Replacing the AB 1761-NET-ENI with the MGate EIP3000 to perform an EIP-to-DF1 conversion

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Contents

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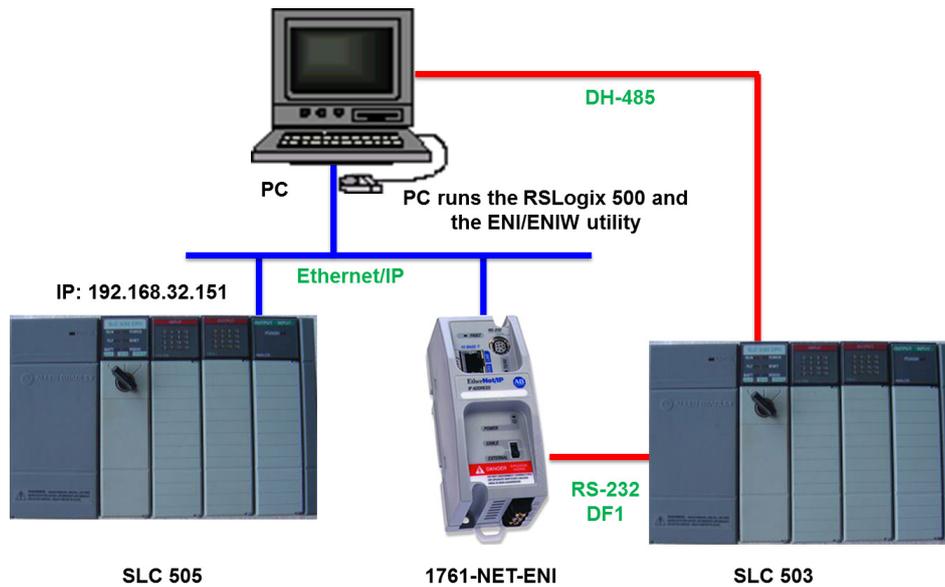
How to Contact Moxa

Tel: +886-2-8919-1230
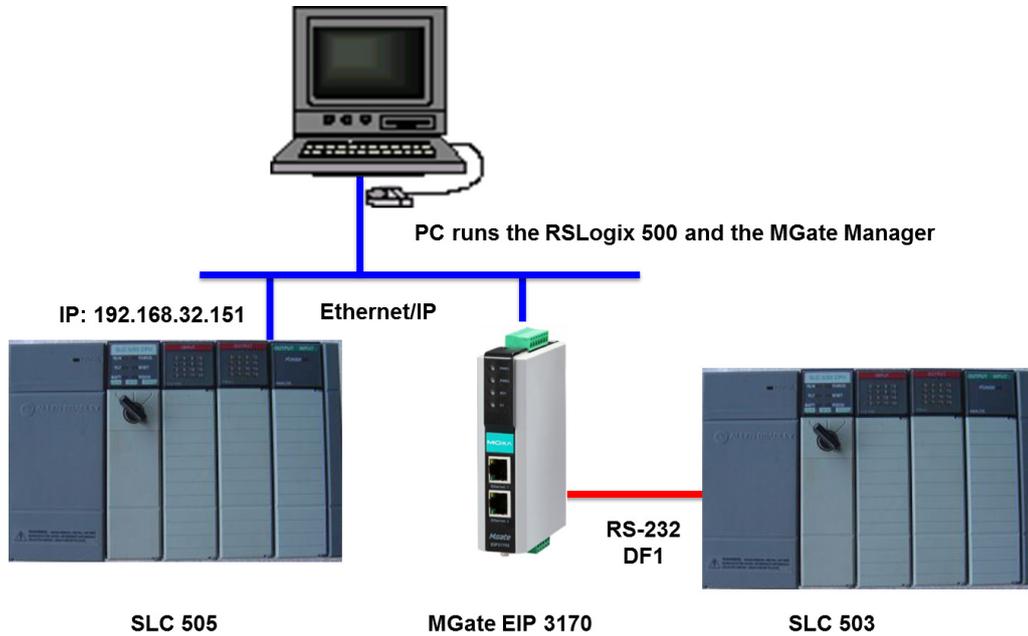Fax: +886-2-8919-1231

