KIP AutoCAD 2000i HDI Driver v. 2.00

1. **Overview and Features**

The KIP AutoCAD 2000 HDI Driver has been designed to quickly and effectively plot to your KIP directly from the AutoCAD interface under Windows 95/98/NT/2000. Features and functionality of this driver can work in tandem with our Powerprint Request software for added power and flexibility, or as a stand-alone entity.

2. **Link Options**

? Powerprint Request
Allowing the KIP HDI driver to interface with Powerprint Request provides the most versatile and powerful printing solution from AutoCAD 2000. Powerprint Request is KIP America's document submission tool that allows for complete and comprehensive control over printing/plotting. This software can operate on several remote workstations simultaneously*. With Powerprint Request, users have the ability to obtain real-time printer/plotter status, submit collated job sets, password protect these submissions based on user and job information, apply custom made stamps, activate folder equipment, and modify job descriptions.* The KIP HDI driver was designed to take advantage of, and dynamically link to, Powerprint Request, bringing *many* of these key features to the AutoCAD interface**. It is recommended that the KIP HDI driver be configured in this manner**. If you opt *not* to link with Powerprint Request, certain features of the KIP HDI driver will not be available to you (i.e. real-time printer status, password protected pull-down menus, on-the-fly stamping, and automated spooling). **This document assumes that Powerprint Request is utilized and installed properly.** Installation instructions and further documentation for Powerprint Request are located on your Powerprint software compact disc that came with your KIP system.

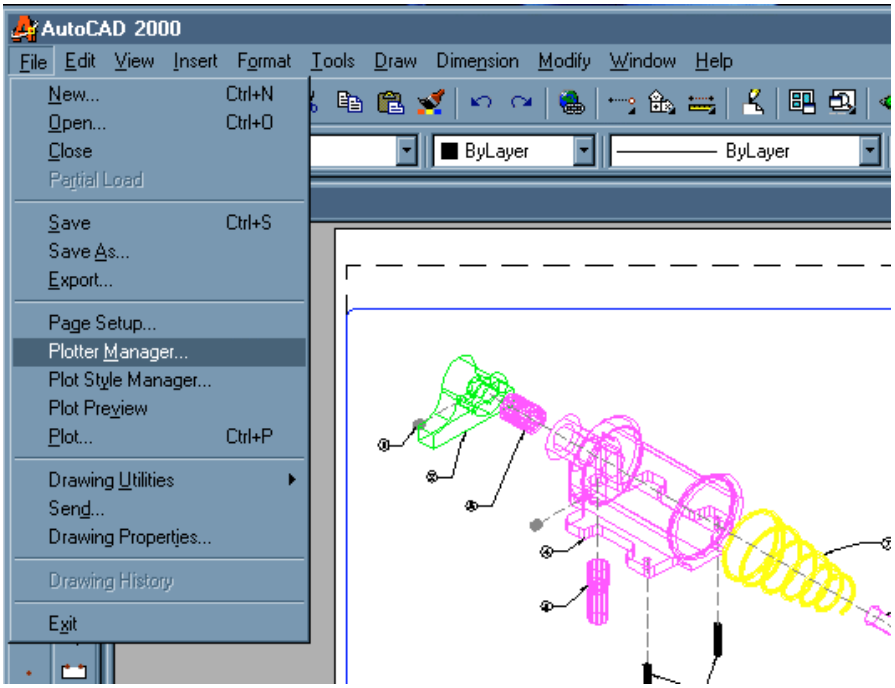
? LPD Printing
LPD printing is a powerful alternative solution for interfacing with your KIP equipment. The advantages of LPD printing are multi-faceted. LPD is a print protocol native to UNIX based networks. Because the KIP controller is based on a Windows NT operating system, our printers/plotters appear as another "node" on a network, *not a shared printer*. This design was intentional because spooling data is inherently more time consuming and network intensive than simply dealing with actual data files. However, with continued demand and need for platform integration, LPD printing has branched off into new territory. LPD connectivity simply allows the KIP controller to accept spooled print jobs from Unix based networks, as well as display the KIP printer/plotter on a UNIX based network as a shared device. (Specifics on configuring LPD printing can be found in **D**igital **S**upport **B**ulletin NT-00-009) and is attached near of the end of this document for reference. LPD spooling is also effective *within* Windows based networks, and will be primarily be used by those *not* employing Powerprint Request. It is important to note that some ADI features specific to Powerprint Request integration will not be available to users employing the LPD method (i.e. real-time printer status, password protected submission, and stamping).

? Plot-to-file
The KIP HDI driver can also function as an output to file device. Whereas this is a viable option to print, it is the least recommended, simply because *each and every print will need to be directed to a specific "monitor path" manually, and creates additional steps for the user.* AutoCAD has an option to "plot to file" within it's print dialogue window, and this must be activated for each print.

