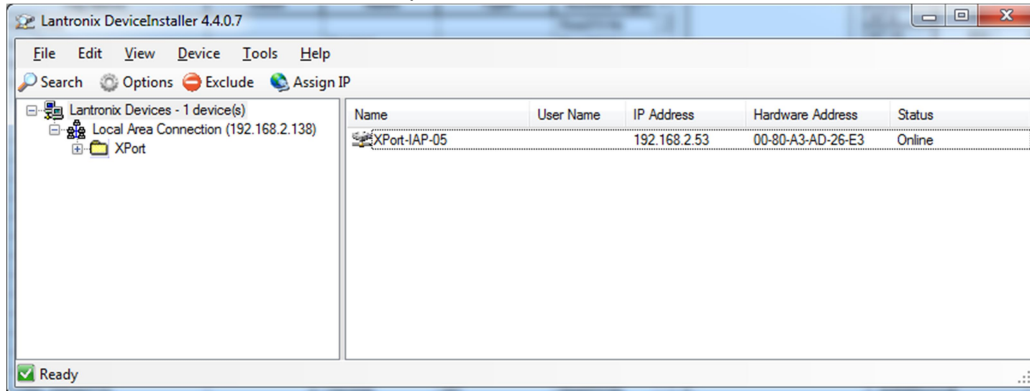


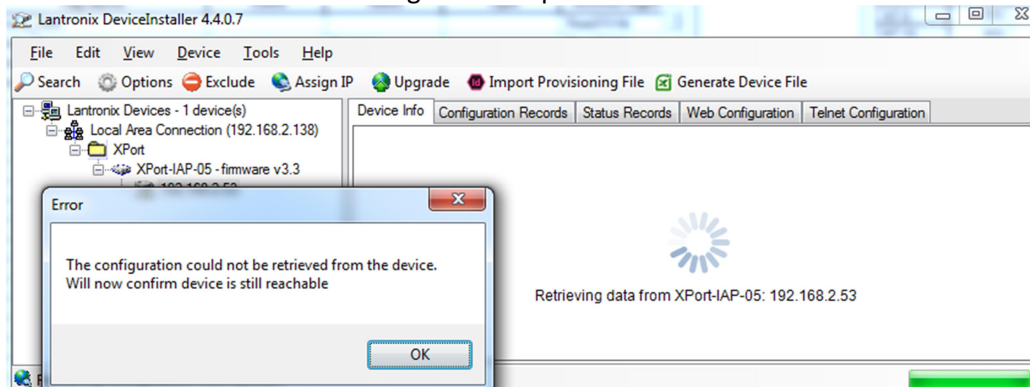
MODBUS TCP/IP to DH485 Converter Equustek DL6000-MEDH485 to Allen Bradley DH485 PLCs

This application note shows how to setup and use Equustek DL6000-MEDH485 MODBUS TCP/IP to DH485 converter to access data from Allen Bradley SLC-503, Micro Logix, Compact Logix or any Allen Bradley DH485 device on DH485 Network connected to the DL6000 where it's MODBUS is set as a slave.

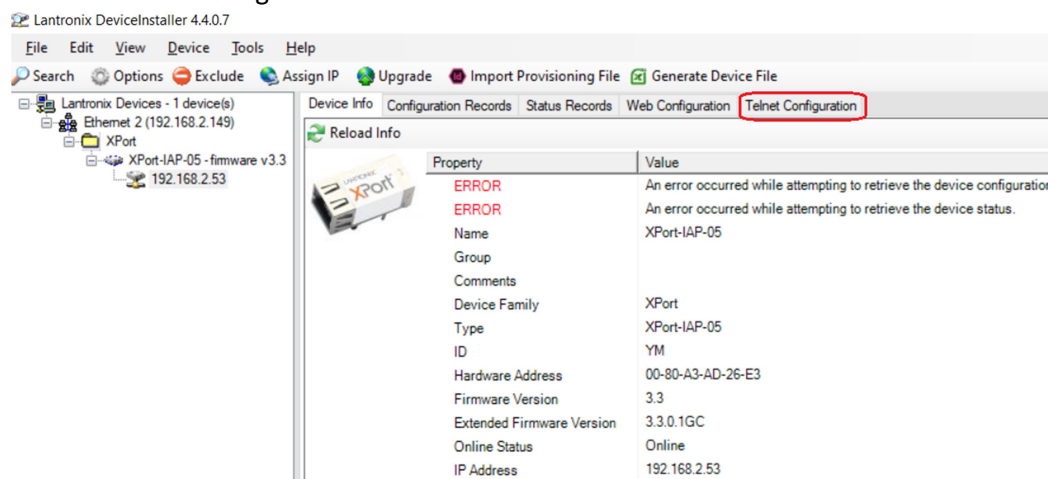
Power up and connect the DL6000-MEDH485 to your Ethernet network, start the Lantronix Device installer and double click on the Xport-IAP-05



