



Lakewood Automation

27911 Clemens Road

Westlake, Ohio 44145

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CJ1M-CPU11-ETN to CQM1H Controller Link.

PURPOSE:

This document will show how to configure the CQM1H and the CJ1M-CPU11-ETN so that data can be transferred over the Controller Link Network. It will also show how to go online with the CQM1H while be physically connected to the CJ1M over the Controller Link network.

REQUIRED EQUIPMENT:

- | | | |
|----|----------------|-------------------------|
| 1. | CJ1M-CPU11-ETN | Omron CJ1 PLC. |
| 2. | CJ1W-PA202 | PLC power supply. |
| 3. | CJ1W-CLK21 | Controller Link module. |
| 4. | CQM1H-CPU51 | Omron CQM1H PLC. |
| 5. | CQM1-PA203 | PLC power supply. |
| 6. | CQM1-CLK21 | Controller Link module. |

REQUIRED SOFTWARE:

- | | | |
|----|--------------|---------------------------------|
| 1. | CX-PROG V7.2 | Omron PLC Programming Software. |
|----|--------------|---------------------------------|

REQUIRED CABLES:

- | | | |
|----|------------|------------------------|
| 1. | CS1W-CN226 | PLC Programming Cable. |
|----|------------|------------------------|

FILES:

HELPFUL MANUALS:

W309 Controller Link Units.

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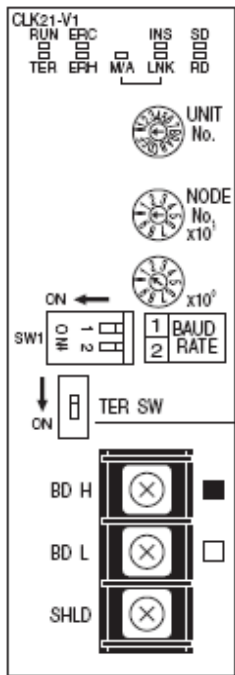
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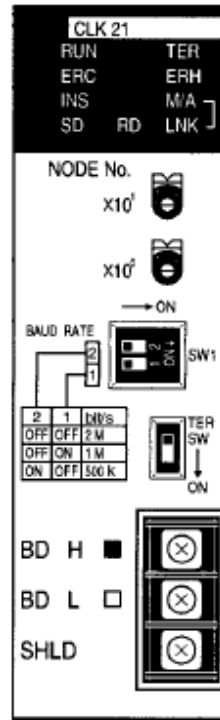
INSTRUCTIONS:

CJ1M-CLK21-V1



Unit # 1
Node # 01
Baud Rate 1 Off
Baud Rate 2 Off
Ter Sw On

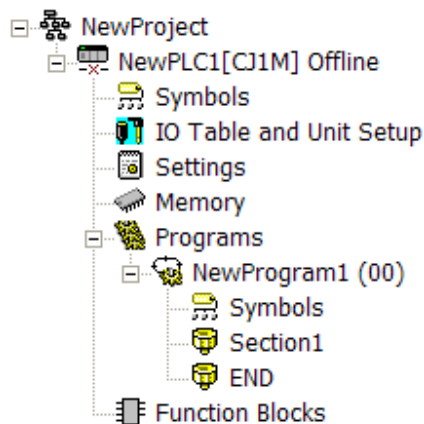
CQM1H-CLK21



Node # 02
Baud Rate 1 Off
Baud Rate 2 Off
Ter Sw On

Make sure the Ethernet unit is set to Unit 0.

