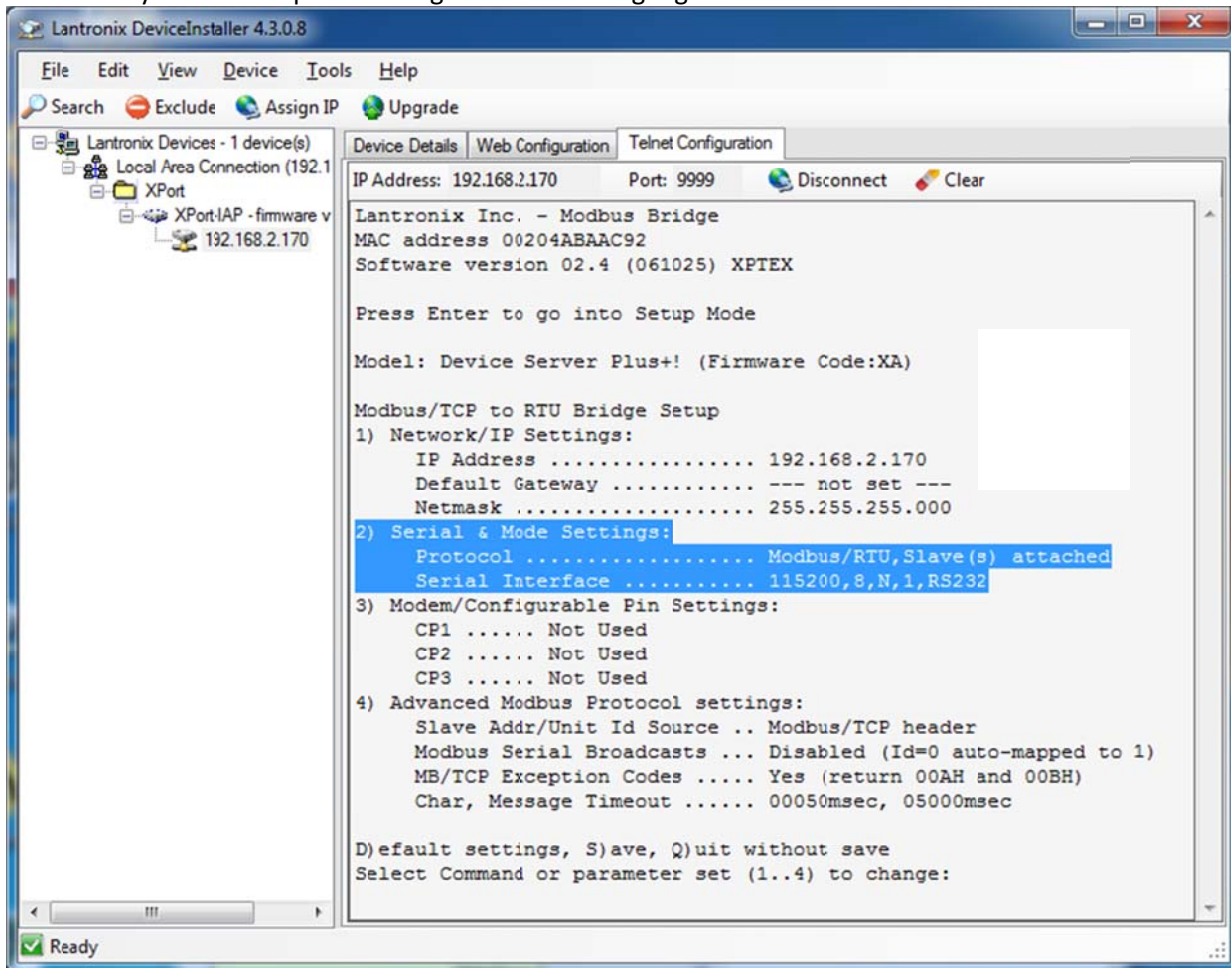




Accessing PLC5 & SCL 500 with DL6000-MEDH+ MODBUS slave Using Automated Solutions MODBUS TCP/IP Driver

Start the Lantronix device Installer and telnet to the DL6000.
Make sure your telnet option settings are exact as highlighted shown below.