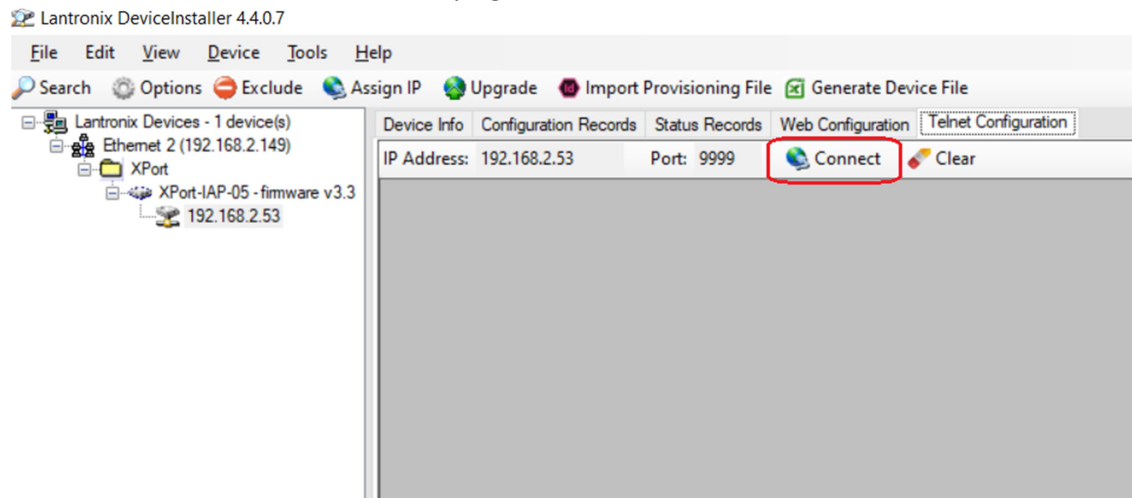
Click on Ok when the Error message comes up.



