Accessing Data from DH+ Devices Using AB Ethernet and Ethernet/IP Enabled Allen-Bradley Processors
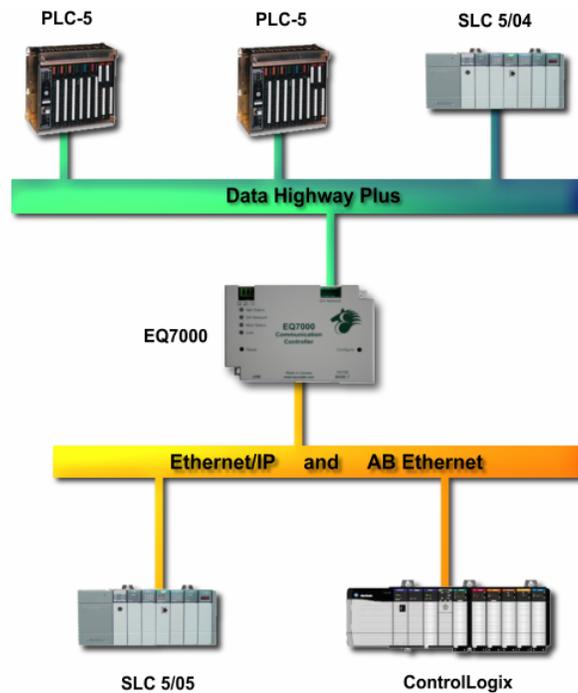
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Overview

The EQ7000 is capable of bridging Ethernet/IP messages from Allen-Bradley processors to DH+ using either *Unconnected Messages* or *Connected Class 3 Messages*. The following is an explanation of how to setup either unconnected messages or connected messages to access data from a DH+ network depending on the type of Allen-Bradley Ethernet/IP enabled processor that you are using. *The EQ7000 can not be used to browse a DH+ network using Ethernet/IP.*

Configuring Ethernet/IP Messages

The following section describes how to setup Ethernet/IP messages using legacy devices and newer CIP devices.

Legacy Devices (PLC-5, SLC 5/05)

To communicate to nodes on the DH+ network using Ethernet/IP with legacy devices such as PLC-5 and SLC 5/05 processors requires the use of *MultiHop* messaging. Below is an example of how to setup the MultiHop message to access node 7 on the DH+ network.
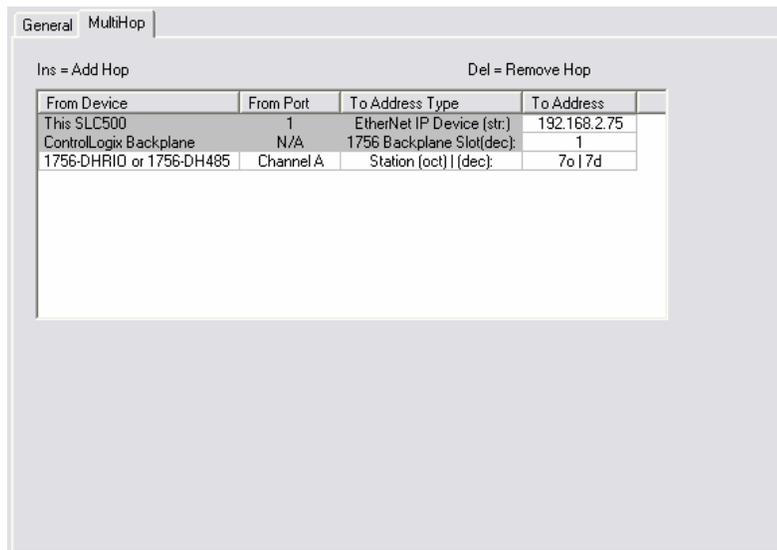
The example above sends a message to an EQ7000 with an IP address of 192.168.2.75 which is then routed to node 7 on the DH+ network. As can be seen, the message is setup like it is communicating to a ControlLogix Bridge. *When communicating to the EQ7000 use a Backplane slot number of 1.*

CIP Devices (ControlLogix, CompactLogix)

When using a ControlLogix or similar device, there are two ways to configure the message to access data from the DH+ network. One way is to use unconnected messages and the other is to use connected messages.

The two examples below show how to setup a message to acquire data from node 7 on the DH+ through an EQ7000 with an IP address of 192.168.2.75.