Reset the unit either by pressing the reset button or power on and off.

Start EQ32 configuration to configure the DL6000

From the screen below select DL6000.



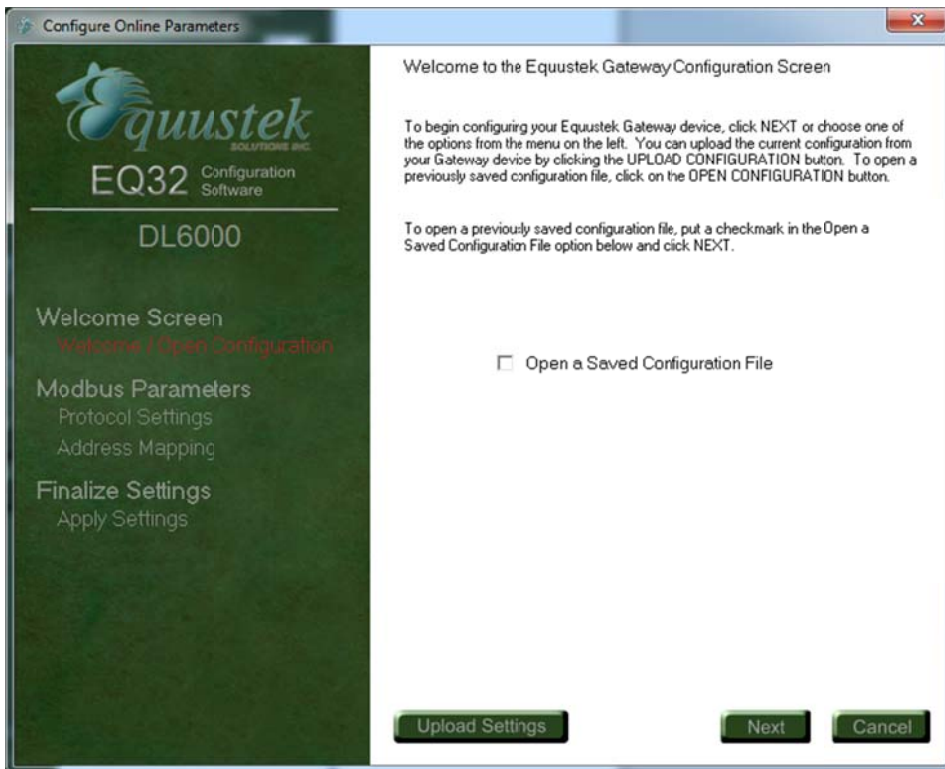


Select the serial port and click on Configure.



Click on Next.





Select Modbus Device, and Allen Bradley device type, since we are trying to communicate with both PLC5 and SLC at the same time, we select the option shown below and click on next.



In Slot 1 is set to read file N7 starting at word 0 and read 10 words
 Slot 2 is set to read file F8 starting at word 0 and to read 10 words
 Slot3 is set to read file B4 starting at word 0 and to read 1 word = 16bits



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 Allan-Bradley Datafiles.

Slot	Modbus Start Address	Modbus End Address	Allan-Bradley Datafile		Floating Point
			File	Word	
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 -->

Upload Settings Back Next Cancel

Click on finish, press the configuration button of the DL6000 once download complete close EQ32.

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

Apply Configuration Settings

To download the configuration settings to the gateway device, select the Download Configuration option and click the FINISH button. You may also save your configuration settings by selecting one of the other options available.

☐ Download Configuration
☒ Download and Save Configuration
☐ Save Configuration

Upload Settings Back Finish Cancel

After you select the TCP/IP driver

Enter the Node address as explained below and make sure that the DH+ node address number which is the unit ID is in decimal not Octal, in our example here our PLC5 node address 7.

