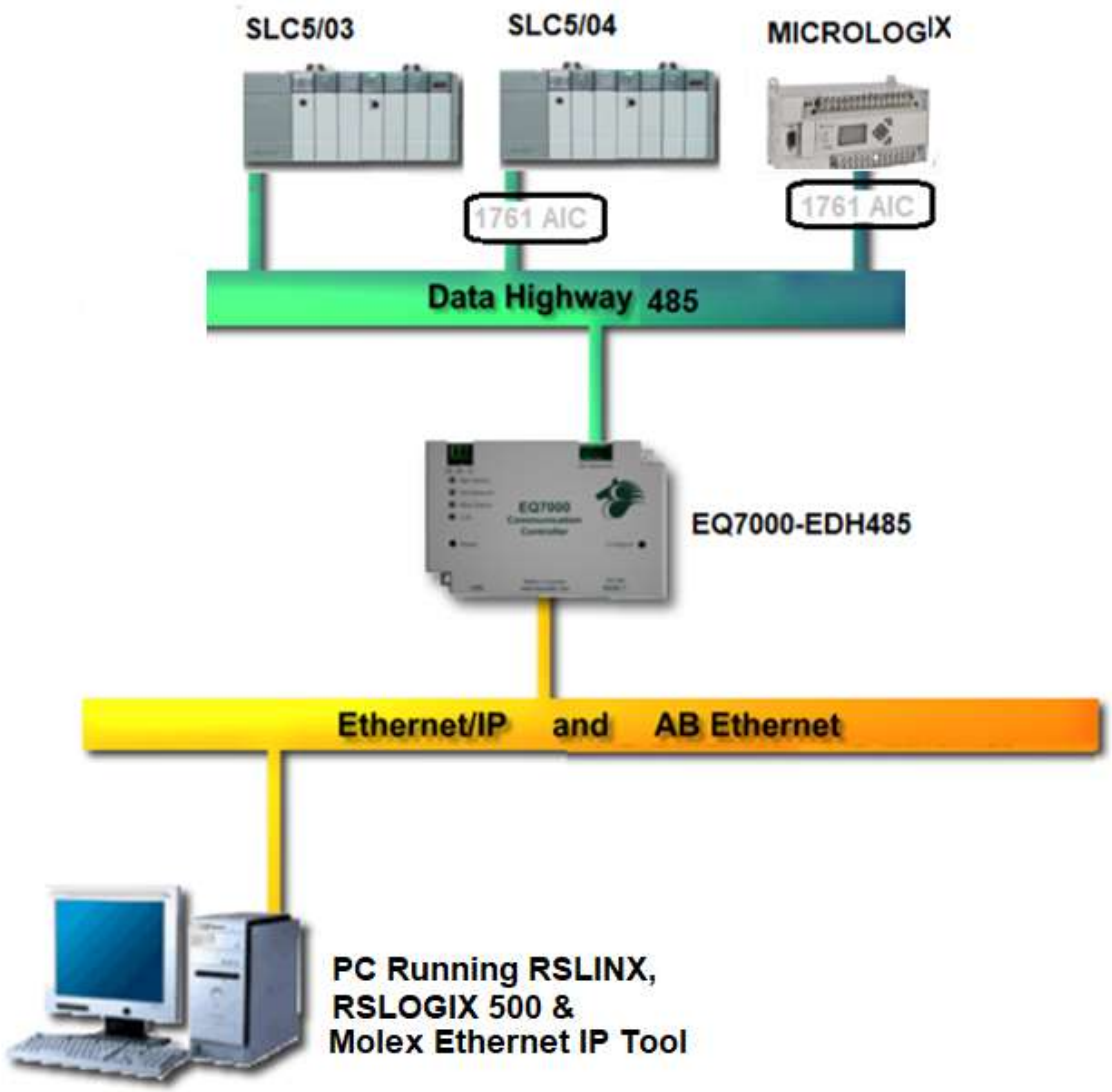
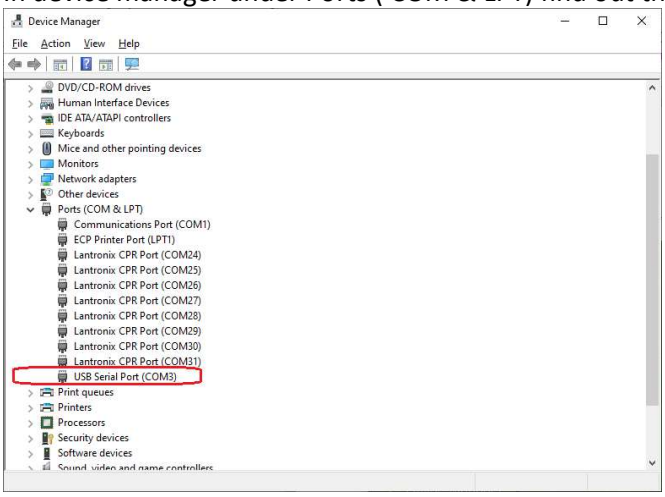
Molex Ethernet/IP Tool getting data from SLC503, SLC504 and Micro Logix Using EQ7000-EDH485 on DH485 network

Setup for this application note, we used a SLC/503, SLC/504 through 1761-AIC, and a Micrologix also through 1761-AIC all on a DH485 network with the EQ7000-EDH485 and a PC with RSLINX and RSLOGIX 500 as well as Molex Ethernet IP Tool on Allen Bradley Ethernet and Ethernet IP side of the EQ7000.



This application note also includes configuring the EQ7000-EDH485 and going online using Allen Bradley RSLINX and RSLOGIX 500 to show that data read in both the RSLINX and the Molex Ethernet IP are same. Power on the EQ7000 and connect it to the PC using the USB cable then open device manager.

In device manager under Ports (COM & LPT) find out the USB Serial Port in our case her is COM3.



Press the **configure push button switch** on the right-hand side of the EQ7000 to put it in offline configuration mode (Make sure the **STATUS LED** is flashing green).

Start EQ32 software, Under products select EQ7000.

From the drop Menu of the COM Port Selection, select the USB comport previously found under the Device Manager.

Click on Offline Manager to confirm that you can communicate with the unit.

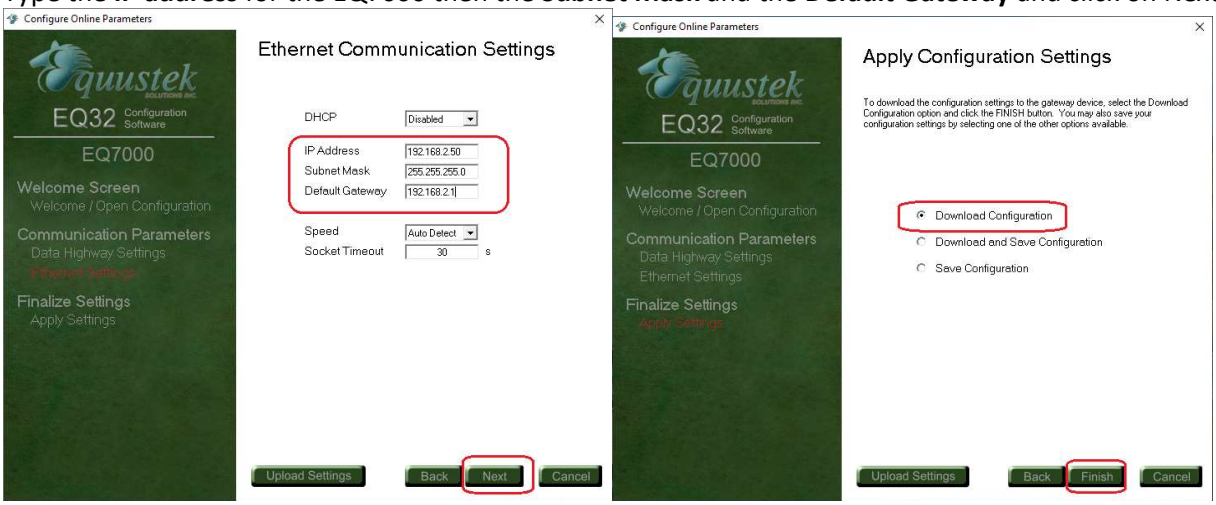
Seeing the offline manager menu confirms that your USB connection is OK, click on Close.