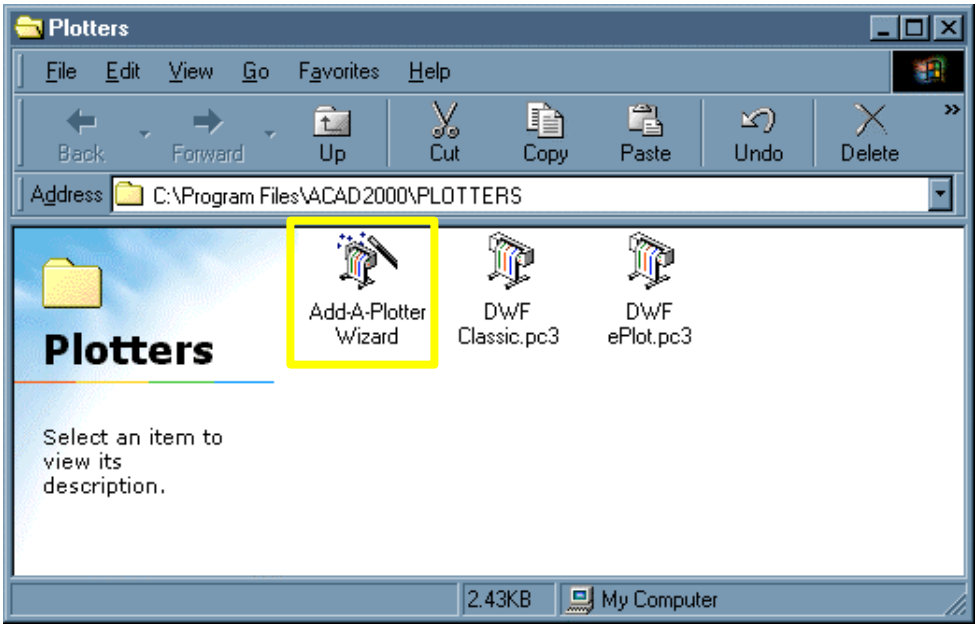
3. Initial Installation

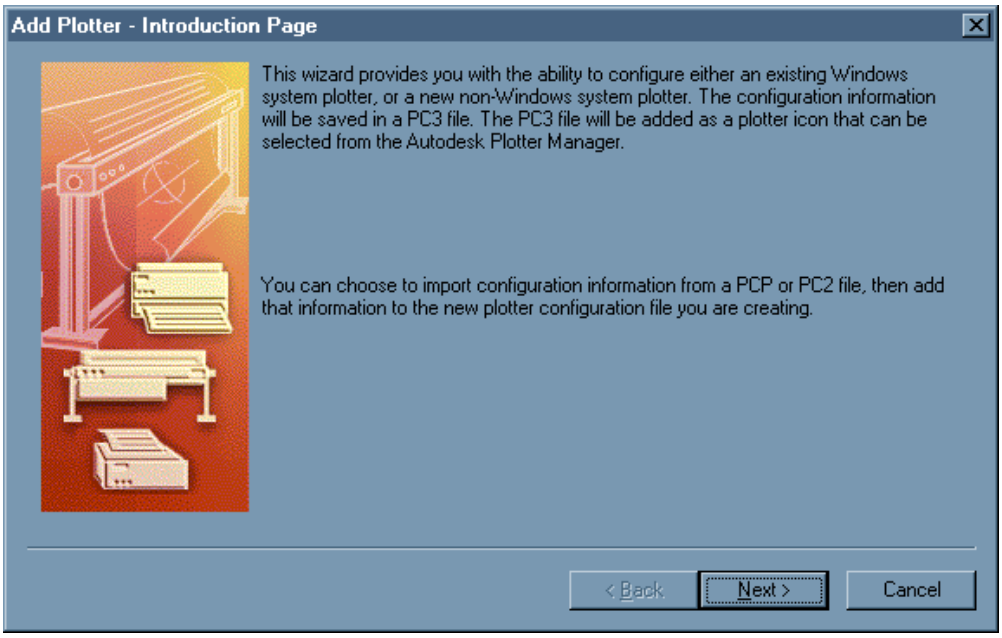
The process for installing the HDI driver will differ from the installation of the ADI driver. In fact, it should be much easier. Please follow these simple instructions.

Within AutoCAD 2000, click on the **File** pull down menu, then select **Plotter Manager**.



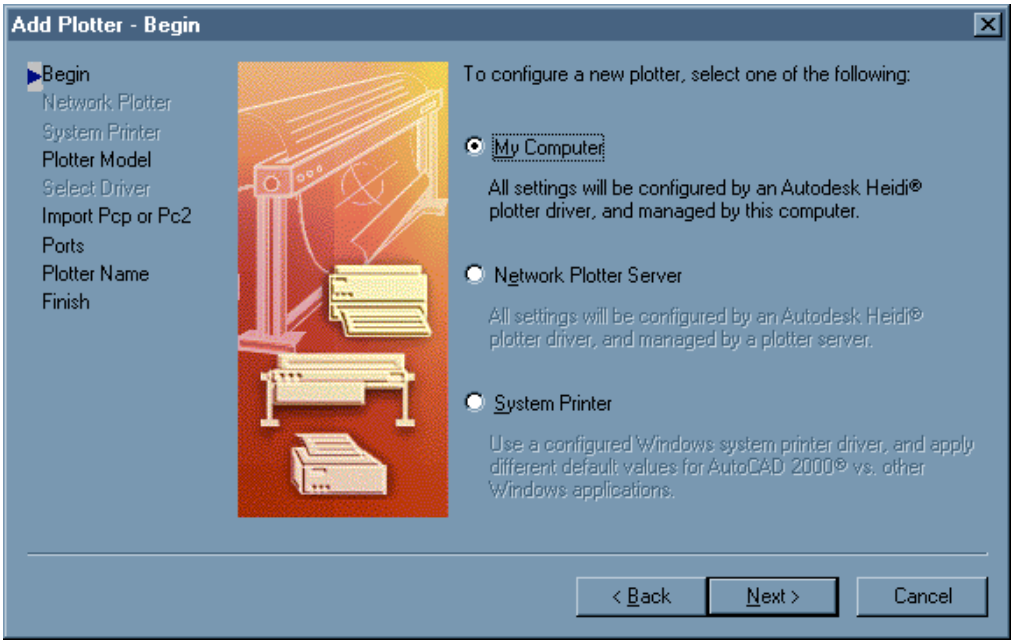
You should then see a Plotters dialog box, as shown below.
Please Double Click the "Add-A-Plotter Wizard" Icon as highlighted below.



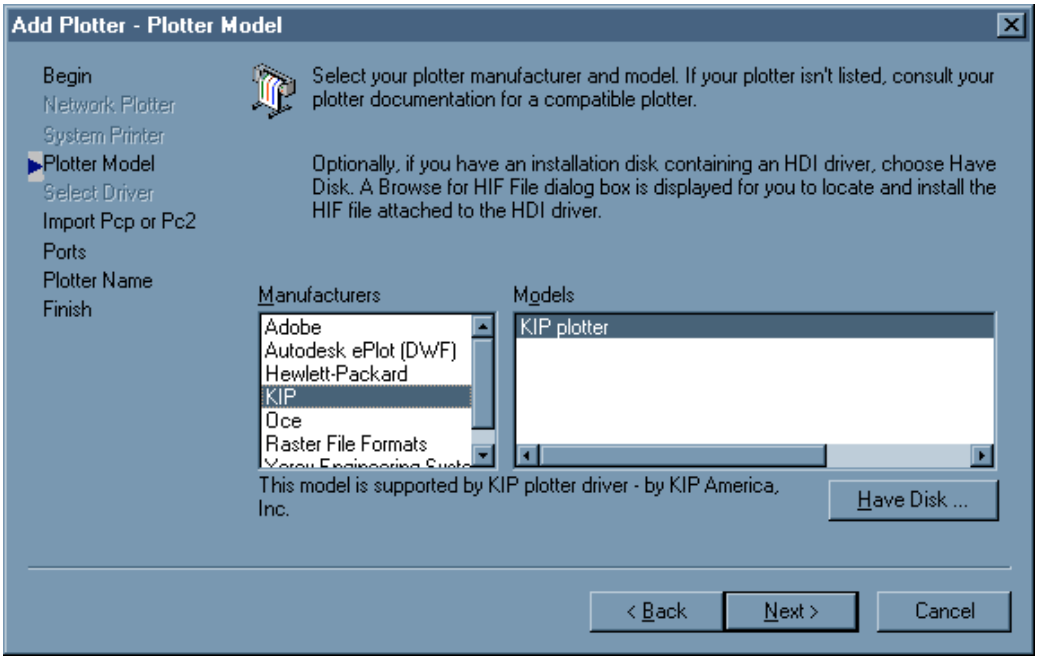


The initial Wizard screen (shown above) starts by explaining that AutoCAD 2000 has changed from the PCP and PC2 file formats to a PC3 file format and will offer another screen during the installation process to migrate your PCP and PC2 to PC3 files for use in AutoCAD 2000.