ASComm.NET Modbus/TCP Client Simple

Channel

Modbus/TCP Client has no settable properties

Device

☐ Simulate Hardware Device

Node Address

Max Read bytes

Max Write bytes

☐ Floats ☐ Longs

MODBUS RTU & ASCII (All fields are required)

For Channel.Driver = Serial, format is <Modbus Node Address>

For Channel.Driver = TCP or UDP, format is <IP Address>:<IP Port>,<Modbus Node Address>

MODBUS/TCP (Only <IP Address> field is required)

Format is <IP Address>[:<IP Port>][,Unit ID]

Valid <Unit ID> range is 0..255

ASComm.NET Modbus/TCP Client Simple Read & Write Example Application (v3.9.5.2)

Channel

Modbus/TCP Client has no settable properties.

Device

☐ Simulate Hardware Device

Node Address

Address Type

Transaction Timeout mSec

Connection Timeout mSec

Retries Before error is reported

Advanced

Max Read bytes

Max Write bytes

32-Bit Word Swap ☐ Floats ☐ Longs

Use Modbus to write to registers

Use Modbus to write to coils

Group

☐ Active

Update Rate mSec

Scan Time mSec

Check the Active checkbox to enable background reads at rate specified by Update Rate

Scan Time is the measured time for a group to update all its items.

Item

Tag Type

Tag Name

Elements

Data Formatting

Data Format

String Length

Simulation Type

(Only applies when 'Simulate Hardware Device' checkbox is checked)

Sync Read Async Read

Sync Write Async Write

Clear Event Viewer

This example application was built using Automated Solutions' ASComm.NET Modbus Master Net driver.

Select and type in the Tag Type and the Tag Name.

Item

Tag Type

Tag Name

Specify the starting register on the slave device that this item will represent.

Data Format

String Length

Type the numbers of Elements from the Allen Bradley PLC, here in our example we have 10 words of integer file 7 starting at word 0, they were mapped to register 40001-40010.

Item

Tag Type

Tag Name

Elements

Simulation Type

Specify the number of contiguous data elements on the slave device that this item will represent.

Data Format

String Length

(Only applies when 'Simulate Hardware Device' checkbox is checked)



Click on Async Read as shown, then you should see the 1st 10 words from integer file N7 in PLC5.

ASComm.NET Modbus/TCP Client Simple Read & Write Example Application (v3.9.5.2)

Channel
Modbus/TCP Client has no settable properties.

Device
☐ Simulate Hardware Device
Node Address: 192.1682.170.502.07
Address Type: ONE_BASED
Transaction Timeout: 250 mSec
Connection Timeout: mSec
Retries: 0 Before error is reported

Advanced
Max Read: 250 bytes
Max Write: 246 bytes
32-Bit Word Swap: ☐ Floats ☐ Longs
Use Modbus FC16 to write to registers
Use Modbus FC15 to write to coils

Group
☐ Active
Update Rate: 500 mSec
Scan Time: mSec
Check the Active checkbox to enable background reads at rate specified by Update Rate
Scan Time is the measured time for a group to update all its items.

Item
Tag Type: HOLDING_REGISTER
Tag Name: 1
Elements: 10
Data Formatting: Data Format: Int16 String Length: 80
Simulation Type: USER
(Only applies when 'Simulate Hardware Device' checkbox is checked)

Sync Read Async Read 10,9,8,7,6,5,4,3,2,1.
Sync Write Async Write

02:39:43:640 Successful read transaction, Item Quality is GOOD (77 mSec)
02:39:43:640 Item DataChange event fired, quality is GOOD

This example application was built using Automated Solutions' ASComm.NET Modbus Master Net driver.

[Online Product Information](#)
[Automated Solutions Website](#)
[Online Revision History](#)

Clear Event Viewer

Now type the values if you want to write and click on Async Write.

ASComm.NET Modbus/TCP Client Simple Read & Write Example Application (v3.9.5.2)

Channel
Modbus/TCP Client has no settable properties.

