



Technical Note

Sample Message Instructions for Processor to Processor Communications using the AN-X2-AB-DHRIO DH Plus Bridge

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Document Information

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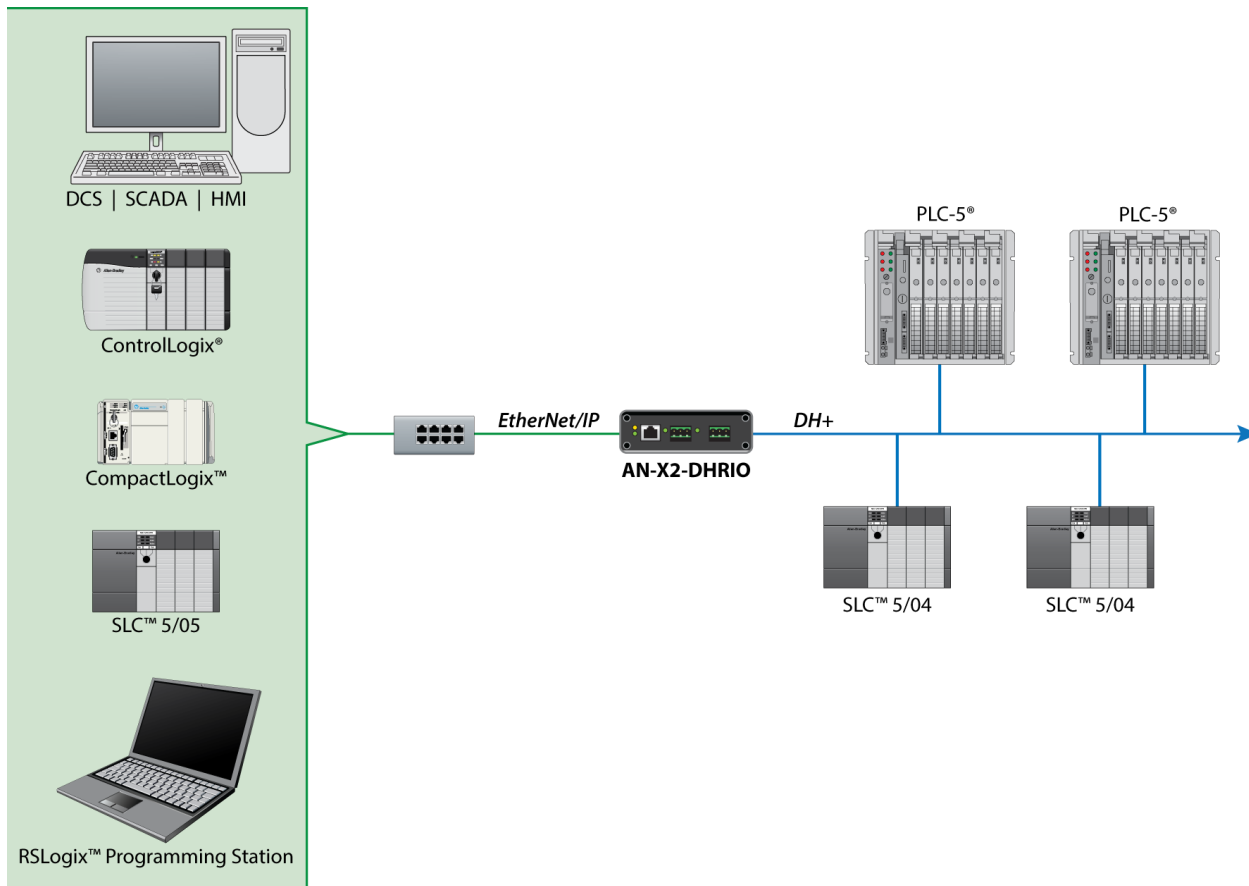
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The AN-X2-AB-DHRIO gateway when operating with the AN-X2-DHP firmware selected emulates a ControlLogix Hardware Gateway. This gateway enables Programming Terminals, SCADA, DCS, HMIs, and processors to communicate through the gateway to various legacy processors on the DH+ network.

This TechNote will show samples of Processor to Processor communications via Message instructions, and how to configure the path to the devices on the DH+ network. The DH+ bridge firmware has been designed to take communications from the Ethernet interface and pass them to the devices on the DH+ network. Communications that originate from the DH+ network cannot be routed to devices on the Ethernet network.

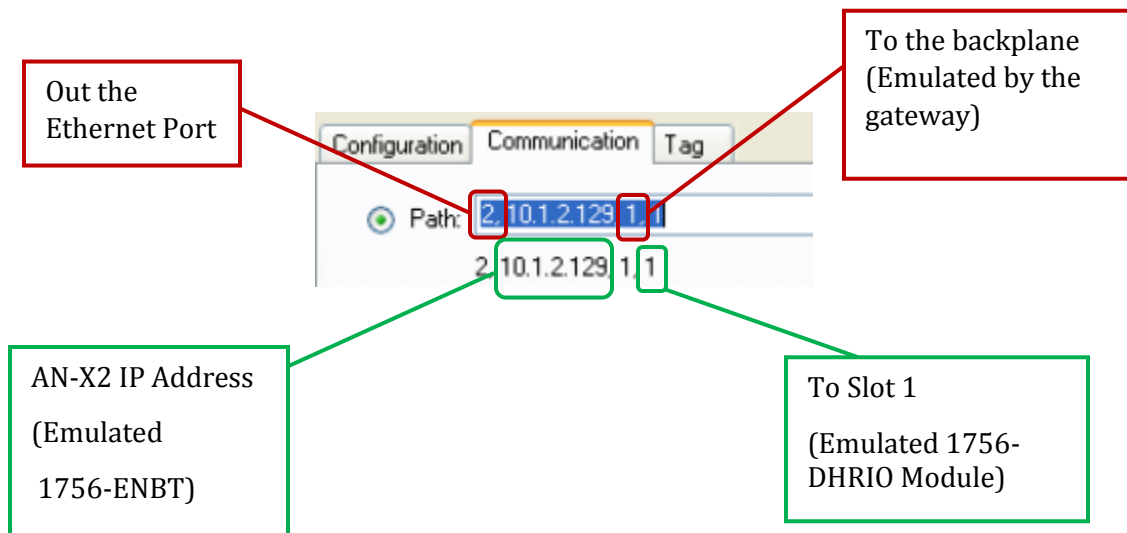


General Message Instruction Information:

- 1) When using CompactLogix™ or ControlLogix® processors:
 - a. It is not possible to configure MSG instructions with binary data types
 - b. It is not necessary to add in the AN-X2 gateway into the I/O tree when using MSG instructions
- 2) The Source and destination tags or data files data types must match
- 3) Cannot be continuously enabled, but must be enabled based upon some trigger condition

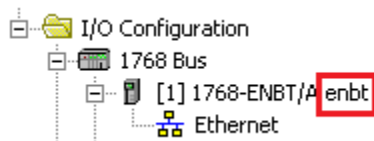
CIP Path Information:

Since the AN-X2 Gateway emulates a 4 slot ControlLogix® Hardware Gateway here is the breakdown of the CIP portion of a CompactLogix™ sample path:



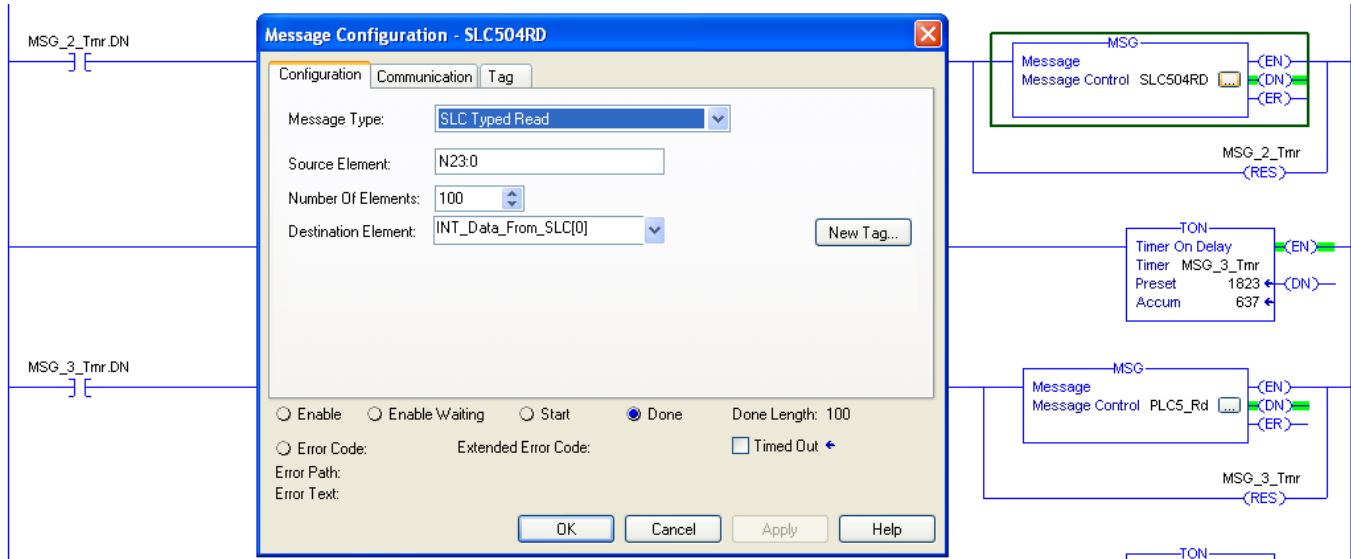
For some processors, the path may also require the name of the Ethernet device from the I/O Configuration, like "enbt" or "LocalENB".

enbt, 2, ip.ip.ip.ip, 1, 1

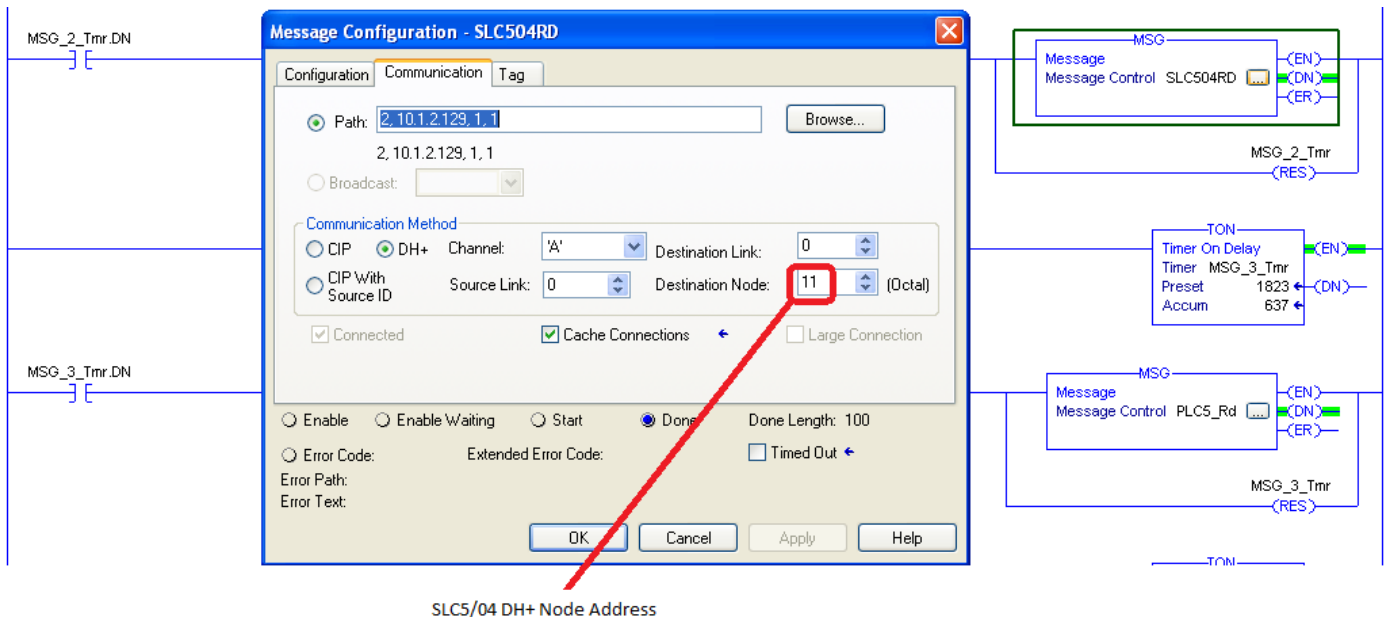


CompactLogix MSG samples to a SLC5/04

Read



The IP Address listed in the path below is the IP address of the AN-X2 Gateway



Note: 2,IP at the beginning of the path is used by newer L3x processors, like the L33ER, an older L32E would use 1,2,IP. A 5069 CompactLogix, like the L306ERM, use 2,IP if in DLR mode, or if not then 3,IP to talk out of port 1, 4,IP to talk out of port 2. In all cases the IP,1,1 and communication method remains the same.

Write

The screenshot shows the 'Message Configuration - SLC504WR' dialog box. In the 'Configuration' tab, the following settings are visible:

- Message Type: SLC Typed Write
- Source Element: Int_Data[0]
- Number Of Elements: 100
- Destination Element: N22:0
- Radio buttons: Enable, Enable Waiting, Start, Done
- Done Length: 100
- Timed Out:

The background diagram shows a ladder logic network with two MSG instructions (SLC504WR and SLC504RD) and two TON (Timer On Delay) instructions. The MSG instructions are connected to a 'MSG' block, and the TON instructions are connected to 'Timer On Delay' blocks. The 'MSG 1_Tmr' and 'MSG 2_Tmr' labels are visible.

The IP Address listed in the path below is the IP address of the AN-X2 Gateway

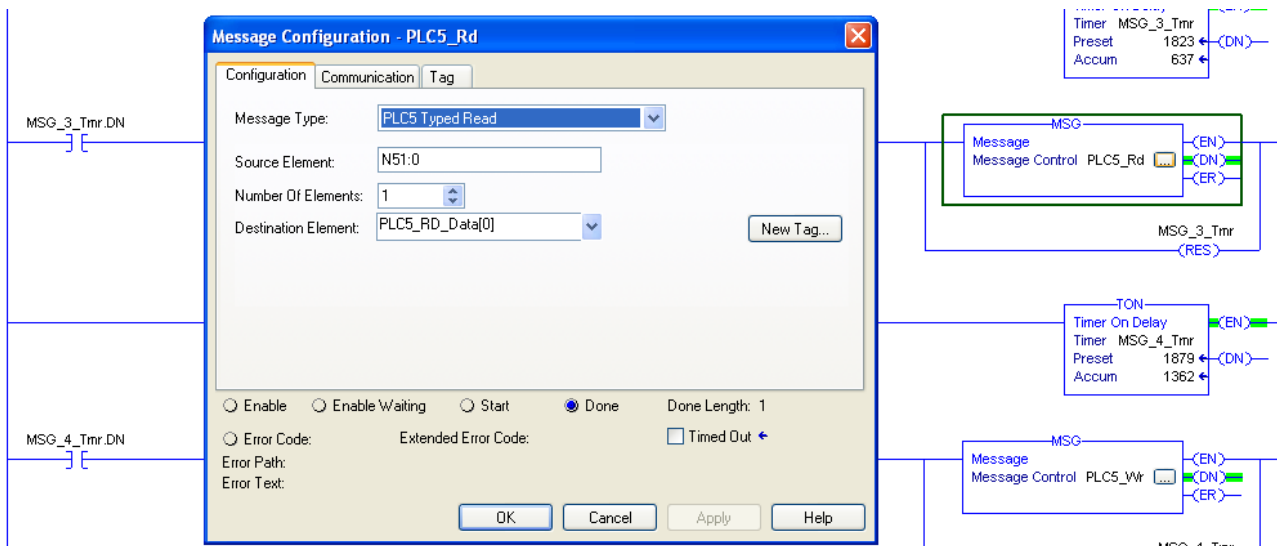
The screenshot shows the 'Message Configuration - SLC504WR' dialog box with the 'Communication' tab selected. The following settings are visible:

- Path: 2,10.1.2.129,1,1
- Broadcast:
- Communication Method: DH+
- Channel: 'A'
- Destination Link: 0
- Source Link: 0
- Destination Node: 11 (circled in red)
- Cache Connections:
- Large Connection:

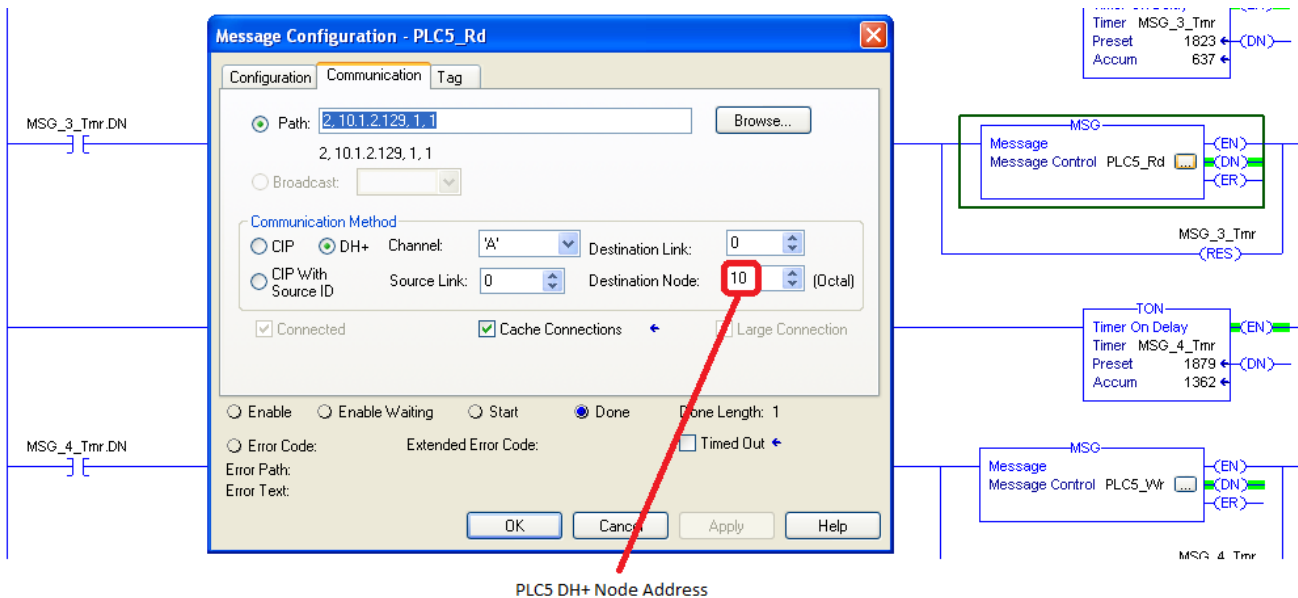
A red arrow points from the text 'SLC5/04 DH+ Node Address' below the dialog to the '11' in the Destination Node field. The background diagram is the same as in the previous screenshot.

Note: 2,IP at the beginning of the path is used by newer L3x processors, like the L33ER, an older L32E would use 1,2,IP. A 5069 CompactLogix, like the L306ERM, use 2,IP if in DLR mode, or if not then 3,IP to talk out of port 1, 4,IP to talk out of port 2. In all cases the IP,1,1 and communication method remains the same.

CompactLogix MSG samples to a PLC-5® Read

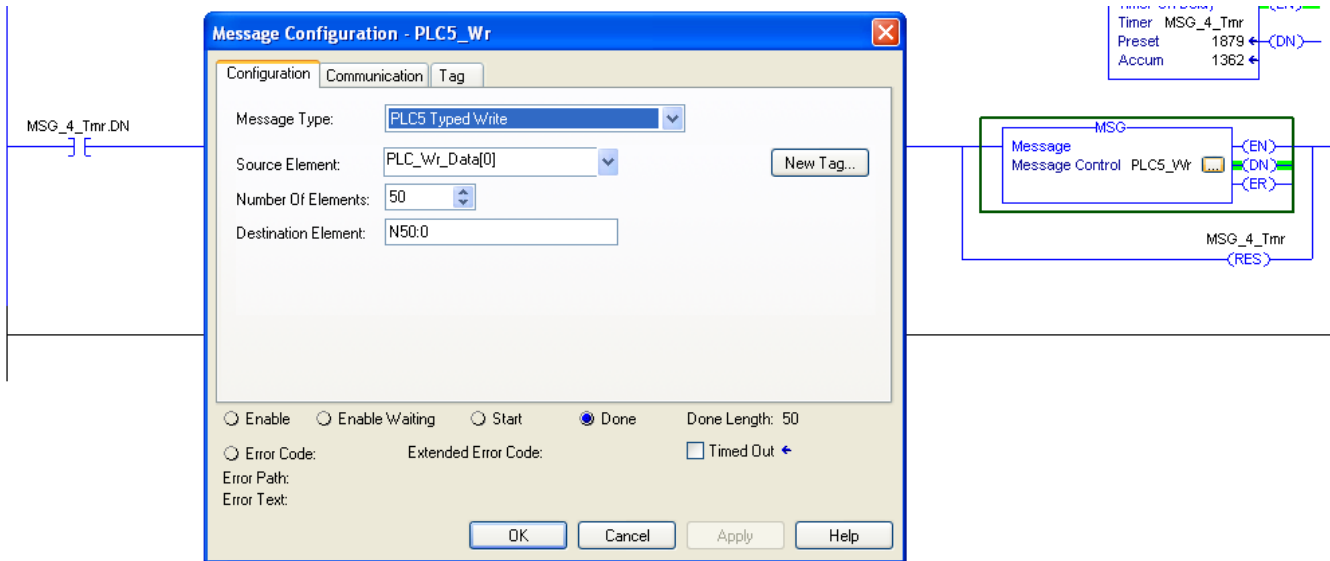


The IP Address shown in the Path statement is the IP Address of the AN-X2 Gateway