Click on Telnet Configuration tab

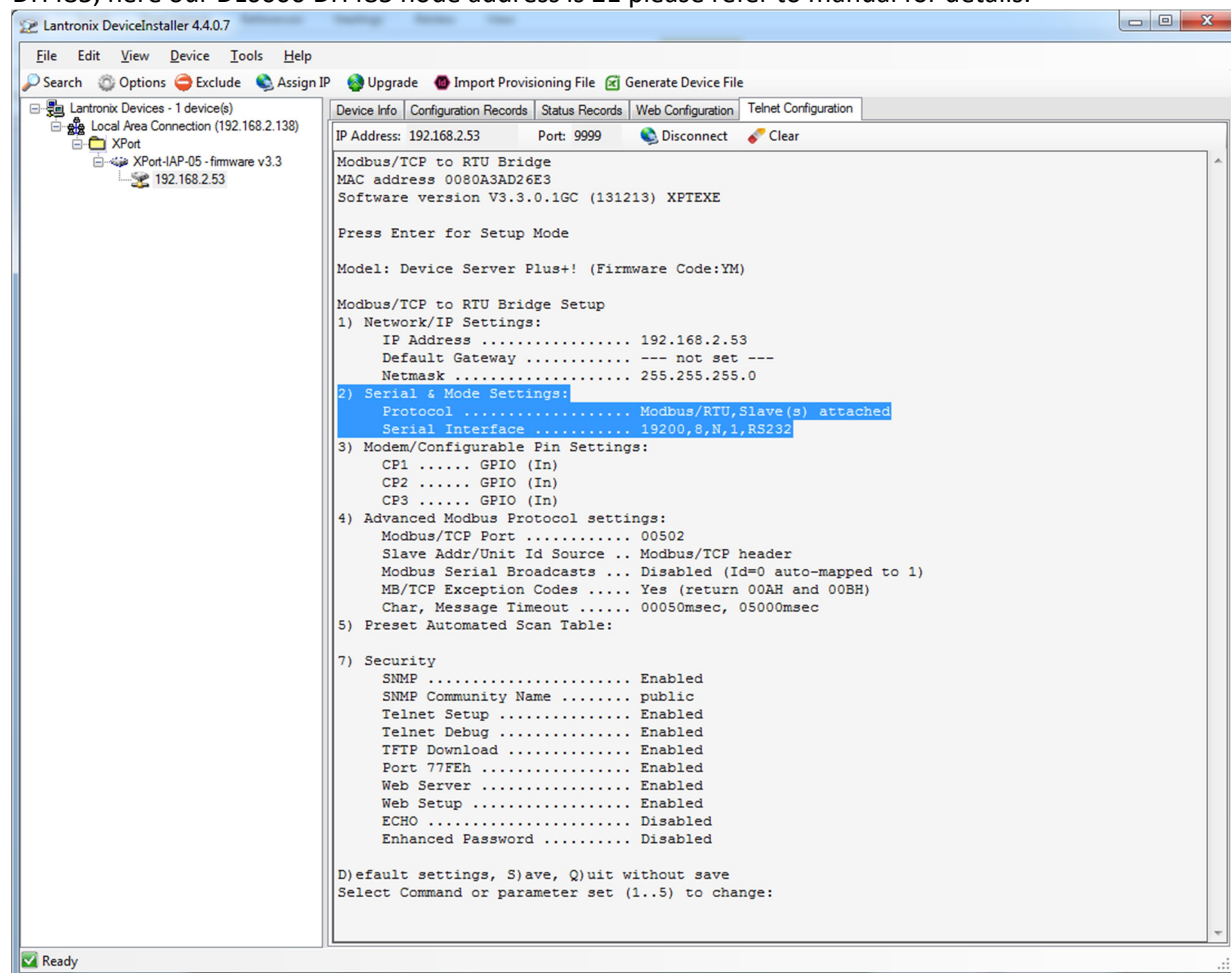


Click on Connect and hit the Enter key right after that.



Set Network IP settings and make sure that option 2 is exactly as those highlighted in blue, Then type S for save and exit, and close the Lantronix Device Installer.

Please note that from the last octet of the DL6000 IP address you get its node address number on the DH485, here our DL6000 DH485 node address is 21 please refer to manual for details.