Device
☐ Simulate Hardware Device
Node Address: 192.1682.170.502.07
Address Type: ONE_BASED
Transaction Timeout: 250 mSec
Connection Timeout: mSec
Retries: 0 Before error is reported

Advanced
Max Read: 250 bytes
Max Write: 246 bytes
32-Bit Word Swap: ☐ Floats ☐ Longs
Use Modbus FC16 to write to registers
Use Modbus FC15 to write to coils

Group
☐ Active
Update Rate: 500 mSec
Scan Time: mSec
Check the Active checkbox to enable background reads at rate specified by Update Rate
Scan Time is the measured time for a group to update all its items.

Item
Tag Type: HOLDING_REGISTER
Tag Name: 1
Elements: 10
Data Formatting: Data Format: Int16 String Length: 80
Simulation Type: USER
(Only applies when 'Simulate Hardware Device' checkbox is checked)

Sync Read Async Read 10,9,8,7,6,5,4,3,2,1.
Sync Write Async Write 1,2,3,4,5,6,7,8,9,10

02:40:03:344 Successful write transaction (61 mSec)
02:39:43:640 Successful read transaction, Item Quality is GOOD (77 mSec)
02:39:43:640 Item DataChange event fired, quality is GOOD

This example application was built using Automated Solutions' ASComm.NET Modbus Master Net driver.

[Online Product Information](#)
[Automated Solutions Website](#)
[Online Revision History](#)

Clear Event Viewer

Now you can click on Async Read if you want to make sure values were written properly.

ASComm.NET Modbus/TCP Client Simple Read & Write Example Application (v3.9.5.2)

Channel
Modbus/TCP Client has no settable properties.

Device
☐ Simulate Hardware Device
Node Address: 192.168.2.170:502.07
Address Type: ONE_BASED
Transaction Timeout: 250 mSec
Connection Timeout: mSec
Retries: 0 Before error is reported

Advanced
Max Read: 250 bytes
Max Write: 246 bytes
32-Bit Word Swap: ☐ Floats ☐ Longs
Use Modbus FC16 to write to registers
Use Modbus FC15 to write to coils

Group
☐ Active
Update Rate: 500 mSec
Scan Time: mSec
Check the Active checkbox to enable background reads at rate specified by Update Rate
Scan Time is the measured time for a group to update all its items.

Item
Tag Type: HOLDING_REGISTER
Tag Name: 1
Elements: 10
Data Formatting: Data Format: Int16 String Length: 30
Simulation Type: USER
(Only applies when 'Simulate Hardware Device' checkbox is checked)

Sync Read: Async Read: 1,2,3,4,5,6,7,8,9,10.
Sync Write: Async Write: 1,2,3,4,5,6,7,8,9,10

02:40:12:937 Successful read transaction, Item Quality is GOOD (43 mSec)
02:40:12:937 Item DataChange event fired, quality is GOOD
02:40:03:344 Successful write transaction (61 mSec)
02:39:43:640 Successful read transaction, Item Quality is GOOD (77 mSec)
02:39:43:640 Item DataChange event fired, quality is GOOD

This example application was built using Automated Solutions' ASComm.NET Modbus Master.Net driver.

[Online Product Information](#)
[Automated Solutions Website](#)
[Online Revision History](#)

Clear Event Viewer

Next in our application here we will try same procedure for our SLC504 node 23 Octal which is 19 Decimal.

ASComm.NET Modbus/TCP Client Simple Read & Write Example Application (v3.9.5.2)

Channel
Modbus/TCP Client has no settable properties.

Device
☐ Simulate Hardware Device
Node Address: 192.168.2.170:502.19
Address Type: ONE_BASED
Transaction Timeout: 250 mSec
Connection Timeout: mSec
Retries: 0 Before error is reported

Advanced
Max Read: 250 bytes
Max Write: 246 bytes
32-Bit Word Swap: ☐ Floats ☐ Longs
Use Modbus FC6 to write to registers
Use Modbus FC5 to write to coils

Group
☐ Active
Update Rate: 500 mSec
Scan Time: mSec
Check the Active checkbox to enable background reads at rate specified by Update Rate
Scan Time is the measured time for a group to update all its items.

