

# PLC133 LAB 3.2: NODE COMMISSIONING UTILITY

Student Name: \_\_\_\_\_

Student ID: \_\_\_\_\_

## LAB OUTCOMES:

1. Demonstrate how to use the RSNetWorx Node Commission Utility
2. Demonstrate how to set the Node ID using the Node Commission Utility
3. Demonstrate how to set the Baud Rate using the Node Commission Utility

## LAB PROCESS:

Lab Exercise 2 will cover using the Node Commissioning Utility in RSNetWorx for DeviceNet software. For DeviceNet, Commissioning is setting the Node (MAC) ID (address) and / or setting the Baud Rate / Data Rate (network communication speed).

## Part 1

### EQUIPMENT REQUIRED:

ControlLogix Demo board with 1756-DNB module, 1756-processor  
1756-Ethernet Communication Module  
Discrete Input / Output Modules

DeviceNet Demo Board with 871TM Prox switch  
RightSight Standard Diffuse Photoelectric Sensor  
855T – Stack Light  
1791D 8B8P Compact Block I/O  
PowerFlex 4 VFD

Note: Other components are also installed on DeviceNet Demo Board

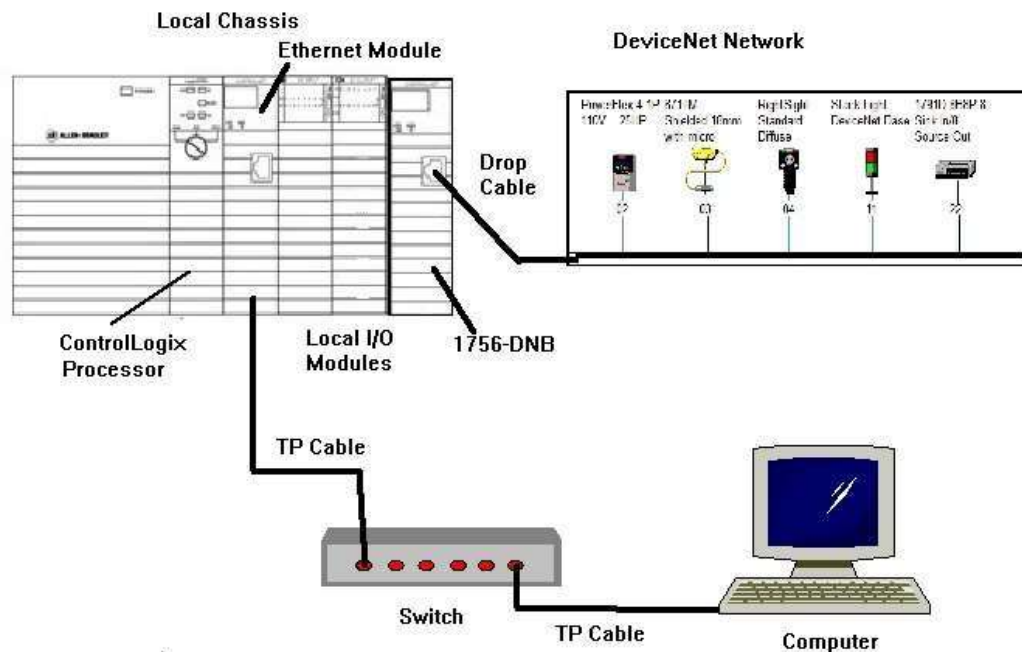


Figure 1-A

Ensure all the DeviceNet component's cables are connected to the IDC taps on the bottom of the DeviceNet Demo Board

Twisted pair Ethernet cables from Computer Ethernet Port the 1756-EtherNet Module Note: the cable may be directly connected - no Switch required

DeviceNet drop cable to connect the DeviceNet Demo Board to the front port on the 1756-DNB Module located on the ControlLogix Demo Board.

## Power-up ControlLogix and DeviceNet Demo Boards

Note: If the display on the 1756-DNB Module shows - No Network Power – the 1756-DNB Module is not receiving power from the DeviceNet network (drop cable) cable.

In the Lab exercise a connection will be made from the computer's Ethernet Port thru RSNetWorx for DeviceNet using a RSLinx, EtherNet/IP Driver to connect to the DeviceNet network

Ensure the Computer can connect to the ControlLogix Demo board using the 1756 – Ethernet Communication Module with an EtherNet/IP driver.