Unconnected Message

To send an unconnected message to the EQ7000 setup the *Communication* tab as shown below. For the *Path* setup, direct messages out the Ethernet module to the IP address of the EQ7000. For the *Communication Method* setup, select the *CIP With Source ID* option and set the *Destination Node* to the node of the device on the DH+ network that you want to communicate with.

Configuration | Communication | Tag
Path: Ethernet, 2, 192.168.2.75   Browse...
Ethernet, 2, 192.168.2.75

Communication Method
○ CIP ○ DH+ Channel: [▼] Destination Link: 0
⊙ CIP With Source ID   Source Link: 0   Destination Node: 7 (Octal)

☐ Connected   ☑ Cache Connections

○ Enable   ○ Enable Waiting   ○ Start   ○ Done   Done Length: 0
○ Error Code: Extended Error Code: ☐ Timed Out
Error Path:
Error Text:

OK   Cancel   Apply   Help

Connected Message

To send a connected message to the EQ7000 setup the *Communication* tab as shown below. For the *Path* setup, direct messages out the Ethernet module to the IP address of the EQ7000. For the *Communication Method* setup, select the *DH+* option and set the *Destination Node* to the node of the device on the DH+ network that you want to communicate with. Ensure that the *Cache Connections* is checked.

Configuration | Communication* | Tag
Path: Ethernet, 2, 192.168.2.75   Browse...
Ethernet, 2, 192.168.2.75

Communication Method
○ CIP ⊙ DH+ Channel: 'A' [▼] Destination Link: 0
○ CIP With Source ID   Source Link: 0   Destination Node: 7 (Octal)

☑ Connected   ☑ Cache Connections

○ Enable   ○ Enable Waiting   ○ Start   ⊙ Done   Done Length: 10
○ Error Code: Extended Error Code: ☐ Timed Out
Error Path:
Error Text:

OK   Cancel   Apply   Help

Communicating via AB Ethernet

Overview

The EQ7000 is capable of bridging AB Ethernet messages from Allen-Bradley processors to DH+. The following is an explanation of how to setup AB Ethernet messages to access data from a DH+ network.

Configuring AB Ethernet Messages

To communicate to nodes on the DH+ network using AB Ethernet, remote messaging must be used. Using local messaging will only allow communication to a single device located at node 0 on the DH+.

When using remote messaging, the source and destination link ID's are not needed and can be left as 0. The destination address (or remote address) will be the value of the DH+ node address. *Please note that DH+ uses octal notation and the application that is being used to setup the message may use decimal notation.*

Below is an example of how to setup a remote message in a SLC 5/05 to read data from node 7 on the DH+ network through the EQ7000 at 192.168.2.75.

Browsing the DH+ Network

It is possible to browse known nodes on the DH+ network with the EQ7000 using the AB Ethernet driver in RSLinx. To do this, follow the steps below.

1. Open the *Configure Drivers* window and create a new *Ethernet Devices* driver.

2. After creating the new driver, the configuration window for station *mapping* should appear. Enter the node address of the DH+ device in *Station* column and the IP address of the EQ7000 in the *Host Name* column. Repeat this step if there are multiple nodes to be browsed.

3. Once all the nodes are entered, enter the DH+ node address of the EQ7000 in the *Station* column where the *Host Name* is *Driver*. Below is an *example* showing DH+ nodes 3 and 7 being mapped to an EQ7000 with an IP address of 192.168.2.75 and DH+ node address of 58 decimal (72 octal).

Station	Host Name
0	
3	192.168.2.75
7	192.168.2.75
58	Driver

Station Mapping   Add New   Delete   OK   Cancel   Apply   Help

4. Once the driver is configured click *OK* to continue. Now that the *driver* is created, right click on the driver in the RSWho window and select *Properties*.

5. In the *Properties* window, click the *Advanced Browse Settings* tab. *Check* the *Force network type to* option and select *Data Highway Plus*. Below is an example of how the properties will be set. Click *OK* to close the window.

Browse Addresses   Advanced Browse Settings

☑ Force network type to: Data Highway Plus

Tuning:
☐ Use custom browse settings:
Poll timeout (msec):
Poll rate for known stations (msec):
Maximum concurrent packets to this network:

OK   Cancel   Apply   Help

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6. Now the driver is setup to browse the nodes specified in the *driver* configuration, highlight the driver that was just created and make sure *Autobrowse* is checked. The nodes should now appear as shown below.