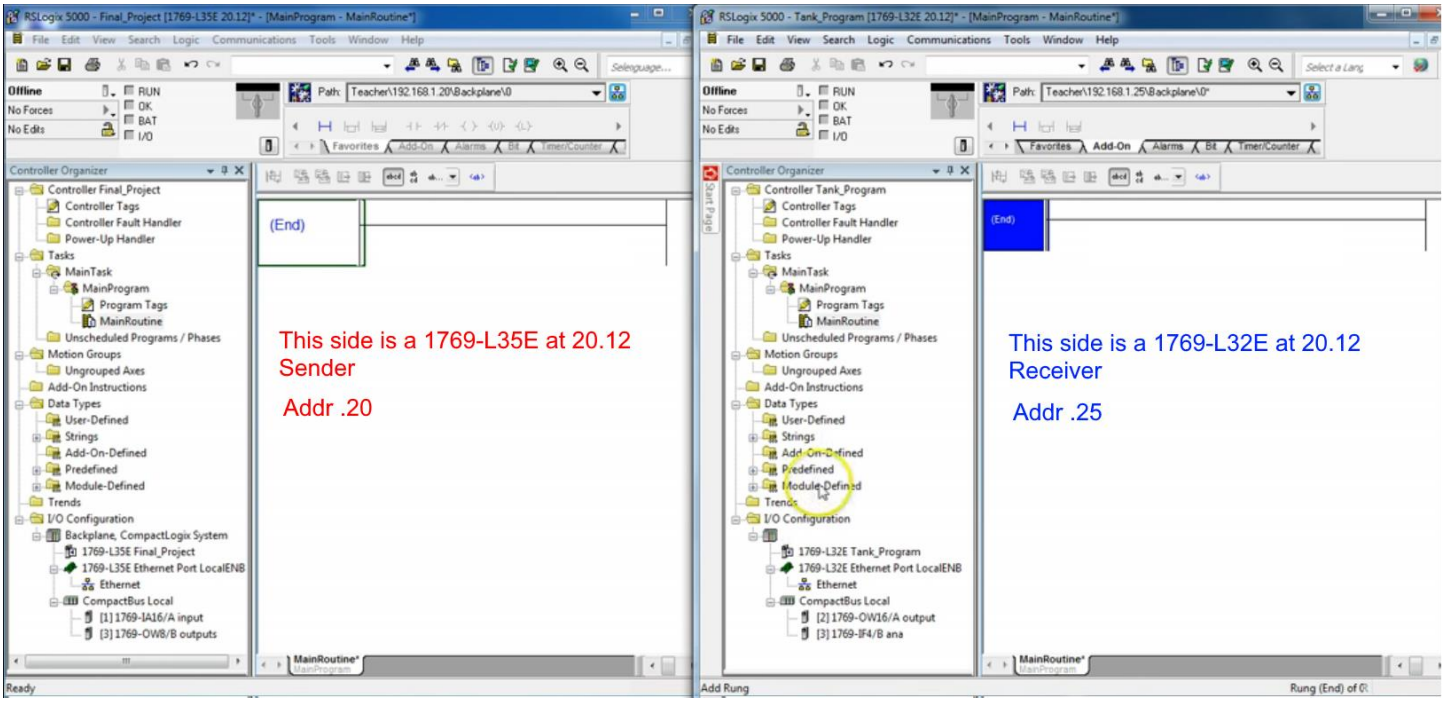
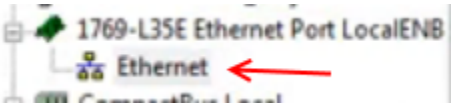
How to program a producer/consumer data messaging in RSLogix 5000 using Ethernet (X)

This is the basic method. There are many ways including message based. Some methods are very complicated.
There is a more recent note on this topic in Databox.