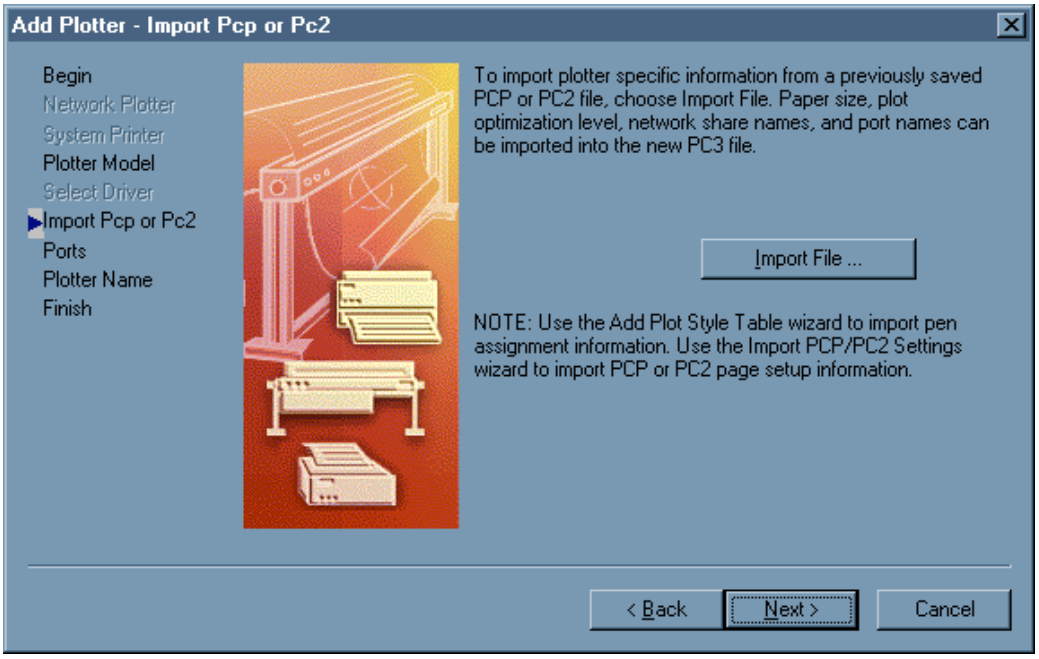
The next screen (shown below) should be set to the default “My Computer” to install the driver to your local computer.



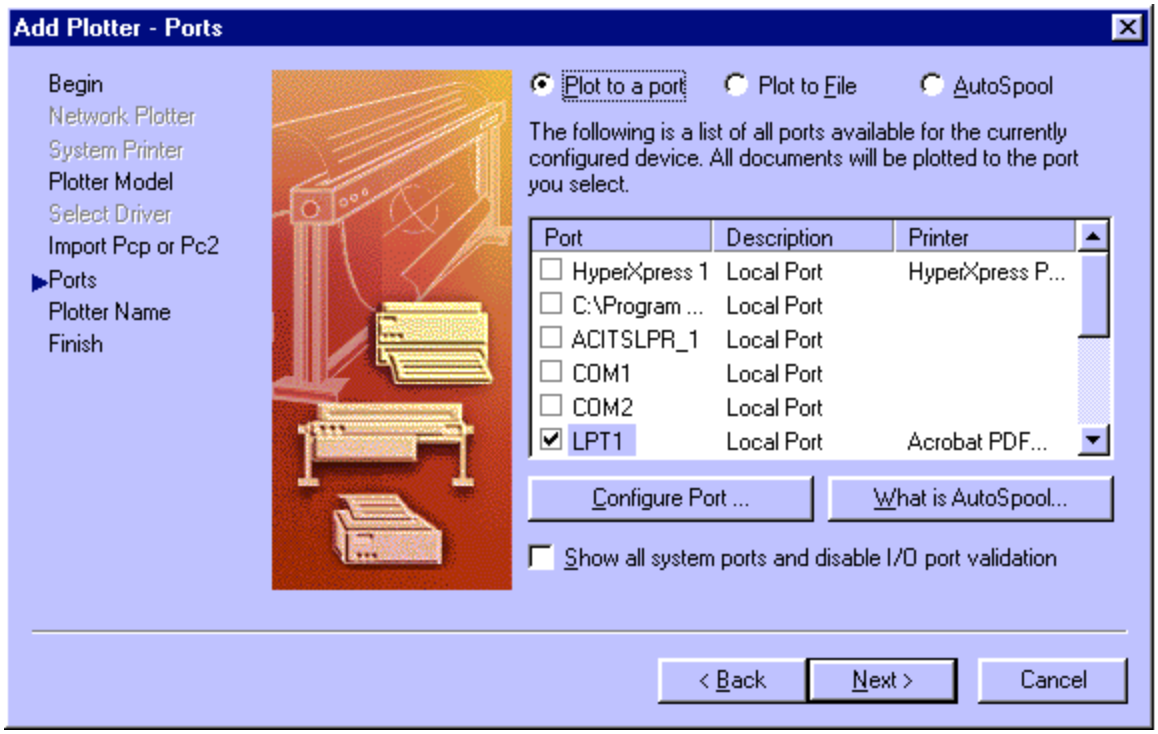
The next step is to identify your plotter model. If KIP is in the list, simply select KIP from your list of manufacturers and click "Next." If KIP is not in the list, click the "Have Disk" button and you will be able to browse for the plotter driver from your KIP Powerprint Ghost CD. The file you are searching for is located in the **Drivers\KIP HDI** folder and should appear as **KIP6.hif**. Once you have pointed to this file KIP should appear in the list and you may select it from your list of manufacturers and then click "Next."



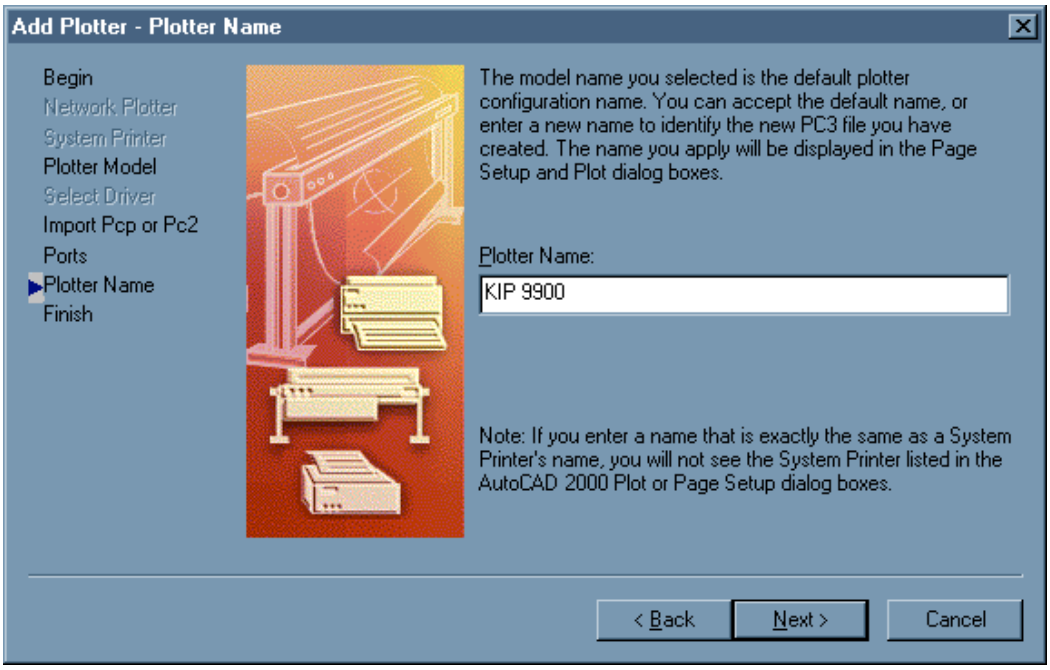
This next screen is the PCP and PC2 importation screen (as discussed earlier.) This screen allows users of previous AutoCAD versions to import their PCP and PC2 files to the AutoCAD 2000 PC3 file format for use in the AutoCAD 2000 product. If you do not wish to migrate or you do not have any PCP or PC2 files to migrate, you may simply click the "Next" button and proceed with the installation.