1. Start CX-Programmer and add the First PLC. CJ1M-CPU11. Set Network Type to Toolbus.



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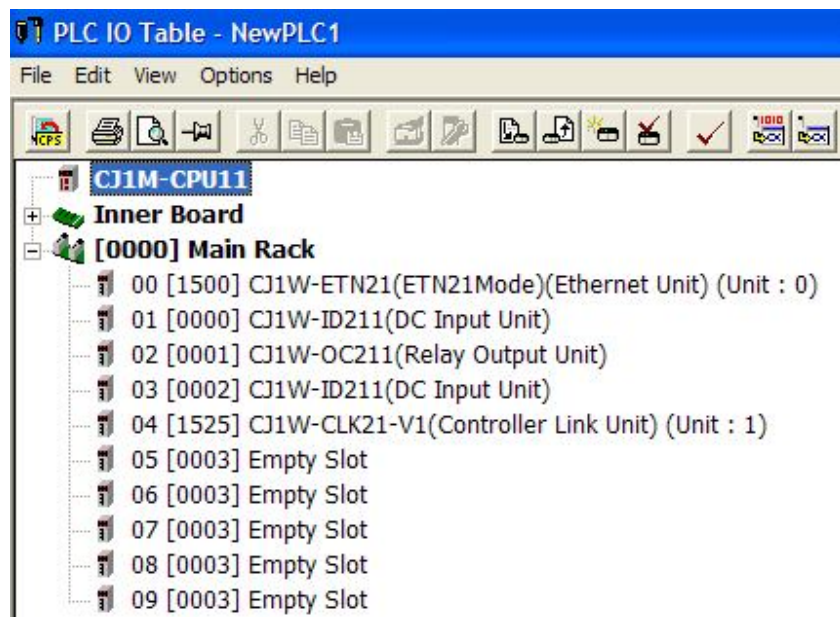
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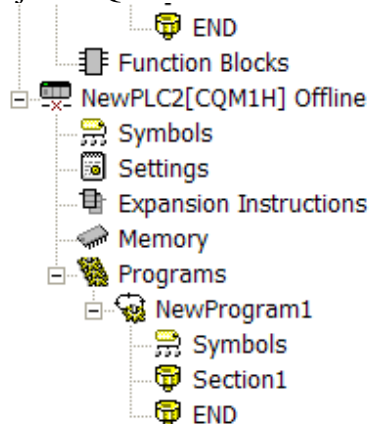
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2. Go online with the CJ1M and put the PLC in the Stop/Program Mode.
3. Double Click on the IO Table. Click on Options and then Delete. Click on Options and then Create. Transfer to the PLC. Close the IO Table Window. Go Offline.



4. Add the second PLC to your project. CQM1H-CPU51. Set the Network Type to Toolbus.



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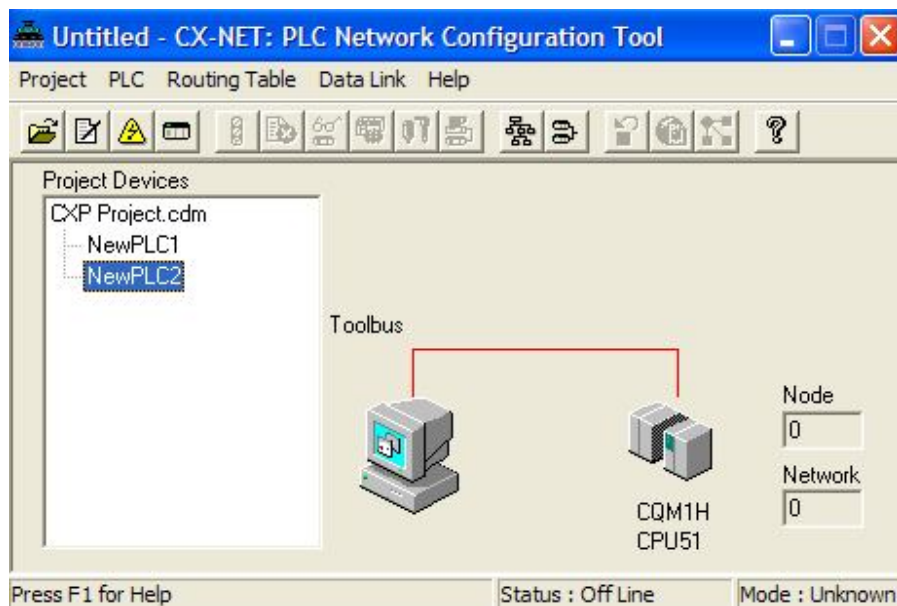
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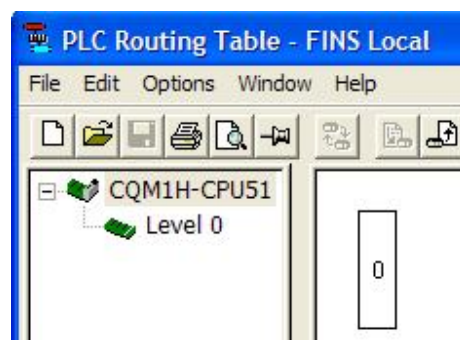
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5. Go online with the CQM1H. Go offline. This just checks that the communications work.
6. Click on the CQM1H PLC. Tools / Network Settings. Click on the CQM1H PLC. Go Online. The Red line should go green.