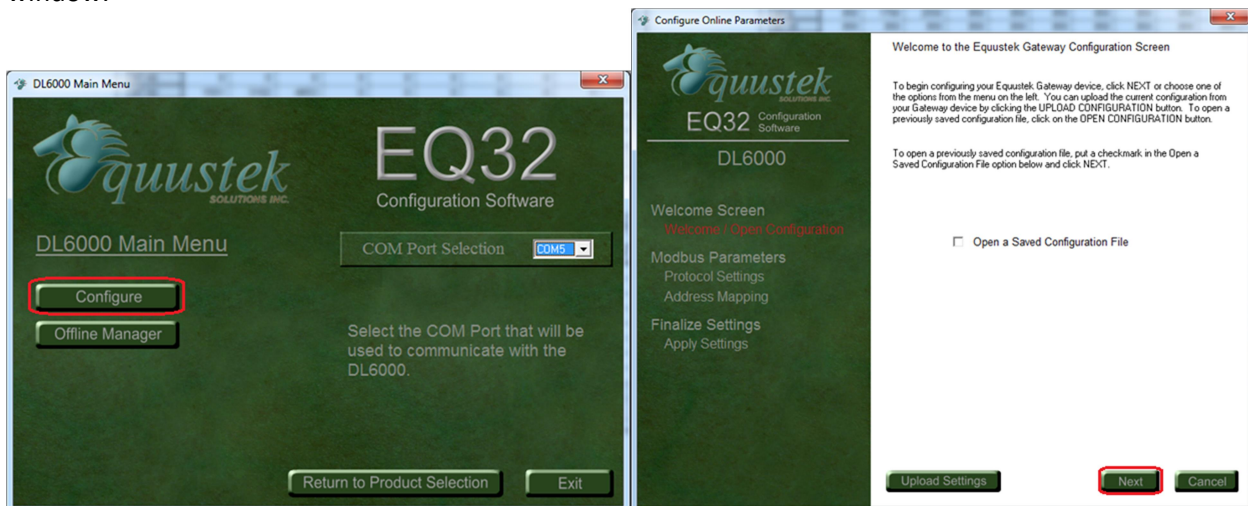


Connect the DL6000 to your PC using either RS232 null MODEM cable or USB cable, if you are using a USB cable find out under device manager which comport is that USB.

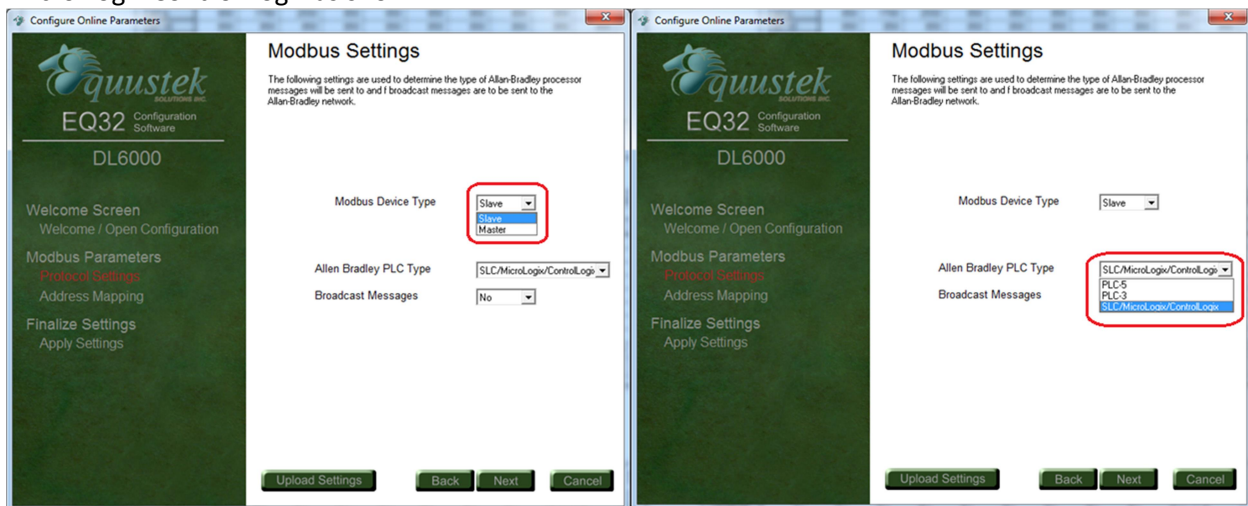
Start the EQ32 Equustek configuration software and click on DL6000, then click on the drop menu of the (COM Port Selection) to select the RS232 comport or the USB comport you found under device manager.



Click on Configure in the DL6000 main menu, then click on Next in the Configure Online parameters window.



From (MODBUS Device Type) drop menu, select Slave and from (Allen Bradley PLC Type), select SLC Micro Logix Control Logix as shown.



Here click on Next.

Configure Online Parameters

quustek
SOLUTIONS INC.
EQ32 Configuration Software
DL6000

Welcome Screen
Welcome / Open Configuration

Modbus Parameters
Protocol Settings
Address Mapping

Finalize Settings
Apply Settings

Modbus Settings

The following settings are used to determine the type of Allen-Bradley processor messages will be sent to and if broadcast messages are to be sent to the Allen-Bradley network.