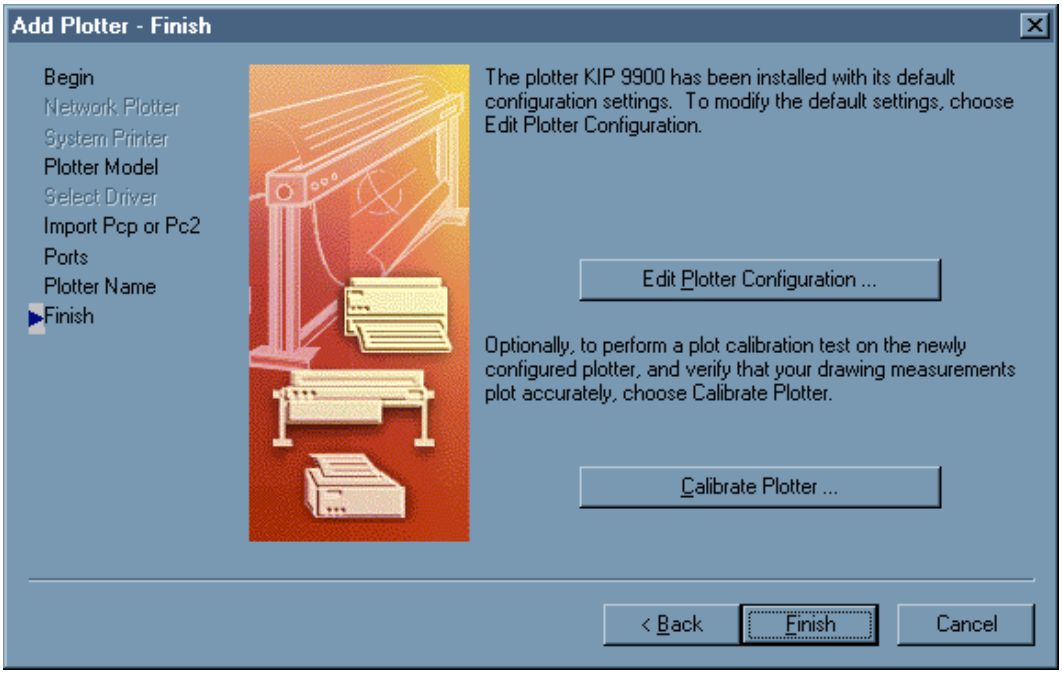
Next, we will specify that we wish to plot to a port.



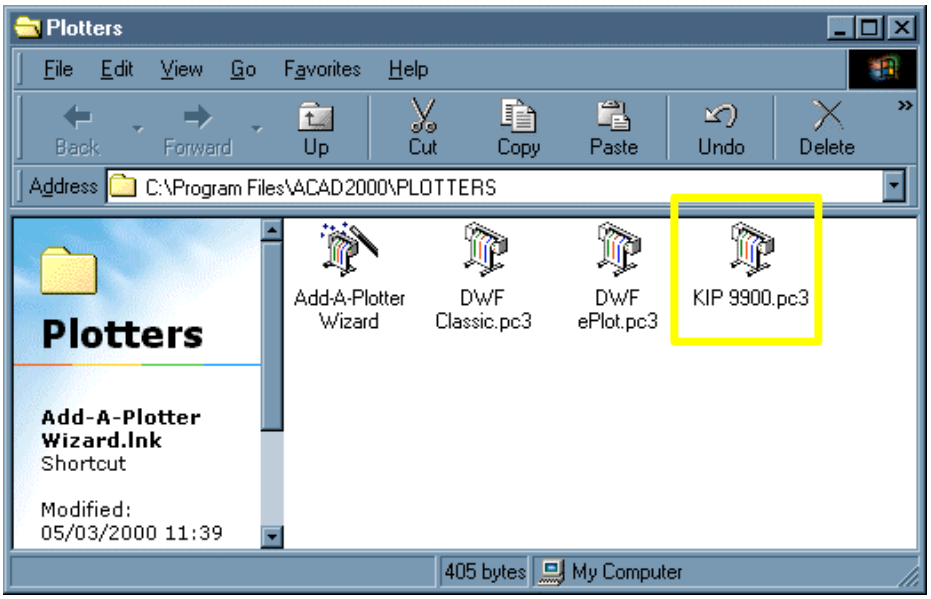
Specifying the plotter's name is next. Since all the KIP plotters use the same driver, you could set up a plotter name for each KIP device you have. We recommend you use the nomenclature of your KIP machine to identify the plotter's name (as shown below.)



Lastly, to finish the installation, simply click the “Finish” button.
Plotter configuration can come later and there is no need to “Calibrate Plotter” as the KIP is already calibrated upon installation.

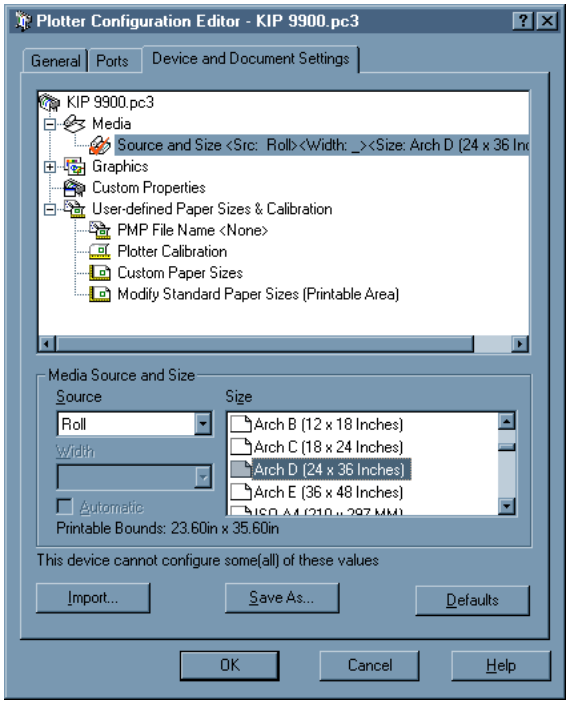


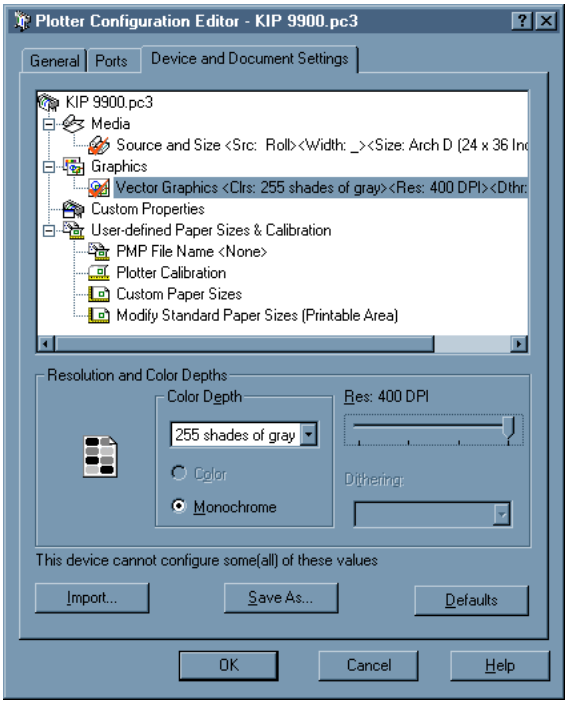
Once installation is complete you will notice in your Plotters dialog box the creation of a .PC3 file for the plotter you just added. To move on to the configuration of the plotter, simply double-click on the .PC3 file.