7. Click on Routing Table and select Setup.



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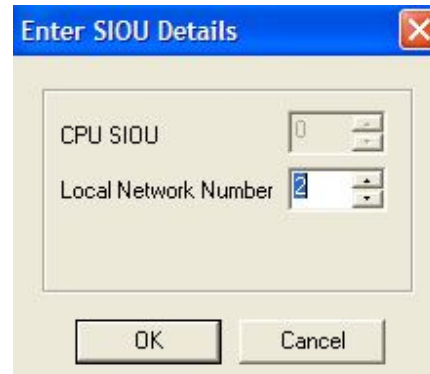
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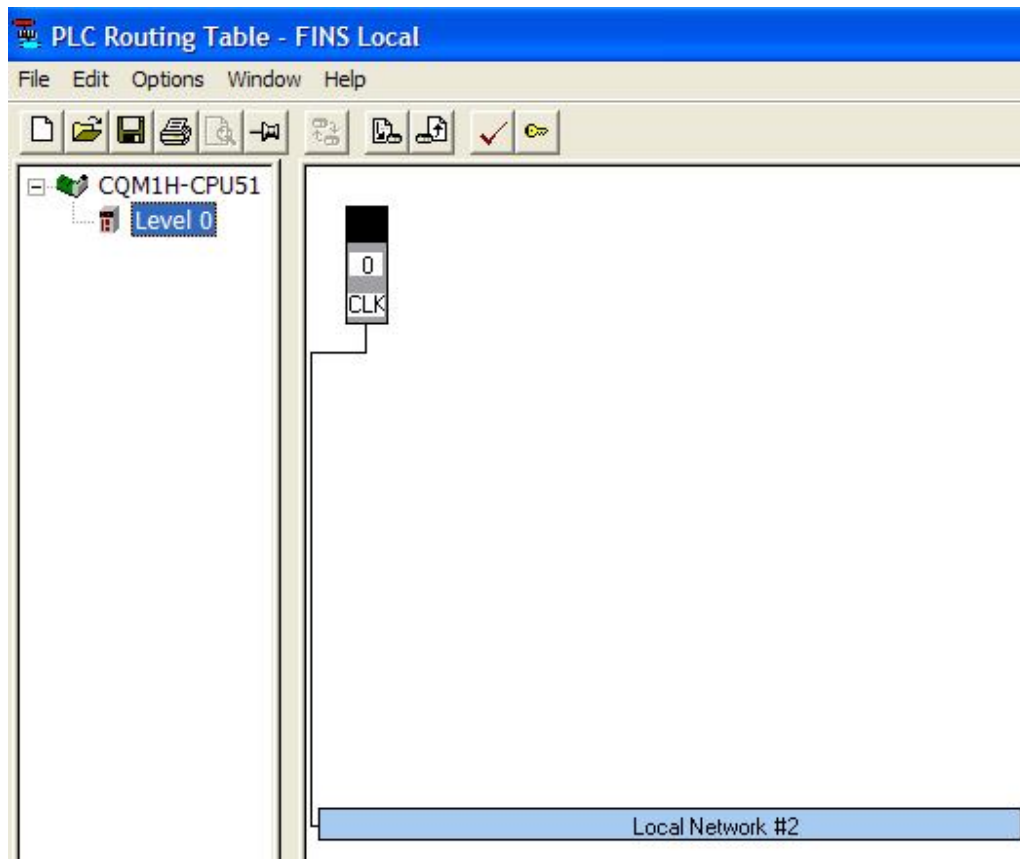
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8. Right Click Level 0, select Insert CPU SIOU. Change Local Network Number to 2. Click OK.



9. Transfer to the PLC. Close the Routing Table window. Go offline.



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10. In the PLC Network Configuration Tool click on Project and select Add device and make the following settings.

The screenshot shows a dialog box titled "Change PLC" with the following fields and options:

- Device Name:** A text input field containing "New PLC 2".
- Device Type:** A dropdown menu set to "CQM1H" with a "Settings..." button to its right.
- Network Type:** A dropdown menu set to "[NewPLC2]" with a "Settings..." button to its right.
- Comment:** An empty text area with a vertical scrollbar.
- Buttons:** "OK", "Cancel", and "Help" buttons are located at the bottom of the dialog.