Click on Configure then click on Next

From the Drop menu of **Network Type** select **DH485**, then select a unique **Node Address** for the EQ7000

Select the DH485 Baud rate (**Network Speed**), then click on Next

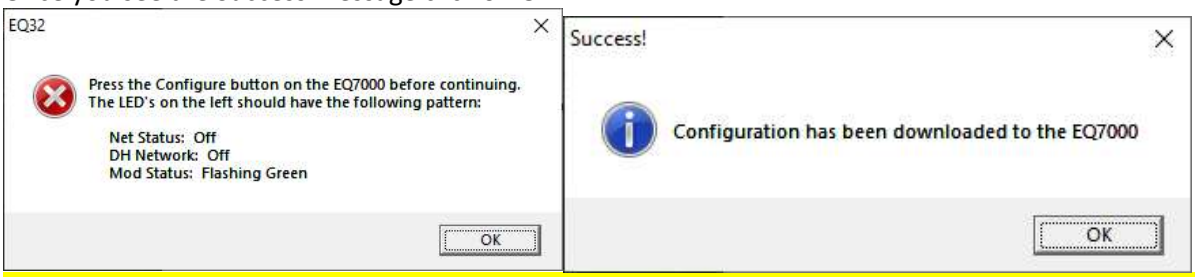
Type the **IP address** for the EQ7000 then the **Subnet Mask** and the **Default Gateway** and click on Next.



Select **Download Configuration** and click on **Finish**

Warning message will ask to press the configure push button, you don't need to, since it was done earlier, just click on OK

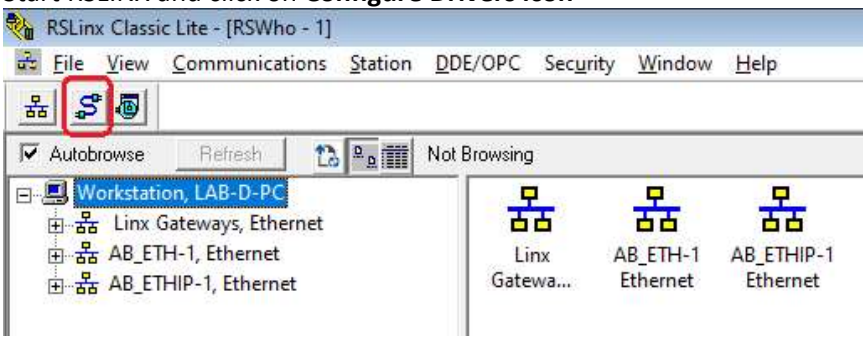
Once you see the Success message click on OK.



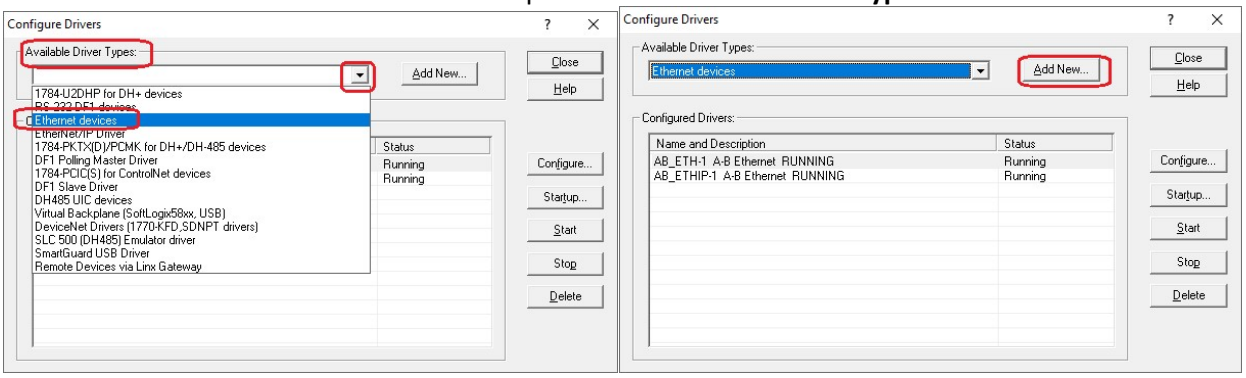
In case you encounter any error message, press the **RESET push button switch** on left hand side of the EQ7000 then press the **Configure push button switch** on the right hand side of EQ7000 and click on **Finish** again in EQ32.

After Success configuring the unit, click on Exit to close the EQ32 software and press the Reset push button switch on the EQ7000 to put it in online operating mode.

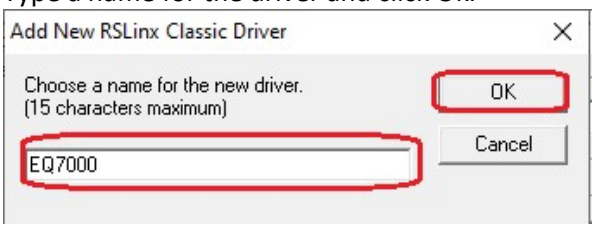
Start RSLINX and click on **Configure Drivers icon**



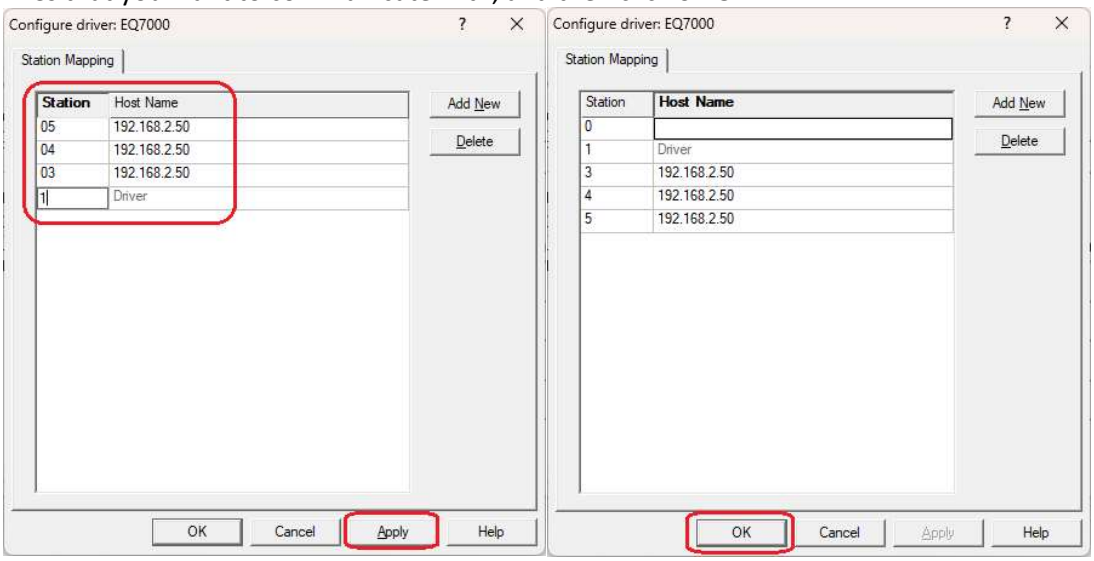
Select **Ethernet Devices** Driver from the drop menu of **Available Driver Types**. And click on **Add New**.



