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ADwin ENET Configuration – Rev0 | March 10, 2020 | CAS DataLoggers & LTI

1. Check PC Network Configuration

The first step is to check the existing network configuration of the PC to verify the current IP address of the main network connection and the presence of the 2nd Ethernet interface, if any.

    a. Option 1 – Use ADconfig

        There is a utility called **ADconfig** that is provided as part of the standard ADwin software package that is used to configure the ADwin communications interfaces.

          i. From the **Windows Start** menu go to the **ADwin** folder and then click on **ADconfig**.
         ii. Once the program starts, go to the **Help** menu and select **NIC Configurations**.
        iii. You should see two entries for the primary and secondary Ethernet interface cards.
        iv. The IP address of the primary will usually begin with a number like 192. or 172. and the secondary will begin with 169.
         v. If the primary begins with 192., make note of the first 3 sets of number like 192.168.10. This will be used in the second step.

    b. Option 2 - Command line
          i. Open a Windows **Command Prompt**.
         ii. At the command prompt type "ipconfig" and press Enter to display the current network configuration.
        iii. You should see 2 Ethernet adapters, one with a connection to your primary network and the second for connection to the ADwin.
        iv. Under the settings for the primary connection there should be an entry for **IPv4 Address**.
         v. The IP address of the primary interface will usually begin with a number like 192. or 172. and the address secondary interface will begin with 169.
        vi. If the primary begins with 192., make note of the first 3 sets of number like 192.168.10. This will be used in the second step.

2. Assign a Static IP Address to 2nd PC Interface Card (If Necessary)

    We must assign a static (fixed) IP address to the secondary Ethernet interface that will be used connect to the ADwin, but it is critical that this address be on a different subnet than the main network. By default, we will use a subnet that begins with 192.168.150. However if the network

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address of the primary Ethernet interface that you found in step 1 begins with the same 3 sets of numbers then we will us an alternate subnet of 192.168.250.

The **Network Settings** utility is used to configure the address of the Ethernet port that will be used to connect to the ADwin.

a. To start the **Network Settings** utility, go to the Start menu and click on the gear icon.
b. A window will pop-up with the various settings options.
c. Click on the **Network & Internet settings**. In the new window that appears click on **Ethernet** then click on **Change adapter options**.
d. A new window will appear and there should be 2 Ethernet devices. One will show a connection to your main corporate network. If you don't have a cable connecting the ADwin to the PC, the second should show "no cable".
e. Right click on the Ethernet connection to that will be used to communicate with the ADwin and from the list that pops up select **Properties**. In the window that pops up select **Internet Protocol Version 4 (TCP/IPv4)** and click the **Properties** button.
f. Another window will appear. Click on the button for **Use the following IP address**, then fill in the IP address box with 192.168.250.1 (or, if using the alternate subnet 192.168.150.1).
g. In the box immediately below labeled **Subnet mask** enter 255.255.255.0.
h. The **Default gateway** box can be left empty.
i. When this is done, click OK to close the **Internet Protocol Version 4 (TCP/IPv4) Properties** window. Then click Close to close the **Ethernet Properties** window. Click the x in the upper right corner to close the **Network Connections** window. Finally, click the x in the upper right corner to close the **Settings** window.

3. Use ADconfig to Set Static IP Address of ADwin

The next step is to configure the IP address of the ADwin to be on the same subnet as the second Ethernet card that was just configured.

a. First, plug in the Ethernet cable between this second Ethernet port of the PC and the ADwin system.
b. Next, power up the ADwin by turning on the power switch.
c. From the **Windows Start** menu go to the **ADwin** folder and then click on **ADconfig** to start the program.
d. Click on the button that is labeled **Configure AEI…**
e. Near the top of the window next to the field labeled **MAC address** click the **Browse** button.
f. After several seconds the ADwin should show up in the list.
g. When it does click the **Apply MAC Address** button at the bottom of this window.
h. In some cases, it may be possible that the ADwin will not show up when you click the **Browse** button; in this case it will be necessary to manually enter the MAC address.

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    i. If the ADwin does not show up in the browse window, click the **Cancel** button to close this window.

        i. Then, go back to **MAC Address** field on the **Configure ADwin Ethernet Interface** window and manually enter the MAC address which can be found on a sticker attached to the ADwin device.

        ii. The MAC address should begin with either 00-50-C2-0A or 00-22-71.

        iii. Once the MAC address has been entered, the next step is to assign the IP address.

j. Make sure that the **Manual configuration** button is selected, in the field labeled **IP Address of ADwin System** enter 192.168.250.2 (or if the alternate subnet address was selected for the PC network interface use 192.168.150.2).

k. In the next field for **Subnet Mask** enter 255.255.255.0. The other fields can be left as is.

l. When ready, click the **Send configuration** button to transfer the settings to the ADwin device.

m. It will take about 30 seconds for the new configuration to be loaded become active.

4. Use ADconfig to Create a New Logical Device for ADwin

Once the ADwin has programmed with the correct IP address, the last step is to create a logical device for the ADwin driver to connect to.

a. On the main window of the **ADconfig** program, click the **Add TCP/IP…** button.

b. In the window that pops up, click the **Browse** button. A new window will open and it should show a device the IP address that was just configured.

c. Click on this device and then click the button at the bottom what is labeled **Apply TCP/IP Address and Port**.

d. Back in the **Device No. configuration** window make sure that the field labeled **Device No.** is set to 150.

e. To create the new device click the **OK** button and now there should be a new network device in the main window of ADconfig with a device number of 150 and an IP address of 192.168.250.2 (or 192.168.150.2 if using the alternate subnet.

5. Test connection

To test the connection the easiest way is to use the **ADtest** program.

a. Go to the **Start** menu, open the ADwin folder and find the **ADtest** program,

b. Click **OK** on the warning screen.

c. Select **Gold (Rev. B)** on the **ADtest –Boot** screen under Step 1.

d. Select **Device Number** 150 and under Step 2 select.

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e. Click **Boot** and after several seconds a screen should appear with the current analog and digital values of the ADwin system.