MicroLogix 1100 and 1400 Controllers MSG over Ethernet

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Access Level: TechConnect

Question

- How do I message (MSG) in a MicroLogix 1100 or MicroLogix 1400 over Ethernet?
- Can I configure a message (MSG) instruction to communicate over Ethernet in MicroLogix 1100 and MicroLogix 1400?
- Why am I getting the error on my message instruction : Error Code : e0 Error Description: Error code (in upper byte of MGxy.22) was returned by comms or CIP device.

Answer

Download video: MP4 format

Note: This document assumes the user has a working knowledge of the proper programming of messages for the MicroLogix family of controllers. All MSG programming guidelines and techniques must be followed. Messaging for the MicroLogix 1100 is no different than for any other member of the MicroLogix family.

Explanation

A new data table file is used for Ethernet messaging in the MicroLogix 1100/1400.

This new file stores all the following information required to communicate on Ethernet:

- Routing information
- IP address

This *Routing Information File,* or **RIF**, is simply a file that the controller uses to store the Ethernet information entered into the Message (MSG) instruction.

Programmers and Users should not directly modify, add, or delete any information in the RIF. Doing so could cause MSG instruction executing and communications issues.

1. Create the MG and RI Data Files inside the program.

2. Add a MSG to your program.

3. Select the **MG file** to use, then proceed into the setup screen to complete the MSG configuration.

4. This Controller.

   a. To communicate via Ethernet, first select the correct communications Channel.

      The Ethernet channel for a MicroLogix 1100/1400 is " 1 (Integral)".

   b. Select a MSG **read** or **write** for the communication command.
   c. Enter the **data table address** of this MicroLogix 1100/1400 that you wish to MSG to/from.
   d. Enter the **size** in elements of the data you will read or write.

5. The "Target" Device

   Enter the Data Table address for the target device. If the target device is a Logix controller you must map the file address (MicroLogix) into the descriptive tag (Control/CompactLogix). The tech note 7355 - Setting up PLC/SLC Mapping in Logix controllers explains how to do it.

6. Only after selecting channel 1 will the Target Device area of the set-up screen change to reveal the **Routing Information File** data field.

   In the **Routing Information File** data field, enter the address of the RIF data table file you wish to use.

   a. ***Enter RIx:y, where x is the file number and y is the element number.***
   b. For this example a RIF file was created as File #10 and we will use element 0 for this example.
   c. Enter RI10:0 for the Routing Information File.

RSLogix 500 v7.0 will create the RIF file for you once correct information is entered into the RIF data field.

Note: Each RI element uses up 20 data table words.

MicroLogix 1100 Series A require that each MSG use a unique RI file element (RIxx:yy) even if the target is the same device. MicroLogix 1100/B and all MicroLogix 1400 do not have this limitation. The programming software will still issue a warning indicating an overlap but this is intended to ensure the MSG setup was intentionally programmed this way.

See below for steps 2, 3 & 4

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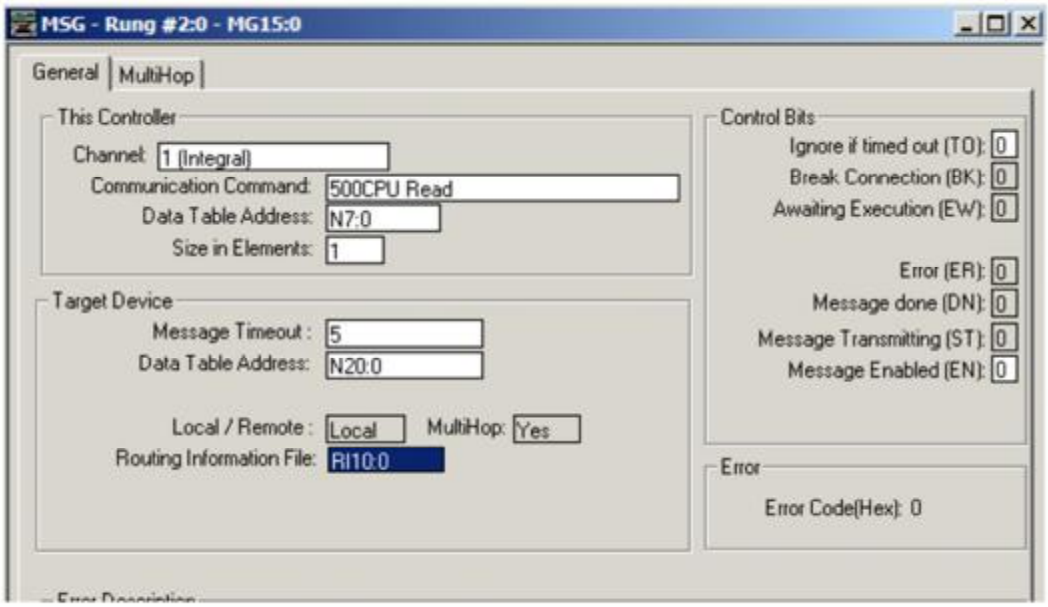
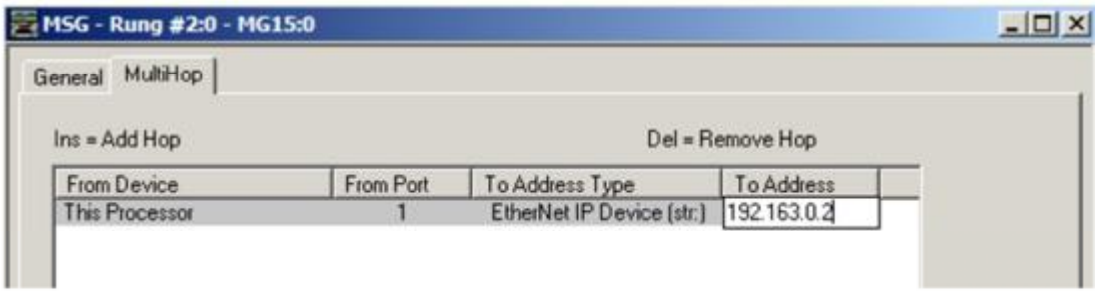


7. Select the **MultiHop** tab on the MSG setup screen.
   Enter the IP address of the destination controller or device.



How to configure the route in the Multihop tab to a MSG to a ControlLogix, FlexLogix or CompactLogix controller

- Enter the IP address if messaging to:
  - Another MicroLogix 1100
  - An ENI/ENIW
  - A SLC 5/05
  - A PLC5E.
- If routing to a ControlLogix, FlexLogix or CompactLogix controller, a second line must be inserted by pressing the **Insert** key on the keyboard.

  Select **ControlLogix Backplane**, then enter the controller backplane slot number (always 0 for FlexLogix and CompactLogix).

- NOTE: In regards to all MSG instructions programmed in Multihop compatible PLC-5, SLC, and MicroLogix platforms, which read/write to 5370, 5380, and 5580 processors through their embedded Ethernet ports. Only the IP Address of the embedded Ethernet port is entered on the first line of the Multihop screen. The second line of the Multihop configuration in the MSG properties should not be used.