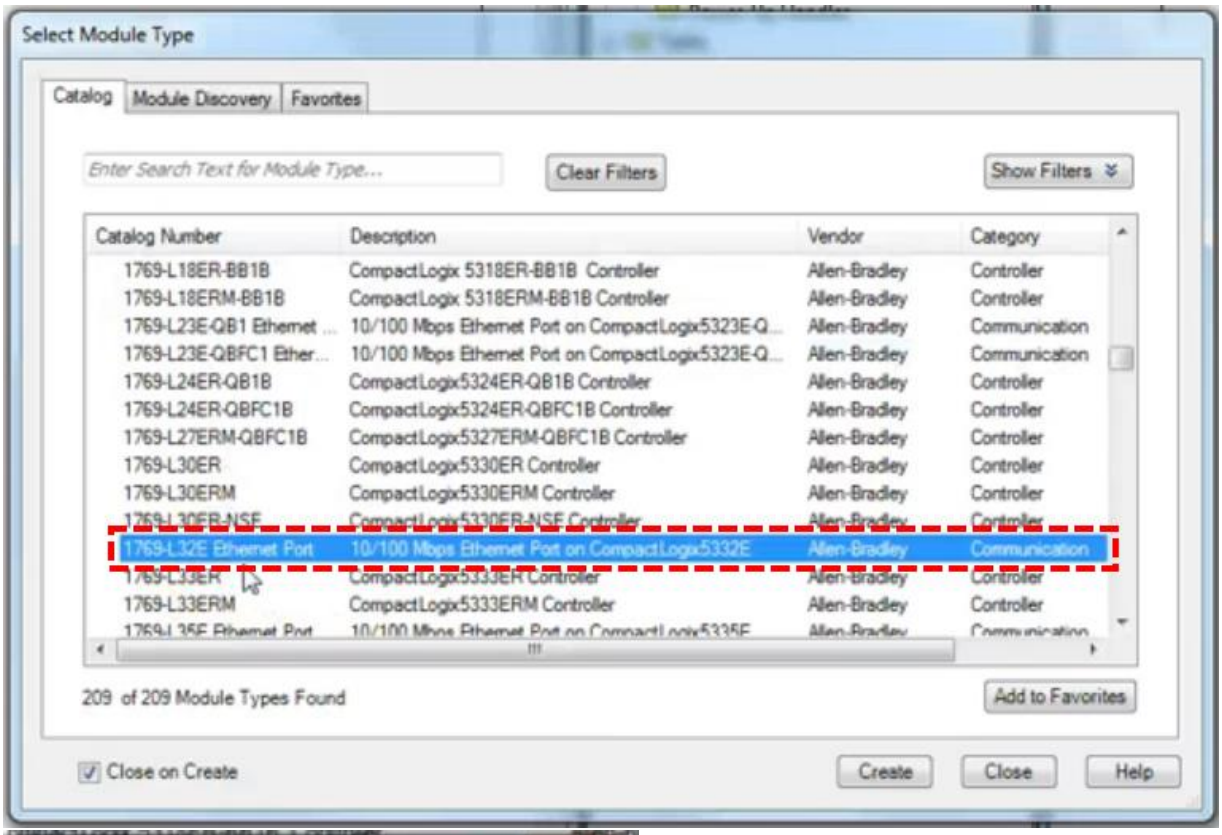


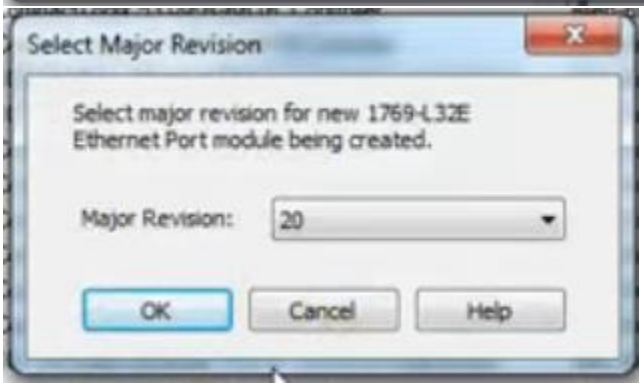
First step is to set up the ethernet connection so they know where to look.

On the L35 side select “Ethernet” under the 1769-L35E Ethernet Port LocalENB rack symbol, and select New Module under right click menu.



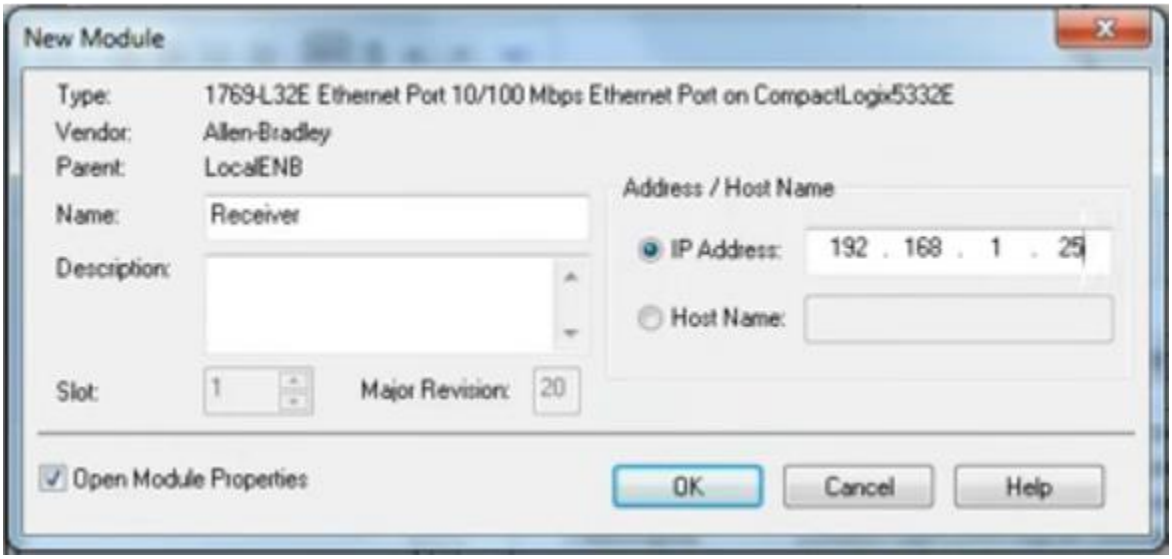
Search for and select the 1769-L32E Ethernet Port 10/100 Mbps … from the catalog. Basically we are telling the PLC about the other PLC’s communications setup.