1 Application Description

This document illustrates how to replace the AB 1761-NET-ENI with the MGate EIP3000 to perform an EIP-to-DF1 conversion. This application routes DF1 messages to an EtherNet/IP destination or EtherNet/IP messages to a DF1 node.The DF1 device is an Allen-Bradley SLC 5/03 and the EtherNet/IP device is an Allen-Bradley SLC 5/05.We describe how to use an Allen-Bradley 1761-NET-ENI module to route messages and how to use the MGate EIP 3170 to replace it in the following chapters.
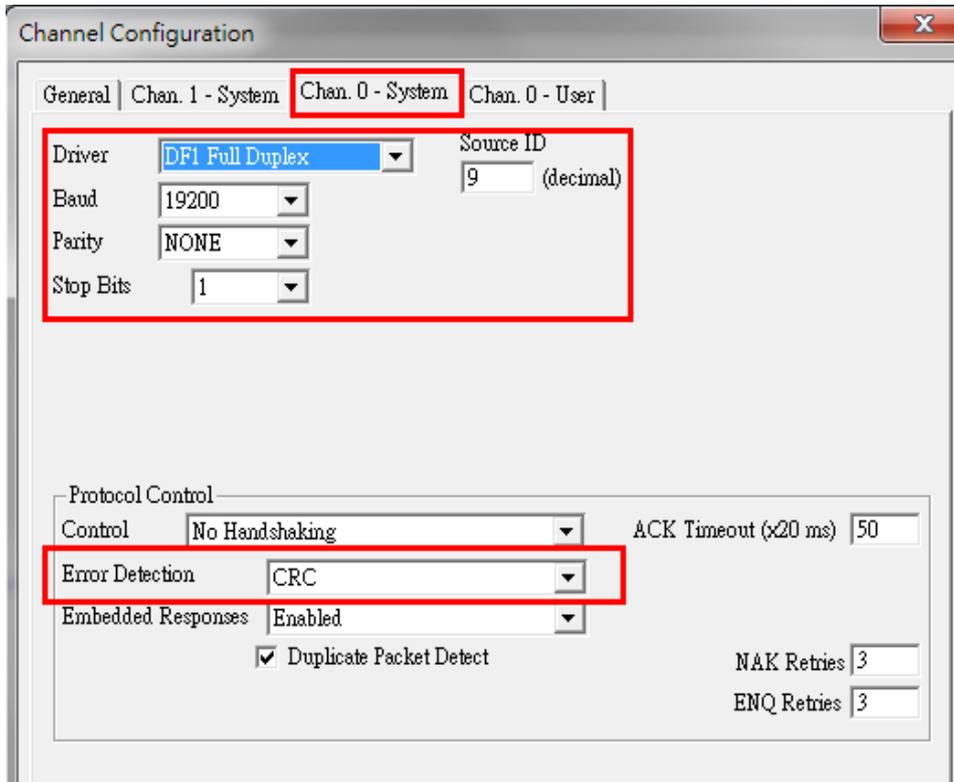
A system that has been replaced with an MGate EIP 3170 topology is illustrated below:

PC runs the RSLogix 500 and the MGate Manager

IP: 192.168.32.151   Ethernet/IP
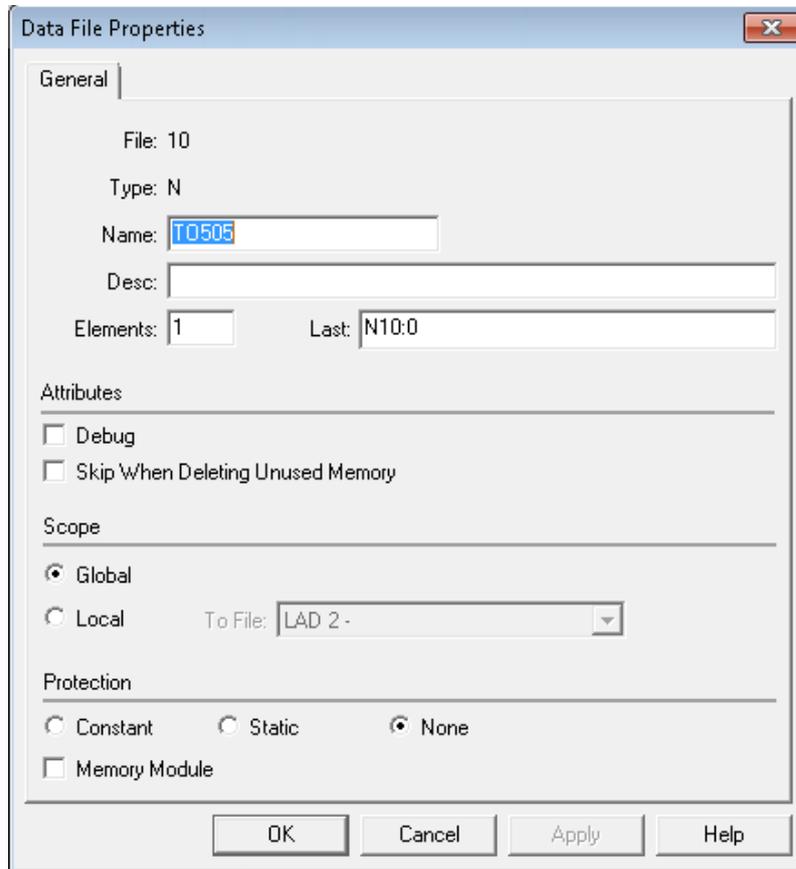
RS-232 DF1