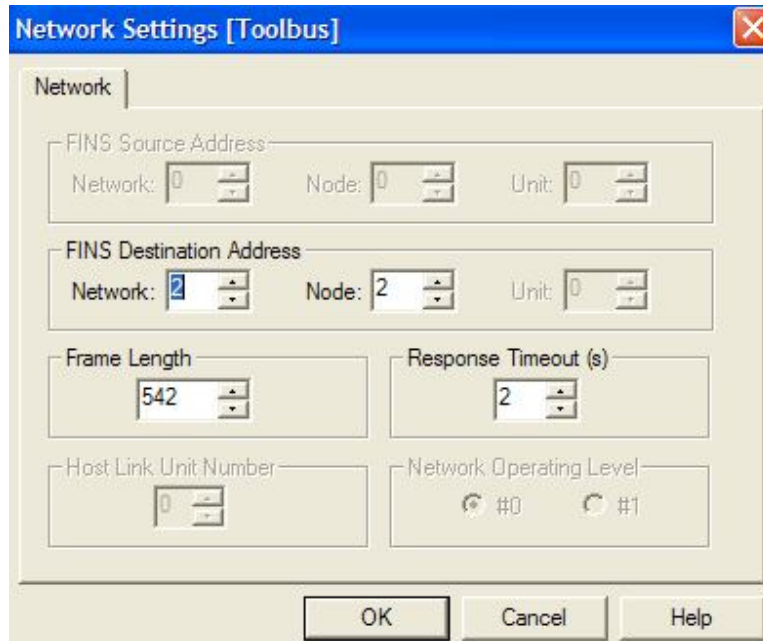
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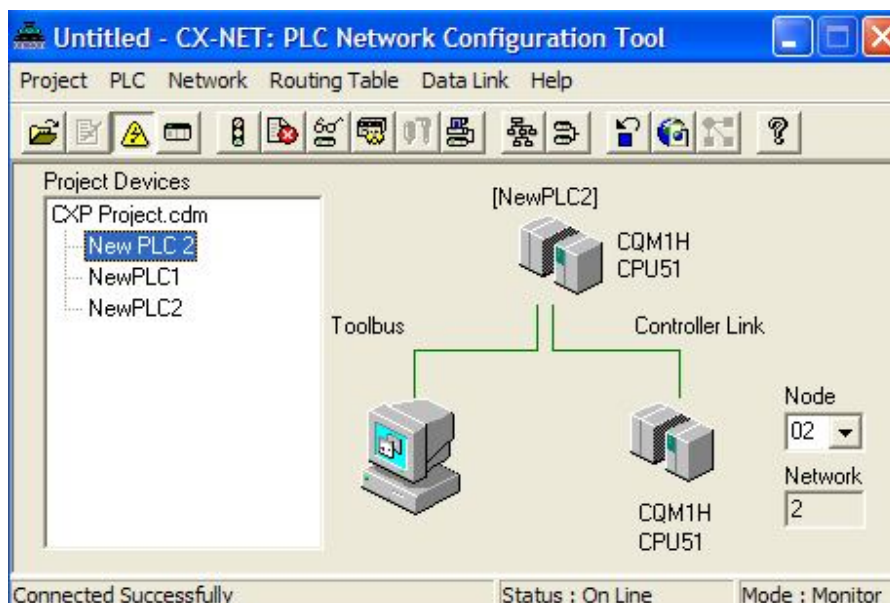
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11. Click on Network Type Settings. Make the following settings. Click OK. Then OK again.