Then click Create and select the matching major revision level.

In the next dialog we will name our new module. The name describes the other PLC which, in this case, is the receiver. We enter the IP address of the other PLC as well. We are telling the L35 what address to go out and look for.



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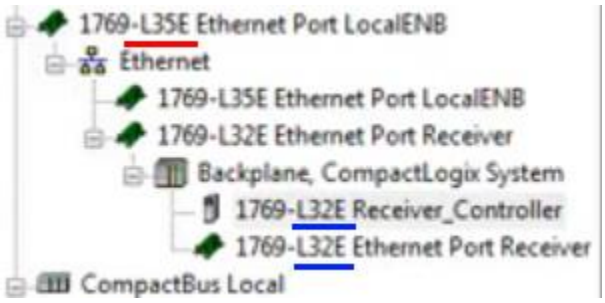
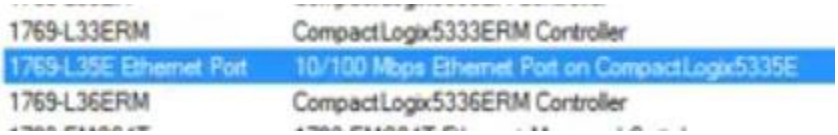
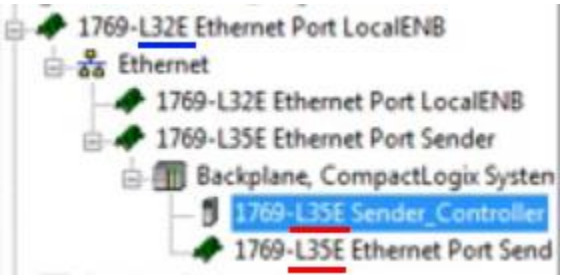
On the L35 side we now have this…



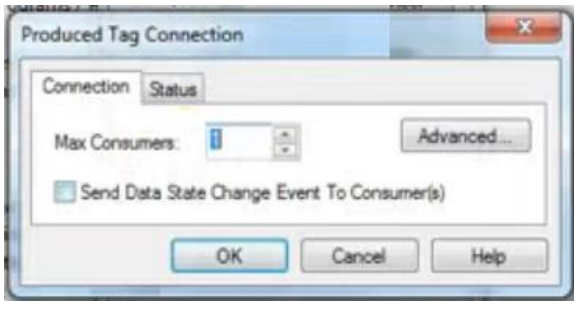
Now we will do the same for the L32E PLC, we will register the L35's information.

