Procidia™ i|server™

i|server is used to make the process data gathered and manipulated by the i|pac™ controller viewable in a web browser such as Internet Explorer or Netscape. i|server can have a connection to an intranet for distribution of data within a facility or it can be connected to the Internet for data distribution across larger geographical boundaries.

KIT CONTENTS

The i|server kit, PN 16357-41, contains the items listed below.

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BOARD INSTALLATION

This section describes i|server board installation. See Figure 1 for a view of the assembled i|pac control carrier that shows major assemblies.

The following items should be available before beginning the installation.

- An i|server Kit.
- Procidia i|pac User’s Manual UMiPAC-1, Rev: 3 or later.
- i|pac Control Carrier Model iPAC-CC-B_. Model iPAC-CC-A_ carriers may not be used.
- A Local Faceplate if an RTC/CB Board is installed in the Controller Module.
- Common hand tools for electronic equipment servicing.
- Anti-Static wrist strap and static dissipative mat. Before handling an assembly, refer to the Circuit Board Handling section in UMiPAC-1 for electrostatic discharge prevention procedures.

Control Module Circuit Boards

The control module typically includes several circuit boards, as shown in Figure 2. Access to the boards in the control module and i|server installation are described below.

Board Access

1. Remove AC and DC power input from i|pac.

WARNING

Electrical shock hazard. Remove power from all involved assemblies and wires before proceeding.
FIGURE 1 Assembled Control Carrier
2. Always protect electronic components from electrostatic discharge. Fasten a conductive wrist strap around your wrist and ground the strap to earth ground or to a grounded static dissipative workmat.

3. On the control carrier, loosen and remove the two screws securing the i|pac controller cover.

4. Press on the two cover removal buttons (see Figure 1) and rotate the cover upward.

5. Pull the MPU Controller board, and any connected boards, from the enclosure by grasping the board by the exposed edge and pulling it straight out of the enclosure. The Controller board has a lithium battery; refer to the Board Handling Precautions section in UMiPAC-1.

6. Remove the LIL Network Board and RTC/CB Board, if installed, from the MPU Controller board. These boards are attached by spacers and screws and connectors. Refer to Figure 2 for board location and fasteners. Figures 4 and 5 show the LIL and RTC/CB boards.

LIL Network Board - If presently installed, this board must be permanently removed.

RTC/CB Board - If installed, this board may be fastened to either the LIL Network Board or, when the LIL Network Board is not installed, the MPU Controller Board. Remove the hardware securing the RTC/CB Board, unplug the board and set it and the mounting hardware aside. When re-installed, this board will plug into the i|server board and mechanically fasten through the i|server board to the MPU Controller board.

7. Install the i|server Board and the RTC/CB Board.

Refer to Figure 2 for board location and mounting hardware. The i|server board mechanically fastens and electrically connects to the MPU Controller board as shown.

W2, the LIL/Modbus Network Jumper shown at right, is located on the MPU Controller board and must engage J12 on the i|server board. If installed, remove the W2 shunt before installing the i|server board.

Plug the RTC/CB Board into the i|server Board and use the supplied hardware to mechanically fasten the boards to the MPU Controller board.

8. Insert the board stack into the enclosure card guides and carefully guide the connector ends of the boards until they mate with the connectors on the carrier. Only when all board and carrier connectors are aligned should additional force be applied to seat the boards.

9. Install the cover. Insert the two thin rectangular tabs on the controller cover into the thin rectangular cutouts in the metal enclosure. Pivot the cover onto the enclosure until the square buttons mate with the square cutouts in the metal enclosure.

10. Install the two previously removed cover screws. Do not over tighten.

11. Remove the wrist strap.

12. RTC/CB board only: After installing an RTC/CB board and before applying power to the controller, connect a local faceplate. When power is applied, an RCB->MEM message will appear in the local faceplate’s alphanumeric display. This message is prompting you to select the controller’s operating configuration. Read the two bulleted items below and select the desired configuration.

- To copy the configuration stored on the RTC/CB board to the MPU Controller board: rotate the pulser to display YES and press the STORE pushbutton.

  This option is typically selected when a configuration is being transferred from one controller to another by moving the RTC/CB board from one controller to another.

- To retain the configuration stored on the MPU Controller board: rotate the pulser to display NO and press the STORE pushbutton.

  The configuration stored on the MPU Controller board will be the operating configuration and it will be copied to the RTC/CB board when a change is made to the configuration.
13. After removing and reinstalling an MPU Controller board, configuration parameters must be re-entered. Refer to CGiFB-1 or UMiPAC-1 as needed.
i|server SETUP AND CHECKOUT

The i|server board is mounted on the MPU Controller board and provides access to the controller parameters via Modbus. Controller parameters can be viewed and changed using a standard web browser, such as Internet Explorer or Netscape. For this to happen, i|server must have a unique Internet address, or IP address, on the network to which it is connected, such as a Local Area Network (LAN) or the World Wide Web.

To check out a Procidia with an installed i|server, you will need:

1. A PC with Microsoft Internet Explorer (V4.72.3110.0 or greater) or Netscape Navigator (V 4.08 or greater) and an Ethernet card configured for TCP/IP.