SLC 505   MGate EIP 3170   SLC 503

2 SLC 5/03 Settings

1. Create an SLC 5/03 project on **RSLogix 500**.
2. Set the SLC 5/03's **channel 0** setting as below:

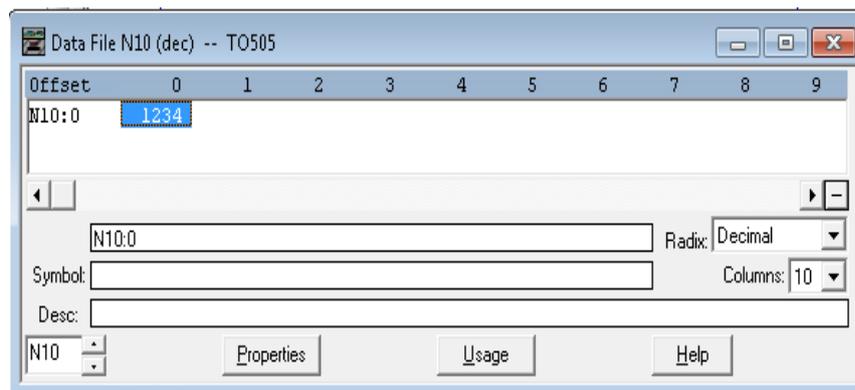3. Create an **Integer Data File** Name as "**N10**" and set **Elements** as 1. SLC 5/05 will poll this data file that we will discuss later.
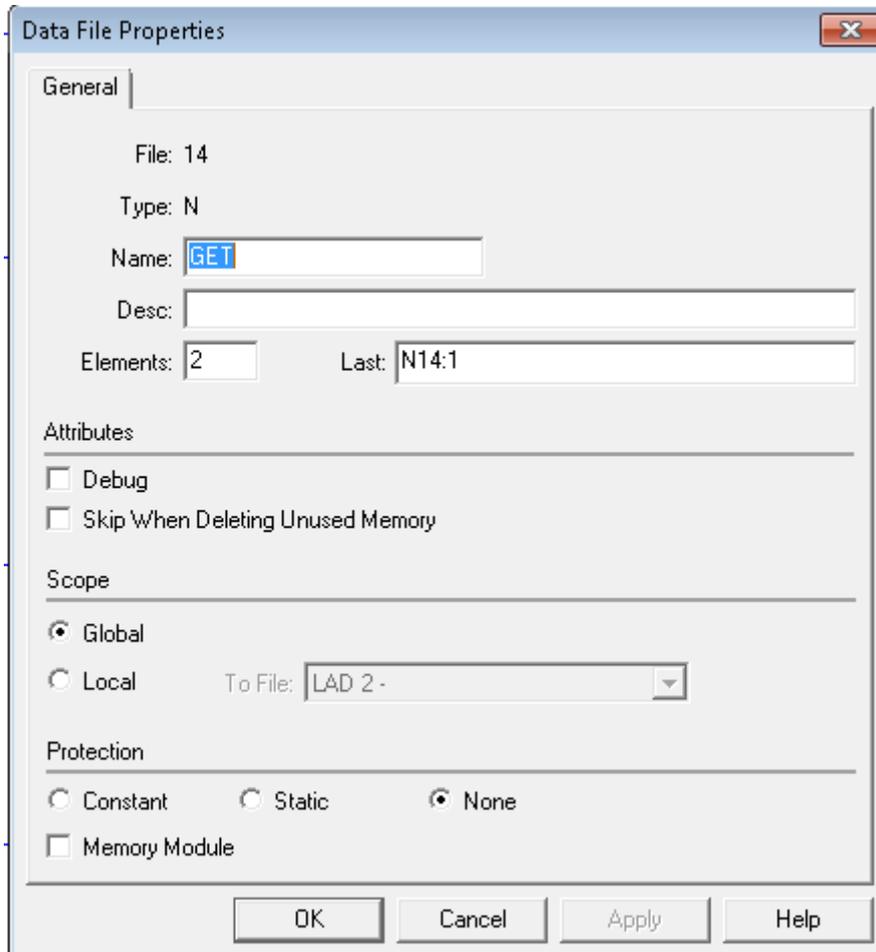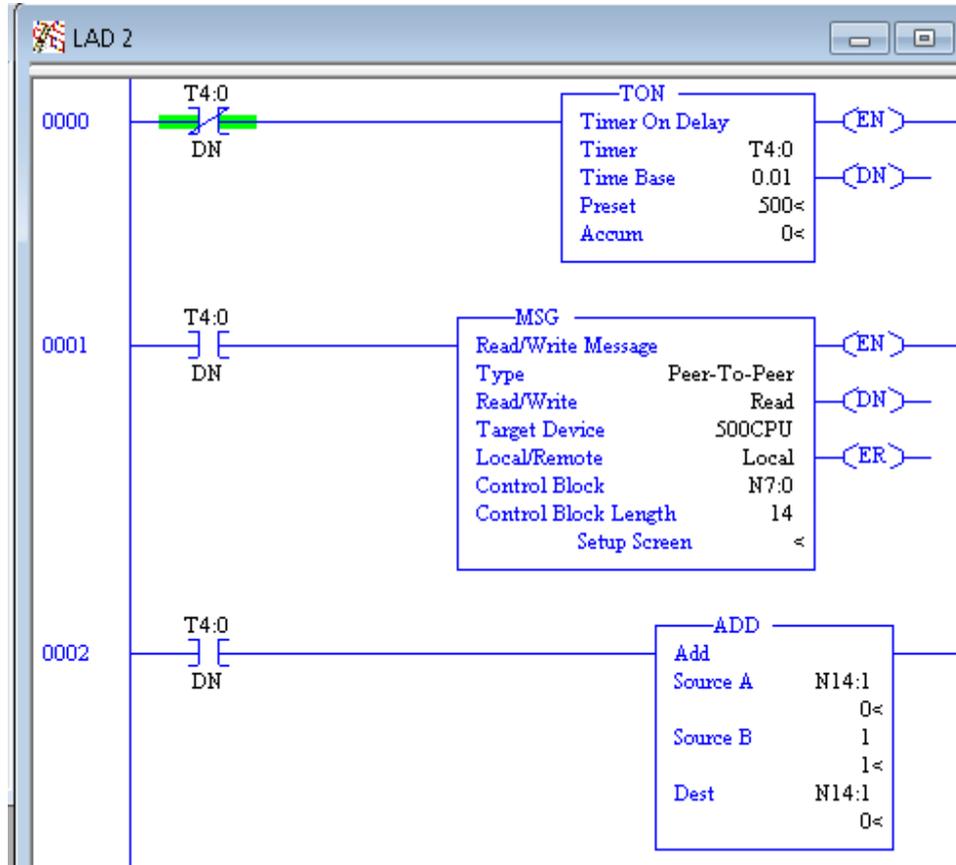