Note: DeviceNet Scanner Module - 1756-DNB – located in slot 6.

## RSNetWORX

1. Open RSNetWorx for DeviceNet.



Figure 1-A

2. Start a new DeviceNet Network Configuration
3. Go online to browse the DeviceNet network (DeviceNet Demo Board)

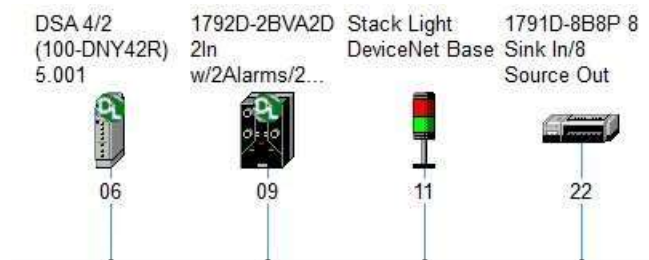


Figure 2-A

4. For this example, the Node Address of the 1791D -8B8P Compact I/O Block will be modified from 22 to 10.

Note; Do Not choose a Node Address already used on the network – duplicate node error will occur.

DeviceNet Demo Board Addresses may be different

From the RSNetWorx for DeviceNet Menu Toolbar select Tools -> Node Commissioning...

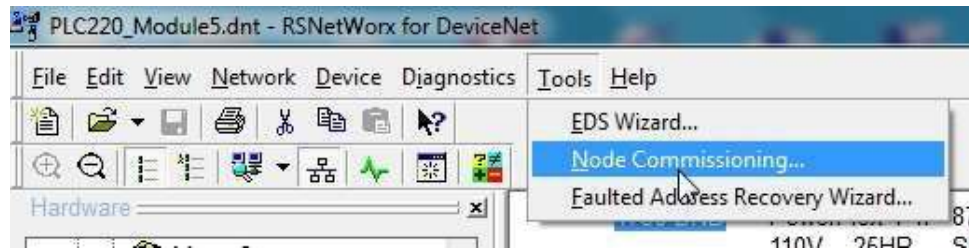


Figure 3-A  
Node Commissioning Selection

5. From the Node Commissioning window click the Browse button.



Figure 4-A  
Node Commissioning - Browse button.

6. The Device Selection window opens.

The Device Selection windows show the RSWho window from RSLinx

Using the connected ETHIP driver – expand through the Backplane to view the 1756-DNB module in Slot 6

Click the + sign to the left of 1756-DNB to view the DeviceNet network connection - A, DeviceNet