Modbus Device Type:

Allen Bradley PLC Type:

Broadcast Messages:

In address mapping, enter the (MODBUS Start Address) of the register and the (MODBUS End Address) of the register, enter (Allen Bradley Data File number) under File and the (Offset Start Address) under Word, here in this application note we mapped 10 words of integer file 7 starting at word 0 to registers 40001 to 40010 also mapped 5 floating numbers from floating point file 8 starting at word 0 to MODBUS registers 40011 to 40020 since each floating point number takes two registers that is why it took 10 registers, finally mapped 1 word of Binary file 3 starting at word 0 to register 40021. After mapping is complete click on Next.

Configure Online Parameters

quustek
SOLUTIONS INC.
EQ32 Configuration Software
DL6000

Welcome Screen
Welcome / Open Configuration

Modbus Parameters
Protocol Settings
Address Mapping

Finalize Settings
Apply Settings

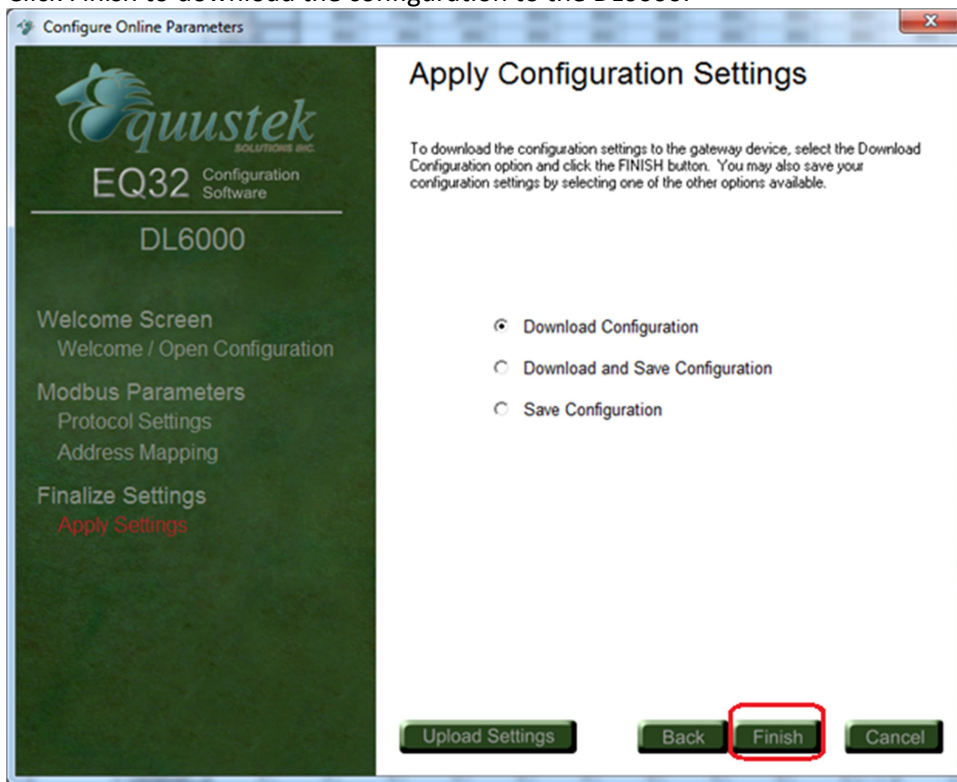
Address Mapping

The following mapping table is used for mapping Modbus Registers and Coils to Allen-Bradley Datafiles.