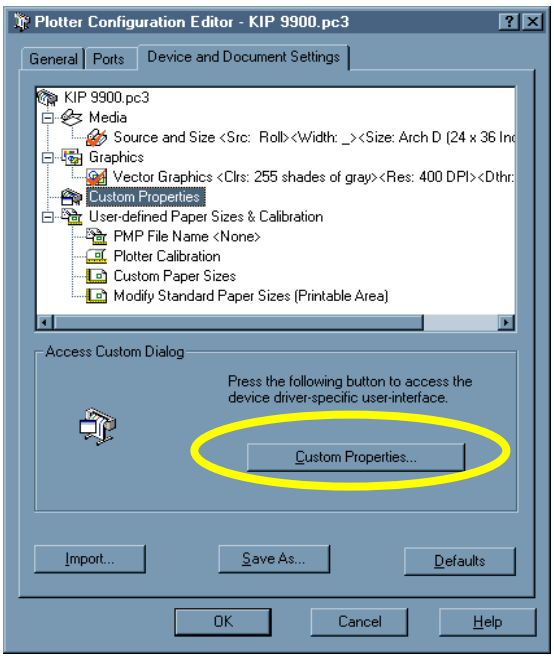
4. Configuration

By double-clicking the .PC3 file you will open the **Plotter Configuration Editor**. Navigate to the **Device and Document TAB** and click the + sign next to the "Media" Icon. This will open up the Media options and allow you to choose your Media Source (which is "Roll') and Media Size (which in this case is "Arch D 24x36 inches.") Next, click the + sign next to the "Graphics" icon. This will open up the Graphics options and allow you to choose your Color Depth (in this case "255 shades of gray") as well as your Resolution (in this case "400 dpi.")

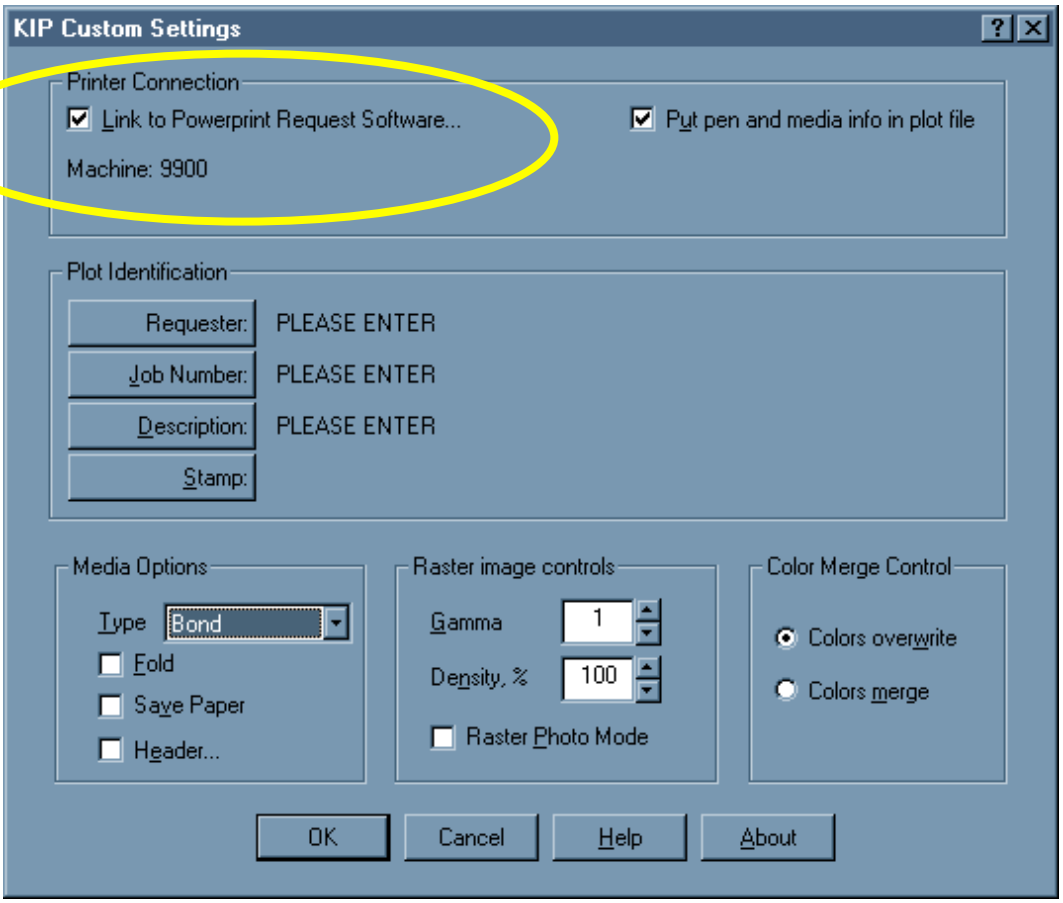




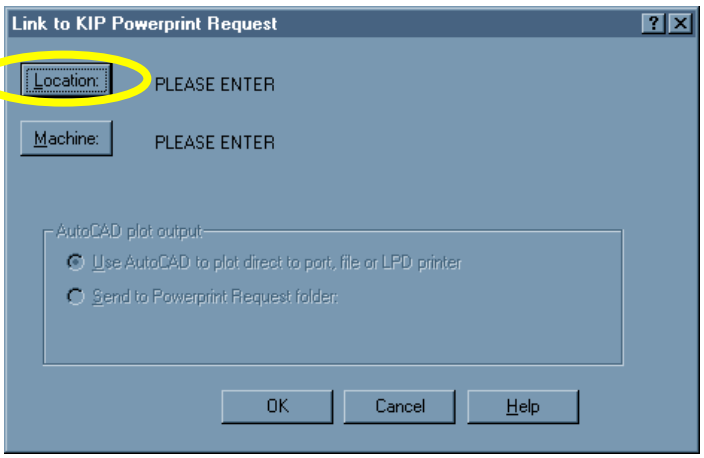
Next, click the "Custom Properties" Icon and you should see a "Custom Properties" button appear, you should then click the "Custom Properties" Button.

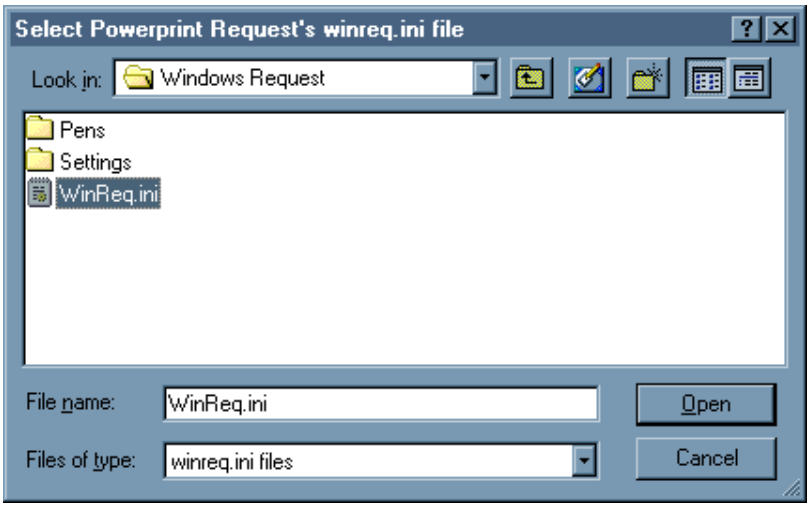


By clicking the "Custom Properties" button you should then see the KIP Custom Settings dialog box (as shown below.) A number of the features of the KIP Powerprint Request software have been directly integrated into our HDI driver; these features are enabled by "linking" the HDI driver to the Powerprint Request software. If you are using the HDI driver and own a KIP machine we recommend you activate this by clicking the "Link to Powerprint Request Software" checkbox.