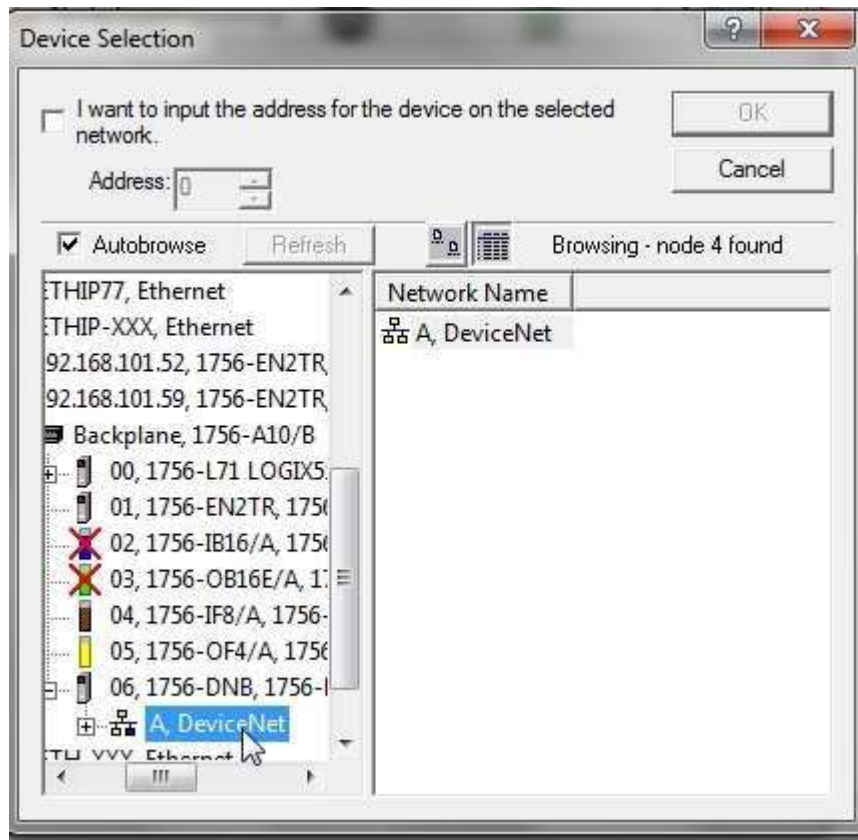


Figure 5-A  
Device Selection Window

Double click A, DeviceNet to view DeviceNet network components

The DeviceNet network components will appear in the right-side window

Note: DeviceNet network components will also appear below A, DeviceNet on the left side window.

See Figure 6-A

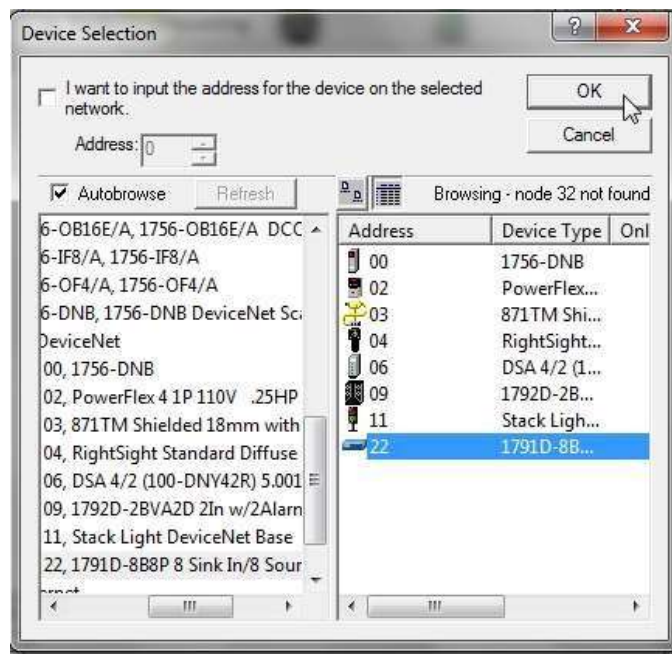


Figure 6-A

View DeviceNet network Components - DeviceNet Selection Window

Select the component to Commission -22, 1791D -8B8P Compact I/O Block

Click the OK button on the DeviceNet Selection window

7. The Node Commissioning window reopens.

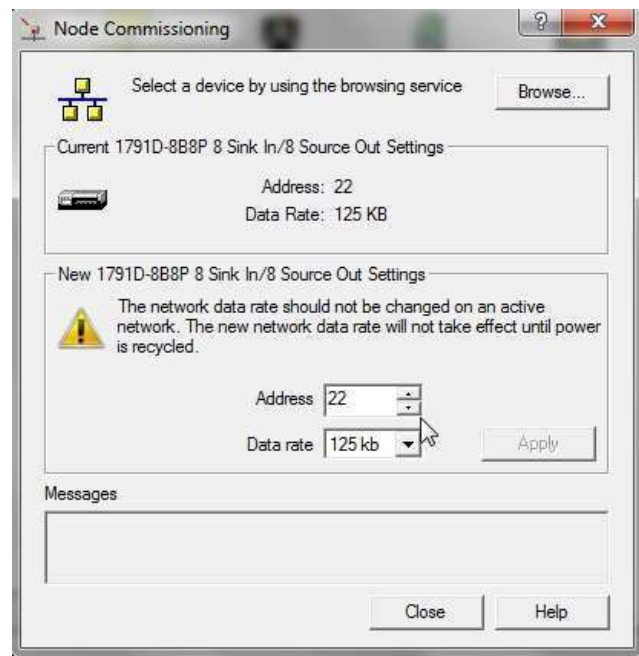


Figure 7-A

#### Node Commission Window

The Current region of the window shows the Description, Address, Data Rate and icon of the selected component



Figure 8-A

#### Current Setting Selection Component

The New region of the window show two selection boxes where the Address and / or the Data Rate of the selected component can be modified.