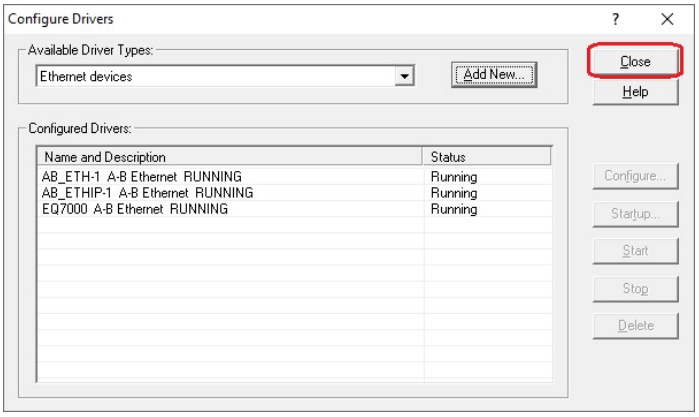
Type a name for the driver and click Ok.



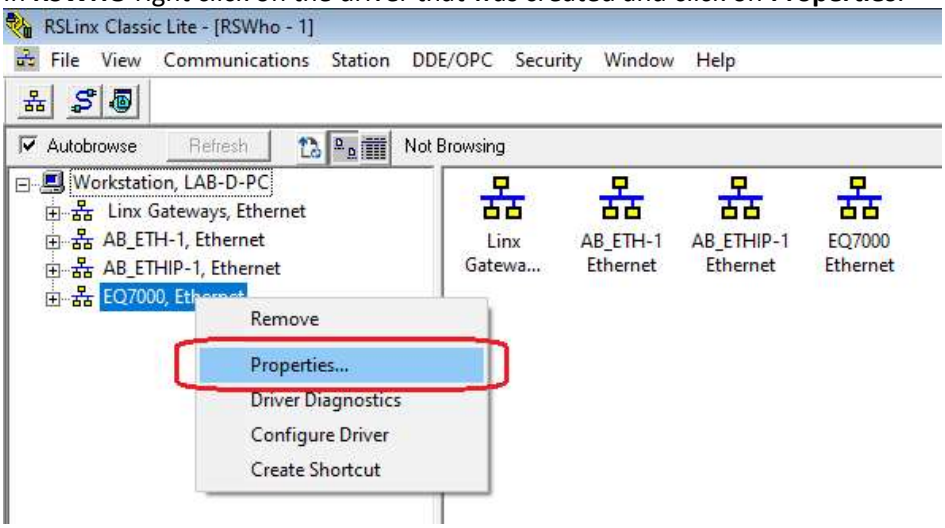
To map all the PLCs that you need to communicate with, type the Node address numbers of the SLC500s & Micrologix under **Station** in decimal and the IP address of the EQ7000 under the **Host name**, as for Driver enter the node address number of the EQ7000 under **Station**. Click on Apply, please map only the PLCs that you want to communicate with, and then click on OK.



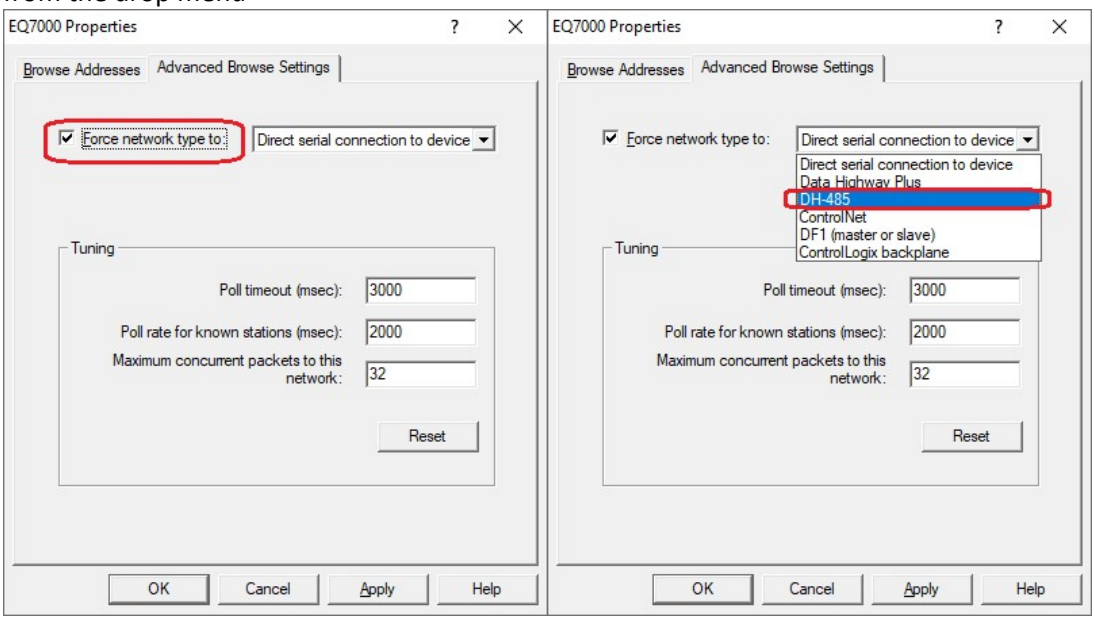
Click on close



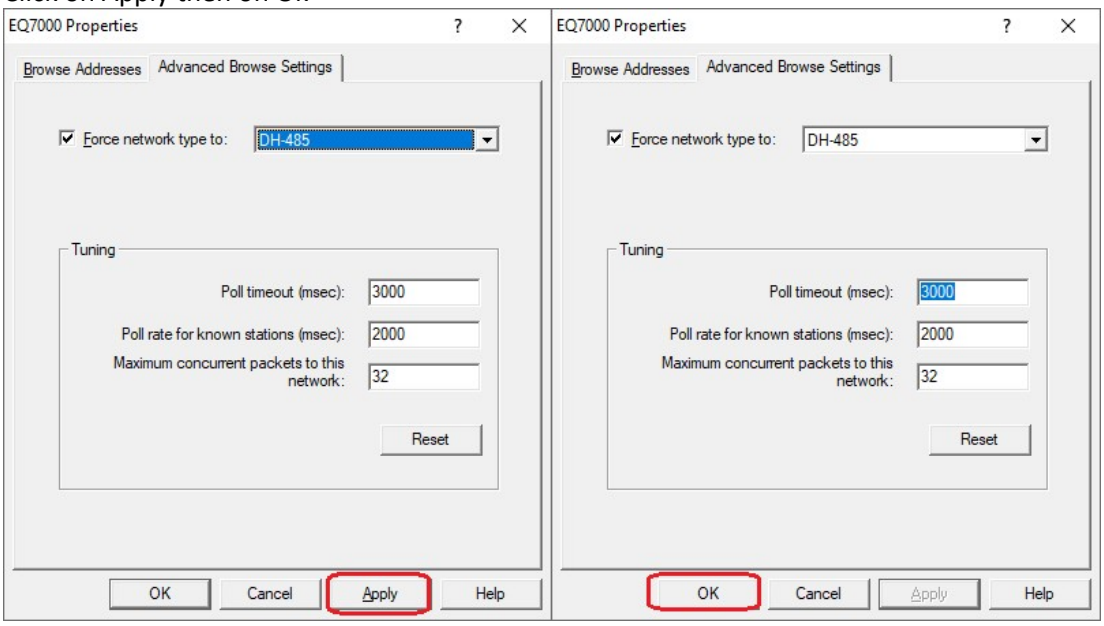
In **RSWHO** right click on the driver that was created and click on **Properties**.