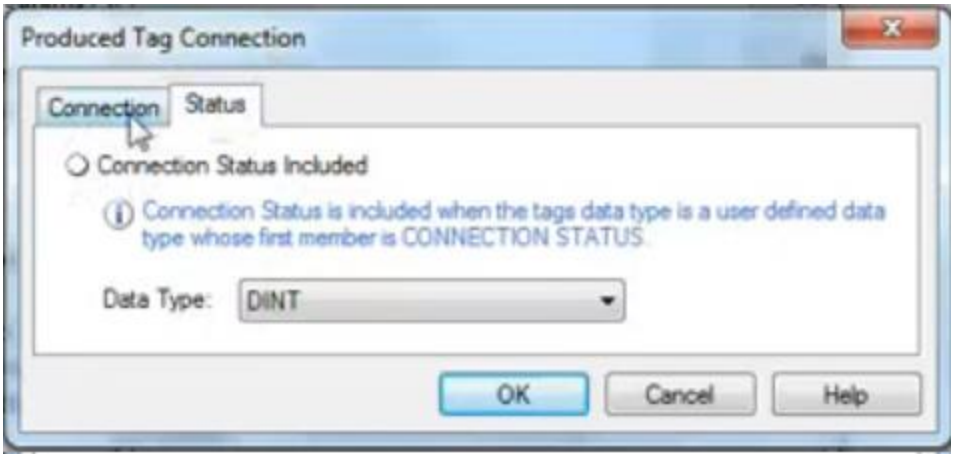




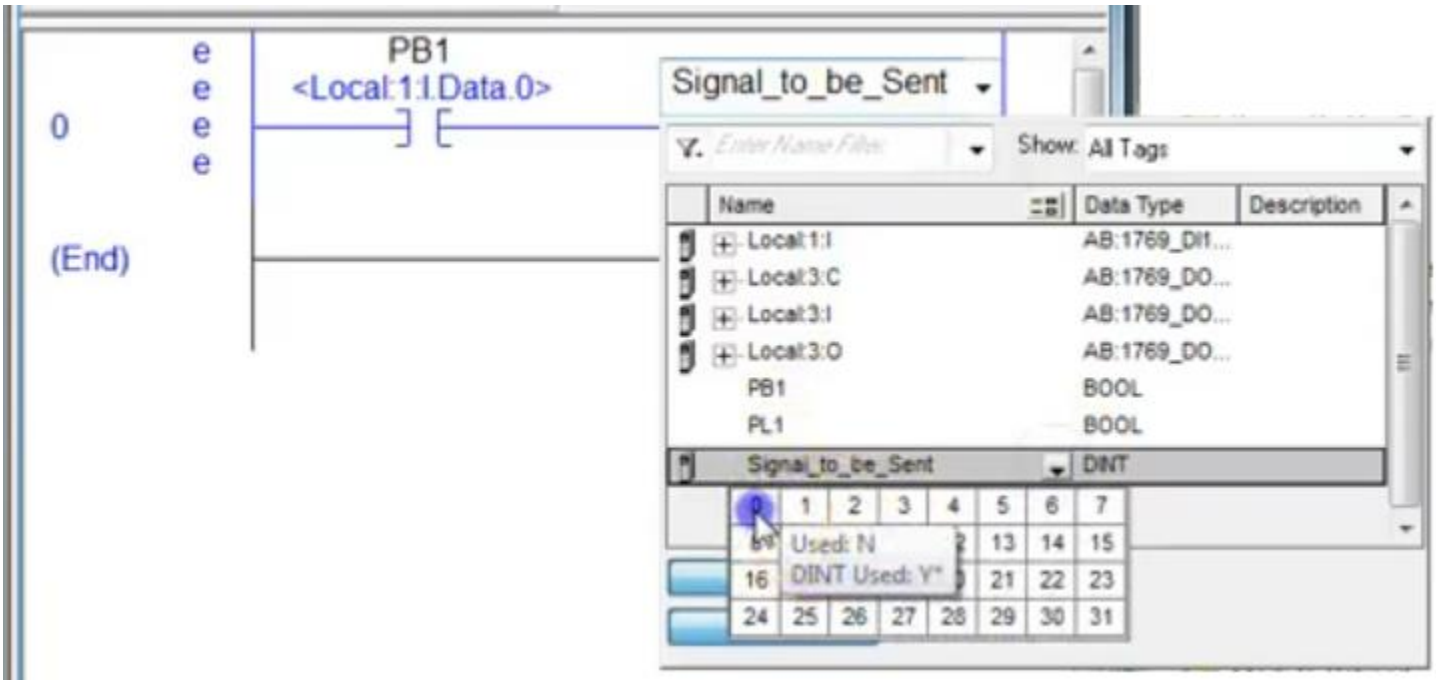
All tags which are used to communicate between PLCs must be created and stored in the Controller Tags group under Controller.

We will create a tag called "Signal_to_be_sent", it is a **Produced** type tag, this will cause the data type to become DINT. Now click the **Connection** button and confirm the entry for Max Consumers is set to 1.

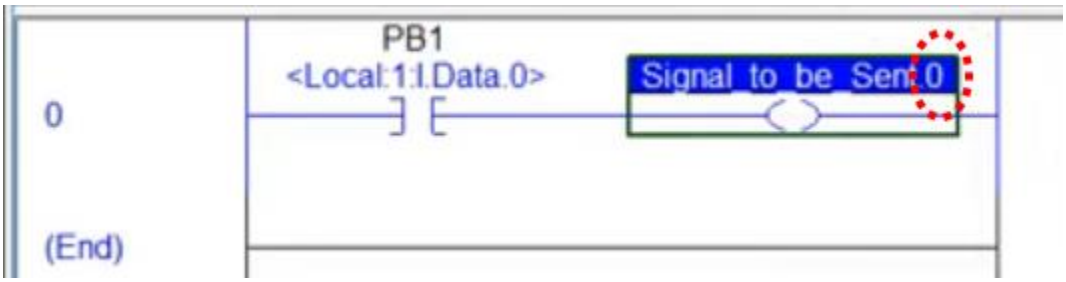




Now we create a simple program with the contact being a local input and the coil being on the other plc. But first we must specify which bit inside the data type DINT we wish to send. We can only send 1 bit.