12. Select the PLC that was just created. Go online. Then go back offline. Line should go green.



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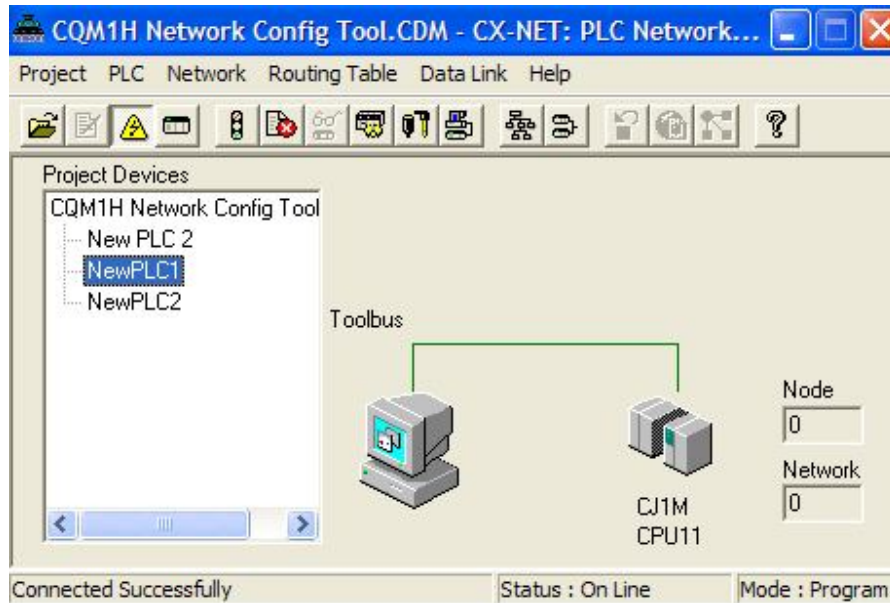
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13. Select the CJ1M PLC and go online.



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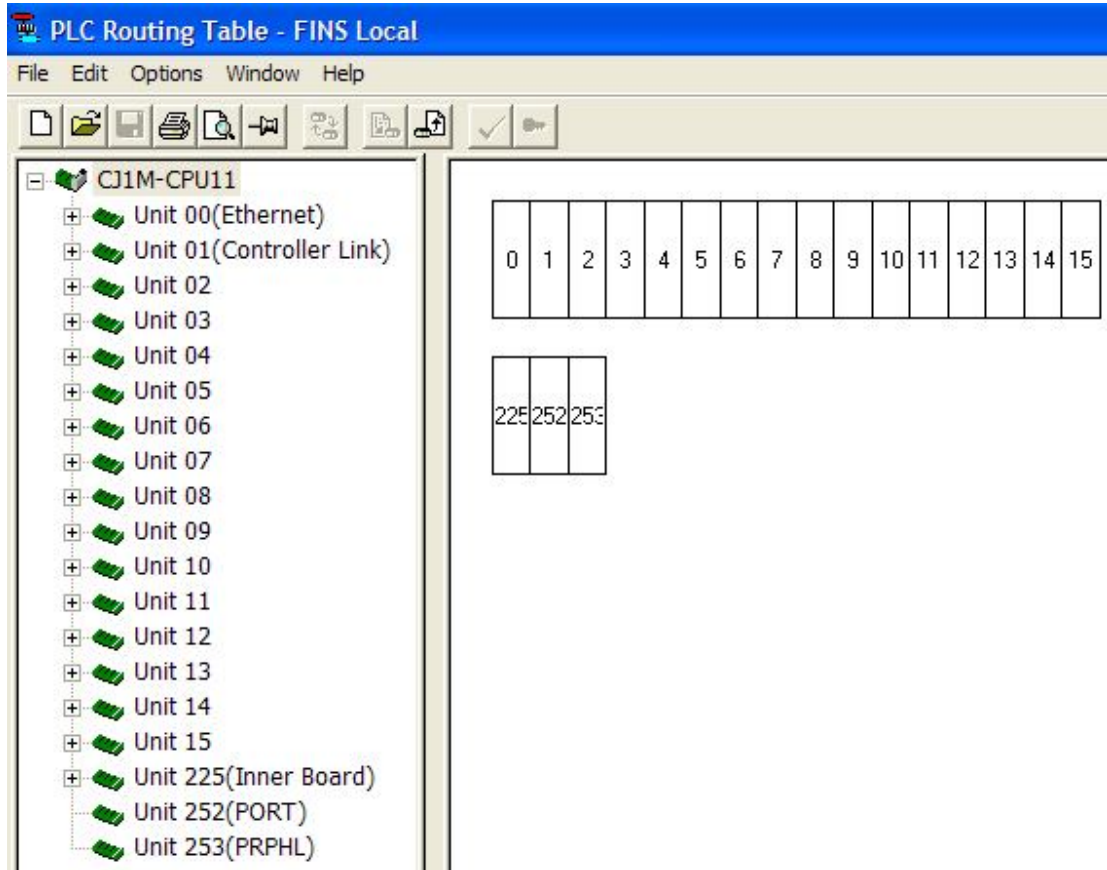
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14. Click on Routing Table and select Setup.