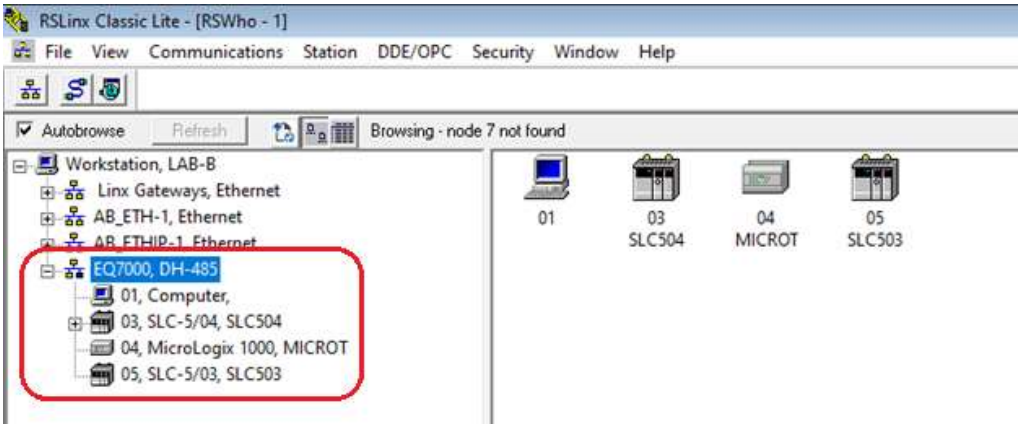
Click on **Advanced Browse settings tab** and check mark **Force network type to**, and then select **DH485** from the drop menu



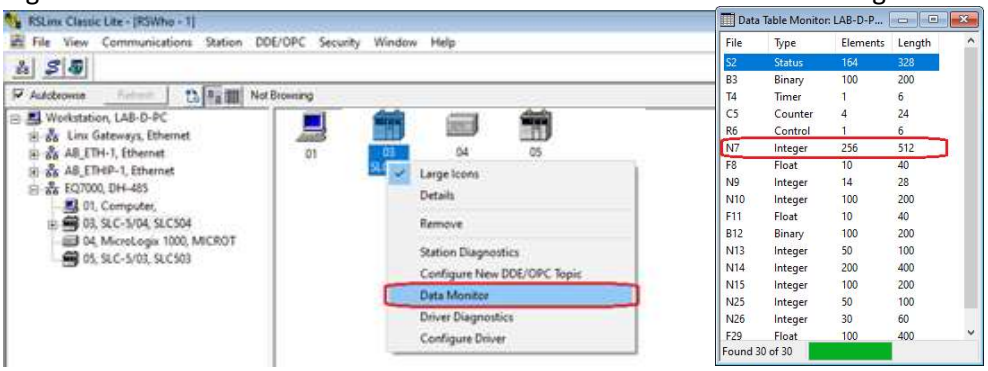
Click on Apply then on Ok



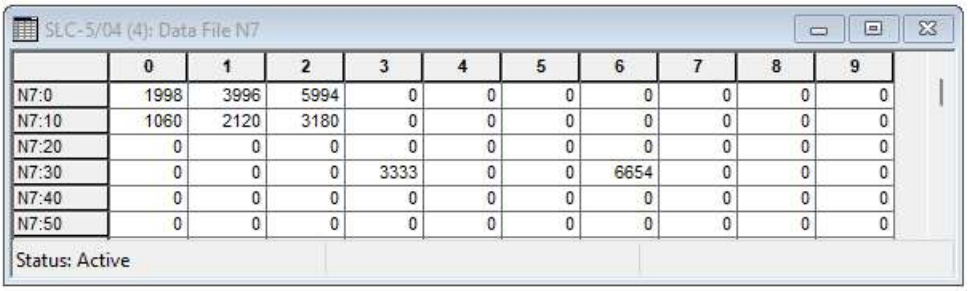
In **RSlinx RSWHO** click on the driver that was created to browse the DH485 network.
Here you can see SLC503, SLC504, and the Micrologix, all those that were mapped when we created the Ethernet driver.



Right click on SLC503 and click on **Data Monitor** then double click on integer file N7

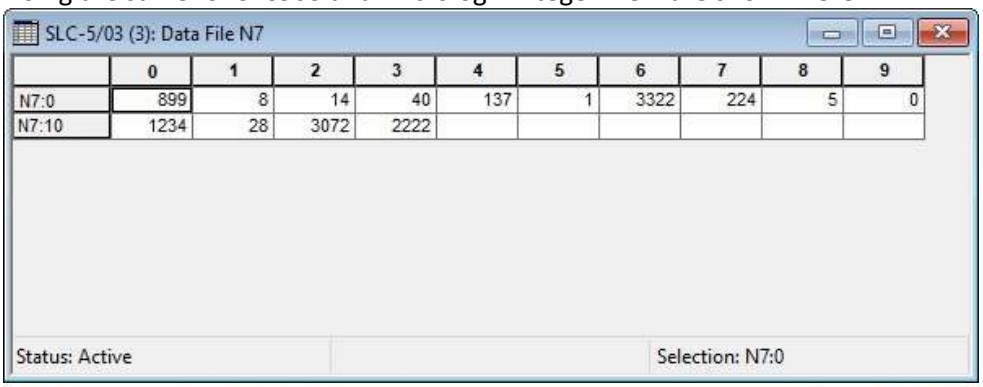


N7 from the SLC504 node 3 is shown here

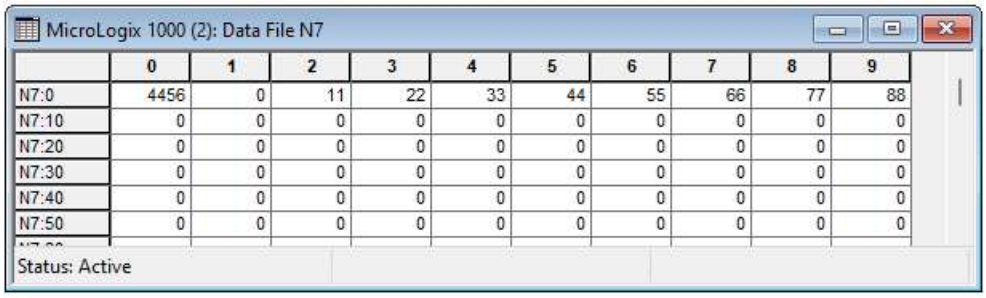


	0	1	2	3	4	5	6	7	8	9
N7:0	1998	3996	5994	0	0	0	0	0	0	0
N7:10	1060	2120	3180	0	0	0	0	0	0	0
N7:20	0	0	0	0	0	0	0	0	0	0
N7:30	0	0	0	3333	0	0	6654	0	0	0
N7:40	0	0	0	0	0	0	0	0	0	0
N7:50	0	0	0	0	0	0	0	0	0	0

Doing the same for SLC503 and Micrologix integer file 7 are shown here.