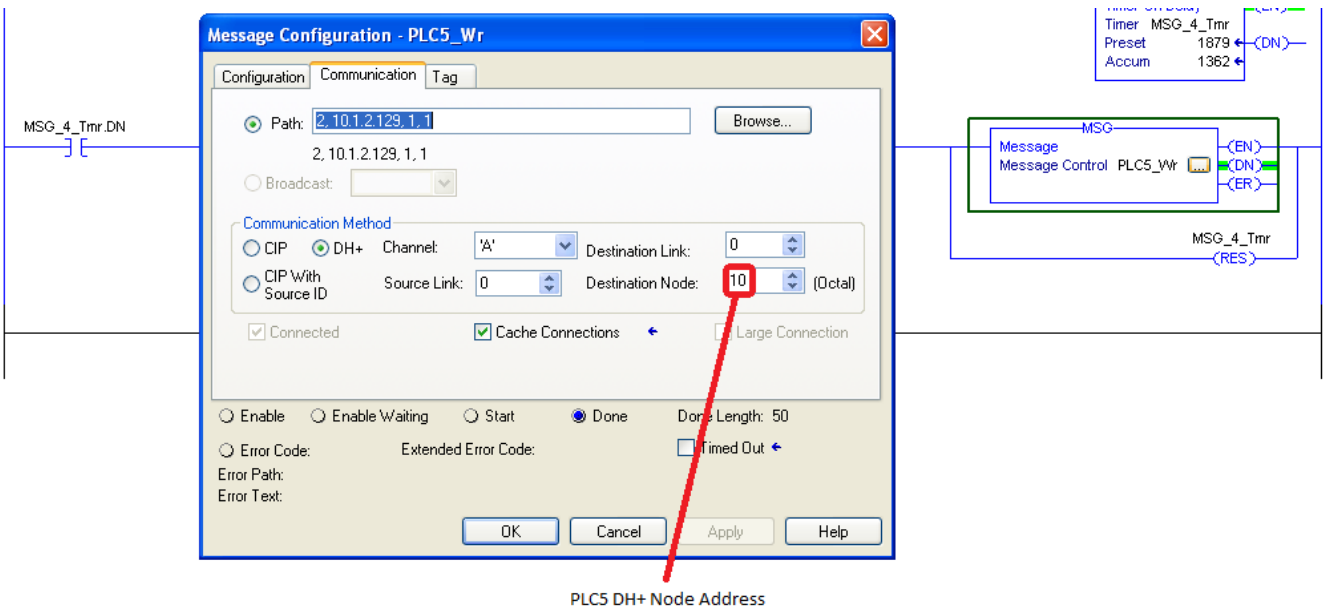


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Write

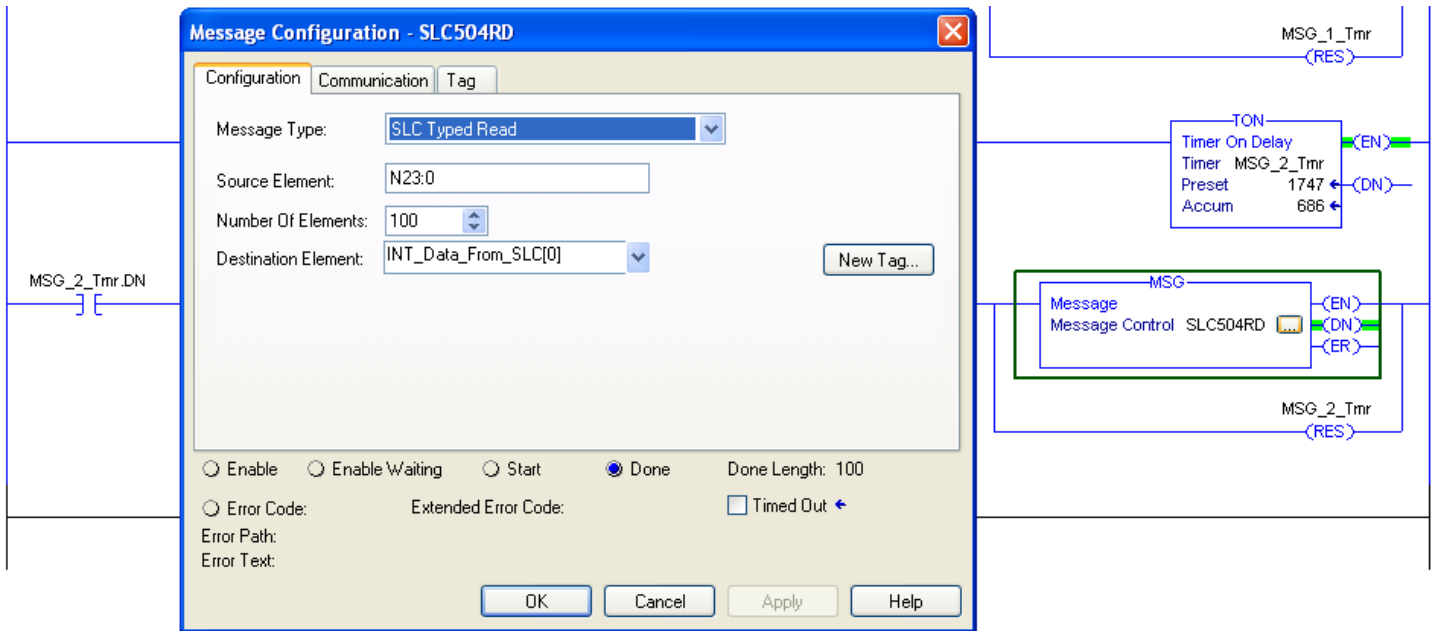


The IP Address shown in the Path statement is the IP Address of the AN-X2 Gateway

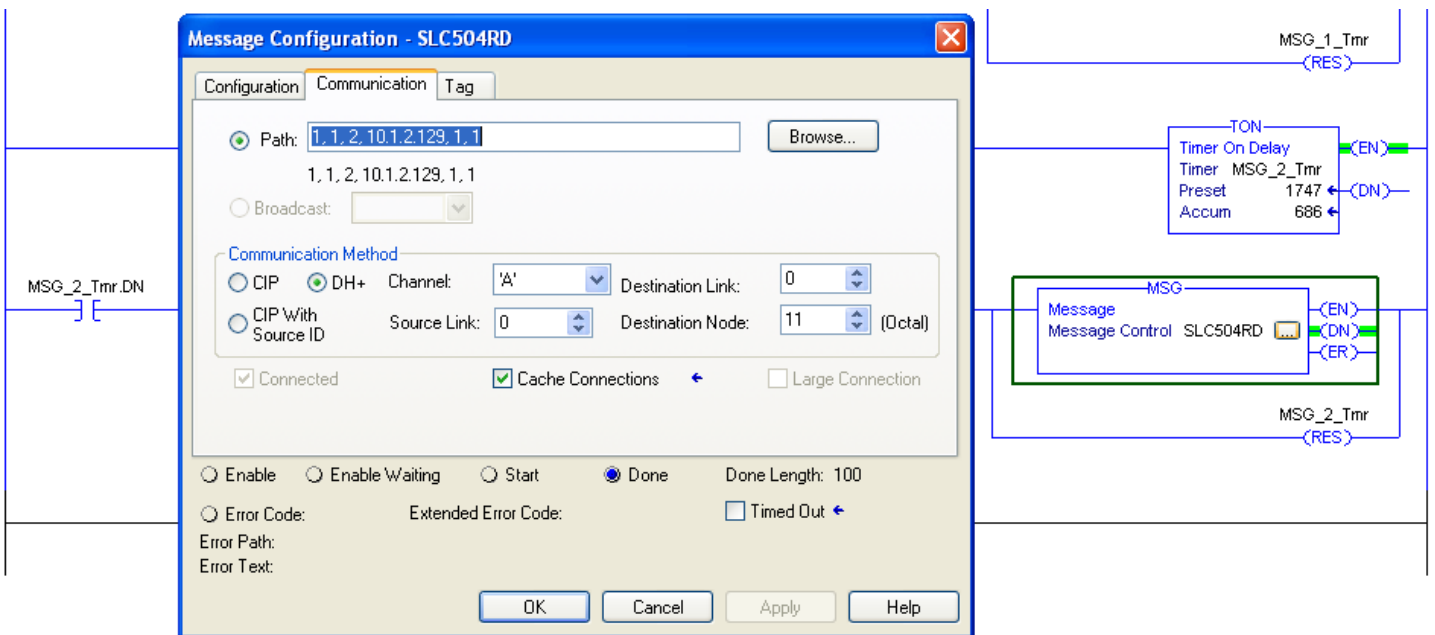


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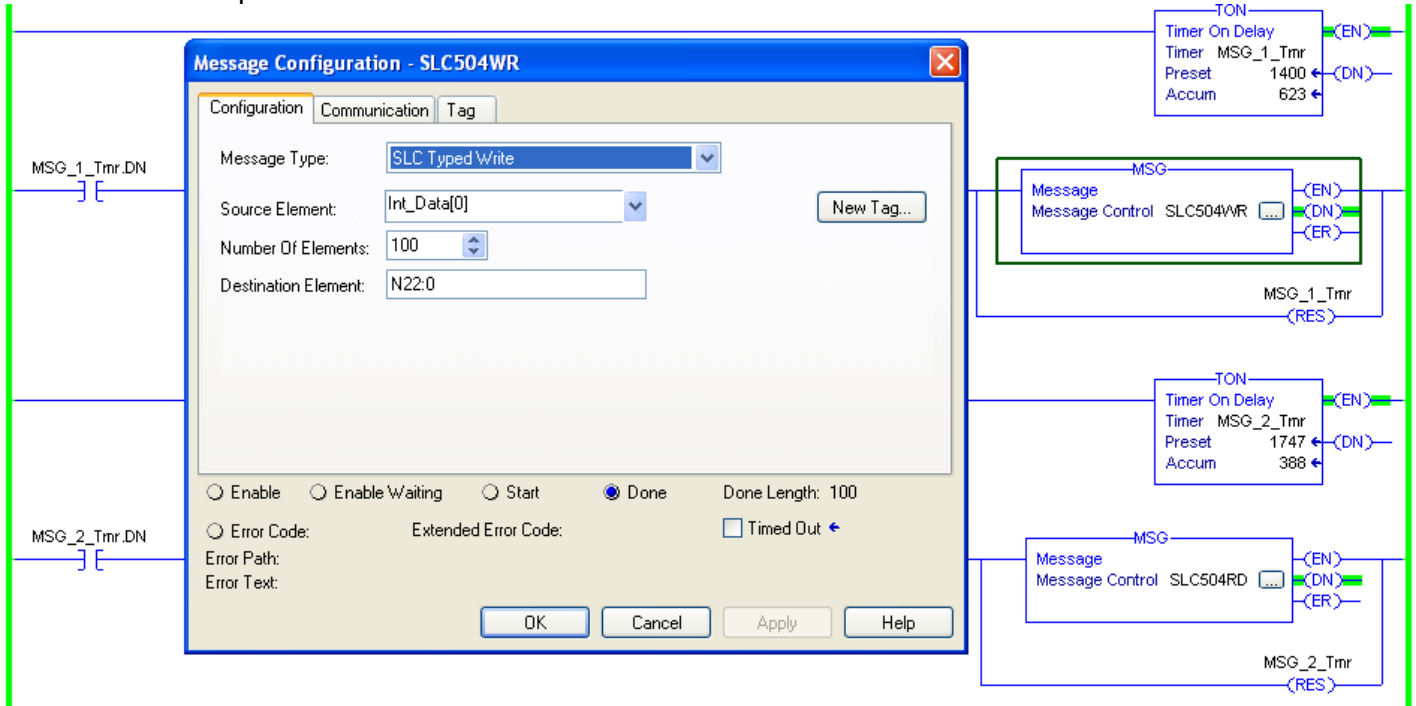
ControlLogix MSG Samples to a SLC5/04 Read



