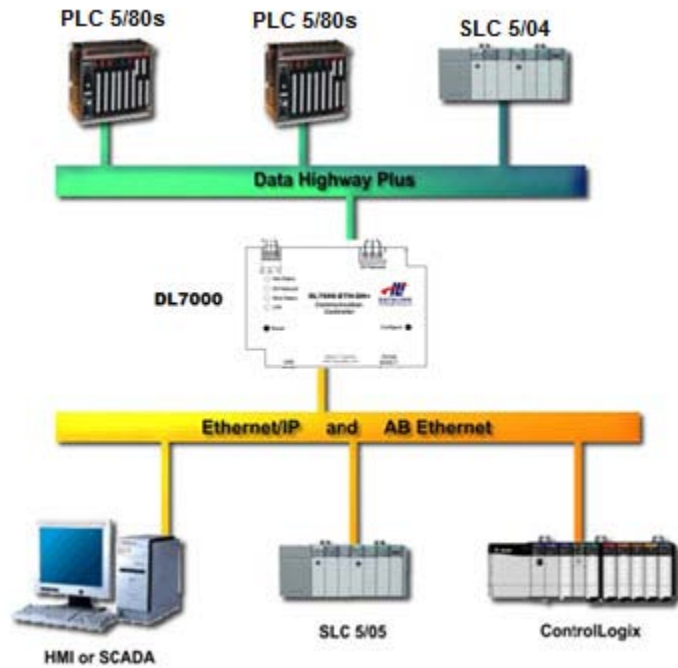


DL7000-ETH/DH+ Application Note

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



Communicating via Ethernet/IP

Overview

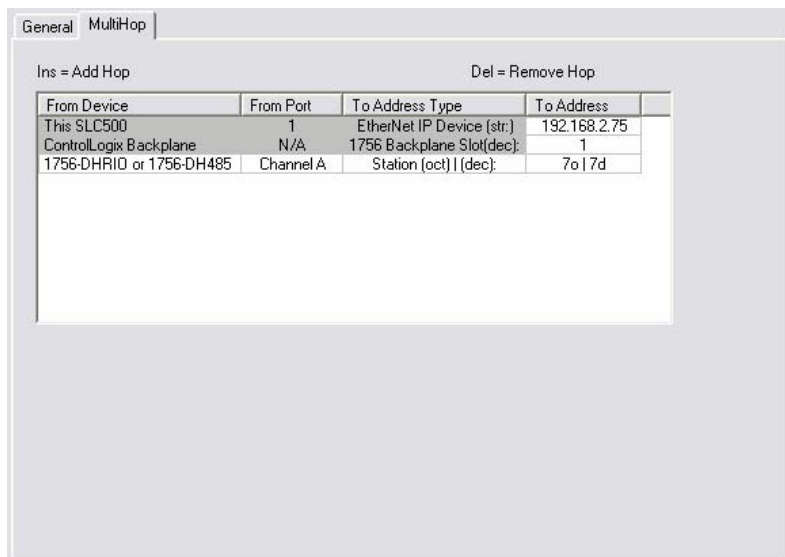
The DL7000 is capable of bridging Ethernet/IP messages from Allen-Bradley processors to DH+ using either *Unconnected Messages* or *Connected Class 3 Messages*. The following is an explanation of how to setup either unconnected messages or connected messages to access data from a DH+ network depending on the type of Allen-Bradley Ethernet/IP enabled processor that you are using. *The DL7000 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 DL7000 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 DL7000 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 DL7000 with an IP address of 192.168.2.75.