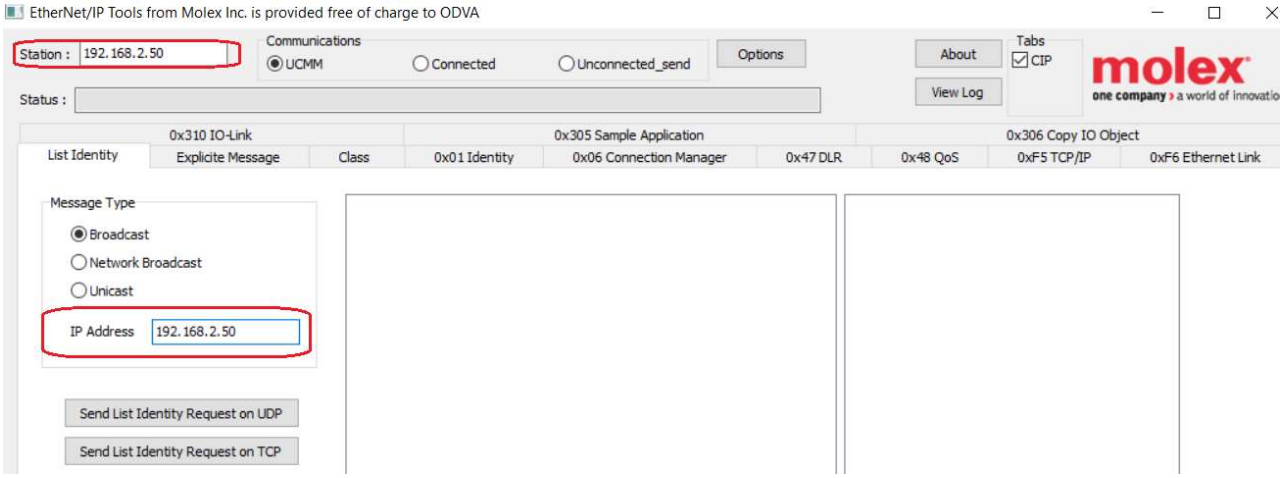


	0	1	2	3	4	5	6	7	8	9
N7:0	899	8	14	40	137	1	3322	224	5	0
N7:10	1234	28	3072	2222						

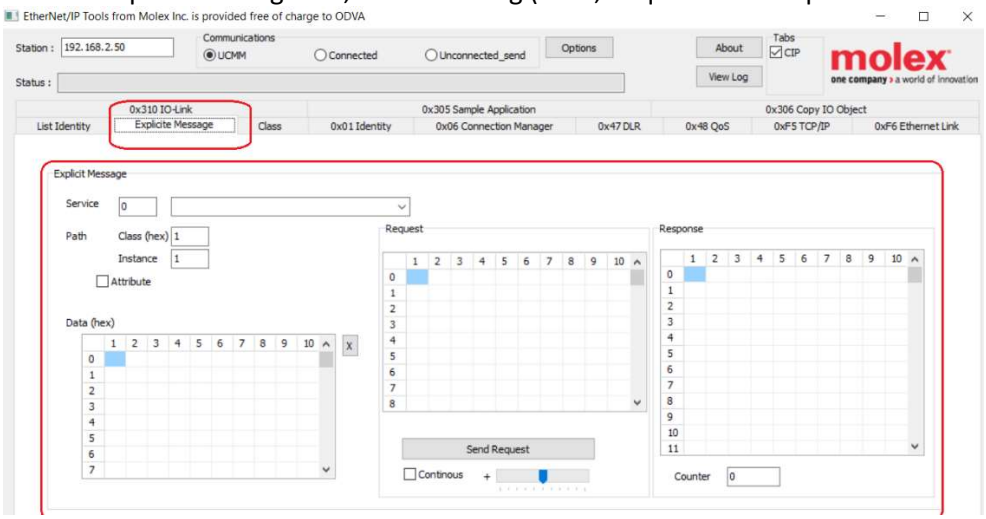


	0	1	2	3	4	5	6	7	8	9
N7:0	4456	0	11	22	33	44	55	66	77	88
N7:10	0	0	0	0	0	0	0	0	0	0
N7:20	0	0	0	0	0	0	0	0	0	0
N7:30	0	0	0	0	0	0	0	0	0	0
N7:40	0	0	0	0	0	0	0	0	0	0
N7:50	0	0	0	0	0	0	0	0	0	0

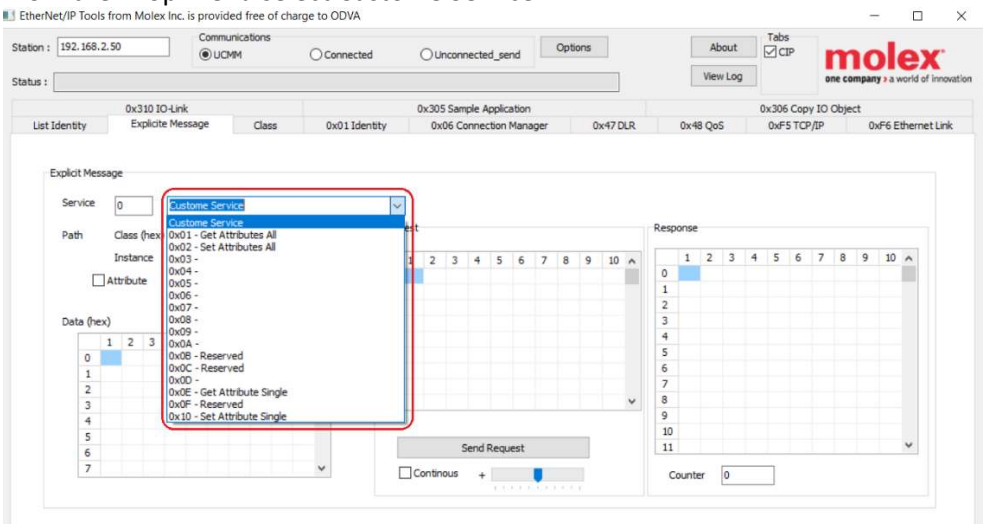
Now to show that we can request same data files from those PLCs using Molex Ethernet IP Tool we need to open Molex Ethernet/IP Tool and enter EQ7000 IP address, select UCMM under Communications.



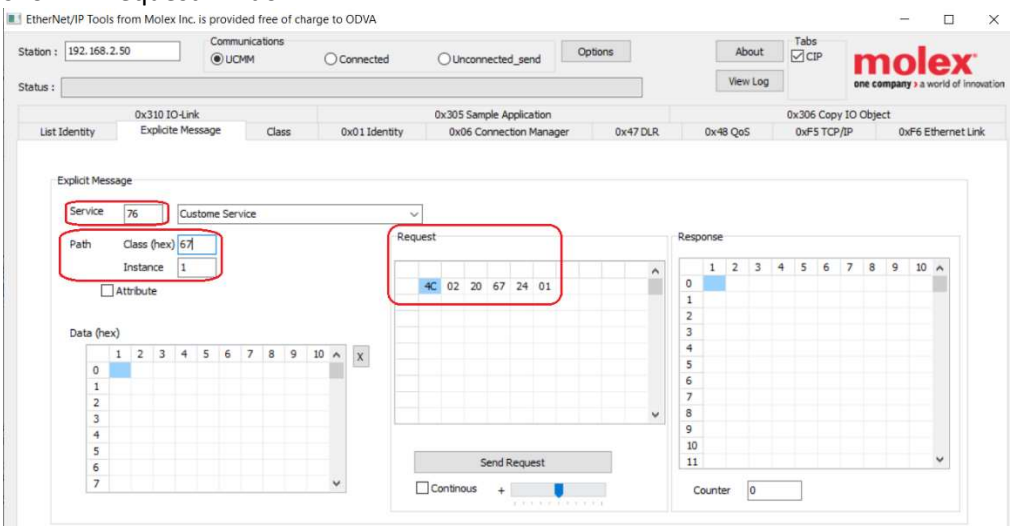
Click on Explicit Message tab, that will bring (Data, Request and Response windows) to show.