Note: Current Settings are shown

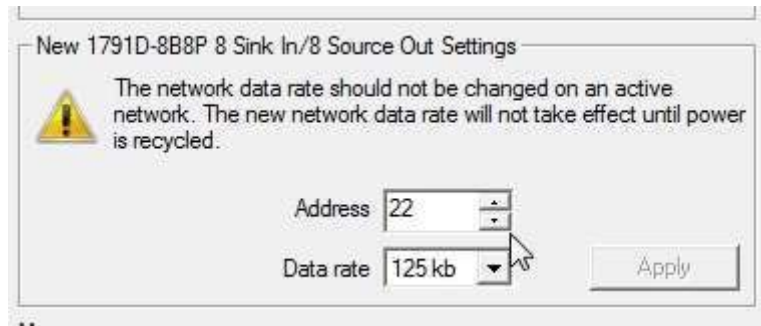


Figure 9-A  
Address / Data Rate Selection Boxes

For this example, the Address of the 1791D -8B8P Compact I/O Block will be changed from 22 to 10.

Enter 10 the Address selection (Spin) box

See Figure 11-A

Note: The warning about changing the Data Rate

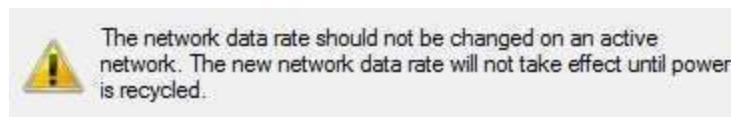


Figure 10-A





Figure 11-A  
Modified Address Node Commissioning Window

Click the Apply button to initiate Commissioning.

8. The Message region of the Node Commissioning window will show results of Commissioning.

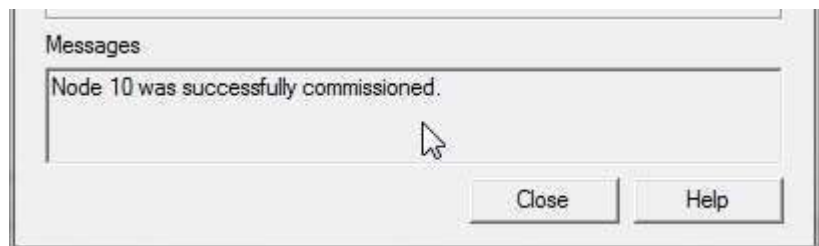


Figure 12-A  
Commission Successful

If the Commissioning attempt was not successful an Error Message similar to the message shown in Figure 13-A will appear.

This will occur when hardware set-up (switch settings) of the component prevents software set-up through RSNetWorx for DeviceNet and the Node Commissioning Utility.