2. The supplied “crossover cable” to connect the i|pac web server to the PC. (Note that this cable will not work when connecting the node to a LAN hub. For this, use a “straight cable.”)

3. A software utility, SetIPAddress2.exe, on the included diskette to set the node’s network parameters.

A summary of the setup and checkout procedure is listed below. This is followed by a brief description of the assemblies and their setup. Finally, a step-by-step procedure is provided.

1. Connect the crossover cable to the control carrier.

2. Apply power to the PC and apply power to i|pac.

3. Contact your network administrator to learn your current network settings. Record current network settings before making any changes.

4. At the PC, shut down any network based applications and disconnect the LAN cable. Connect the crossover cable.

5. Install and run the supplied SetIPAddress2.exe utility and apply the TCP/IP settings recommended by the network administrator.

6. Type the node’s new IP address in the address bar of the browser to check out i|server.

Discussion

To provide a direct connection between i|server and the client PC, a “crossover cable” is supplied. Cable connections are shown below.
Lights are provided on the i|server board and typically on the Ethernet card to verify operation. The i|server board has three lights: Status, TX, and Link, as shown below. These LEDs can be seen through rectangular cutouts in the i|pac controller enclosure when it is viewed from the side opposite the controller field terminals. The lights on an Ethernet card can vary so a typical card is shown.

The setup shown in Figure 7 is an isolated Ethernet network. For the devices to communicate with one another, they each must have a unique IP address. i|server is shipped with a private network address of 192.168.1.1 and, therefore, the PC to which it is connected must have the same network address and a different host address. If the netmask is set to 255.255.255.0, any IP address of 192.168.1.2 to 192.168.1.254 will satisfy these requirements.

A quicker way is to change the IP addressing on i|server to conform to the currently assigned address on the PC. This method doesn’t require a reboot of the PC and if you have been assigned an IP address by your network administrator you can set that address and i|server will be ready to plug into your LAN once the checkout is completed. This is the technique employed in the next section.
**Test Procedure**

Follow these steps to enable communication between your PC and i|pac via the supplied crossover cable. The assistance of your network administrator may be helpful.

Before making any changes to your PC’s network configuration, record the present settings. Use the Windows screen capture function, a compatible screen capture utility, or pencil and paper, but save the settings. You may want to return the PC to its typical configuration when the i|server test is completed.

1. Verify that an Ethernet card is installed in the PC at hand. Refer to the manual supplied with the card for a description of any included status LEDs.
2. Connect the crossover cable to P4 on the i|pac Control Carrier. See Figure 7.
3. Turn on the PC and while it is booting, read the following steps and the note the screens shown.
4. Apply power to i|pac. The Status light on the i|server board should be lighted.
5. Contact your network administrator for IP configuration information. If the administrator is not available, go to the IP Configuration section below to determine your PC’s settings.
6. Shut down any network based applications such as e-mail (e.g. MS Outlook). This will prevent error messages from being displayed when the LAN cable is disconnected in the next step.
7. Disconnect the LAN cable from the PC’s Ethernet card. Connect the free end of the crossover cable to the card.
8. Insert the supplied *SetIPAddress2* CD in the computer’s CD-ROM drive.
9. Click on the Windows Start button. Type A:\Setup to install the utility on the PC hard drive.
10. Start *SetIPAddress2* and set an IP address and netmask compatible with your current LAN settings as suggested by your network administrator. If the administrator is unavailable, perform the steps in the IP Configuration section for your PC’s operating system.

**Note**

Do not use x.x.x.0 or x.x.x.255 which are subnet broadcast addresses. Use of these can make the node invisible to *SetIPAddress2* and you will need to do a “Factory Reset” which means you will have to send the node back to the factory to get reset!
11. Click on ? on the tool bar or select Actions, Find to display active i|servers. You should now be able to see the i|server web pages on your browser. However, make sure that the “Use a proxy server” box is unchecked as illustrated in the screen shots below.

On the i|server board, the TX light will flicker when data is sent and the Link light should be lit.

The gateway IP will be needed if the node is moved from an isolated network to a LAN.

Not required if the node is in the “open” security mode which is the default state.
For Netscape, select Edit, Preferences in the tool bar, select advanced/proxies, and then select “Direct connection to the Internet.”
IP Configuration

If your network administrator is not available, use this procedure to determine your PC’s TCP/IP settings. Be sure to use the procedure for your PC’s operating system.

Win98 or Later

Click Start, Run and type \C:\windows\winipcfg.exe.

WinNT

Launch a DOS shell and at the C:\prompt type: \ipconfig. You will see the following (or similar) information in your DOS window:

Use any IP address from 192.168.1.1 to 192.168.1.254. DO NOT use x.x.x.0 or x.x.x.255.

Provides for a 27-bit network address and 254 host addresses.

Don’t care for an isolated network.
Microsoft (R) Windows NT (TM)
(C) Copyright 1985-1996 Microsoft Corp.

C:\> ipconfig

Windows NT IP Configuration

Ethernet adapter El90x1:

  IP Address . . . . . . . . . . : 192.168.1.2
  Subnet Mask . . . . . . . . . : 255.255.255.0
  Default Gateway . . . . . . : 192.168.1.10

C:\>