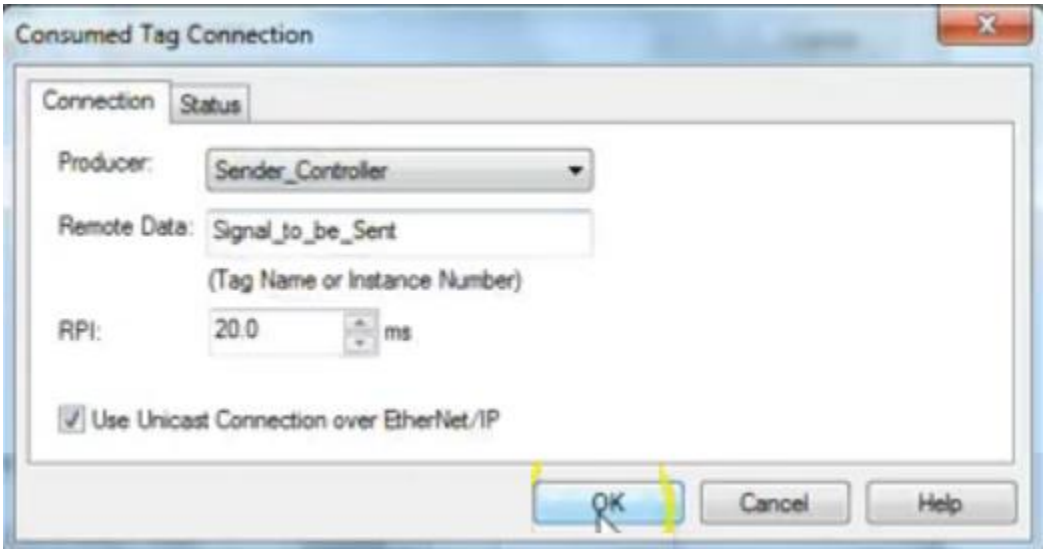


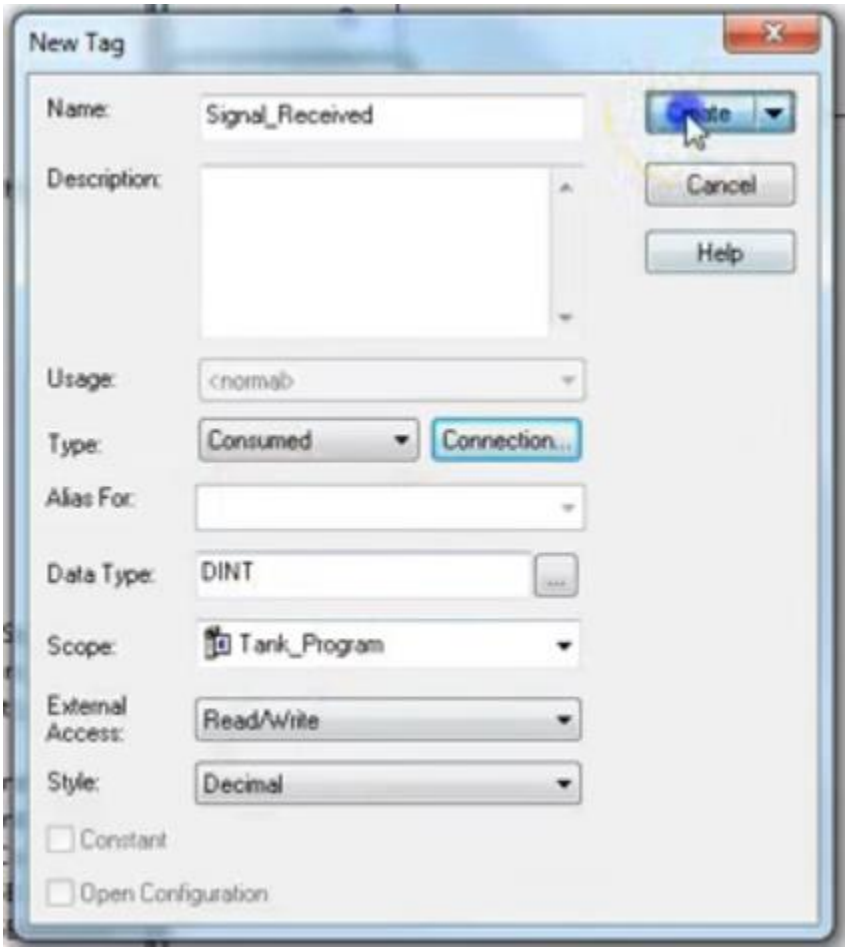
Once we select the bit we see it represented in the tag name above the coil.