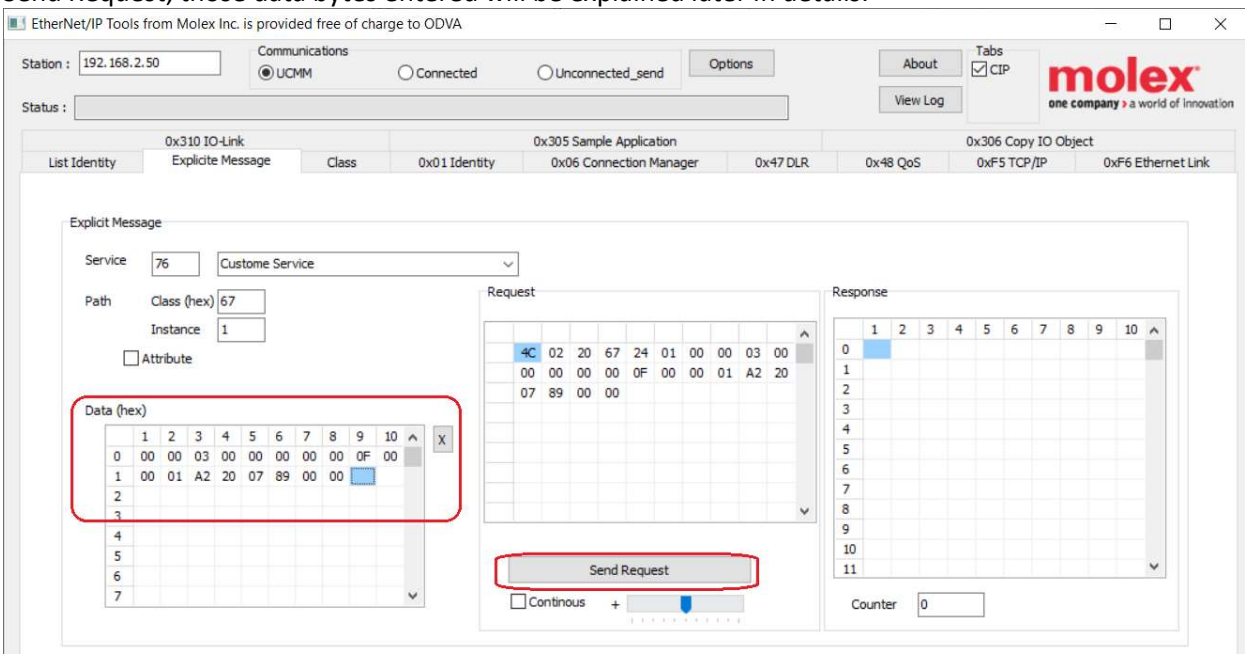
From the Drop Menu select Custome Service.



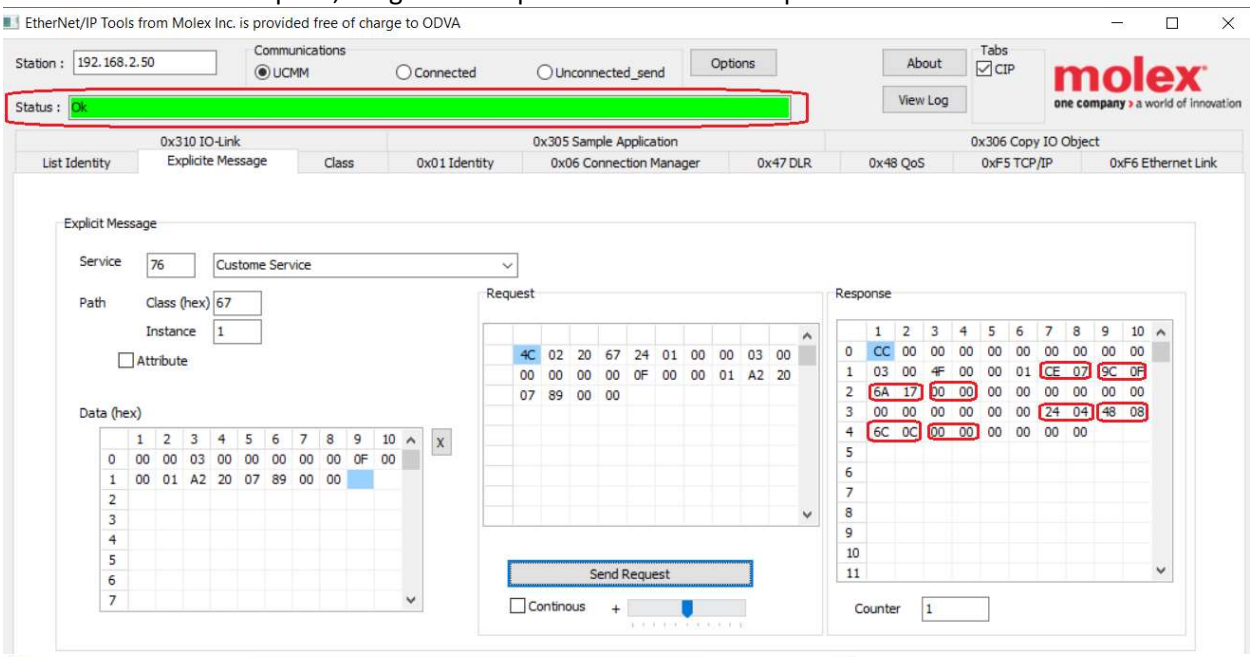
Entere Service 76 which is 4C in Hex and Class 67 Instance 1 then the HEX value for the main request will show in Request window.

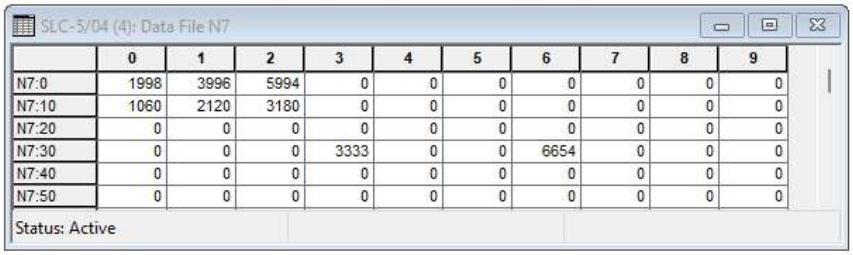


Here we need to enter the data in Hex in Data windows, to read data from the SLC504, then click on Send Request, those data bytes entered will be explained later in details.



After we click Send Request, we get the response as shown in Response window below.

