Procedure for
Setting the Network Configuration
On Multiple PowerNets

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SUMMARY

The Crystal Matrix software utility, PlugNPlay, is used when setting the LAN configuration settings of ISONAS PowerNet Reader-controllers.

A specific configuration of the host workstation and the associated network of PowerNets can be used to streamline the process of configuring multiple PowerNets. This set-up is focused on simplifying the process of setting the PowerNet’s IP Address, SubNet Mask and Gateway, which are all very important if, on the project network, the PowerNets and Host will be installed on different network subnets.

WORKSTATION CONFIGURATION

To use this feature, the workstation that will be running the PlugNPlay software will need to have two IP Addresses assigned to its Ethernet LAN connection. This will allow the workstation’s PlugNPlay application to directly communicate with the PowerNet, both before the PowerNet’s IP Address is changed, and again after the IP Address is changed.

The workstation’s 1st LAN Address should be set to be one that is valid on the customer’s network, but will not be a duplicate of an existing IP Address, or any of the IP addresses being assigned to the PowerNets. Our example assumes that the customer’s PowerNet addresses are in the 172.16.112.xxx range.

For our example, the workstation’s IP setting will be:
IP Address: 172.16.112.41  Subnet Mask: 255.255.0.0

The workstation 2nd LAN Address should be set to be part of the address range assigned to the PowerNet before the address change. From the factory, the PowerNets are configured to have an IP address in the range of:

192.168.1.50 to 192.168.1.250.

Assuming that you are working with PowerNets that were shipped from the factory, it is suggested that you assign a unique IP Address to the workstation in the range of:

192.168.1.2 to 192.168.1.49

For our example, the workstation’s 2nd IP address will be:
IP Address: 192.168.1.49  Subnet Mask: 255.255.255.0
HERE ARE THE STEPS REQUIRED TO ASSIGN THESE TWO IP ADDRESSES (ON A WINDOWS 7 WORKSTATION):

1. Open the setting window for your Ethernet Network Adaptor

2. Select the *Internet Protocol Version 4* entry, and click on the Properties button

![Image of setting window for Ethernet Network Adaptor]

3. Manually configure the workstation’s 1st IP Address (Customer’s Network Address)

![Image of manually configuring IP address]
4. Click on the **Advanced** button:

![Advanced button image]

5. Click on the **Add** Button:

![Add button image]
6. Configure the workstation’s 2nd IP Address (Factory Network Address)

7. Close the windows

8. Disable and re-enable the Network connection

9. Bring up a Command Window,

10. Run an IPCONFIG command

11. Verify that the two address desired are defined
HARDWARE SET-UP

THE PHYSICAL HARDWARE SET-UP IS STRAIGHT FORWARD. THE SUGGESTED STEPS INCLUDE:

1. Connect the workstation to a network switch.

2. Possibly use an isolated PoE switch that will support powering multiple PowerNets at once.

3. Connect the PowerNets being configured to the network switch.
INSTALL AND CONFIGURE CRYSTAL MATRIX’S PLUGNPLAY UTILITY

Install the Crystal Matrix software package.

The software can be downloaded from the ISONAS web site

www.isonas.com → Support → Software Downloads

Start PlugNPlay thru: Window’s StartButton → All Programs → ISONAS → Tools → PlugNPlay

When the application opens, assure that one of the two addresses that are assigned to the workstation appear in the upper left of the PlugNPlay application (see below).
DEFINE THE IP ADDRESSES THAT WILL BE ASSIGNED TO THE POWERNETS.

1. Enter the beginning IP Address of the range
2. Enter the ending IP Address of the range
3. Click on the Insert button below the Start/End address fields
4. Once the addresses have been added to the list, click on the Close button.
LOCATE THE POWERNETS THAT ARE CONNECTED TO THE NETWORK

Click on the “Find” button in the upper left portion of the screen.

DEFINE THE SUBNET AND GATEWAY SETTINGS FOR THE CUSTOMER’S NETWORK.

After the PowerNet readers have been located, you can define the SubNet and/or Gateway that are to be assigned to the readers.

As shown below, select the appropriate checkboxes are selected, and fill in the SubNet/Gateway fields, as appropriate.

Note: PlugNPlay allows you to select any or all of the fields that are to be modified.
DOUBLE-CHECK THE NETWORK SETTINGS

It is **very important** that the Subnet and Gateway setting are correct, before processing the PowerNets.

If these values are in error, you will propagate those incorrect values to all the PowerNets being configured, and the 1st time the problem will probably be discovered is when the installer is unable to communicate with the PowerNets, after they are installed on-site.

One option would be to have a 2nd person verify the settings before proceeding.

*Two sets of eyes are better than one*

PROCESS THE POWERNETS

Now your preparation is complete, and you can proceed to configure the PowerNets with the following steps:

1. Select a PowerNet on the Listing
2. Select an IP Address to use.
3. Click on the “Change” Button

4. Wait for the PowerNet to reboot and the display to “refresh”
5. Record the new IP Address
   a. May be recorded directly on a label attached to the PowerNet
   b. May be recorded on a cross-reference chart of MAC addresses & IP Addresses
6. Select another PowerNet on the list, who’s IP Address has not been updated

7. Click on the “Change” Button.
8. Repeat, until this batch of PowerNets have been configured.
To process the next batch of PowerNets

1. Determine if the workstation LAN Card’s 1st IP Address is within the range of the new batches’ IP addresses.
   a. If not, then update the workstation LAN Connection’s 1st IP Address to belong to that range of IP Addresses
2. Connect the new PowerNet readers to the Network Switch
3. Click on PlugNPlay’s “Find” button
4. Confirm the SubNet and Gateway Settings are correct for this batch
5. If required, add more IP Addresses to the IP Address Pool
6. Begin configuring the new batch of PowerNets