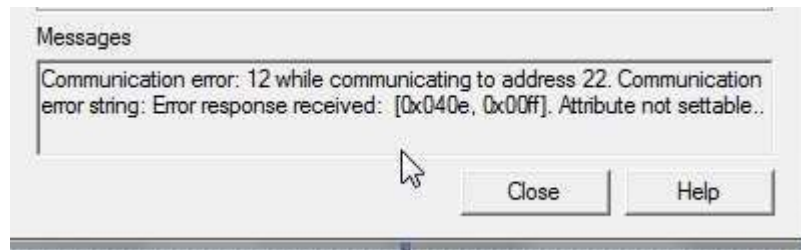


Figure 13-A  
Commission Not Successful

9. Click the Close button to close the Node Commissioning window

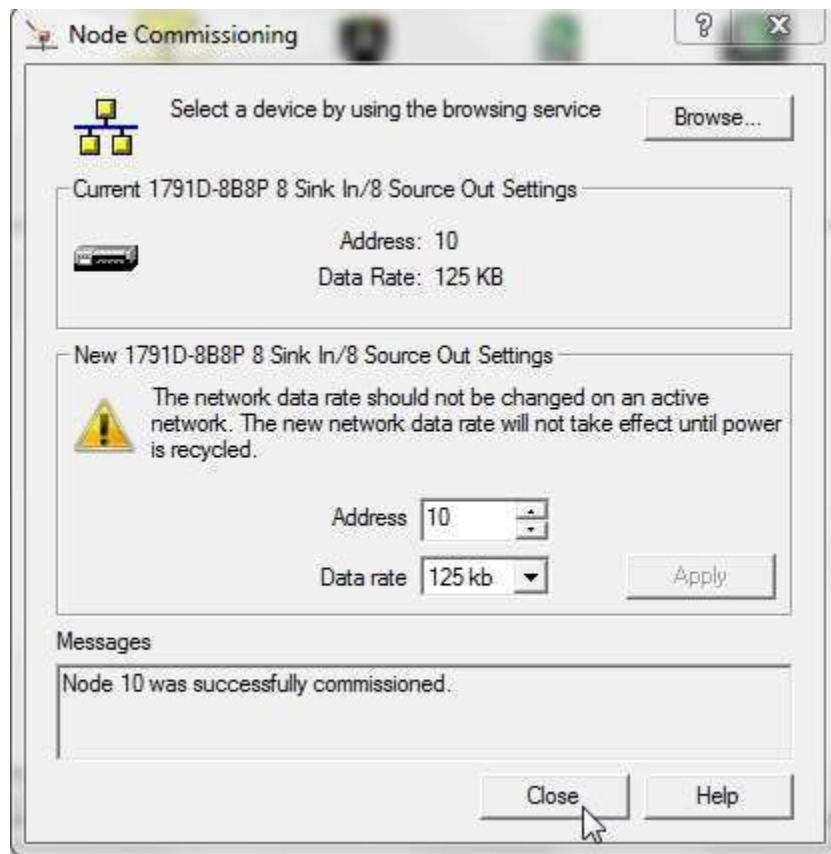


Figure 14-A  
Close Node Commissioning Window

10. View the DeviceNet network layout

See Figure 15-A

Note: The device is still shown with its original address.

The DeviceNet network needs to be re-browsed in order to show the Commissioning changes

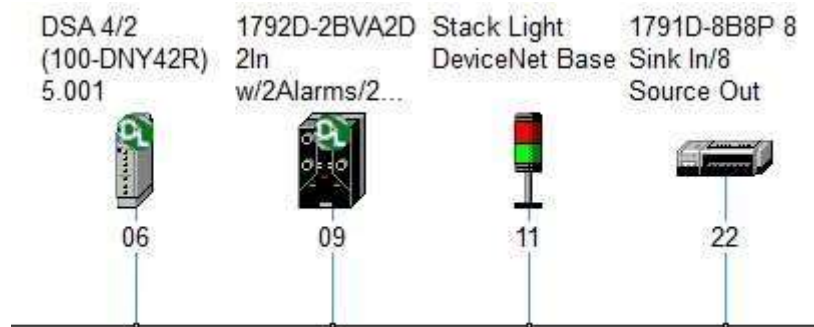


Figure 15-A  
DeviceNet Network Layout

To re-browse the network – Select Network -> Single Pass Browse

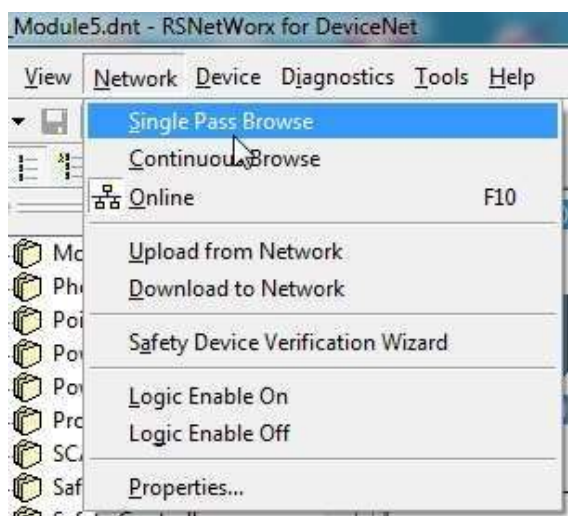


Figure 16-A

### Browse a DeviceNet Network



Figure 17-A

### Browsing Network Progress Bar

Note: To have RSNetWorx for DeviceNet constantly browse the DeviceNet network, choose Continuous Browse