15. Right Click on Unit 00 Ethernet. Insert CPU SIOU. Enter 1 and click OK.



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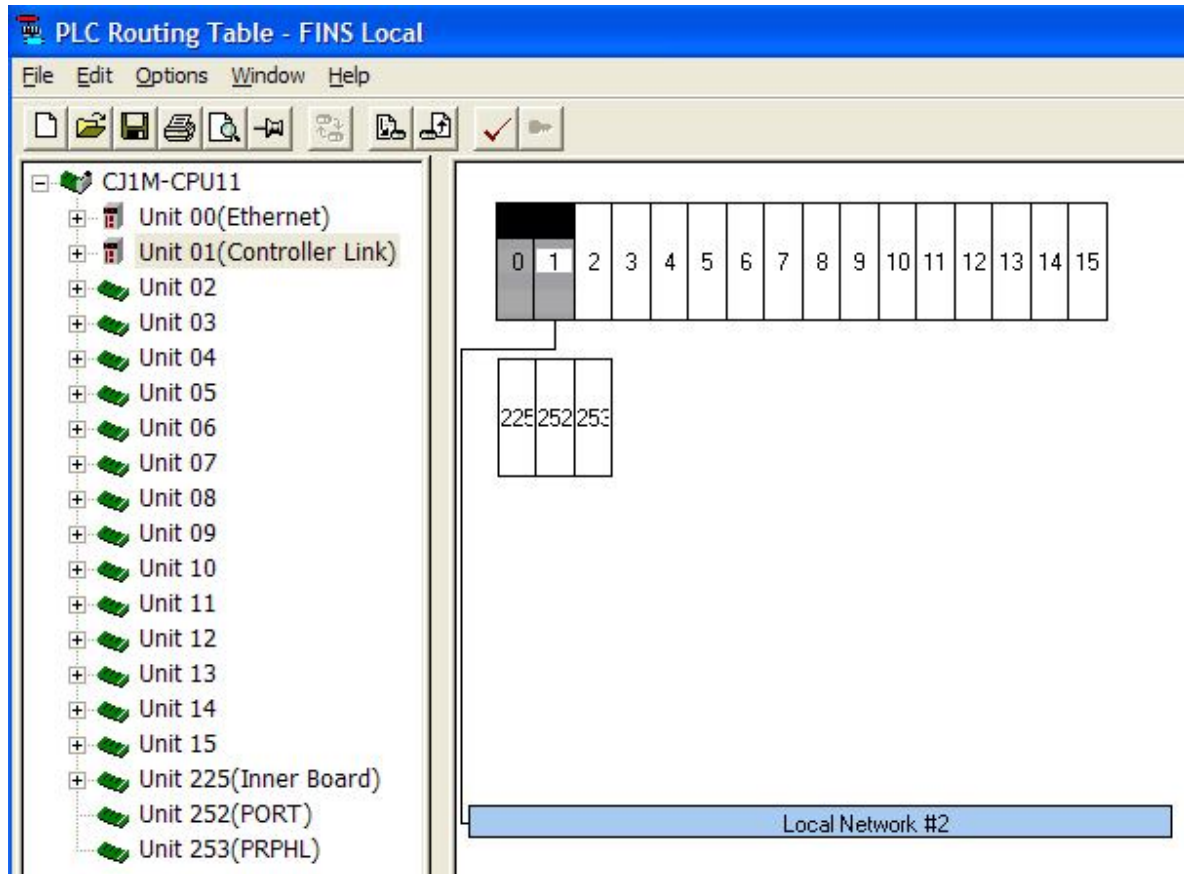
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16. Right Click on Unit 01 Controller Link. Insert CPU SIOU. Enter 2 and click OK.



17. Transfer to the PLC. Close the PLC Routing Table. Close the Network Config Tool.

18. Start CX Integrator. Click on Network and select Communications Settings. Setup for the CJ1M PLC and Toolbus.

19. Click on Tools and select Start Data Link. Click on Controller Link and select OK. The Data Link Component window will open.