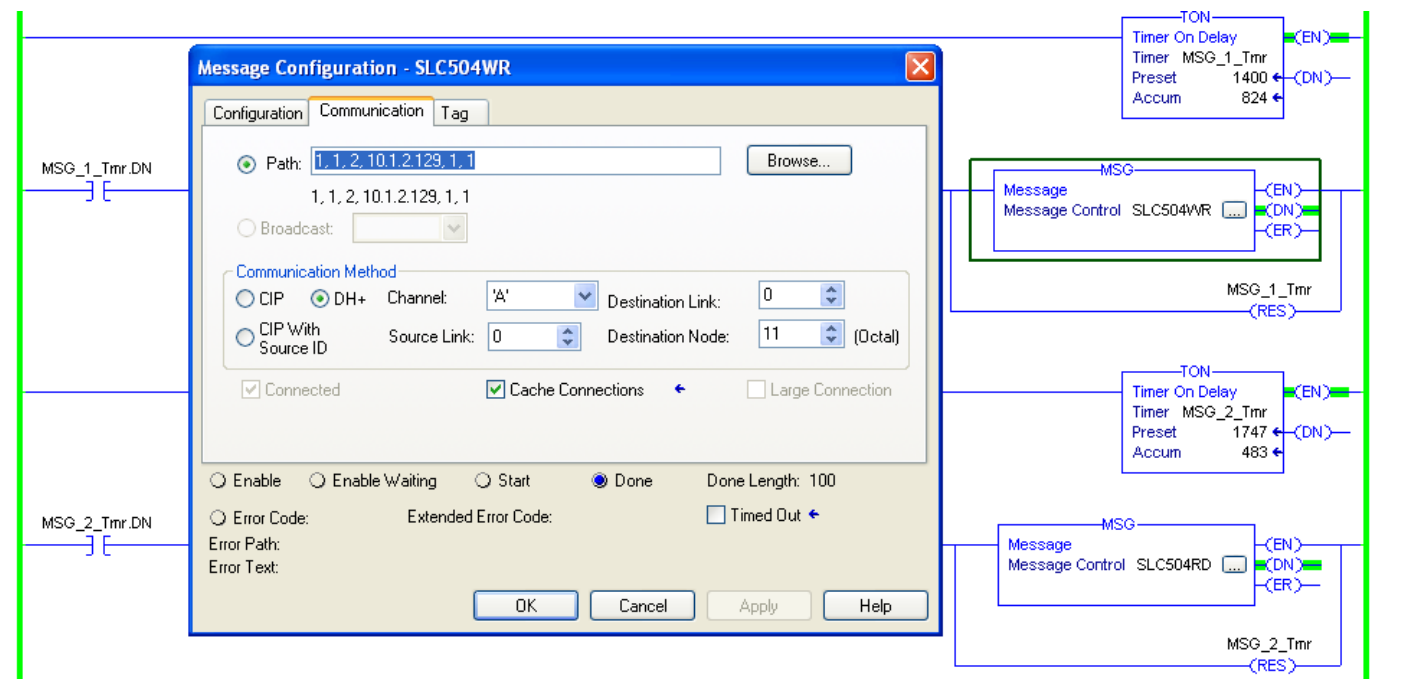
This sample assumes that a 1756-ENBT/ EN2T/EN3T module is in Slot 1 which is the second parameter listed in the path below. The IP Address is the IP Address of the AN-X2 Gateway.