11. Once the network browse is completed – view network layout

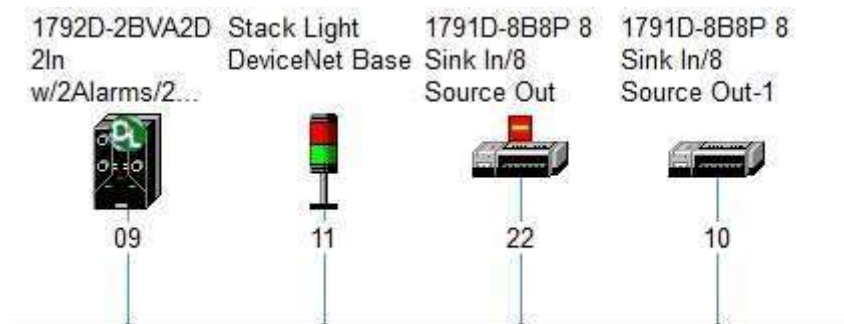



Figure 18-A

### Network Layout After Browse


The 1791D -8B8P Compact I/O Block icon appears with its new address - 10

The 1791D -8B8P Compact I/O Block icon also appears with its old (original) address – 22 with a  above the 1791D -8B8P Compact I/O Block icon.


12. Click the Symbols Legend icon on the Tools Toolbar to determine meaning of Symbols that may appear on the Network Layout window.



Figure 19-A  
Symbols Legend Icon - Tools Toolbar

Note:  means device missing

Since the address of the 1791D -8B8P Compact I/O Block was changed from 22 to 10, there is no longer a node 22 device on the DeviceNet network.

 is similar to a Red X on the RSLinx RSWho window

See Figure 20-A for list of additional Symbol icons that may appear on the DeviceNet Layout window.








RSNetWorx for DeviceNet symbol legend		
When configuring RSNetWorx for DeviceNet online, the software displays icons (appearing as an overlay on top of each device in the network configuration) to provide meaningful information about the state of the online devices. The following sections explain the icons, the associated device states, and the meaning of the displayed icons.		
Icon	State	Description
No icon	Match	The <b>identity</b> information for the device shown in the network configuration is the same as the identity information of the physical device.
	Mismatch	The <b>identity</b> information for the device shown in the network configuration is not the same as the identity information of the physical device.
	Missing	The device shown in the network configuration either is offline or it is not connected to the network.
	Unknown	The device shown in the network configuration exists in the offline configuration file, but the software has not yet identified the device in the browse sequence.
	SNN Error	The Safety Network Number in the safety device is either invalid or does not match the Safety Network Number for the device in the offline project. <b>Tip: This icon only appears in online mode.</b>
	Safety-Locked	The safety device is locked. <b>Tip: This icon only appears in online mode.</b>
no icon	Logic Unknown	The logic enable state is unknown.
	Logic Enable	The logic enable state is in running mode.
	Logic Disable	The logic enable state is not in running mode.

Figure 20-A

### Symbol Legends RSNetworx for DeviceNet

13. Since Node 22 is no longer on the network – remove the unwanted icon from the Network Layout window

Right click on the icon to be removed – Select Delete

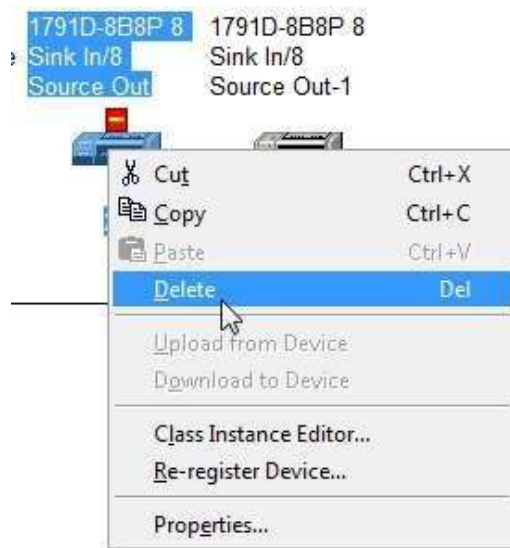


Figure 21-A

Remove Unwanted Icon from Network Layout Window

14. To rearrange the Network icons in sequential order – Select View -> Refresh from the RSNetWorx for DeviceNet Menu Toolbar.