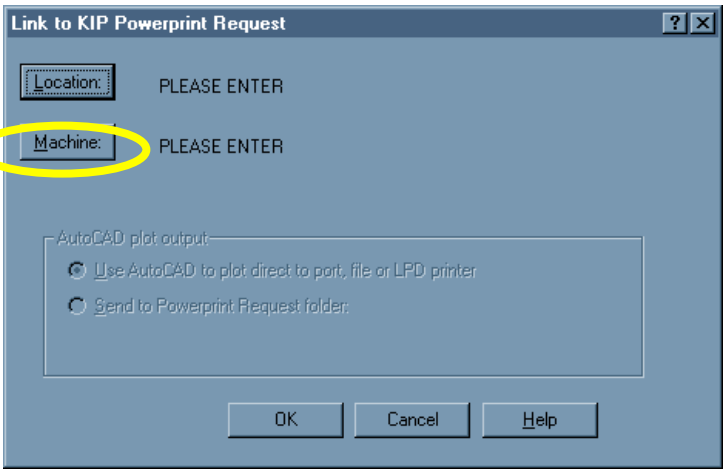


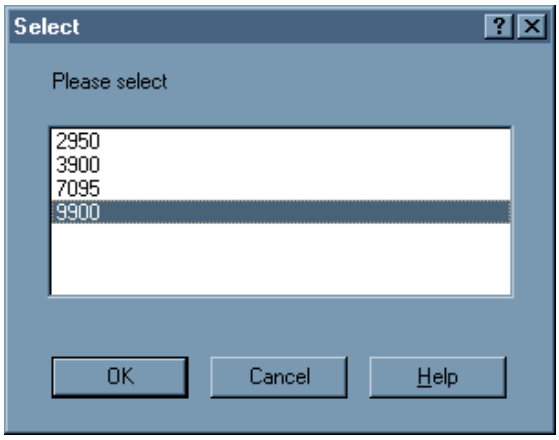
By clicking the "Link to the Powerprint Request Software" checkbox you will be asked to locate the Powerprint Request .ini file (this is the file the HDI driver uses to employ the Powerprint Request features.) You should see the following dialog box asking you to locate the **winreq.ini** file. Click on the "location" button at this point.



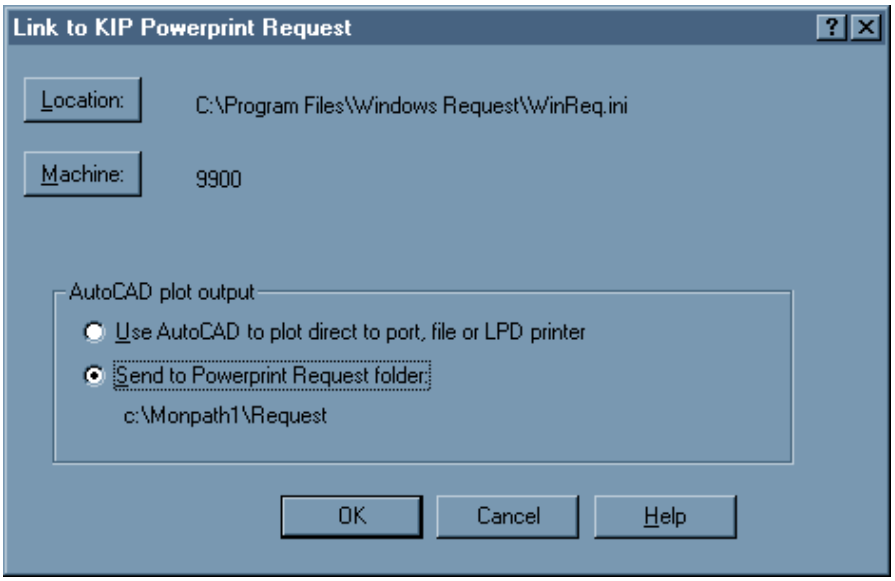


If Request is loaded it should point to the default location, which is **C:\Program Files\Windows Request.** Next, click the "Machine" button, this will bring up a list of all of the machine types you have listed and ask which machine you'd like to link to. (This also follows the monitor path for the machine selected.)

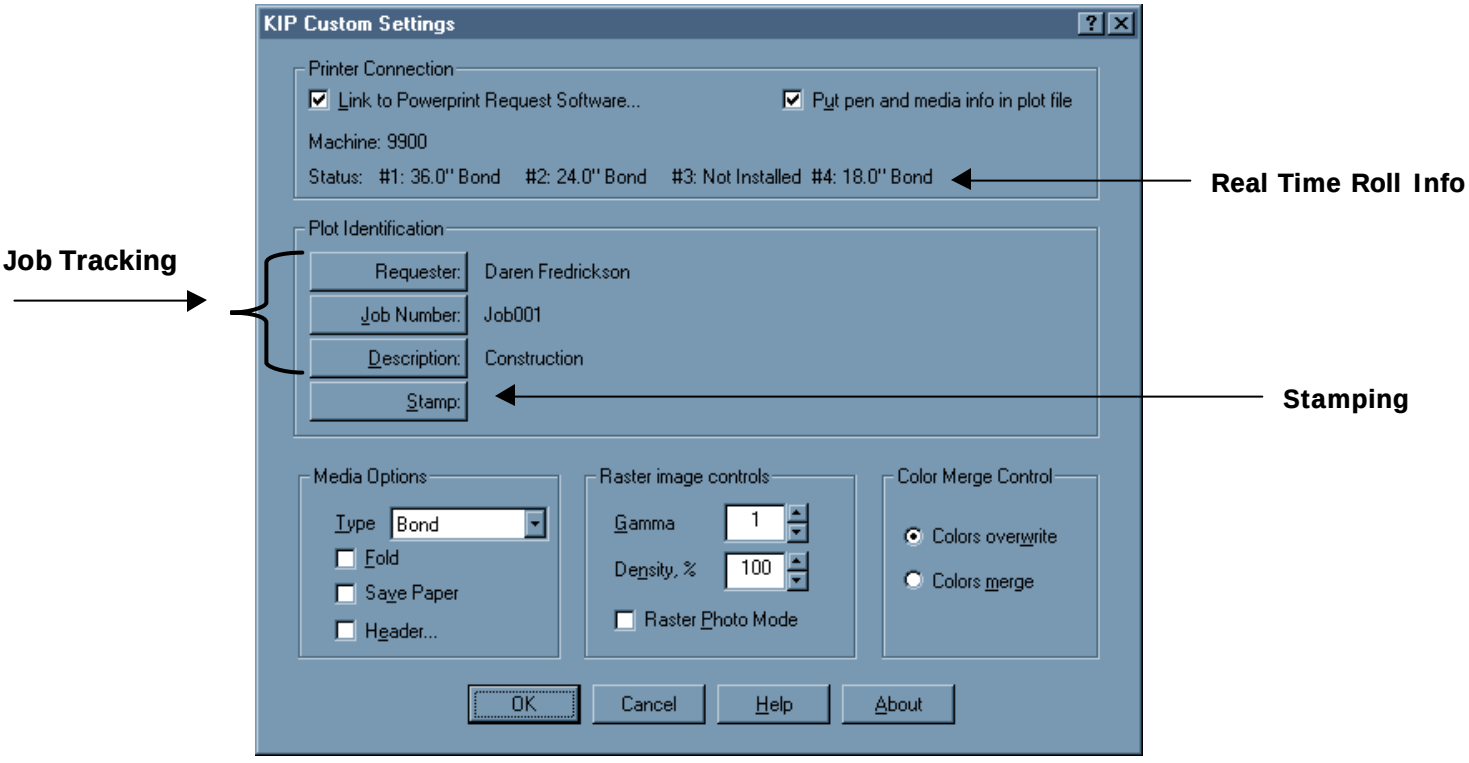




Your last step in linking the HDI driver to the Powerprint Request software is to select an output method. We recommend that you choose to send the file to the Powerprint Request folder. Here in our example, it is "C:\Monpath1\Request."