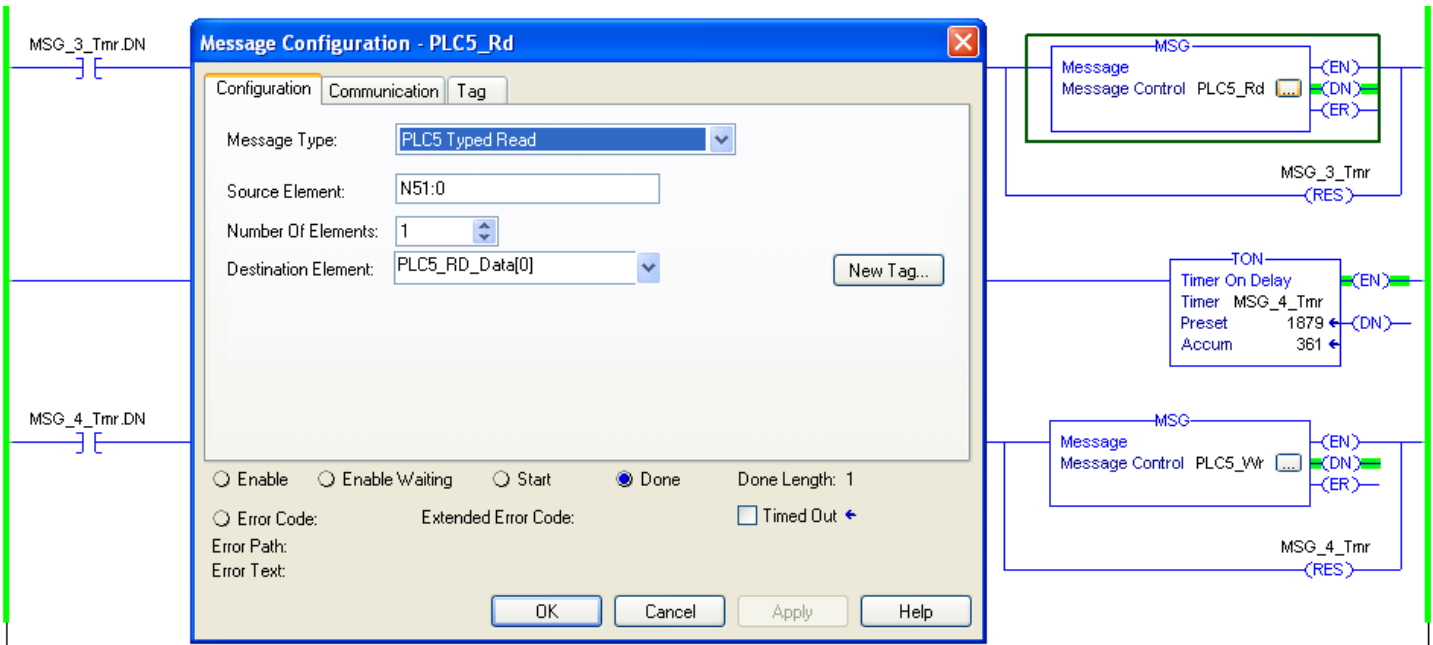
Write Example



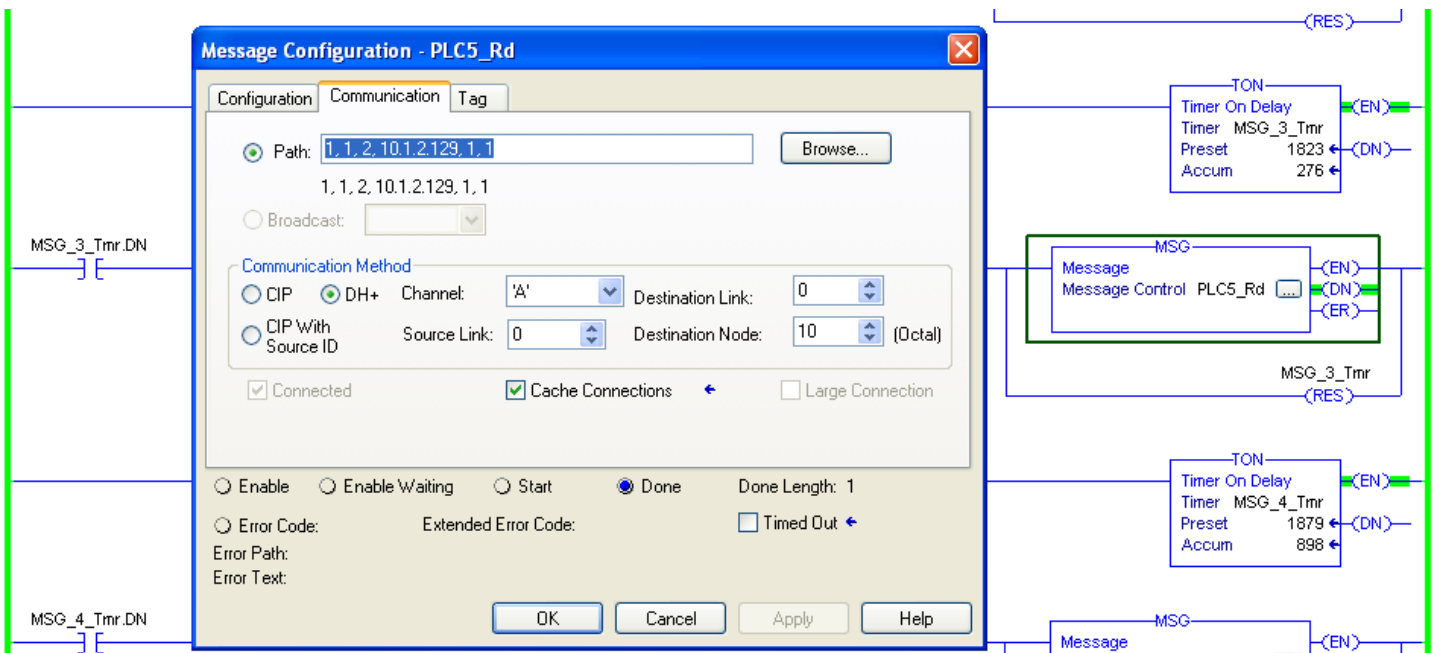
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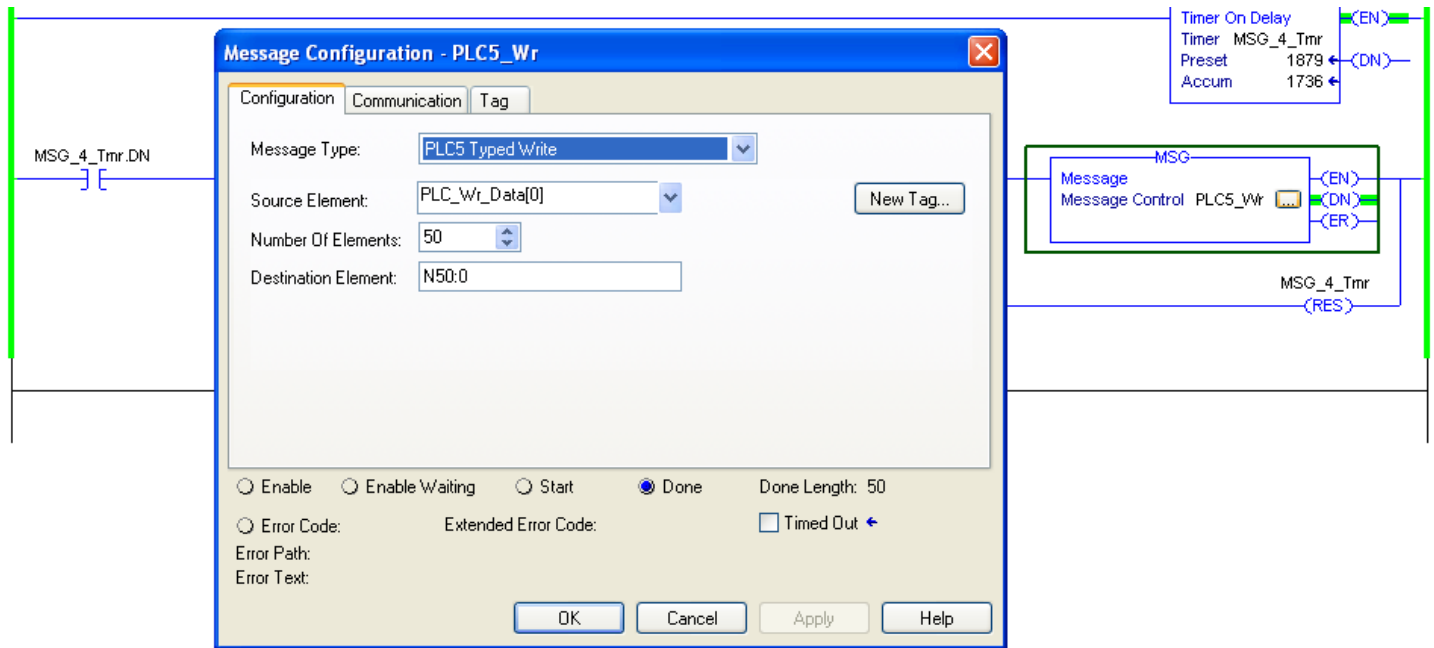
ControlLogix® MSG Samples to a PLC-5® Read



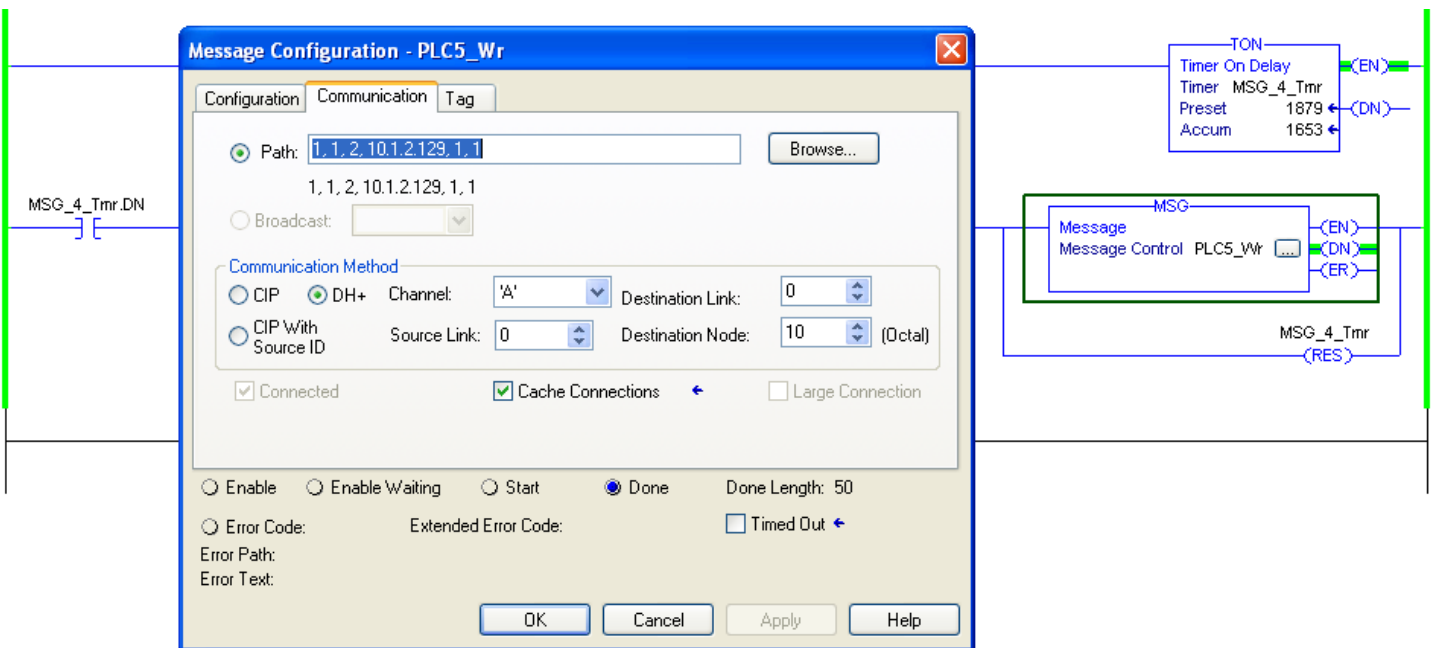
This sample assumes that a 1756-ENBT/ EN2T/EN3T module is in Slot 1 which is the second parameter listed in the path below. The IP Address is the IP Address of the AN-X2 Gateway.