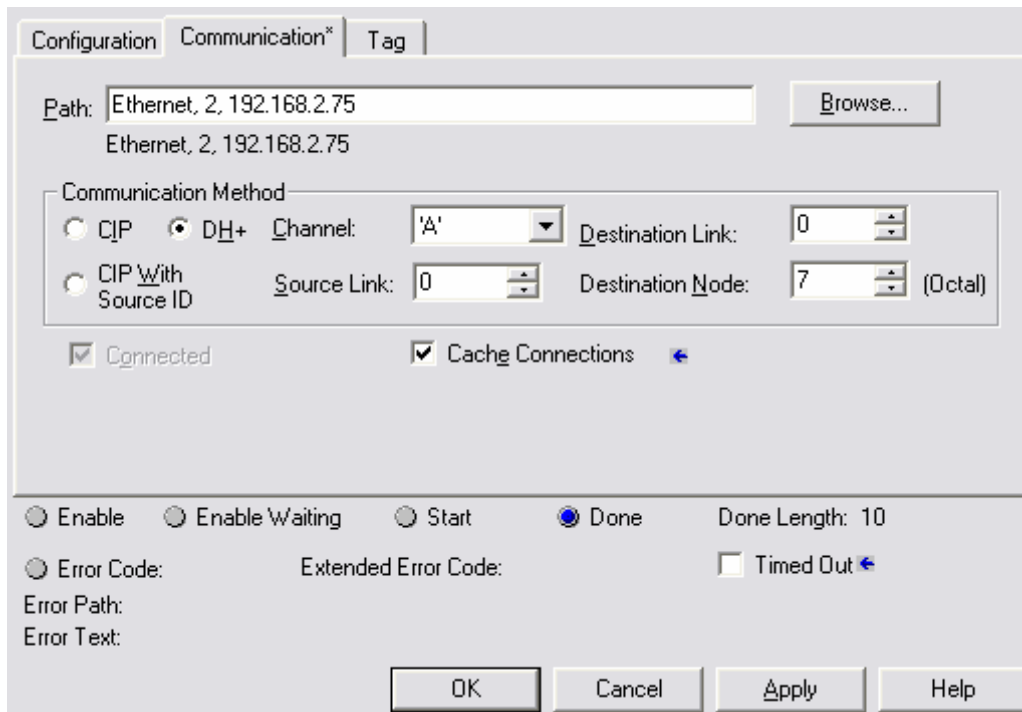
Unconnected Message

To send an unconnected message to the DL7000 setup the *Communication* tab as shown below. For the *Path* setup, direct messages out the Ethernet module to the IP address of the DL7000. 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.

The screenshot shows a configuration window with three tabs: Configuration, Communication, and Tag. The Communication tab is active. The Path field is set to "Ethernet, 2, 192.168.2.75" with a "Browse..." button. Below the Path field, the text "Ethernet, 2, 192.168.2.75" is displayed. The Communication Method section has two radio buttons: "CIP" and "DH+", with "CIP With Source ID" selected. There are also checkboxes for "Connected" (unchecked) and "Cache Connections" (checked). The "Destination Node" field is set to "7 (Octal)". At the bottom, there are radio buttons for "Enable", "Enable Waiting", "Start", and "Done", with "Enable" selected. There are also fields for "Error Code:", "Extended Error Code:", and "Error Path:", and a checkbox for "Timed Out" (unchecked). The "Done Length:" field is set to "0". At the bottom right, there are buttons for "OK", "Cancel", "Apply", and "Help".

Connected Message

To send a connected message to the DL7000 setup the *Communication* tab as shown below. For the *Path* setup, direct messages out the Ethernet module to the IP address of the DL7000. 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.



Communicating via AB Ethernet

Overview

The DL7000 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 DL7000 at 192.168.2.75.

General

This Controller

Communication Command:

Data Table Address:

Size in Elements:

Channel:

Target Device

Message Timeout :

Data Table Address:

Ethernet (IP) Address:

Local / Remote : MultiHop:

Remote Bridge Addr (dec):

Remote Station Address (dec):

Remote Bridge Link ID:

Control Bits

Ignore if timed out (TO):

To be retried (NR):

Awaiting Execution (EW):

Continuous Run (CO):

Error (ER):

Message done (DN):

Message Transmitting (ST):

Message Enabled (EN):

Waiting for Queue Space :

Error

Error Code(Hex): 0

Error Description

No errors

Browsing the DH+ Network

It is possible to browse known nodes on the DH+ network with the DL7000 using the AB Ethernet driver in RSLinx. To do this, follow the steps below.

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

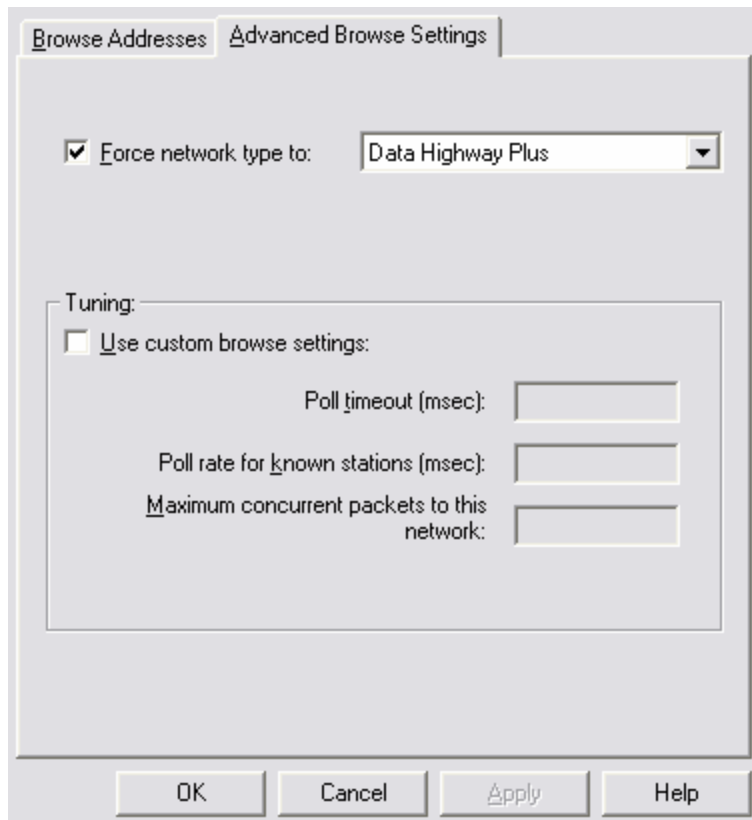
After creating the new driver, the configuration window for station *mapping* should appear. Enter the node address of the DH+ device in *Station* column and the IP address of the DL7000 in the *Host Name* column. Repeat this step if there are multiple nodes to be browsed.