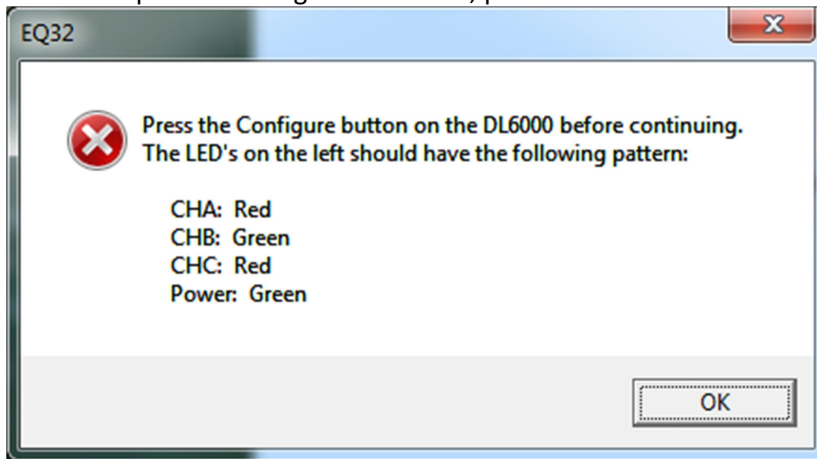
Slot	Modbus Start Address	Modbus End Address	Allen-Bradley Datafile File	Word	Floating Point
1	40001	40010	7	0	<input type="checkbox"/>
2	40011	40020	8	0	<input checked="" type="checkbox"/>
3	40021	40021	3	0	<input type="checkbox"/>
4					<input type="checkbox"/>
5					<input type="checkbox"/>
6					<input type="checkbox"/>
7					<input type="checkbox"/>
8					<input type="checkbox"/>
9					<input type="checkbox"/>
10					<input type="checkbox"/>
11					<input type="checkbox"/>
12					<input type="checkbox"/>
13					<input type="checkbox"/>
14					<input type="checkbox"/>

Next 14 Slots -->

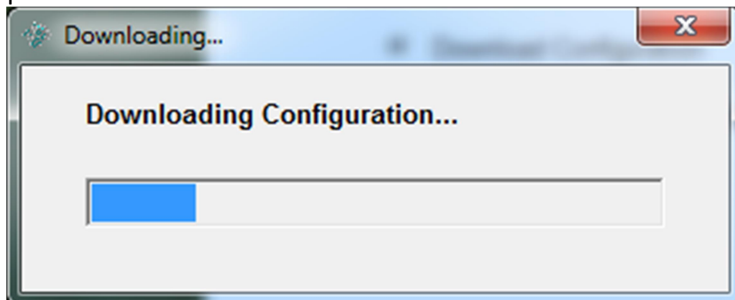
Click Finish to download the configuration to the DL6000.



Here a message will come asking to press the Configure push button switch on the right hand side of the DL6000 to put it in configuration mode, press that and then click on OK