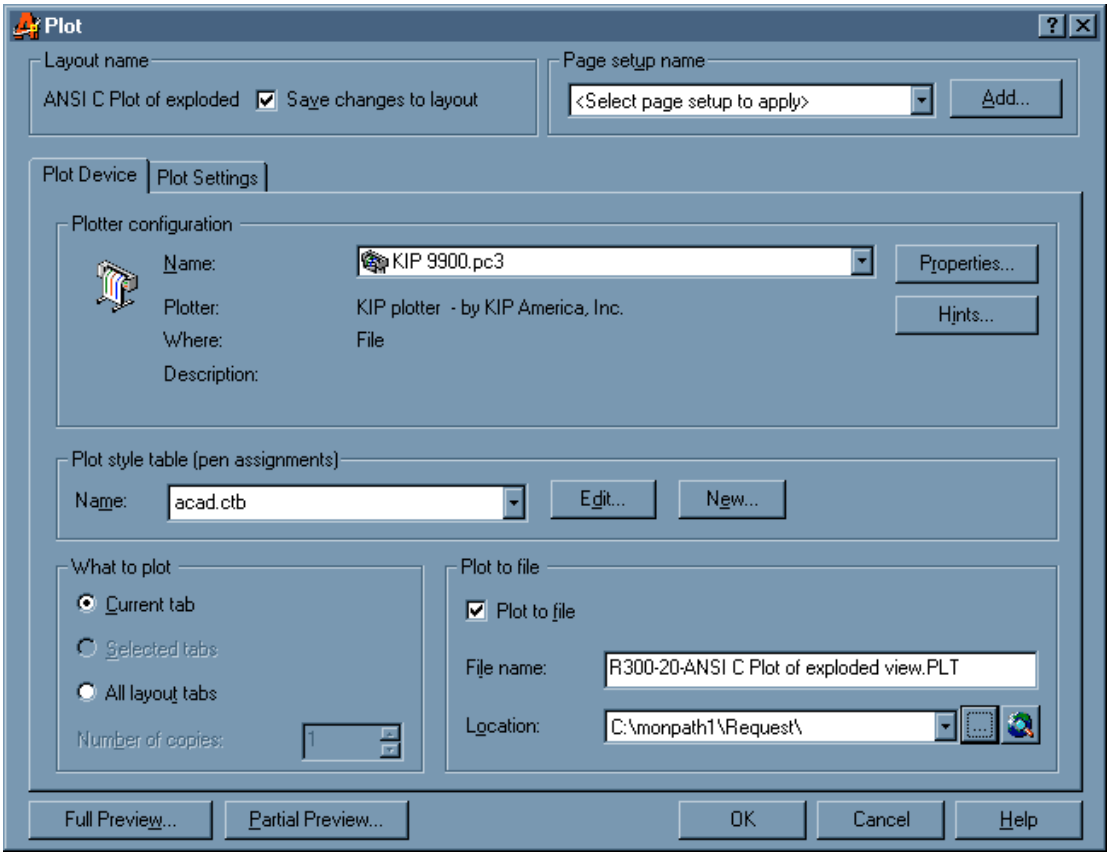


Click on "OK" to finish the linking of the HDI to Powerprint Request. Your KIP Custom Settings dialog box should come back and you should see Real Time Roll Status from the KIP machine. You also have the ability to expertly track your printing directly from the AutoCAD application by Requester, Job Number, and Description. You also have the ability to add a stamp to your document from the HDI. These features are unique to KIP America are **NOT** available in any other HDI driver, across the industry.



5. **Plotting**

After the configuration of the HDI driver, you are ready to plot. After your drawing is complete and ready to send to the KIP, type PLOT at the command line of AutoCAD and you will see the dialog box below.



Under the **Plot Device** TAB, ensure you have selected the .PC3 file you have configured for your KIP machine. Also look to the Plot to file area in the lower right hand corner of this interface.
Ensure the "plot to file" box is checked and the location for the file is specified to the Monitor Path.
The example above points to the **C:\Monpath1\Request.**

While there are many additional configurable options this is the straight path to plotting to the KIP and getting the power of the Request software linked to the HDI driver. If you have any installation or configuration concerns please contact the Digital Support Team at 1-800-252-6793.

KIP America

DIGITAL SUPPORT BULLETIN NT-00-009

TO: All Technical Service Staff
All KIP America Dealers
All KIP America Customers

20-April-2000

FROM: Phil Shipley, Digital Support - Western Region

SUBJECT: Updated LPD Remote Printing Information

This bulletin is designed to better inform, and update, information surrounding LPD remote printing installation, and configuration for Unix/Linux based networks and KIP Powerprint controllers.

KIP America utilizes a combination of our specially designed Unattend software, and a handy utility called WinLPD (available for purchase at www.rabox.com) to accept LPR/LPD print requests. At the time this is being written, WinLPD is currently at a version level of 1.2, with a cost of $39.95.
NOTE: *Make sure you get your serial number and activation key when you purchase!*

Definition of LPR/LPD

LPR/LPD is a platform-independent printing protocol that runs over TCP/IP. Originally implemented for BSD Unix, its use has spread into the desktop world and has become, more or less, an industry standard.

Advantages Of Using LPR/LPD

- Migration to single-protocol environments
- More cross-platform; platform-independent
- Accessible via the Internet

Terminology

LPR: Line Printer Remote. This refers to the process that sends jobs to the printer or print queue. In Unix/Linux based environments, a print queue is established and can be pointed to an assigned printer name, which has an IP address attached to it. LPR is actually part of the syntax used at the command line to begin the spooling process. [i.e. lpr –P *printer filename(s)*]

Examples: lpr –P kip9900 shipley
or
lpr –P kip9900 shipley.plt

LPD: Line Printer Daemon. This refers to the process that accepts print jobs from the line printer daemon client (the LPR client). This is analogous to the printer or the print server and is also called the 'LPD server'.

How does this work in tandem with a KIP controller?

In essence, the KIP controller will become an LPD server with an assigned IP address, which can accept LPR requests from Unix/Linux based workstations.

The print server (LPD) at the KIP controller waits for the client to send it jobs. A print server may be capable of handling multiple printers and print queues at once. Since it (usually) has only a single IP address, the queue name must be used to specify the intended print queue. With WinLPD, the KIP controller gains the ability to identify it as an LPD server, capable of accepting jobs and moving them to multiple queues (if necessary). Configuration of WinLPD and the Powerprint Unattend software (described later) provides an avenue for these specific printing requirements. Before we jump into that, we need to explain a bit more about how LPR and LPD work, and what to expect with Windows NT (OS for the KIP controller).

Note: IP Addressing and networking of the KIP controller is the responsibility of a Network Administrator. Being able to convey how the KIP functions on the network is *not* the responsibility of a Network Administrator.

How LPR Works with WinLPD and the KIP Controller running Windows NT.