We set N10:0's initial value as "1234".

4. Create an **Integer Data File** Name as "**N14**" and set **Elements** as 2. The N14:0 will store data responses from SLC 5/05. The N14:1 will store polling counts.
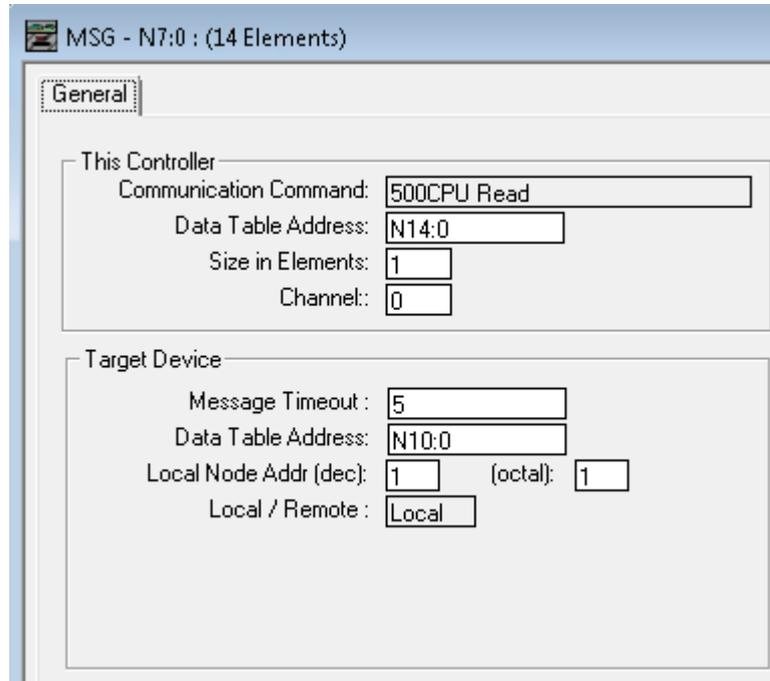
5. Edit the **LAD 2** program as below. This program will send **500CPU Read** commands every 5 seconds.

The **MSG** settings are as follows:

This message will use **500CPU Read** commands to read **Target Node 1** and **Data Address** as **N10:0**; size is **1**. **Target Node 1** will be routed by 1761-NET-ENI or the MGate EIP 3170 to SLC 5/05.
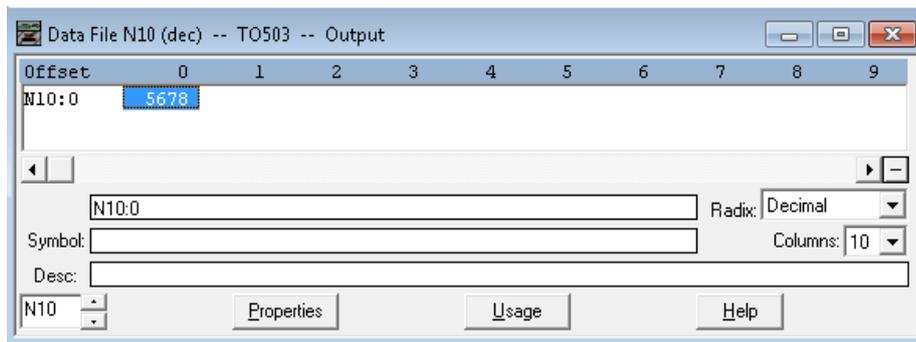
6. When the settings have been completed, download this program to SLC 5/03.