Write

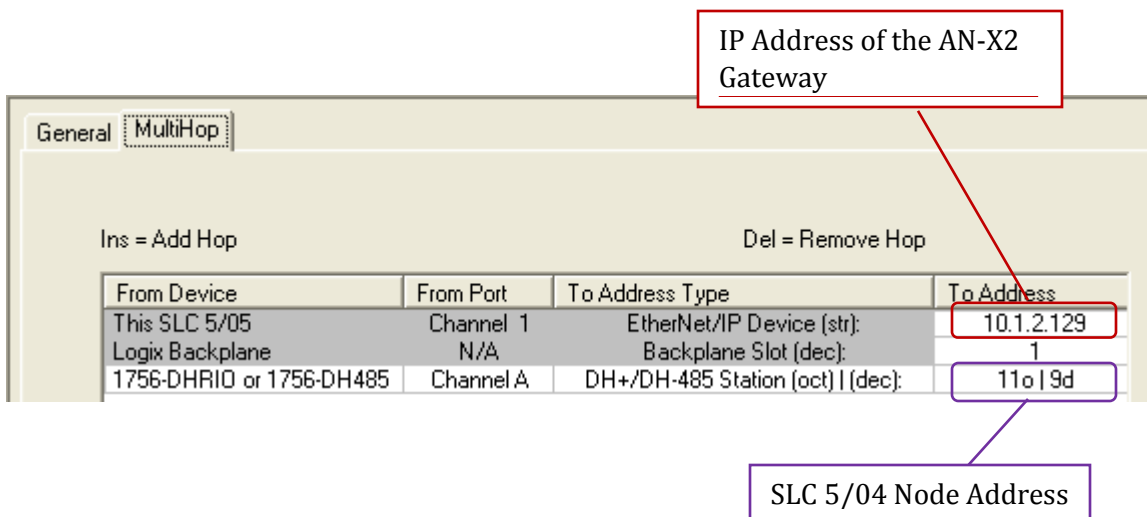
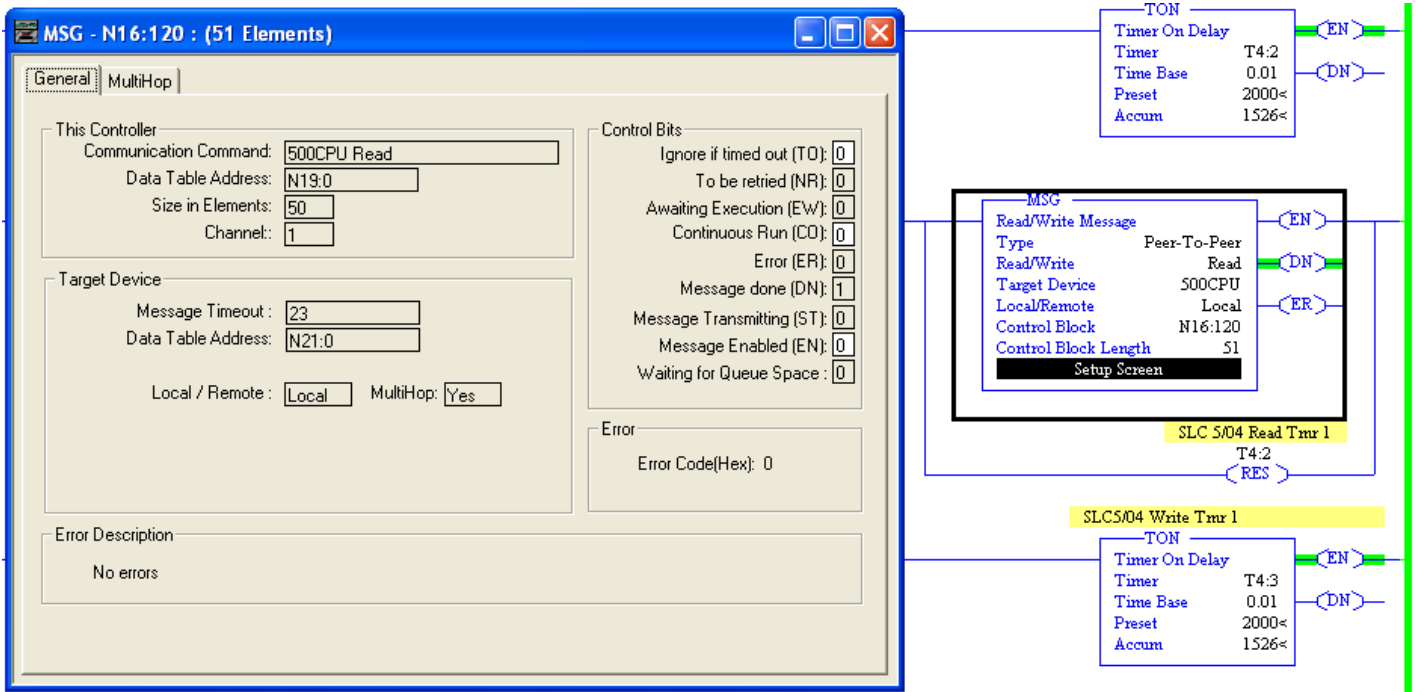


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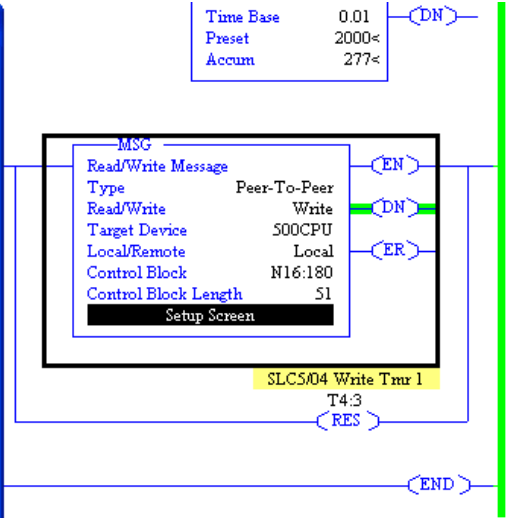