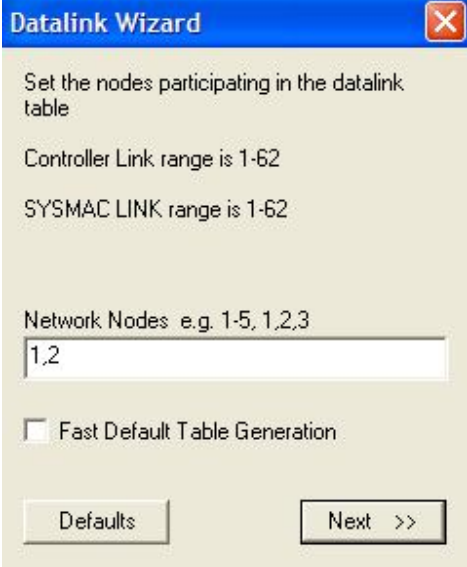
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20. Click on Table and select Wizard. Enter the node numbers being used on the network and click Next.



Datalink Wizard

Set the nodes participating in the datalink table

Controller Link range is 1-62

SYSMAC LINK range is 1-62

Network Nodes e.g. 1-5, 1,2,3

1,2

Fast Default Table Generation

Defaults Next >>

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21. Node 1 info will show up. Select the CJ1M PLC. Pick the 2 areas used for data transfer. Click Next.

The screenshot shows the 'Datalink Wizard' window with the following configuration:

- Node: 1
- PLC: CJ1M
- Area 1: Memory: CIO, Start Address: 50, Size: 10
- Area 2: Memory: D, Start Address: 1000, Size: 10
- Status: Default, Start Address: 0, Size: 16
- Ordered Destination Nodes: e.g. 1-5, 6,7
1,2

Buttons: Make Default, Next >>

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22. Node 2 info will show up. Select the CQM1H PLC. Pick the 2 areas used for data transfer. Click Next.

The screenshot shows the 'Datalink Wizard' window with the following configuration:

- Node: 2
- PLC: CQM1H CPU51
- Area 1: Memory (IR), Start Address (20), Size (10)
- Area 2: Memory (DM), Start Address (500), Size (10)
- Status: Default, Start Address (0), Size (16)
- Ordered Destination Nodes: e.g. 1-5, 6,7 (Input: 1,2)

Buttons: Make Default, Next >>

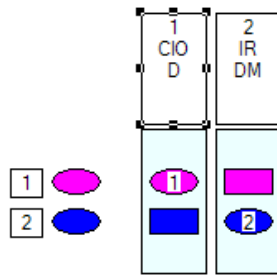
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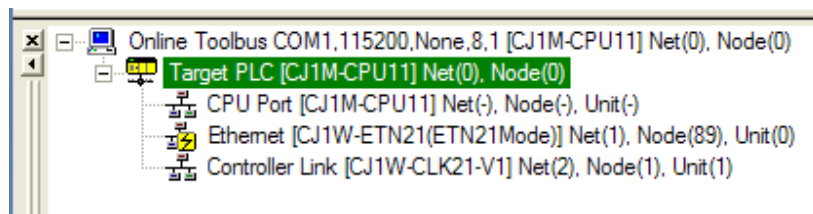
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23. The following screen will then be displayed. Click on File and select Save As. Close the Data Link Component.



Node	PLC	<Area1>				<Area2>			
Node	PLC	Link Addr.	Size	Offset	Src Addr.	Link Addr.	Size	Offset	Src Addr.
Node01	CJ1M	00050	10	----	Send	D01000	10	----	Send
Node02		00060	10	0	00030	D01010	10	0	D00510