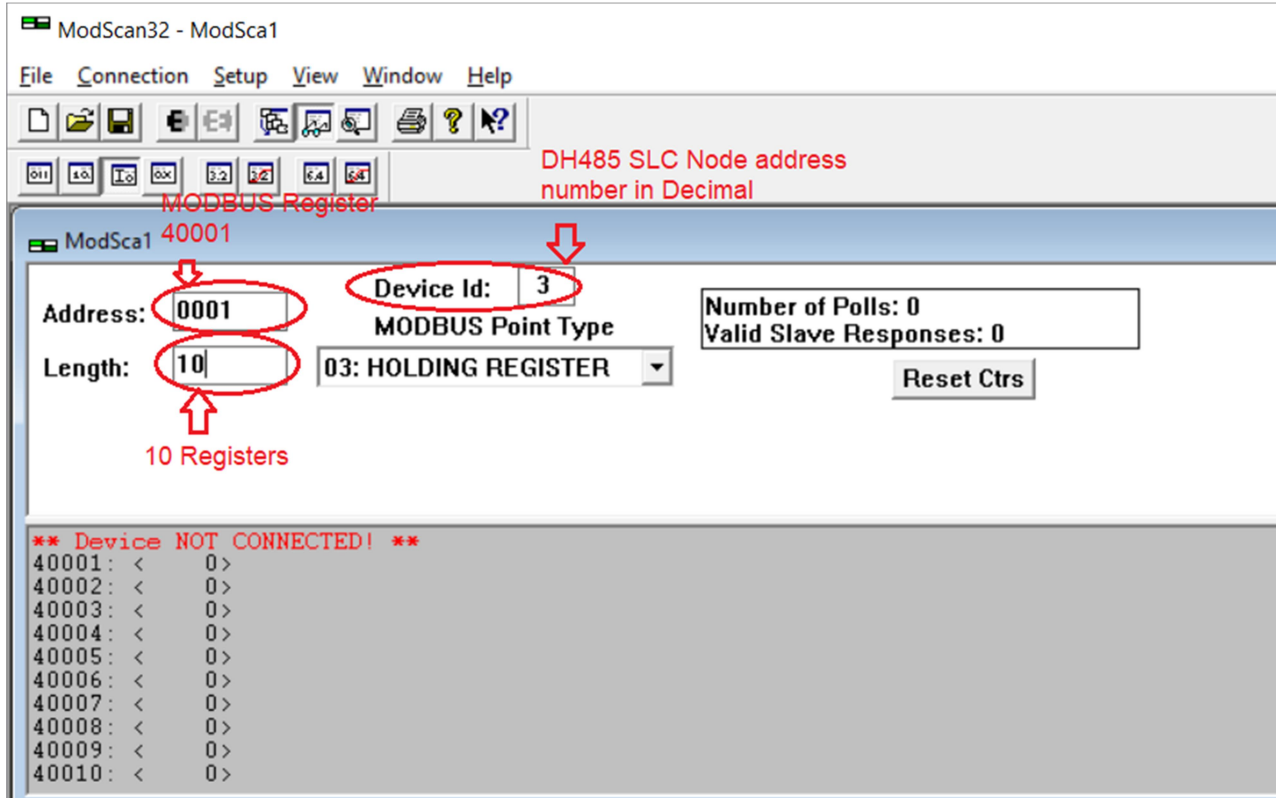
Wait until downloading is completed and a successful message appears, close the EQ32 software and press the RESET Push Button Switch on the left hand side of the DL6000 to put the unit online.



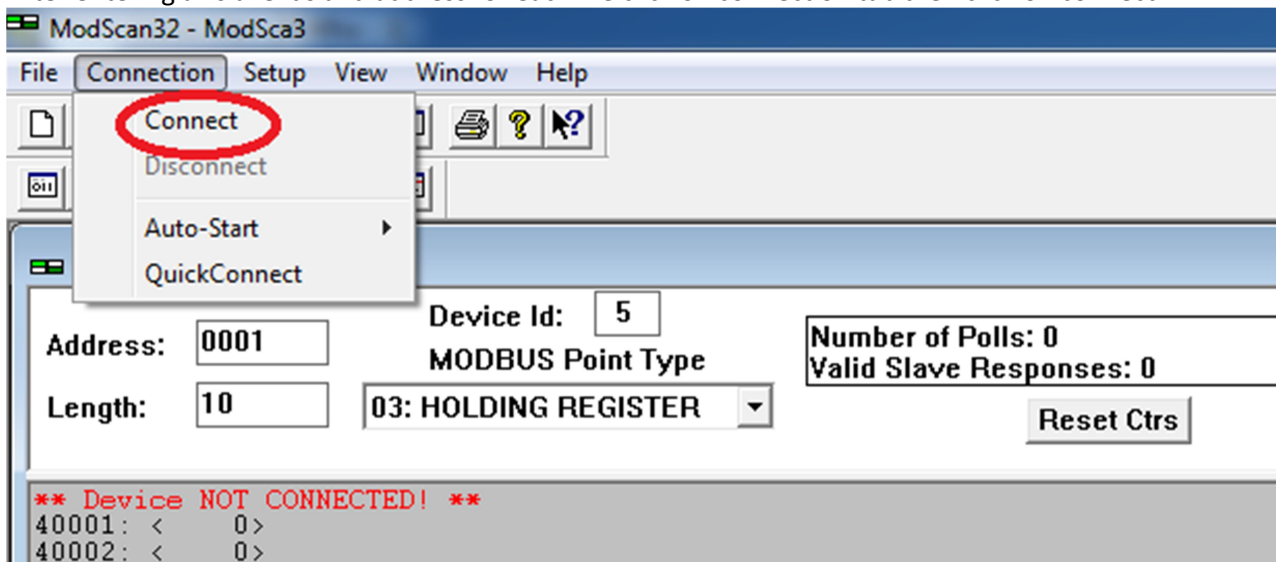
To verify our setting we used a MODBUS simulator MODSCAN.