LPR is a lot like sending a file, except you're sending a print job instead. Also, there are two parts to each print job: the data file (the data to be printed) and the control file (instructions that describe the data file and specify what to do with the data file). By default, when sending LPR requests to the KIP controller (or for simplicity sake, the LPD server) running WinLPD, the data file, and the control file will be received in C:\WinNT\System32\spool\printers. These files are easy to identify by their filename extensions.

Example:

000008.shd = Control File
000008.spl = Data File

Since there may be more than one queue established at the destination IP address (KIP controller), the queue name is sent at the very beginning to identify the intended queue, and is stored in the control file (SHD). Examining the SHD file with Windows Notepad will reveal the queue name, amidst some irrelevant and unreadable information.

How WinLPD and Powerprint Unattend Work Together

Powerprint Unattend is designed to “pick up” specific types of files and processes them for printing. (For a listing of compatible data file formats, see your Powerprint Software Manual.) What this means is that an LPR print request from a workstation must be sent AFTER an acceptable printer data format has been rendered. (i.e. HPGL/2). In order to render, say HPGL/2, a device driver at the users’ workstation (and usually included in many CAD application) is commonly used. For example, a popular Unix based CAD package called SDS/2 has the ability to render HPGL/2.

Once the file has been rendered, the LPR command is initiated and when completed, we are left with two files sitting in C:\WinNT\system32\spool\printers.

Now we will look into installing/configuring WinLPD at the KIP controller to accept LPR commands and having Powerprint Unattend understand them.

What do I tell the Unix Network Administrator to get this all configured on his/her end?

There are MANY flavors of Unix and or Linux that utilize the lpr/lpd protocol out in the world. (i.e. SCO UNIX, IBM AIX, HP/UX, DEC Ultrix, Unixware, SUN OS, SUN Solaris, Data General, NCR, Unisys, AT&T, Silicon Graphics, Linux, ICL, Cray, Fujitsu, QNX, Motorola, Pyramid, Sequent, Stratus, Tandem, TI, Alpha Micro AMOS, Altos, etc. etc.) There are many front-ends that eliminate the arduous task of using command-line syntax to establish print queues. (i.e. HP-UX uses what is called 'SAM' to handle administrator tasks; yes, like setting up a print queue.) A front-end can best be described as a user-friendly shell. (Imagine operating all the tasks in Microsoft Windows from a command line without graphics).

All are different in their own ways, but share a commonality (most of the time) in terms of how lpr/lpd printing is set up, which is in essence what we will need to do.

Because of this phenomenon, setting up a print queue varies from system to system, and front-end to front-end, but all operate in a similar fashion. Simply put, the Unix Admin will need to do the following:

Create a print queue that points to the KIP Controller's computer name (i.e. KIP-PPC) or IP address, followed by the LPD printer attached to it (i.e. KIP9900).

WinLPD

1. Double-click the WinLPD setup icon to launch the installation.

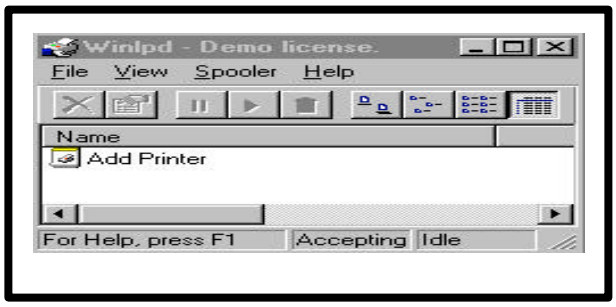
2. When prompted enter your WinLPD Serial Number and Activation Key.

3. When prompted for an installation directory, use the default (C:\Program Files\WinLPD)

4. When prompted to launch WinLPD, do so.
   - After WinLPD starts, you will see the WinLPD icon in the system tray [FIG A.]
   - You will also see the WinLPD setup screen [FIG B.]

FIG. A

FIG. B



1. From the Windows NT desktop, double-click the My Computer icon. 

2. Double-click the printer's icon. 

3. Double-click Add printer
   - A subsequent menu will open. Select 'My Computer'.

   (NOTE: KIP Jet 1.2 or 2.1 may be installed, which is OK. You will still need to add another printer)

4. Select an available port (usually LPT1: or LPT2:)

5. When Windows NT presents a printer list, select any printer you wish. This will simply be used by WinLPD to accept LPR requests.

6. When asked to specify a printer name, type in the name of your KIP (i.e. KIP9900).

7. When prompted, select shared.
   - You will be asked whether to share or not share.
   - Specify a shared name. (Windows NT will default to the printer name, this is OK).
   - When prompted, do not opt to print a test page.

8. Windows NT will prompt you to enter the appropriate media to install the drivers for the selected printer. In most cases, this will be the Windows NT Workstation 4.0 CD.

9. Once the drivers are installed, right click on the icon that Windows NT created for the printer.
   - When a sub-menu appears, select Use as default, and select *pause printing*. THIS IS IMPORTANT!

10. From the Windows NT desktop, in the system tray, double click the WinLPD icon.
    - You will need to add the printer you just configured through Windows NT to work with WinLPD
    - When prompted for an LPD name, type the same name as the printer you configured through NT
      (i.e. KIP9900).

What Did I Just Accomplish?

Basically, WinLPD is now ready to receive LPR requests. The WinLPD service will be initiated automatically upon any reboot or restart of the KIP controller. The printer that we added in WinLPD and Windows NT (and the fact that we have it paused) is important because:

1. Powerprint Unattend will intercept jobs from this paused printer.
2. WinLPD needs to know that a printing device is attached to the NT system to properly route the control file (.SHD) and data file (.SPL)

Verify connectivity by "pinging" the IP address assigned to the KIP controller. Again, a Network Administrator will come in handy.

Example: ping 10.3.0.6

Now what?

The next step is configuring the Powerprint Unattend to properly intercept and handle the .SHD and .SPL files. By default, Unattend is configured to browse C:\WinNT\System32\spool\printers on its local hard drive every 10 seconds. We will need to make a simple change for the Powerprint Unattend to understand what data format the .SPL (data file) actually is when they are received by the KIP controller.

1. Using Windows Explorer, browse to C:\Program Files\Windows Unattend.

2. Look for a file called winuntd.ini and double-click on it.

3. Look for a line that says 'DefaultFileType=R'

4. If you are spooling vector based information (i.e. HPGL/2, or HP-RTL, etc.) change the 'R' to 'V'

5. If you are spooling raster based information, no need to change anything.

6. Save this file by choosing "File", then "Save".

7. Launch Powerprint Unattend.

Note: If you will be spooling multiple data formats, and/or have special sizing, or media requirements, further configuration is necessary. This is a good time to contact KIP America's Digital Support Team.

OK, Am I Done?

Just about. The next step is to test your work. Have a CAD user or Network Admin fire off a couple of prints!

What to Do If Nothing Happens?

If nothing significant happens, try the following:

1. Verify that data is making its way to the KIP controller. You can easily determine this by using Windows Explorer and browsing to C:\WinNT\System32\spool\printers. You should see .SHD and .SPL files. If these files are not present, there is most likely a network queuing problem. Check the status of the Unix/Linux print queue. (Yes, Network Administrator). If the queue has stopped or is "down", verify that it is pointing to the right IP address or LPD name (i.e. KIP9900). Verify a ping from the Unix/Linux workstation to the KIP controller and vice-versa.

2. If all else fails, give KIP Digital Support a call:
   Eastern Region (800-252-6793)
   Western Region (800-699-1106)

Phil Shipley (PjS)
KIP America Digital Support