3 SLC 5/05 Settings

1. Create an SLC 5/05 project on RSLogix 500.
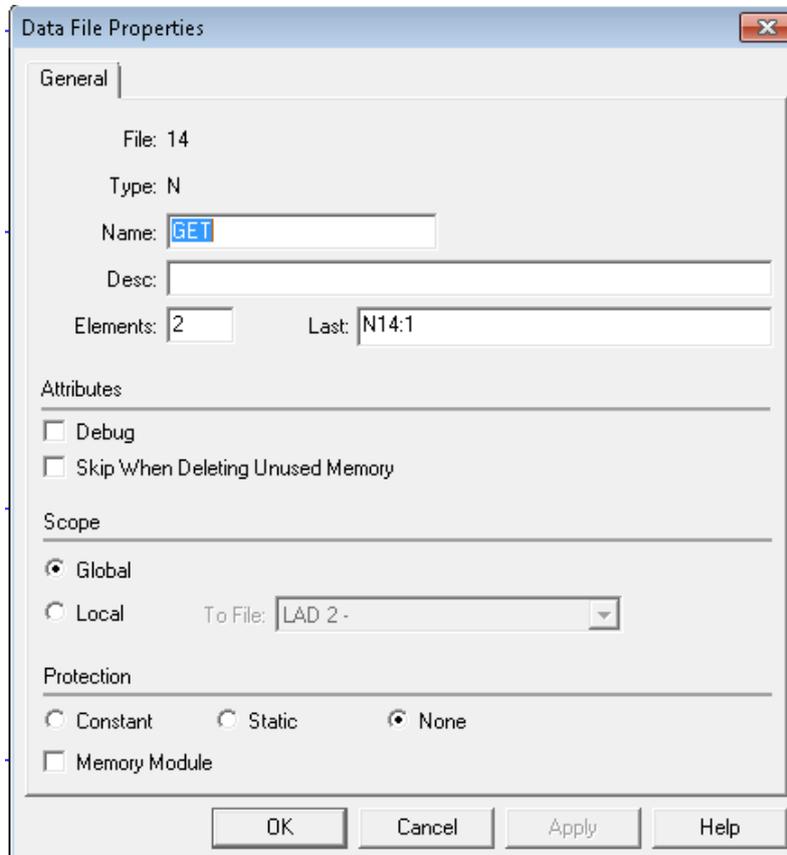2. Create an Integer Data File Name as "N10" and set Elements as 1. SLC 5/03 will poll this data file.
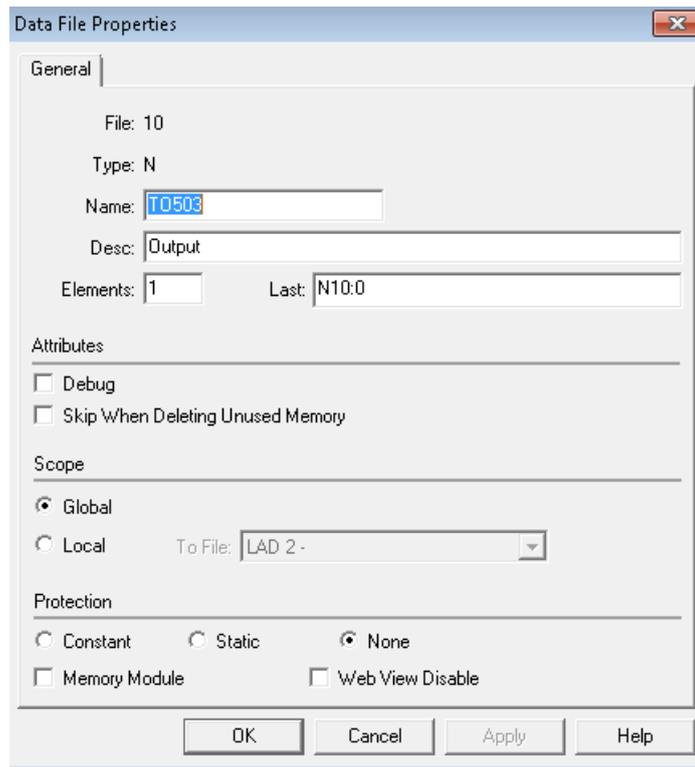
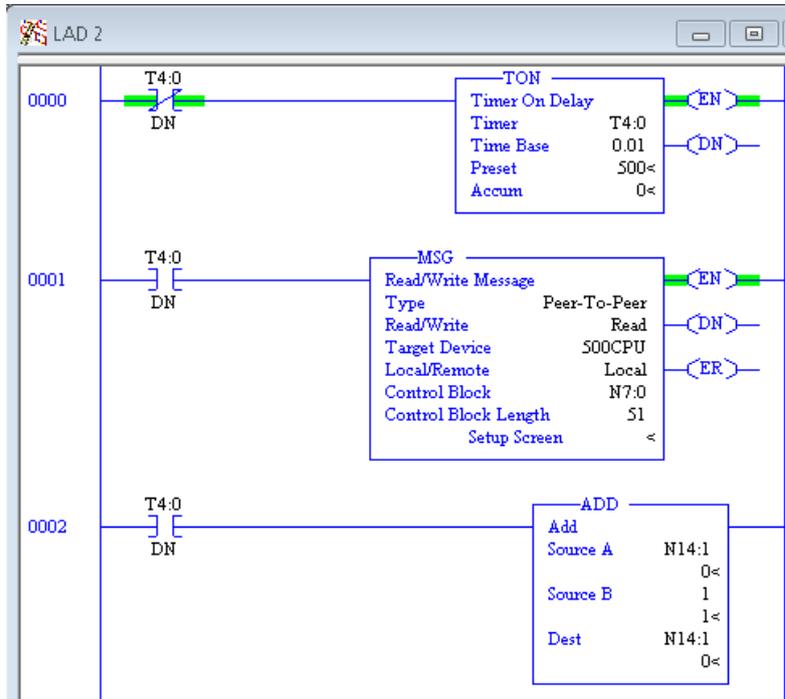
Set N10:0's initial value as "5678".