Start MODSCAN

Open a file for each command, in this application we are setting 6 files , 3 for SCL500 node 3 and another 3 for SLC node 5, please note that the SLC node address represents the MODBUS Slave ID that way you can address any PLC on the DH485 network by their node address number in decimal, as for the registers below the Address 0001 represents Register 40001 and the length 10 means we are requesting 10 words to registers 40001-40010.



After entering all slave Ids and address for each file click on connection tab then click on connect



Here select (Remote TCP/IP Server) from (Connect Using:) drop menu and enter your DL6000 IP address and click on OK

Connection Details

Connect Using: **Remote TCP/IP Server**

IP Address: **192.168.2.53**

Service Port: **502**

Configuration

Baud Rate: **9600**

Word Length: **8**

Parity: **NONE**

Stop Bits: **1**

Hardware Flow Control

☐ Wait for DSR from slave
Delay: **1** ms after RTS before transmitting first character

☐ Wait for CTS from slave
Delay: **10** ms after last character before releasing RTS

Protocol Selections

OK **Cancel**

Below you can see all what was mapped from the SLC files to their registers from both SLC node 3 and SLC node 5.

where registers 40001-40010 showing 10 words from integer file 7 starting at word 0, also Registers 40011-40020 showing 5 floating numbers from floating file 8 starting at word 0 and finally register 40021 showing 1 word from Binary file 3 which is word 0.

ModScan32 - ModSca3

File Connection Setup View Window Help

ModSca3 Device Id: **3** Address: **0001** MODBUS Point Type: **03: HOLDING REGISTER** Length: **10** Number of Polls: **1099** Valid Slave Responses: **1099** Reset Ctrs

40001: < 1998 >
40002: < 3996 >
40003: < 5994 >
40004: < 0 >
40005: < 0 >
40006: < 0 >
40007: < 0 >
40008: < 0 >
40009: < 0 >
40010: < 0 >

ModSca3 Device Id: **5** Address: **0001** MODBUS Point Type: **03: HOLDING REGISTER** Length: **10** Number of Polls: **1098** Valid Slave Responses: **1098** Reset Ctrs

40001: < 272 >
40002: < 544 >
40003: < 816 >
40004: < 0 >
40005: < 0 >
40006: < 0 >
40007: < 0 >
40008: < 0 >
40009: < 0 >
40010: < 0 >

ModSca3 Device Id: **3** Address: **0011** MODBUS Point Type: **03: HOLDING REGISTER** Length: **10** Number of Polls: **1098** Valid Slave Responses: **1098** Reset Ctrs

40011: 2097152.0000
40012: 0.0000
40013: 0.0000
40014: 0.0000
40015: 0.0000
40016: 0.0000
40017: 0.0000
40018: 0.0000
40019: 0.0000
40020: 0.0000

ModSca3 Device Id: **5** Address: **0011** MODBUS Point Type: **03: HOLDING REGISTER** Length: **10** Number of Polls: **1098** Valid Slave Responses: **1098** Reset Ctrs

40011: 2097152.0000
40012: 0.0000
40013: 0.0000
40014: 0.0000
40015: 0.0000
40016: 0.0000
40017: 0.0000
40018: 0.0000
40019: 0.0000
40020: 0.0000

ModSca4 Device Id: **3** Address: **0021** MODBUS Point Type: **03: HOLDING REGISTER** Length: **1** Number of Polls: **1099** Valid Slave Responses: **1099** Reset Ctrs

40021: < 0000000111111000 >

ModSca4 Device Id: **5** Address: **0021** MODBUS Point Type: **03: HOLDING REGISTER** Length: **1** Number of Polls: **1098** Valid Slave Responses: **1098** Reset Ctrs

40021: < 00000001100001010 >

For Help, press F1

Polls: 6592 Resps: 6590