Once all the nodes are entered, enter the DH+ node address of the DL7000 in the *Station* column where the *Host Name* is *Driver*. Below is an *example* showing DH+ nodes 3 and 7 being mapped to an DL7000 with an IP address of 192.168.2.75 and DH+ node address of 58 decimal (72 octal).

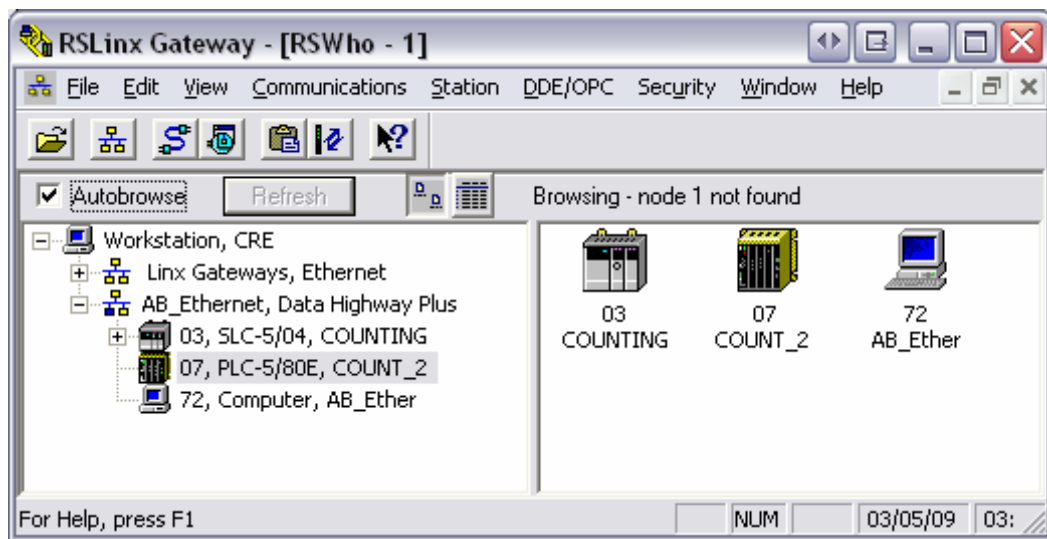
Station	Host Name
0	
3	192.168.2.75
7	192.168.2.75
58	Driver

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*.

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.



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.



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 DL7000 with an IP address of 192.168.2.75.

Unconnected Message

To send an unconnected message to the DL7000 setup the *Communication* tab as shown below. For the *Path* setup, direct messages out the Ethernet module to the IP address of the DL7000. 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.

Connected Message

To send a connected message to the DL7000 setup the *Communication* tab as shown below. For the *Path* setup, direct messages out the Ethernet module to the IP address of the DL7000. 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.

The screenshot shows a software configuration window with three tabs: Configuration, Communication*, and Tag. The Communication* tab is active. The Path field contains 'Ethernet, 2, 192.168.2.75' with a 'Browse...' button. Below the path, the Communication Method section has two radio buttons: 'CIP' (unselected) and 'DH+' (selected). Under 'DH+', there is a 'Channel' dropdown menu set to 'A' and a 'Destination Link' spinner set to '0'. Under 'CIP', there is a radio button for 'CIP With Source ID' (unselected), a 'Source Link' spinner set to '0', and a 'Destination Node' spinner set to '7' with '(Decimal)' next to it. At the bottom of the Communication* tab, there are two checked checkboxes: 'Connected' and 'Cache Connections'. Below the Communication* tab, there are radio buttons for 'Enable', 'Enable/Waiting', 'Start', and 'Done' (selected), along with a 'Done Length: 10' field. There are also checkboxes for 'Error Code', 'Extended Error Code', and 'Timed Out'. At the bottom of the window are buttons for 'OK', 'Cancel', 'Apply', and 'Help'.