3. Create an **Integer Data File** Name as "**N14**" and set **Elements** as 2. The N14:0 will store data responses from SLC 5/03. The N14:1 will store polling counts.
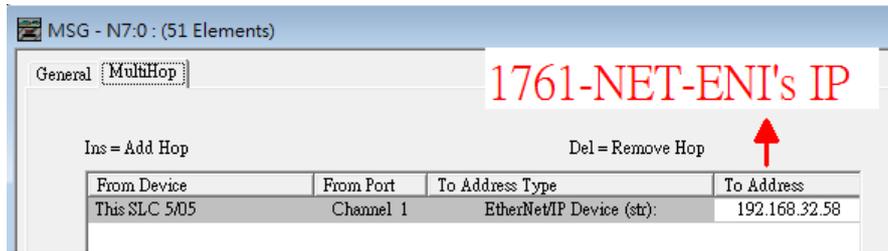
4. Edit the **LAD 2** program as below. This program will send **500CPU Read** commands every 5 seconds.

The MSG settings are as below. Enable **MultiHop**:

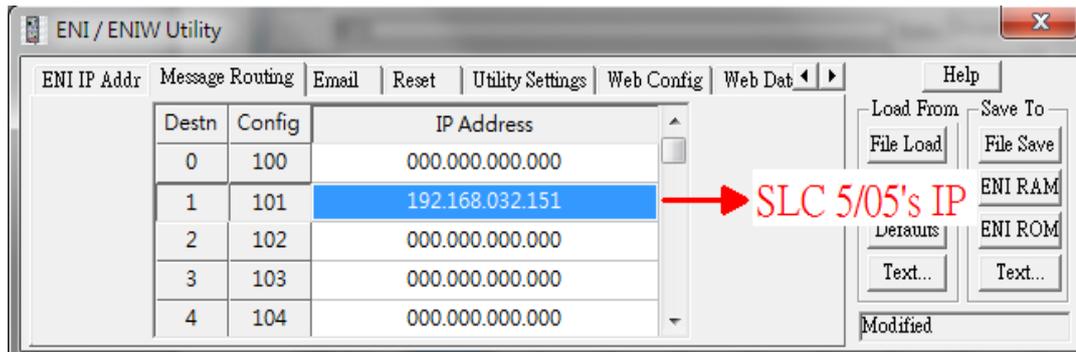In the **MultiHop** tab, add **Hop** as below:

This message will be send to the 1761-NET-ENI module, command as **500CPU Read** to read **Data Address** as **N10:0,** and **size** is **1**.

5. When the settings have been completed, download this program to SLC 5/05.

4 1761-NET-ENI Settings

1. Use ENI/ENIW Utility to configure 1761-NET-ENI. In the **Message Routing** tab, set Destination Node 1 mapping to SLC 5/05's IP.


2. When the settings have been completed, save to "**ENI ROM**".
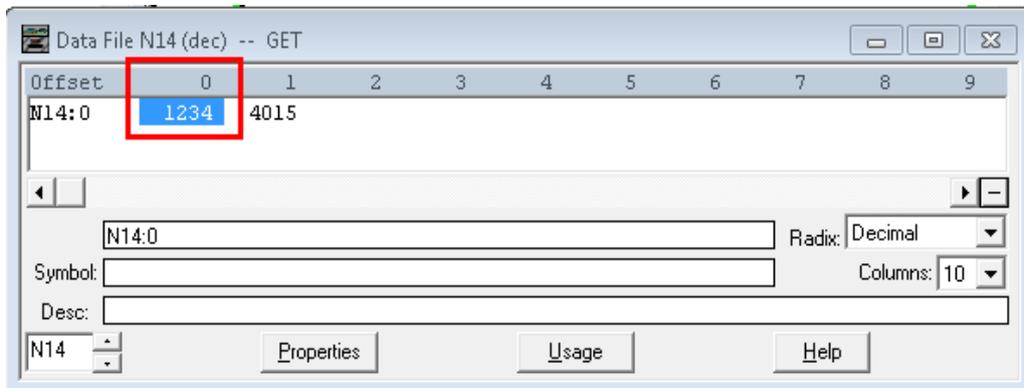
5 1761-NET-ENI Communication Test