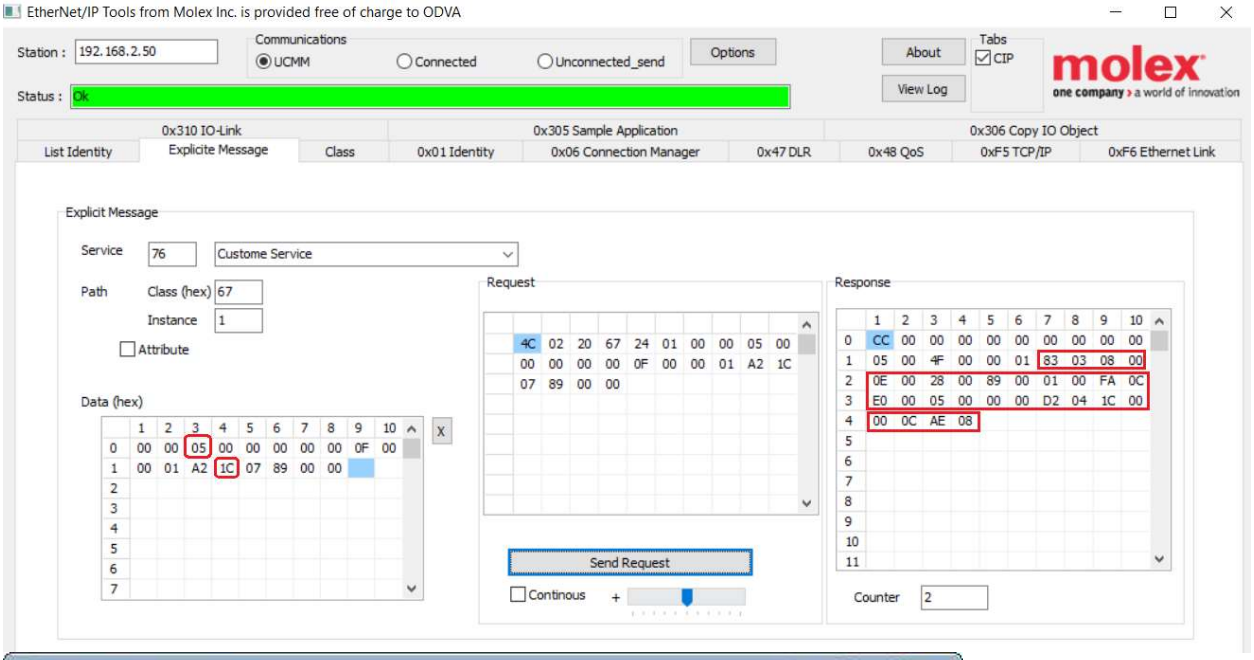


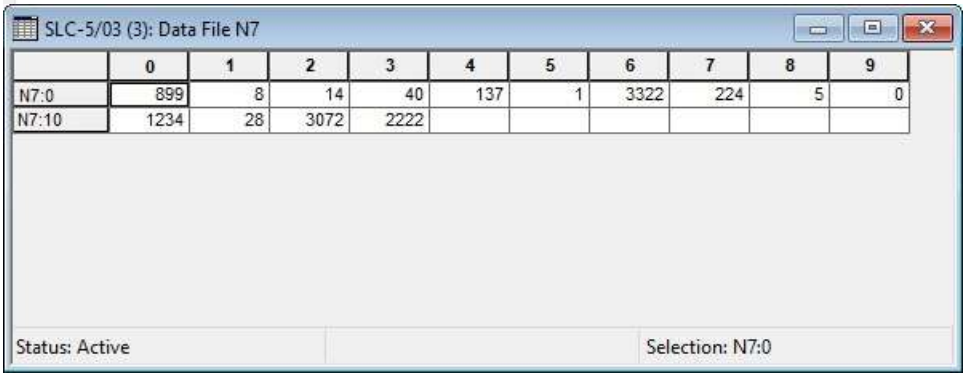


	0	1	2	3	4	5	6	7	8	9
N7:0	1998	3996	5994	0	0	0	0	0	0	0
N7:10	1060	2120	3180	0	0	0	0	0	0	0
N7:20	0	0	0	0	0	0	0	0	0	0
N7:30	0	0	0	3333	0	0	6654	0	0	0
N7:40	0	0	0	0	0	0	0	0	0	0
N7:50	0	0	0	0	0	0	0	0	0	0

Comparing the response data with those read from RSLINX we can see that they are exact same, for eample 07CE= 1998, 0F9C=3996,176A=5994 and so on.
Now to explain the data sent in the request
Destination Link(Lower)=00, Destination Link (upper)=00 Destination Node= 03 which is our SLC504 node address number, 0=00, Source Link (lower)=00, Source Link (upper)=00, Source Node=00, 0=00,Command= 0F, Status=00, Transaction Code (upper)=00, Transaction Code (Lower)=01, Function Code=A2, Data Size = 20, File number=07, File Type=89 for Integer file, Element Number=00, Sub Element Number=00, for more details on all these bytes, please refer to Ethernet IP Protocol and Allen Bradley DF1 protocol (DF1 Command 0F Function A2 is Protected Typed Logical read)
The reason we had the Destination link 0 and the Source link 0 as well is that the EQ7000 does not have the back plane and DH485 module that the Control Logix does.

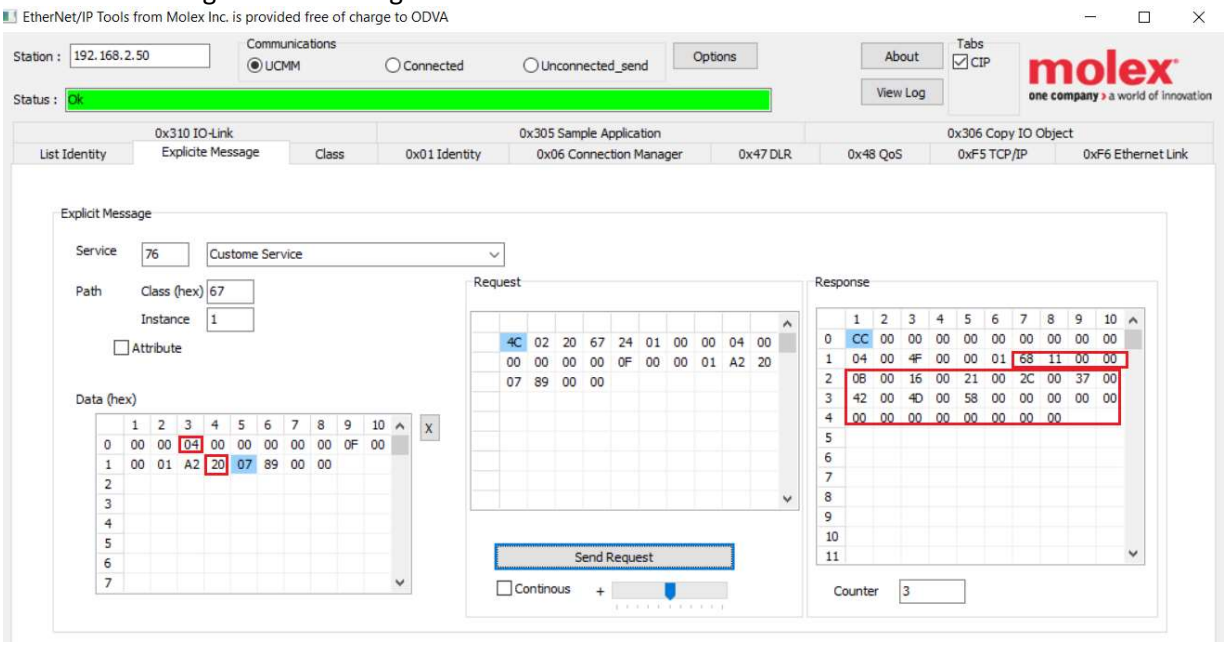
To read from integer file 7 of the SLC503 all what we need is to change the node address number to 05 and change the size of the data we request to 1C, here we get the same data seen in RSLINX as well.