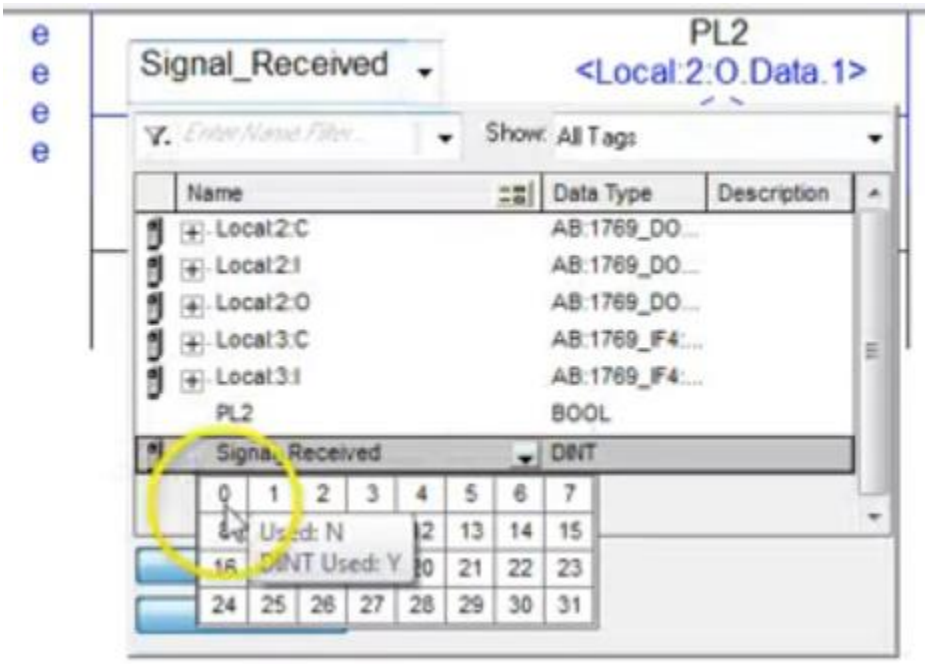
Above is the Producer side.

On the consumer (receiver) side we will set up a similar arrangement, but the contactor will be a bit we send from L35 (this is likely the reason we had to select a single bit above). The coil will be a local physical output. Other data types can likely receive more than on bit. Under Controller Tags create a new tag called Signal_Received of type Consumed then click Connection and select the Producer item “Sender_Controller” and then enter the tag name of the tag sending the data on the Sender side.

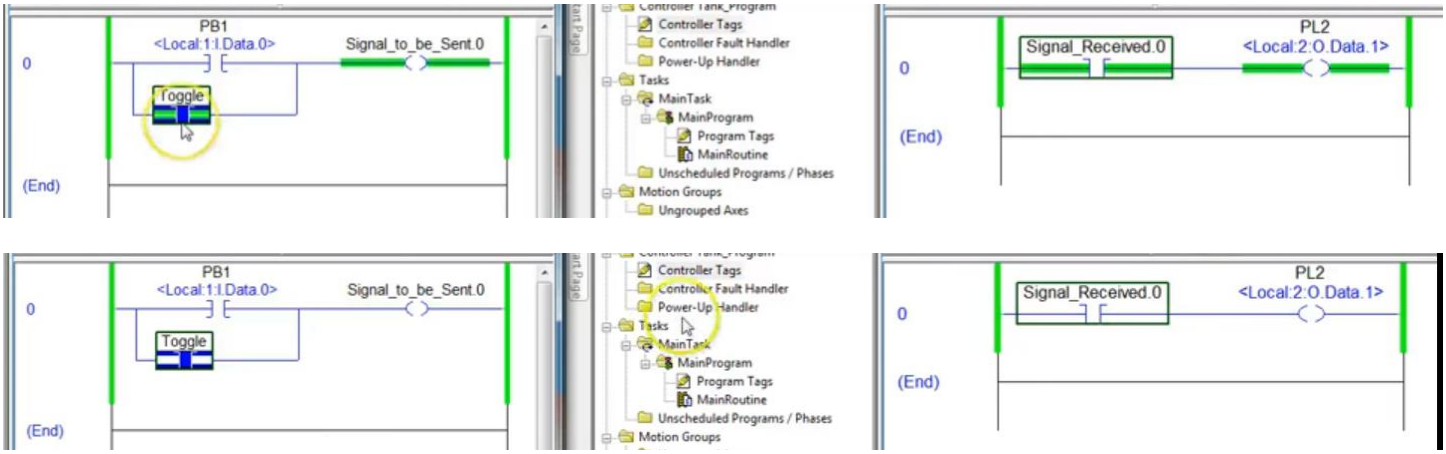




Make sure you specify the proper bit on the contactor tag name.