Item
Tag Type: HOLDING_REGISTER
Tag Name: 1
Elements: 10
Data Formatting: Data Format: Int16 String Length: 30
Simulation Type: USER
(Only applies when 'Simulate Hardware Device' checkbox is checked)

Sync Read: Async Read: 11,22,33,44,55,66,77,88,99,0.
Sync Write: Async Write:

02:42:13:219 Successful read transaction, Item Quality is GOOD (67 mSec)
02:42:13:203 Item DataChange event fired, quality is GOOD

This example application was built using Automated Solutions' ASComm.NET Modbus Master.Net driver.

[Online Product Information](#)
[Automated Solutions Website](#)
[Online Revision History](#)

Clear Event Viewer

ASComm.NET Modbus/TCP Client Simple Read & Write Example Application (v3.9.5.2)

Channel
Modbus/TCP Client has no setttable properties.

Device

☐ Simulate Hardware Device

Node Address: 192.168.2.170:502.19

Address Type: ONE_BASED

Transaction Timeout: 250 mSec

Connection Timeout: mSec

Retries: 0 Before error is reported

Advanced

Max Read: 250 bytes

Max Write: 245 bytes

32-Bit Word Swap: ☐ Floats ☐ Longs

Use Modbus: FC16 to write to registers

Use Modbus: FC15 to write to coils

Group

☐ Active

Update Rate: 500 mSec

Scan Time: mSec

Check the Active checkbox to enable background reads at rate specified by Update Rate

Scan Time is the measured time for a group to update all its items.

Item

Tag Type: HOLDING_REGISTER

Tag Name: 1

Elements: 10

Data Formatting

Data Format: In16

String Length: 80

Simulation Type: USER

(Only applies when 'Simulate Hardware Device' checkbox is checked)

Sync Read: Async Read: 11,22,33,44,55,66,77,88,99,0.

Sync Write: Async Write: 1,2,3,4,5,6,7,8,9,10

Clear Event Viewer

02:42:27:328 Successful write transaction (41 mSec)
02:42:13:219 Successful read transaction, Item Quality is GOOD (67 mSec)
02:42:13:203 Item.DataChange event fired, quality is GOOD

This example application was built using Automated Solutions' ASComm.NET Modbus.Master.Net driver.

ASComm.NET Modbus/TCP Client Simple Read & Write Example Application (v3.9.5.2)

Channel
Modbus/TCP Client has no setttable properties.

Device

☐ Simulate Hardware Device

Node Address: 192.168.2.170:502.19

Address Type: ONE_BASED

Transaction Timeout: 250 mSec

Connection Timeout: mSec

Retries: 0 Before error is reported

Advanced

Max Read: 250 bytes

Max Write: 245 bytes

32-Bit Word Swap: ☐ Floats ☐ Longs

Use Modbus: FC16 to write to registers

Use Modbus: FC15 to write to coils

Group

☐ Active

Update Rate: 500 mSec

Scan Time: mSec

Check the Active checkbox to enable background reads at rate specified by Update Rate

Scan Time is the measured time for a group to update all its items.

Item

Tag Type: HOLDING_REGISTER

Tag Name: 1

Elements: 10

Data Formatting

Data Format: In16

String Length: 80

Simulation Type: USER

(Only applies when 'Simulate Hardware Device' checkbox is checked)

Sync Read: Async Read: 1,2,3,4,5,6,7,8,9,10.

Sync Write: Async Write: 1,2,3,4,5,6,7,8,9,10

Clear Event Viewer

02:43:56:781 Successful read transaction, Item Quality is GOOD (31 mSec)
02:43:56:781 Item.DataChange event fired, quality is GOOD
02:42:27:328 Successful write transaction (41 mSec)
02:42:13:219 Successful read transaction, Item Quality is GOOD (67 mSec)
02:42:13:203 Item.DataChange event fired, quality is GOOD

This example application was built using Automated Solutions' ASComm.NET Modbus.Master.Net driver.

Similar can be applied to read and write of Floating file F8 and Binary file B3.