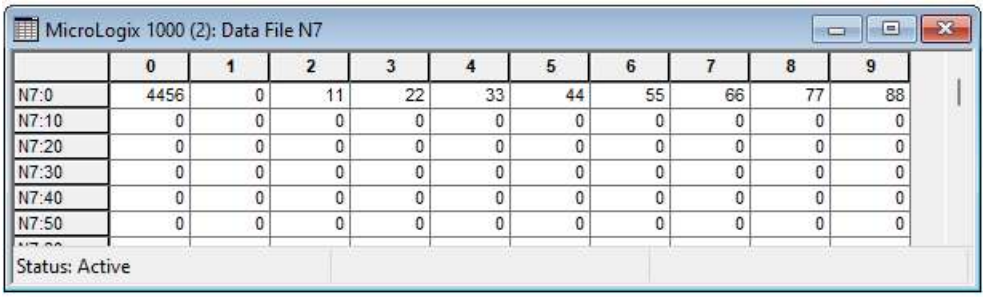


For Example 0383=899, 0008=8,….08AE=2222.

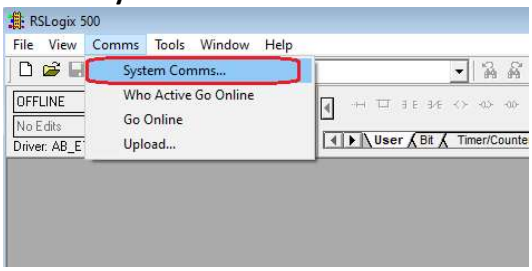
Then for Micrologix we will change the node address to 04 and data to 20.



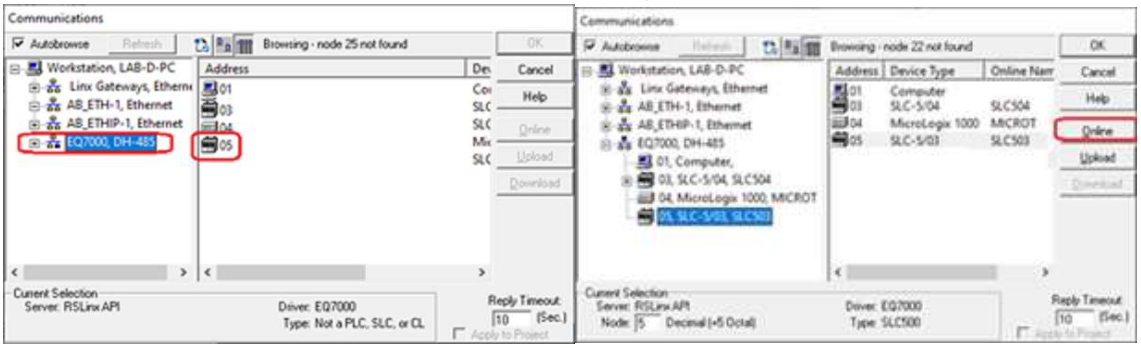
Here also we can see that we are getting exact same data.



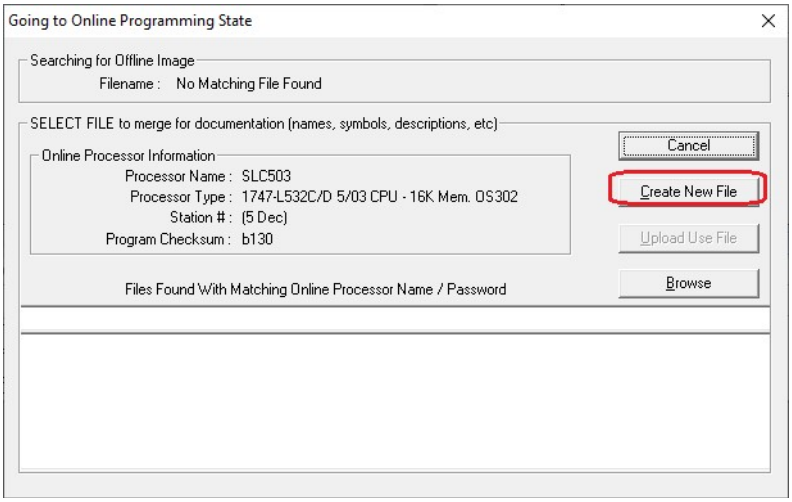
To go online with any of the three PLCs for example the SLC503 start RSlogix500 and under **Comms** tab click on **System Comms…**

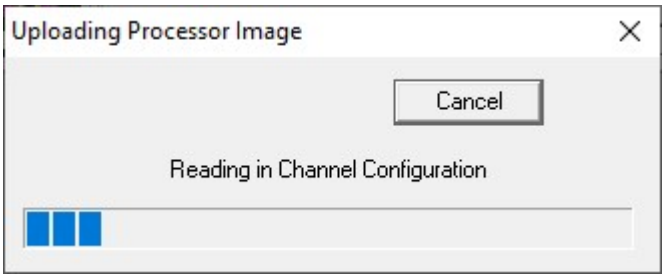


Click on the EQ7000 DH485 driver and click on SLC503, then click on **Online**

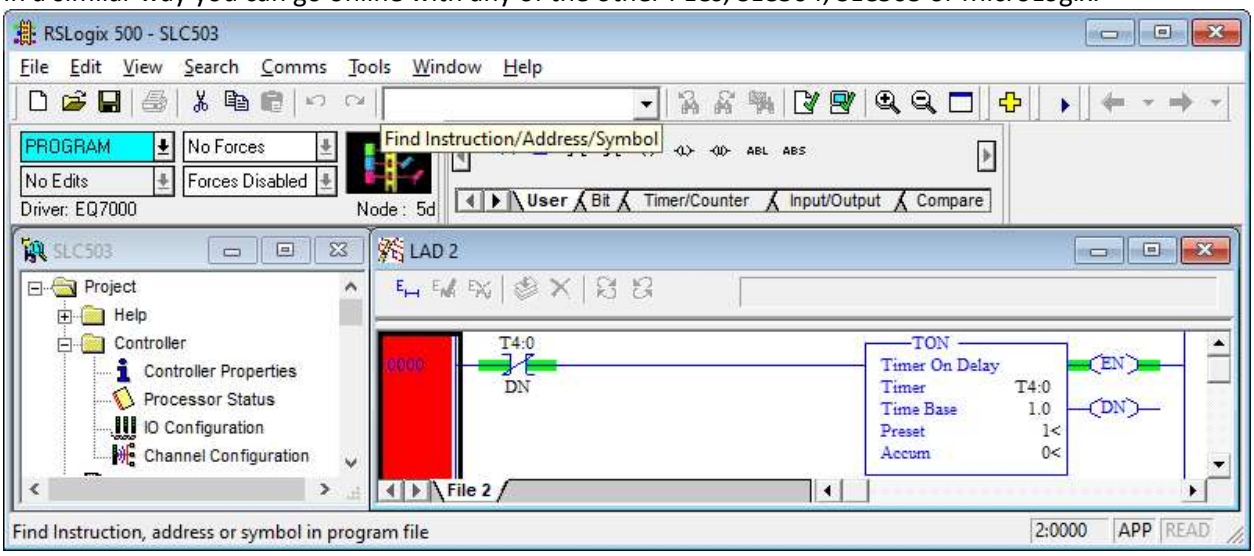


Click on create new file.





In a similar way you can go online with any of the other PLCs, SLC504, SLC505 or MicroLogix.



If you have any questions in regard this application or for more details please contact

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