24. Go online with CX-Integrator. The networks will be uploaded.



25. Right Click on the Controller Link network. Select Start Data Link. The Data Link Component will open.

26. Click on File and select Open. Find the file we saved earlier. Click Open.

27. Click the Online menu and select Set all Nodes for Network Operations.

28. Transfer to the PLC.

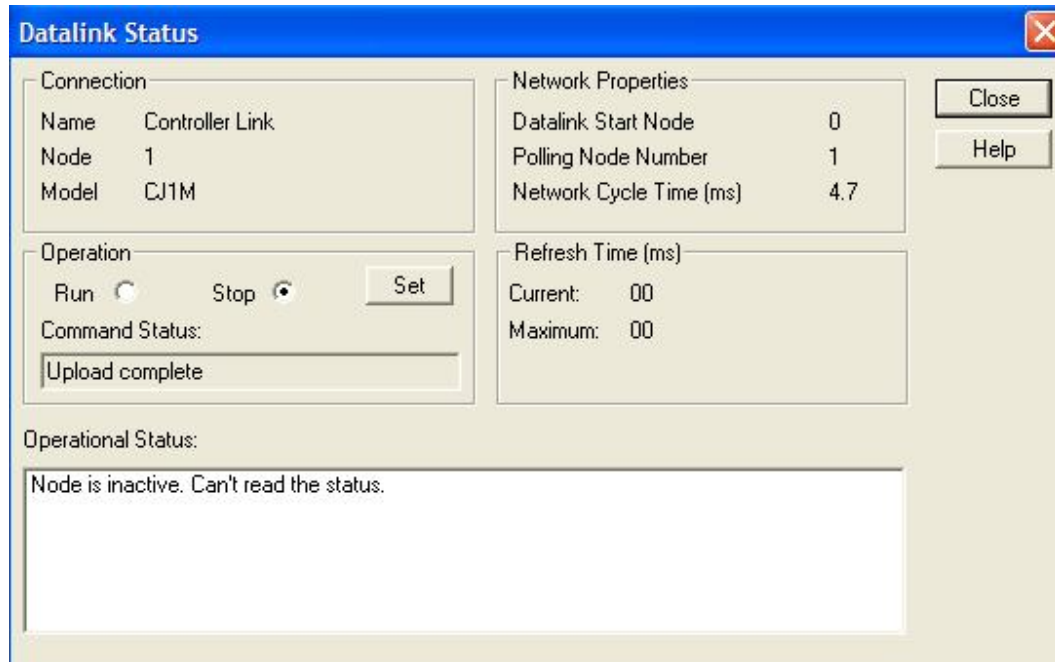
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29. Click the Online menu and select Data Link Operation/Status.



30. Click Run and then press Set. Once started click on Close.

31. Close the Data Link Component window.

32. In CX-Integrator go offline. Close CX-Integrator. Go back to CX-Programmer.

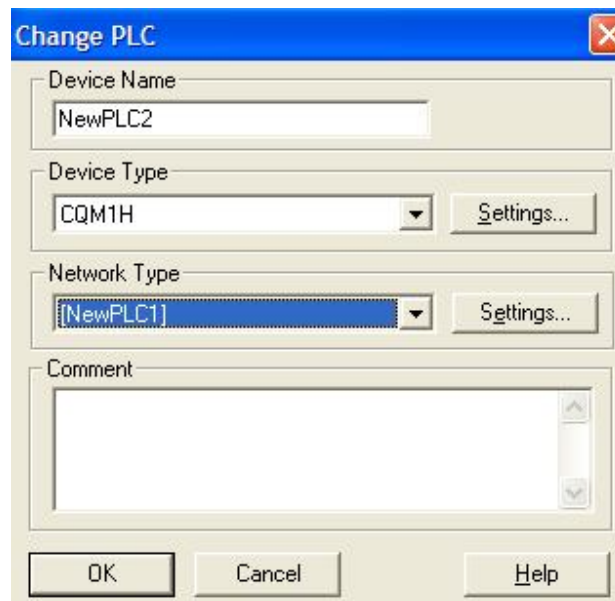
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33. Double Click on the CQM1H and change the Network Type to NewPLC1. This means we are going to use the CJ1M to connect to the CQM1H PLC.



The screenshot shows a 'Change PLC' dialog box with the following fields and options:

- Device Name:** Text input field containing 'NewPLC2'.
- Device Type:** Dropdown menu set to 'CQM1H', with a 'Settings...' button to its right.
- Network Type:** Dropdown menu set to 'NewPLC1', with a 'Settings...' button to its right.
- Comment:** A large empty text area for notes.
- Buttons:** 'OK', 'Cancel', and 'Help' buttons at the bottom.

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34. Click on the Network Type Settings. Change to Network 2 (which is the Controller Link network) and Node 2.

Network Settings [Toolbus]

Network

FINS Source Address
Network: 0 Node: 0 Unit: 0

FINS Destination Address
Network: 2 Node: 2 Unit: 0

Frame Length: 542

Response Timeout (s): 2

Host Link Unit Number: 0

Network Operating Level: #0 #1

OK Cancel Help

35. Click on OK and then OK again.

36. Go Online with the CQM1H with the cable connected to the CJ1M.

37. Check that data is being transferred between the 2 PLCs.