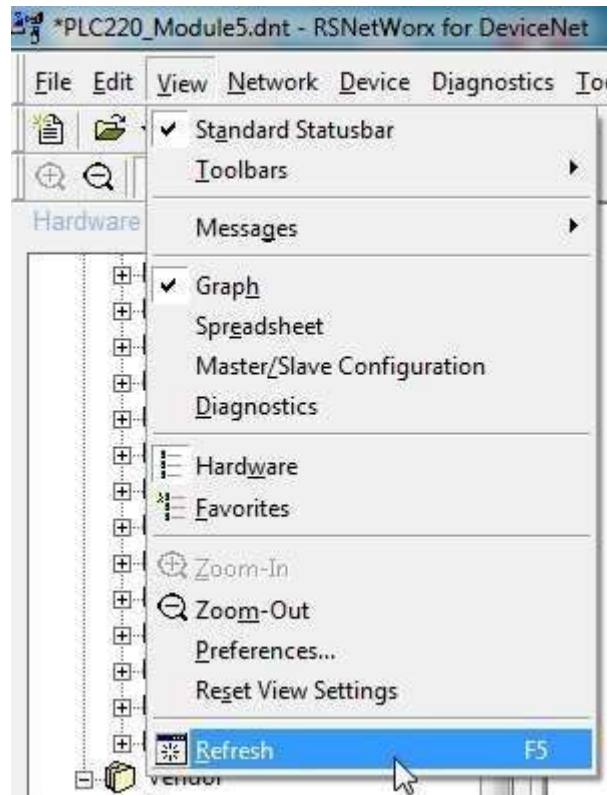


Figure 22-A  
Refresh Network Layout Window

15. Network components will now appear in sequential order on the Network Layout window.

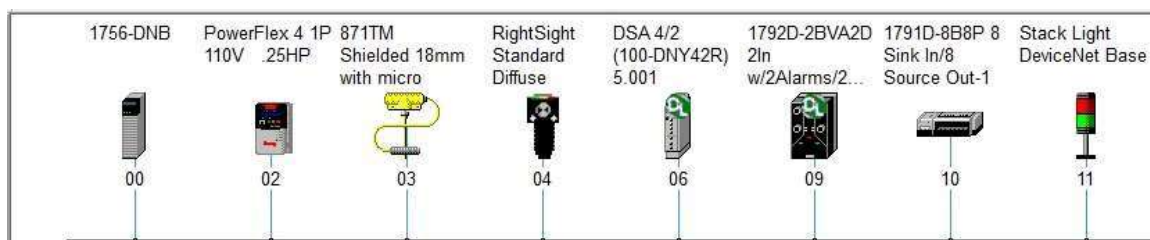


Figure 23-A  
DeviceNet Network Layout Window

16. Commissioning of 1791D -8B8P Compact I/O Block complete

Note: The Node Commissioning Utility can be configured to run as a stand-alone utility outside of RSNetWorx for DeviceNet application.

## Review Questions

1. True or False. All DeviceNet can be commissioned using the Node Commission Utility.
2. Which software is used to run the Node Commissioning Utility?
  - a) RSLogix 5000
  - b) Studio 5000
  - c) RSLinx
  - d) RSNetWorx
3. The icon on the RSNetWorx Layout window means:
  - a) SNN Error
  - b) Mismatch
  - c) Missing
  - d) Unknown
4. True or False. The Address Setting for a DeviceNet component can be made Online.
5. A term that denotes a DeviceNet address is
  - a) Baud Rate
  - b) MAC ID
  - c) Data Rate
  - d) Node ID
  - e) None of the above
6. True or False. The Data Rate setting for a DeviceNet component should be made Online

***The outcomes of this exercise (listed on page 1) specifies the skills that the Student must demonstrate to the Instructor. Once the Instructor is satisfied with the demonstration of Knowledge & Skills by the individual student, they will sign this document (for the student), then enter a 100% into the Hands-On Lab grade in Sakai.***

I verify that this student has completed all of the requirements of this Hands-On Assessment:



Student Name: \_\_\_\_\_

Faculty Signature: \_\_\_\_\_ Date: \_\_\_\_\_

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