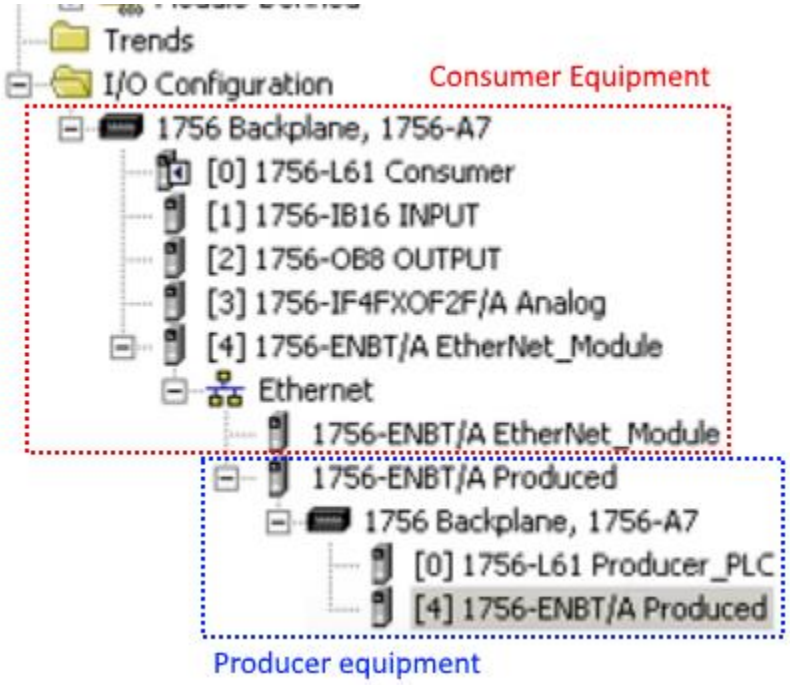
Now download each program to its respective controller. Put the controllers in remote run. Run the test cases.

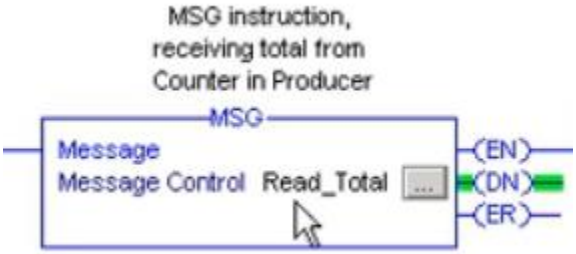


Use a message command to send data of larger types. Data going the other way works the same.

How to set up a Producer/Consumer Message Exchange (X)

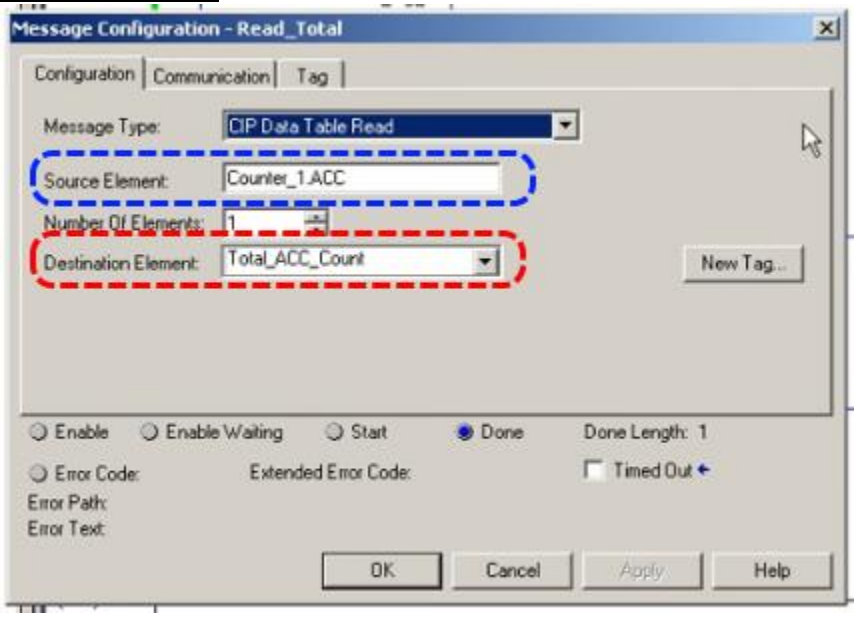
How to set up a message instruction on a ControlLogix platform? The machine we are working on is the Consumer. The second machine is referred to as Produce in the hardware tree.