If the settings on all devices are done, SLC 5/03 will send **500CPU Read** commands every 5 seconds. If they receive the correct responses, they will store data in Data File N14:0. We can use RSLogix 500's **Go Online** to monitor it. To perform a communication test for the 1761-NET_ENI, do the following:
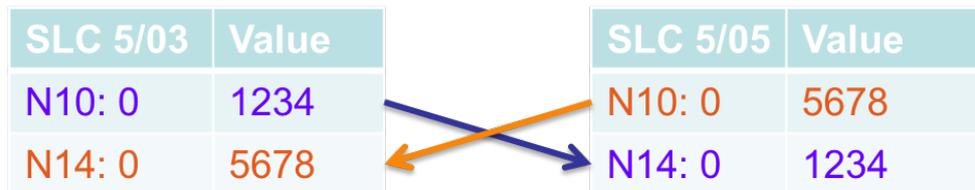
1. Use RSLogix 500's **Go Online** to monitor SLC 5/03. N14:0's value must be updated as "5678".
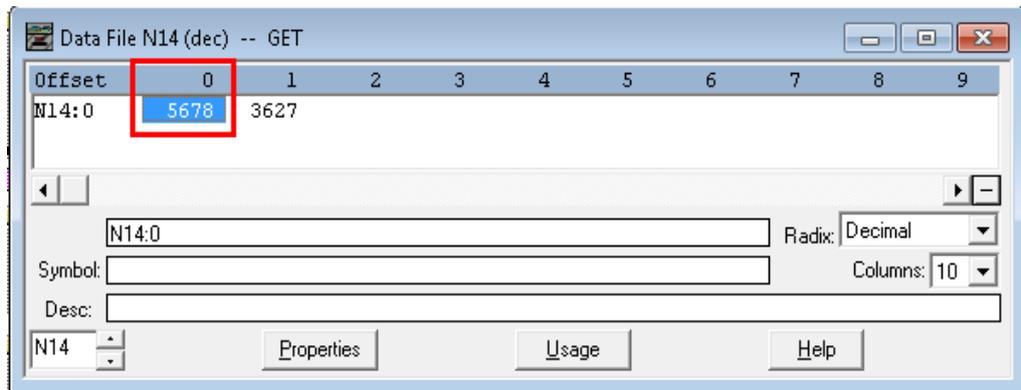
2. Use RSLogix 500's **Go Online** to monitor SLC 5/05. N14:0's value must be updated as "1234".

3. The figure below illustrates how data is transmitted:

SLC 5/03	Value		SLC 5/05	Value
N10: 0	1234		N10: 0	5678
N14: 0	5678		N14: 0	1234

6 MGate EIP 3000 Settings

We remove the 1761-NET-ENI module and then add the MGate EIP 3170 into the topology.

Use the **MGate Manager** to config the MGate EIP 3170 as follows:

1. In the **Network** tab, set IP1 Address as 1761-NET-ENI's IP Address, as below:

2. In the **Serial** tab, set Port 1's serial port setting as below:

3. In the Routing tab, add "**Target Node DST**" 1 as SLC 5/05's IP. In Routing Information, Req. From PORT1, which DST is 001, will route to SLC 5/05. All EIP Nodes Req. will route to PORT1.

Set Port1 Node DST as "09".

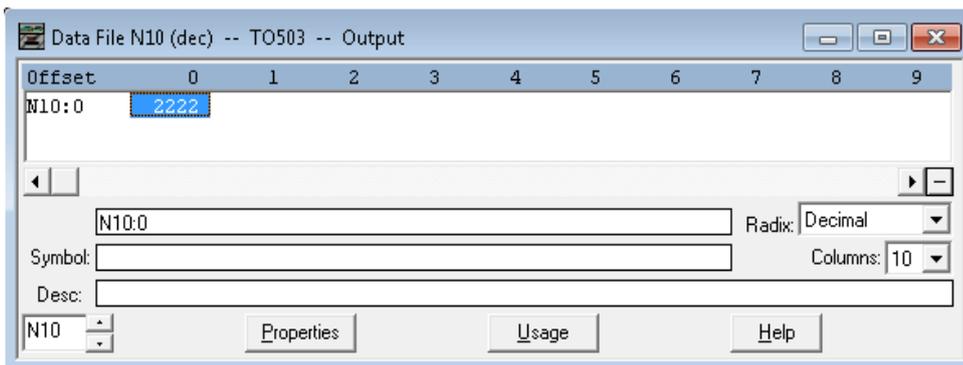4. In the **Protocol** tab, set the Port1's **DF1** setting as follows:

