on the [>>] button next to **Topic** to select the data source connection (S7_300) and click [OK].



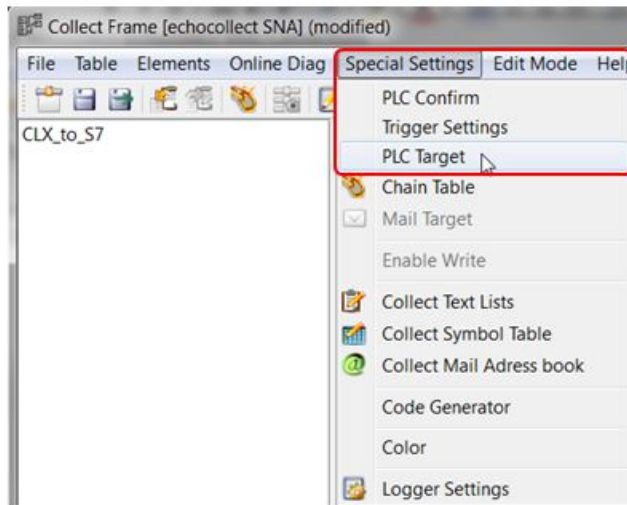
- Type in the address of the source data block (DB2, byte 0) in the **Item** section, and click [OK].



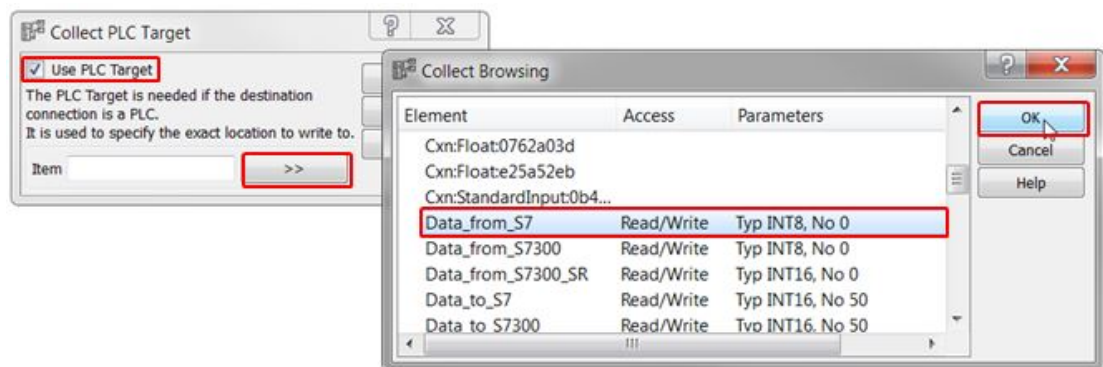
- So far, your table should look similar to this:



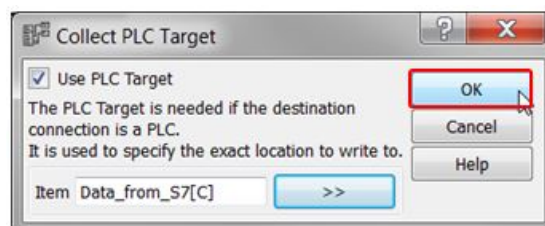
7. To select the target tag on the ControlLogix, click on **Special Settings** → **PLC Target**.



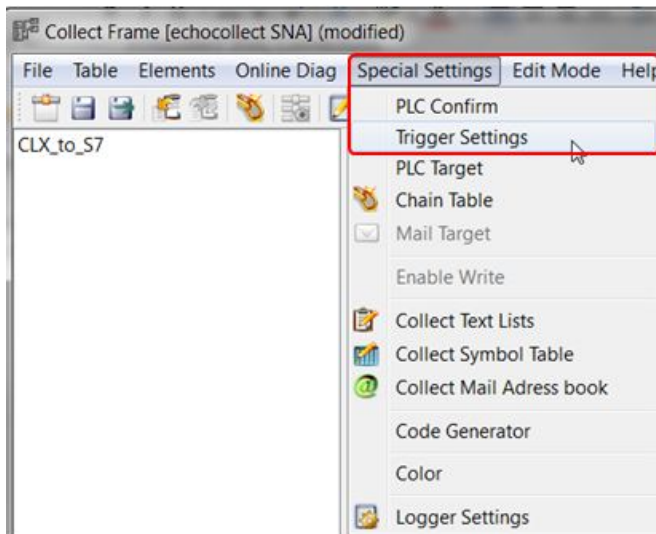
8. Then check **Use PLC Target** and click on the [**>>**] button next to **Item** to select the tag.