Message Instruction Samples from a SLC5/05 to a SLC5/04

Read Sample



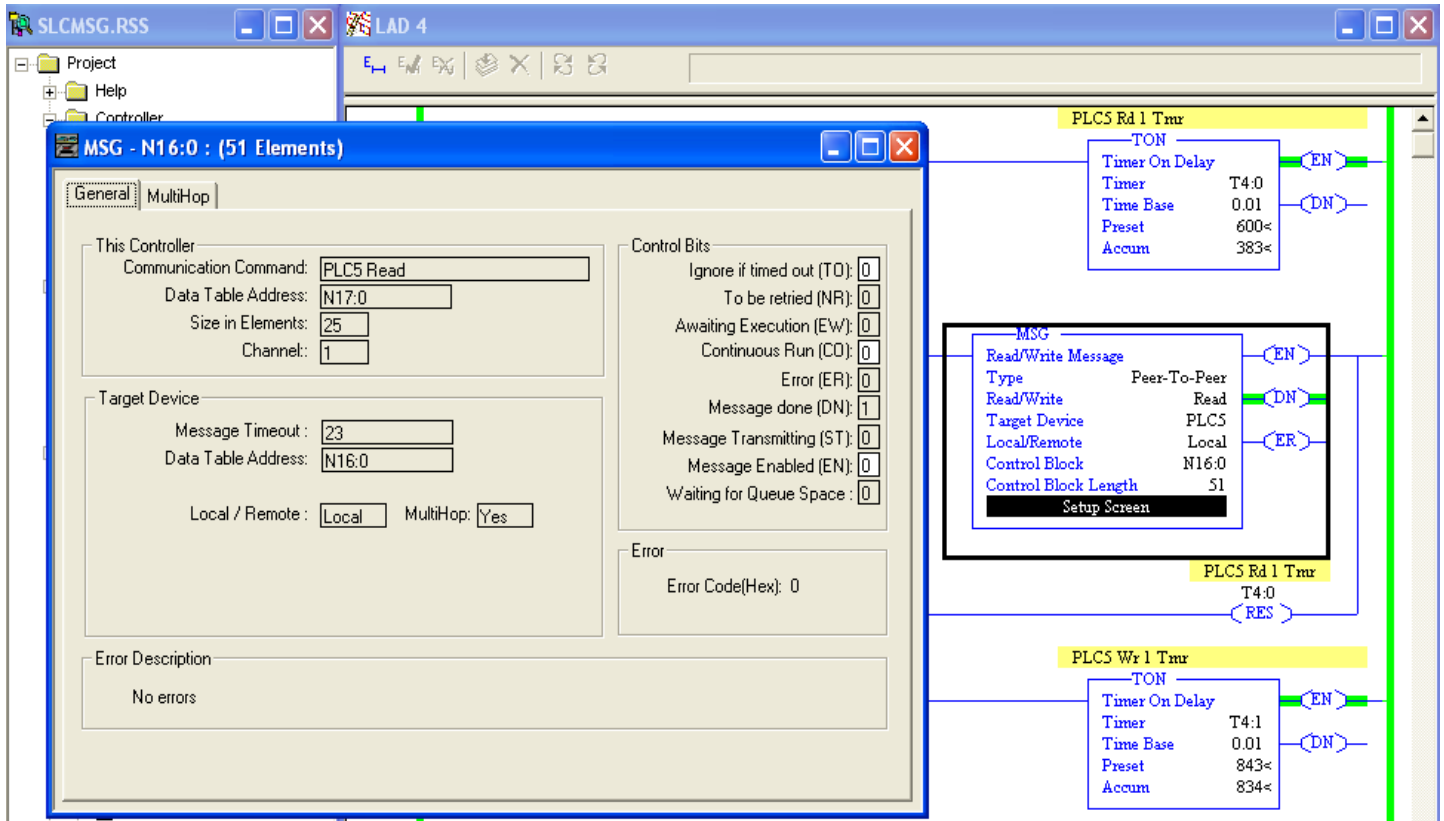
Write Sample



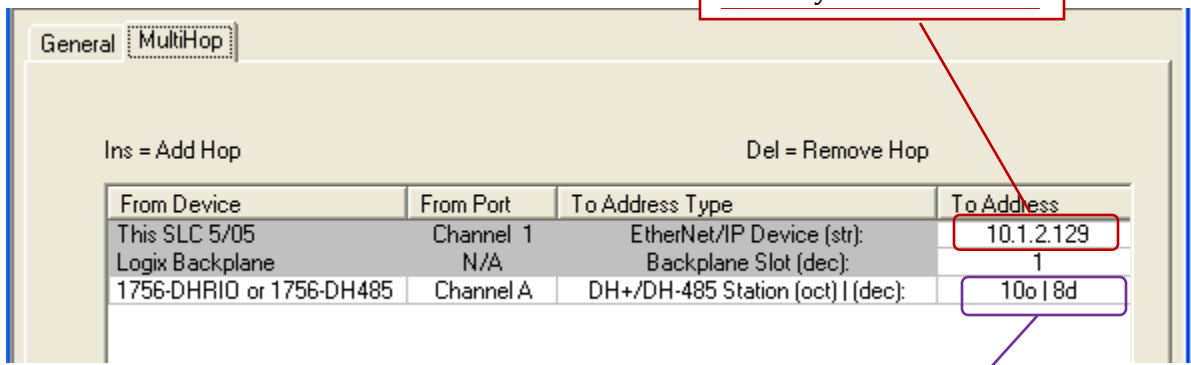
From Device	From Port	To Address Type	To Address
This SLC 5/05	Channel 1	EtherNet/IP Device (str):	10.1.2.129
Logix Backplane	N/A	Backplane Slot (dec):	1
1756-DHRIO or 1756-DH485	Channel A	DH+/DH-485 Station (oct) (dec):	11019d

SLC5/05 PLC to a PLC-5®

Here is a sample Read MSG instruction in RSLogix 500

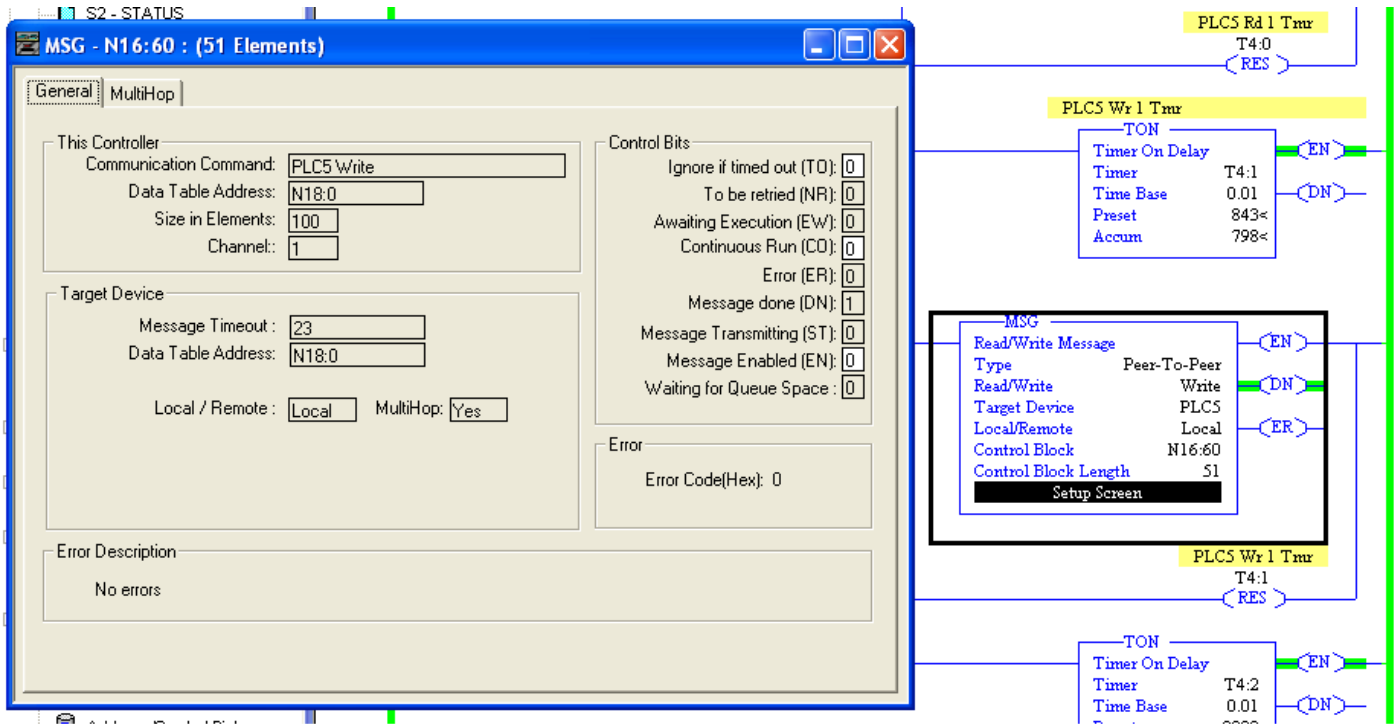


IP Address of the AN-X2 Gateway



PLC5 Node Address

Sample Write MSG instruction in RSLogix 500



IP Address of the AN-X2 Gateway

General MultiHop

Ins = Add Hop Del = Remove Hop

From Device	From Port	To Address Type	To Address
This SLC 5/05 Logix Backplane	Channel 1 N/A	EtherNet/IP Device (str): Backplane Slot (dec):	<input type="text" value="10.1.2.129"/> 1
1756-DHRIO or 1756-DH485	Channel A	DH+/DH-485 Station (oct) (dec):	<input type="text" value="10 8d"/>

PLC5 Node Address

Conclusion

This document has shown samples of various Processor to Processor Message instructions for use with the AN-X2-Ab-DHRIO gateway when running the Data Highway Plus firmware. If you have any additional questions please contact your regional support center listed below.

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