7 MGate EIP 3000 Communication Test

To perform a communication test with the MGate EIP 3000, do the following:
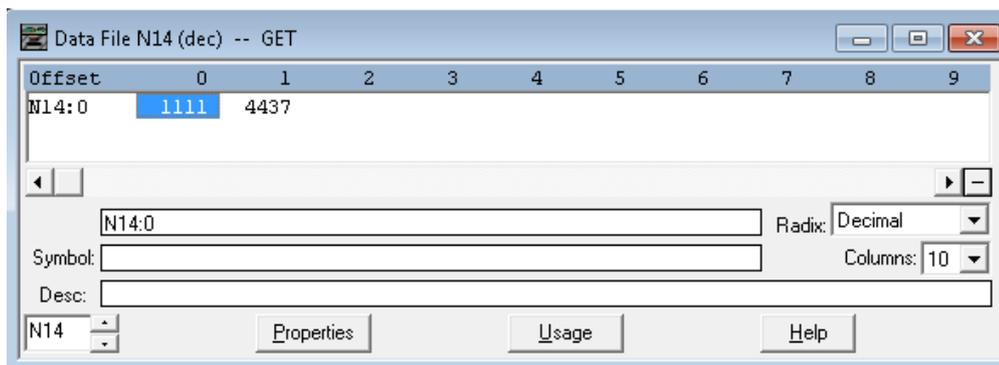
1. Use RSLogix 500's **Go Online** to monitor SLC 5/03. Edit N10:0's value as "1111".
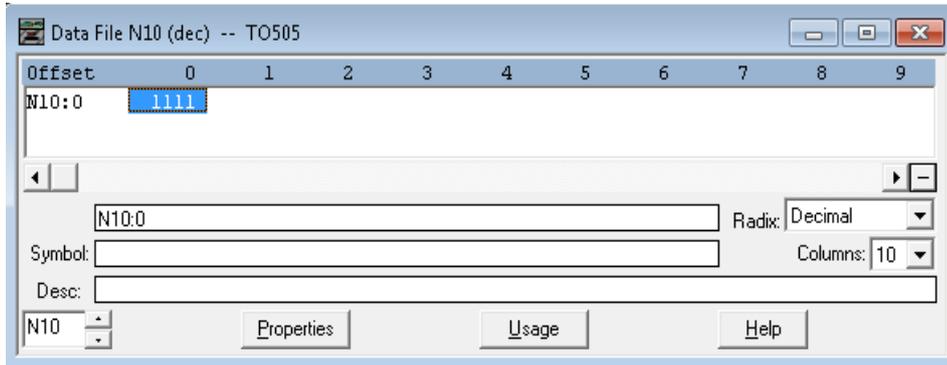
2. Use RSLogix 500's "**Go Online**" to monitor SLC 5/05. Edit N10:0's value as "2222".
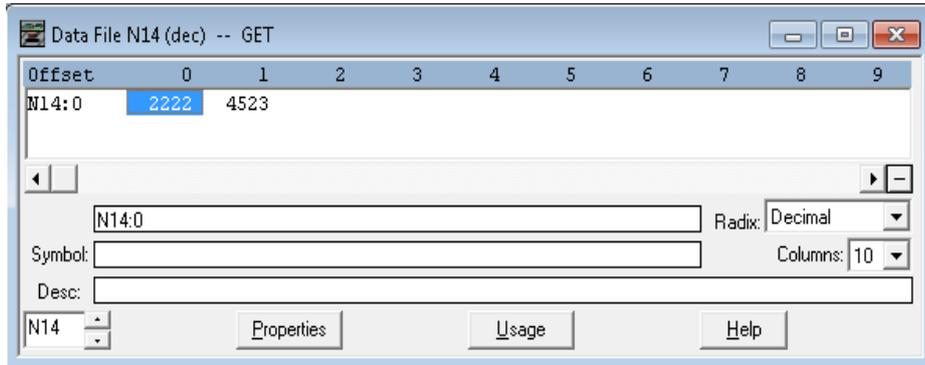

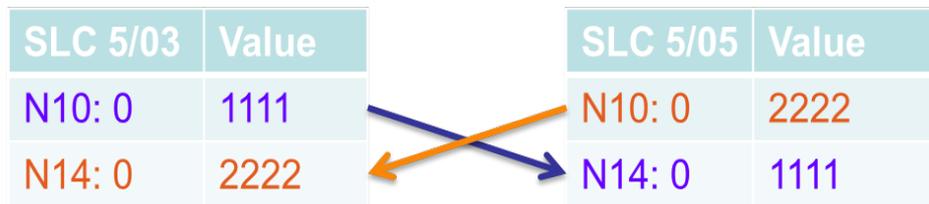3. Check SLC 5/05; N14:0's value must be updated as "1111".

4. Check SLC 5/03; N14:0's value must be updated as "2222".

5. The figure below illustrates how data is transmitted:

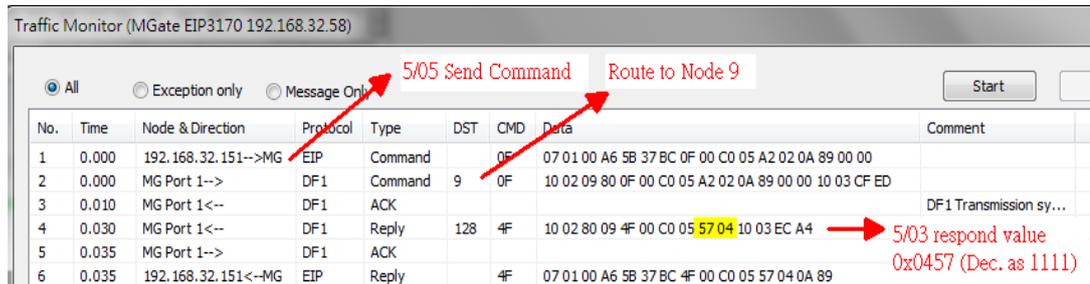| SLC 5/03	Value		SLC 5/05	Value
N10: 0	1111		N10: 0	2222
N14: 0	2222		N14: 0	1111

6. Use MGate Manager to monitor traffic:

   a. Request from SLC 5/05

   b. Request from SLC 5/03