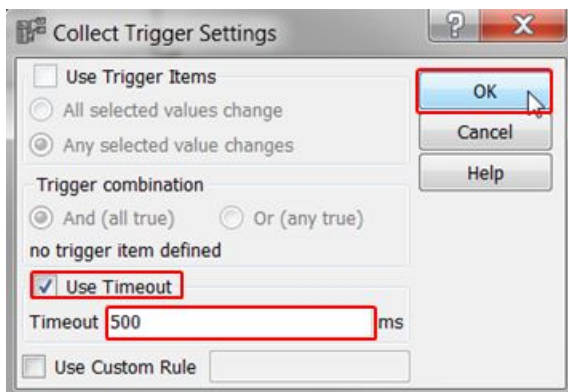
9. Click [**OK**].



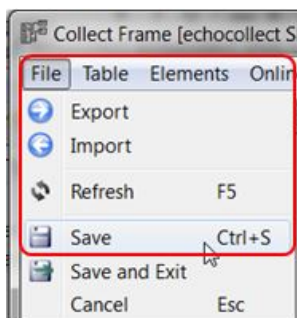
10. To enable the data exchange, create a timed trigger in the echocollect. Click on **Special Settings** → **Trigger Settings**.



11. Then check **Use Timeout** and enter the trigger frequency in milliseconds.



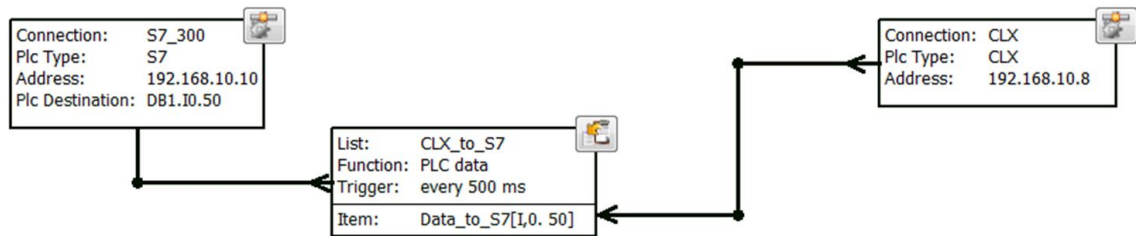
12. Save the table by clicking on **File** → **Save**.



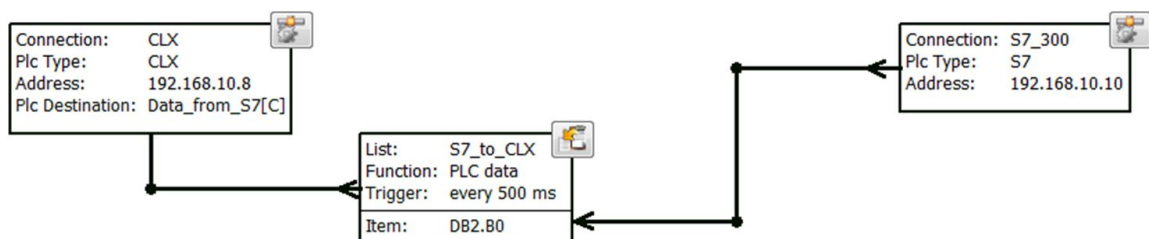
Setup is now complete.

7 Finished table mapping

CLX_to_S7



S7_to_CLX



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