Message instructions must have a name, the example above is named Read_Total. Keep in mind this name is not a tag, it, the name, does not transmit or receive data. Now click the eclipse to bring up the configuration dialog box.

Configuration Tab



Message Type: tells the application what type of equipment you are connecting to, offers generic as well.

Source Element: tag name on the other machine you wish to link to. You can include the dot attributes as well, for ex. .ACC.

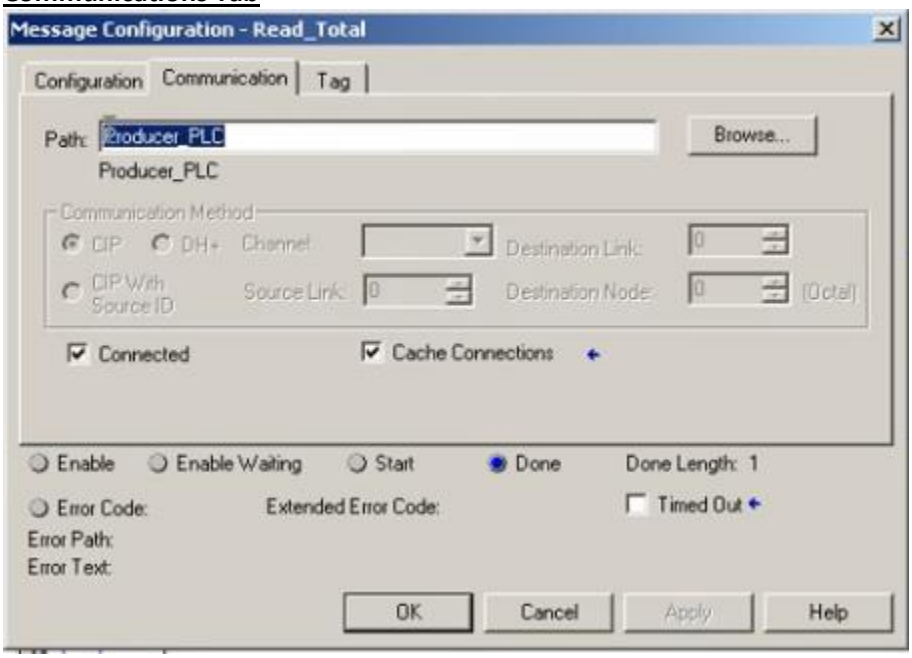
Number of Elements: size of the data table.

Destination Element: tag name of destination tag (on same PC).

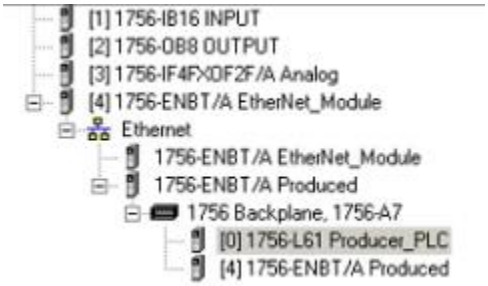
Red is the local tag which will receive the data acquired from the other computer on the network.

Blue is the tag on the other networked computer that we will read, we will transfer its data from the other computer to our local computer and the tag Total_ACC_Count will receive that data.

Communications Tab

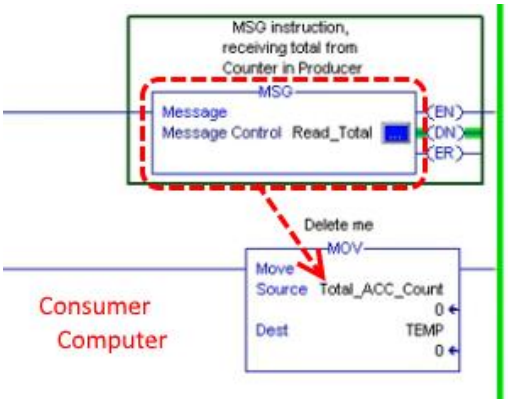


Path: brings up the network tree so you can select the other hardware. In this case we are selecting the **Producer** PLC.



Tag Tab

Name: the name given to the IO block. This is not the data tag!



In this example our MSG FB will retrieve the data on the other machine

With the other machine set up appropriately (and with a tag named Counter_1.ACC, the data will be extracted, moved into Total_ACC_Count, and the transferred to TEMP.

Code from Producer computer: