SATO PCL Windows® 7 Driver

Installation and Operating Instructions

Version 1.8

www.satoamerica.com

Version Control

Version	Date	Description	
1.0	1/21/2013	Test Release	Bob McBride
1.1	1/23/2013	Added install instructions for Windows XP®	Bob McBride
1.2	1/25/2013	Added uninstall instructions for Windows XP	Bob McBride
1.3	1/30/2013	Modified Windows XP uninstall to show driver removal warning	Bob McBride
1.4	2/1/2013	Added instructions to remove the "Read only" attribute Added instructions to reboot after removing printers	Bob McBride
1.5	2/22/2013	Initial release	Bob McBride
1.6	2/26/2013	Added instructions for IP port setup	Bob McBride
1.7	2/28/2013	Inserted sections lost in previous upgrade	Bob McBride
1.8	4/5/2013	Added BarTender information	Bob McBride

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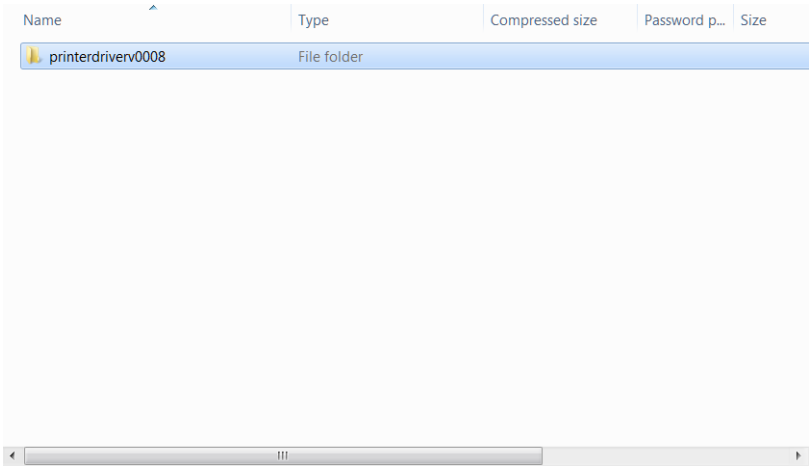
Windows 7 Driver

The SATO PCL Windows 7 driver has been developed to take advantage of the PCL emulation present in the SATO controller in the LP 100R Laser Printer. It has been tested on Windows 7 (32 and 64 bit), Windows 8 (32 bit) and Windows XP (32 bit) operating systems. It has been carefully tested to deliver performance to match the output of the LP 100R in speed as well as form size. The driver will support forms up to 17" wide by 24" long. The performance has been tested at 100 8.5" long pages per minute. Naturally, the driver is susceptible to the performance of the application output.

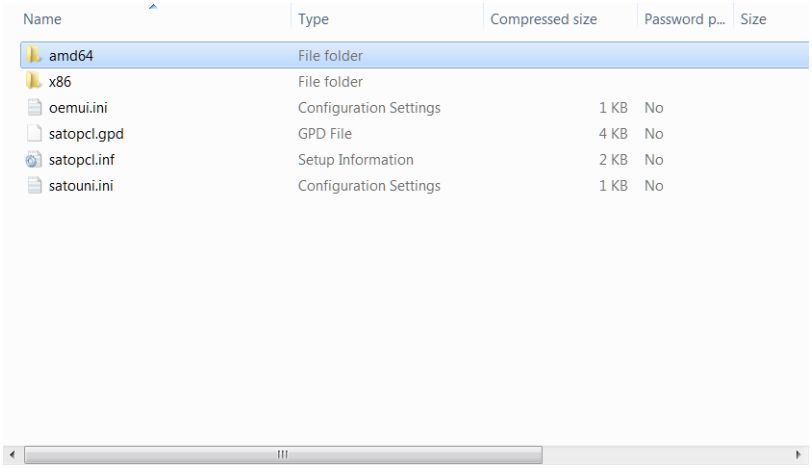
Installation on Windows 7 Platform

Prior to the installation, it is important to know the IP address of the printer to be used by the driver. This will be used in a later step.

The files necessary to install the SATO PCL driver for Windows 7 are delivered in a zip file. The files must be unzipped prior to installation. Inside the zip file is one subfolder which contains all necessary files for the installation. The folder may be unzipped to any location that is accessible from the workstation on which the driver is to be installed.

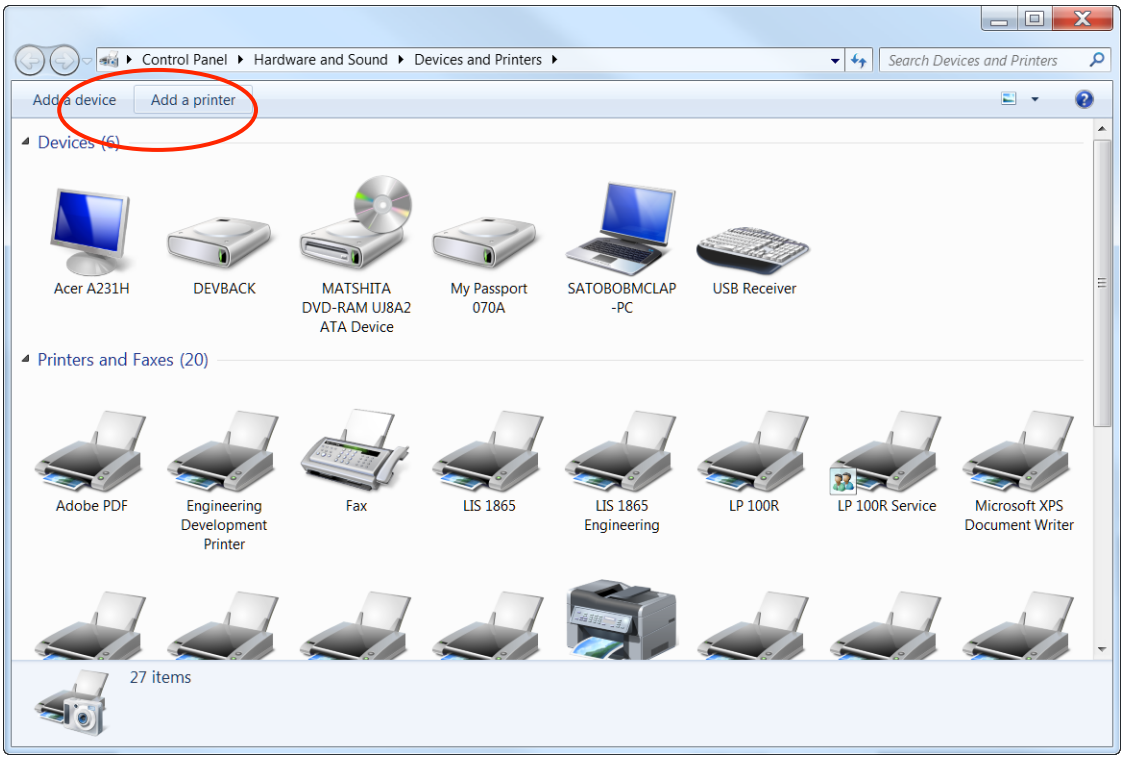


Note that the folder is named for the version of the driver to be installed. Inside this folder are four files and two sub folders.

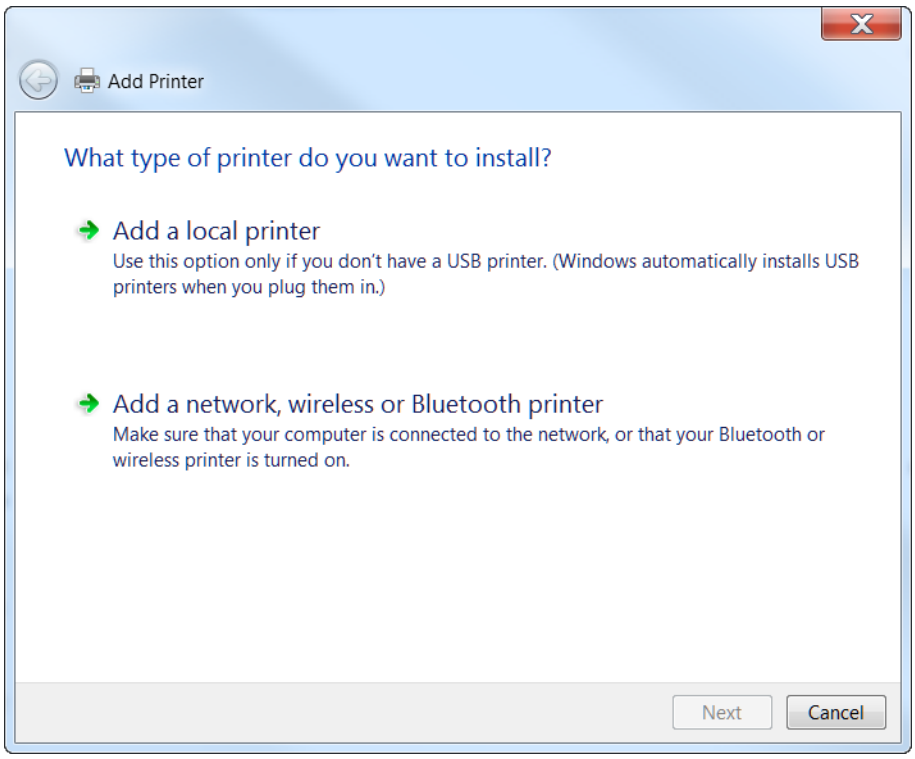


The file "satopcl.inf" is the file that the Windows install wizard will be looking for to install the driver to the proper printer.

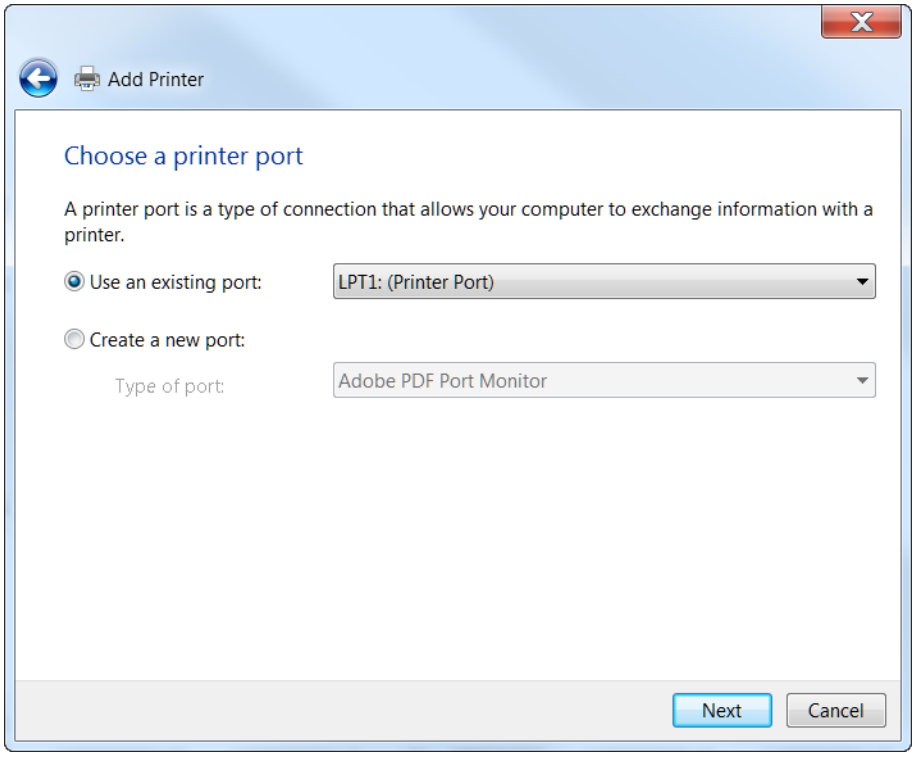
To install the printer, go to the Windows 7 "Devices and Printers" window and select "Add a printer":



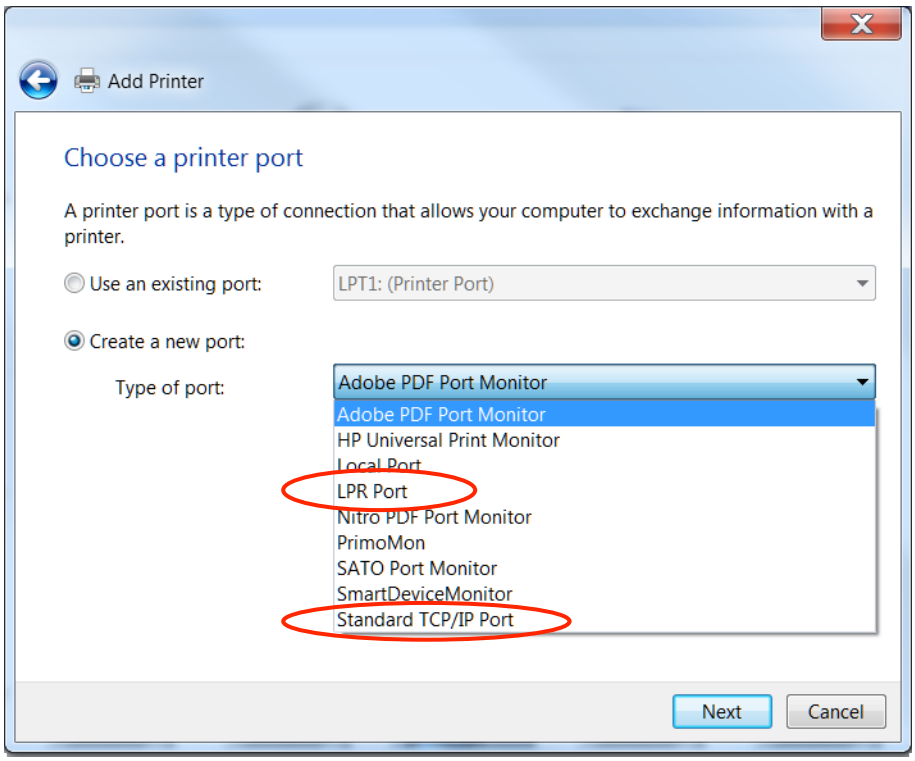
This will start the wizard, which will lead the user through the steps to define the port being used by the printer on this workstation. After the introduction screen, the wizard will ask the type of printer to be installed:



Select the first option, "Add a local printer". The user will then be asked to select a printer port.



If the port to the IP address of the printer has already been defined on the workstation, the user can select the printer from the "Use an existing port" drop down. If the IP address has not been defined previously on the workstation, the user should select the "Create a new port" drop down. The "Create a new port" drop down allows the user to select the type of port to add. In this case, the port would be a Standard TCP/IP Port: (Note that if the printer is to be run as an LPR printer, the user would select the "LPR Port" option).

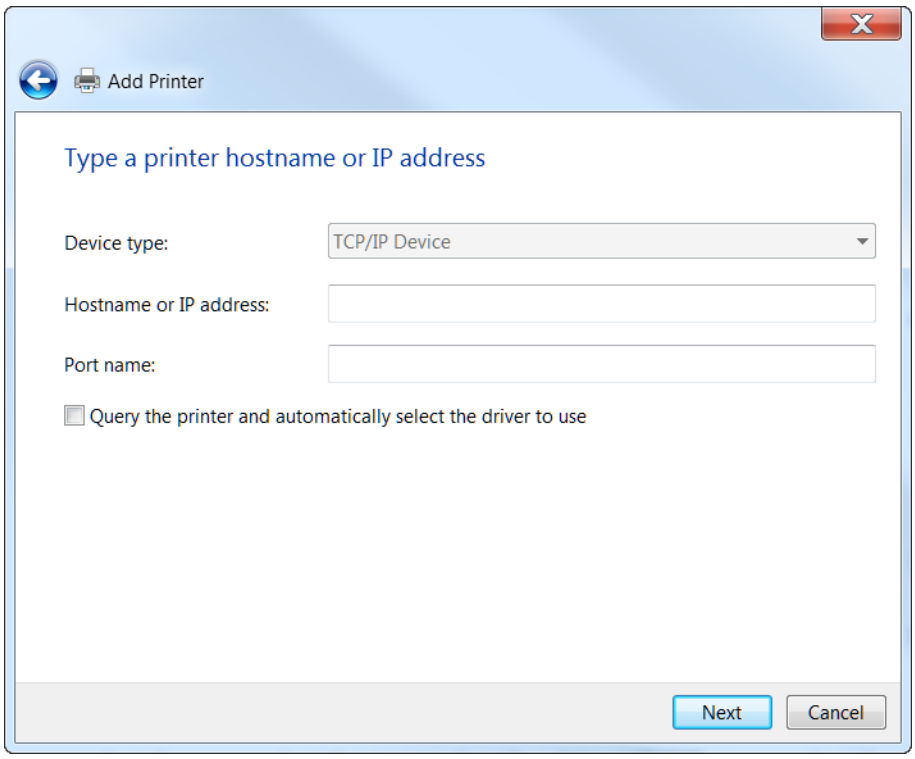


Clicking the "Next" button will either move to the next setup screen, or will start the "Create new port" wizard.

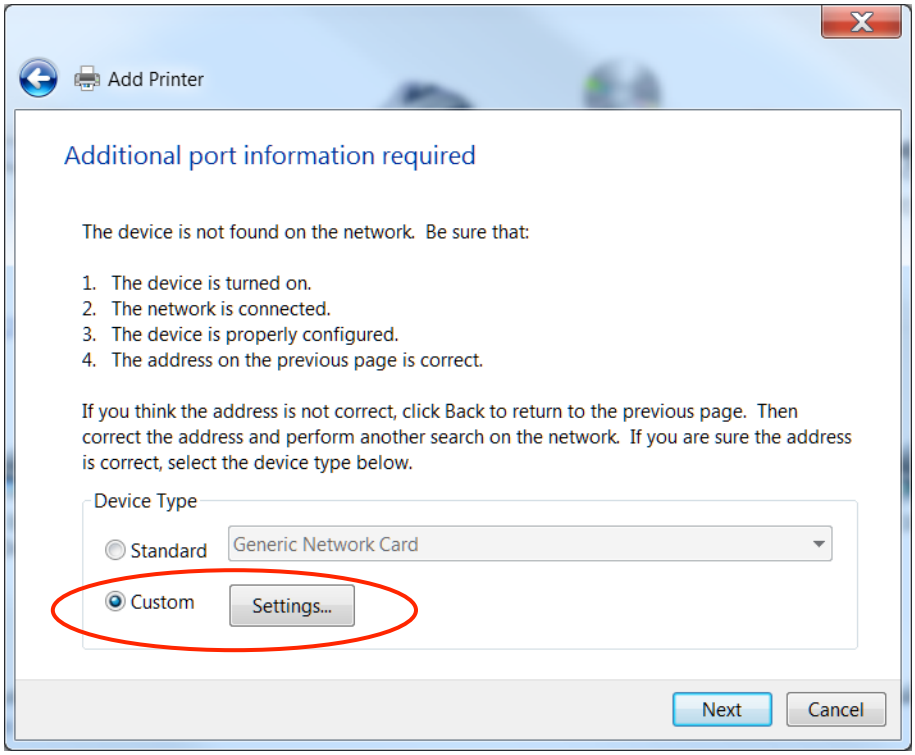
If "Use an existing port" is selected click this link.

If the printer is to be connected through an LPR protocol, click this link.

If it is necessary to create a new TCP / IP port, start the wizard by clicking "Next":

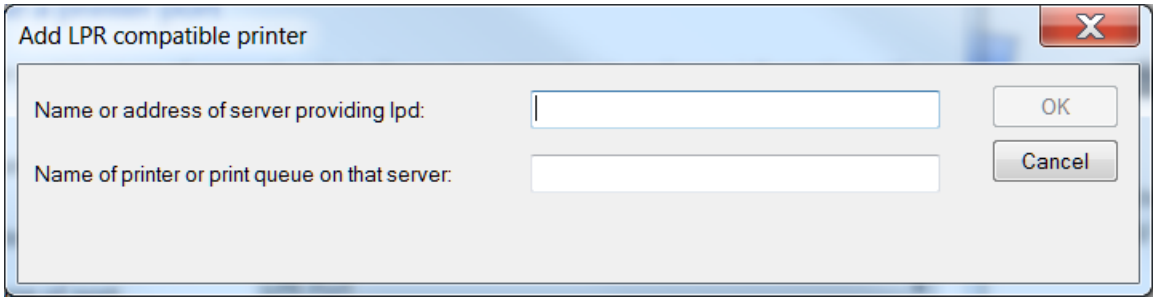


Type in the IP address of the printer, and Windows will fill in a suitable port name. Windows will then attempt to detect the TCP/IP port. This may take a moment. Windows will then ask for additional information:

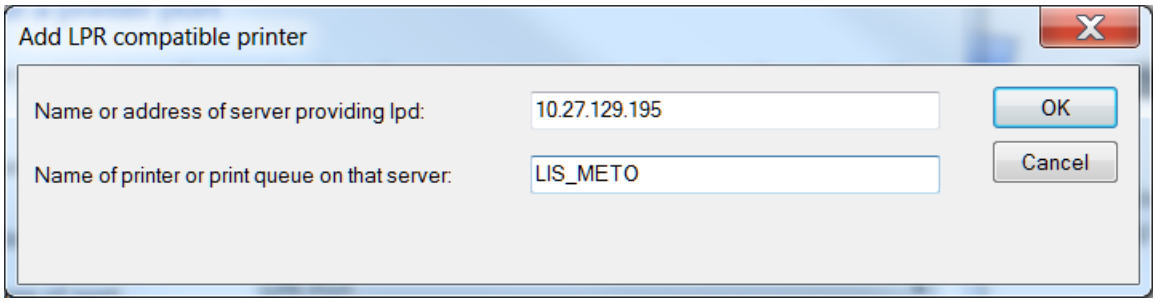


Select "Custom" and click "Next". This will bring up the "Install the printer driver" window.

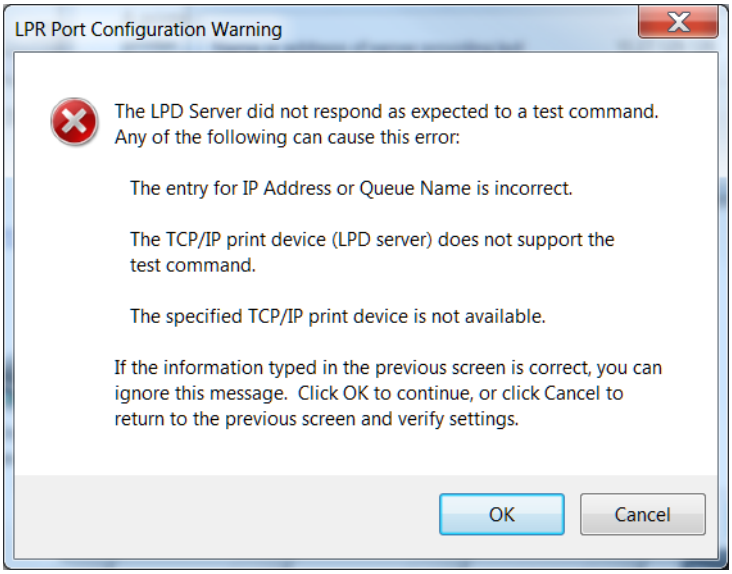
If the printer communication is to be LPR, the "Add LPR Port" wizard will be activated. The user will be asked for the IP address and print queue for the printer:



Enter the printer's IP address and the print queue name "LIS_METO":

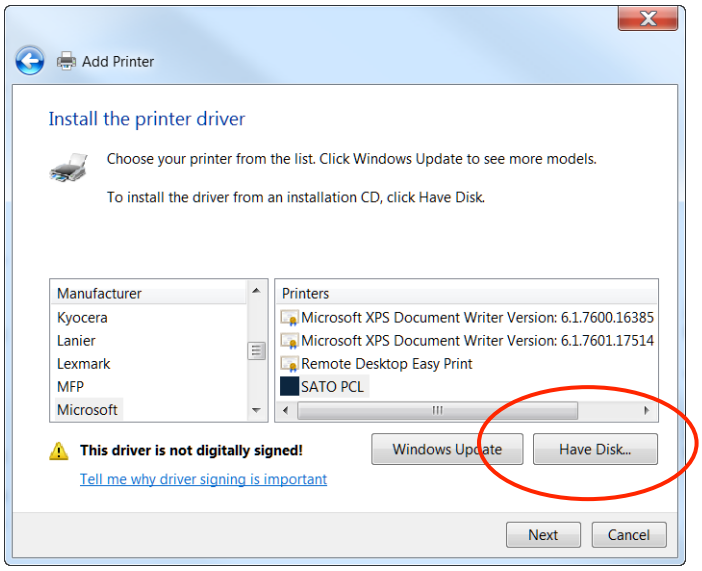


Click the "OK" button and Windows will test the connection. It is possible that a warning message will appear:

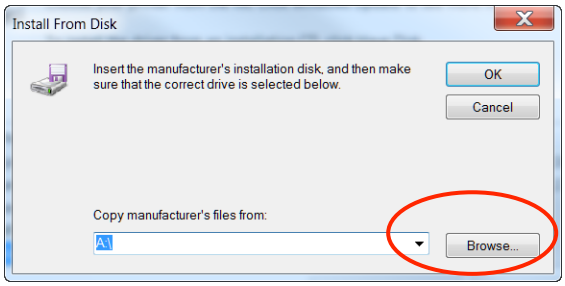


This is not unusual. Click "OK" to continue to the "Install the printer driver" screen.

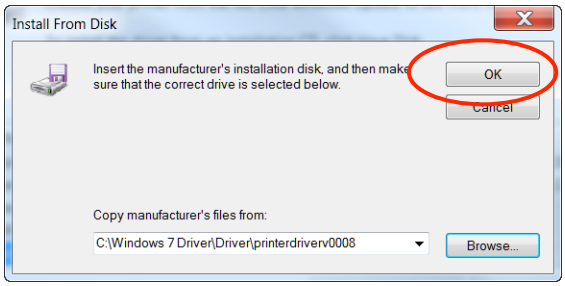
Once the port is selected, the wizard will ask for the driver to be used by the printer:



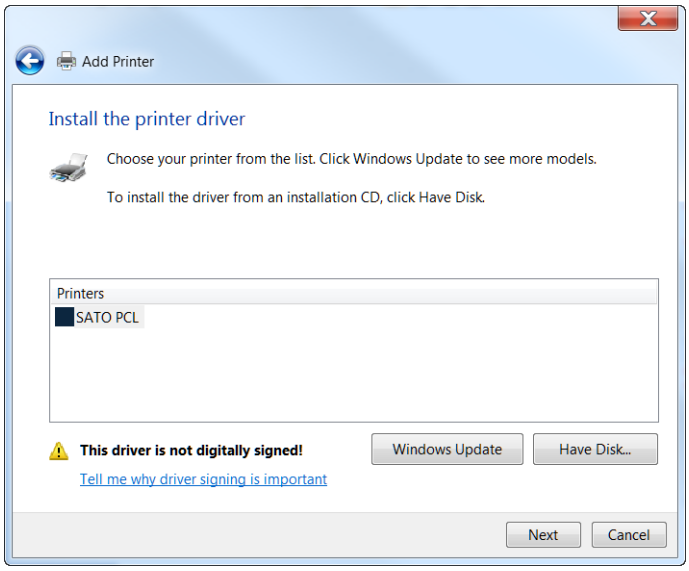
Select the "Have Disk…" button. The wizard will then ask for the place to find the driver. Press the "Browse…" button and navigate to the folder containing the driver files extracted previously:



Once the user selects the "satopcl.inf" file and click open, this file will show in the "Install from Disk" window. Click the "OK" button:



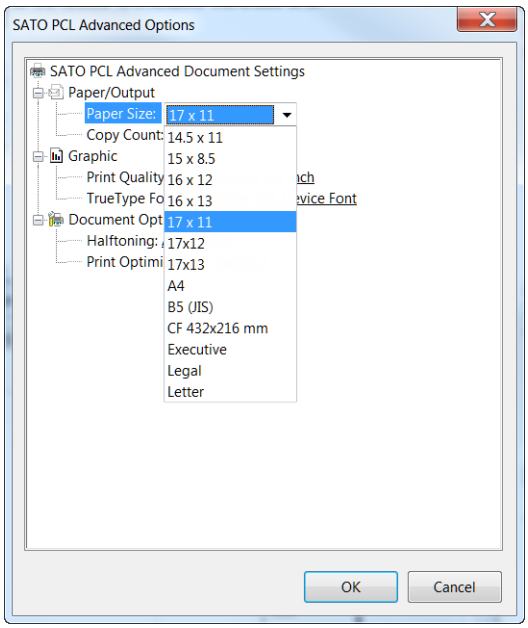
This will bring up the next screen, to select the SATO PCL driver:



Select the SATO PCL driver and click "Next". This will install the driver and bring the user to the Printer Name screen. The system will default to naming the printer "SATO PCL". This can be changed to suit the purpose of the printer install.

Forms

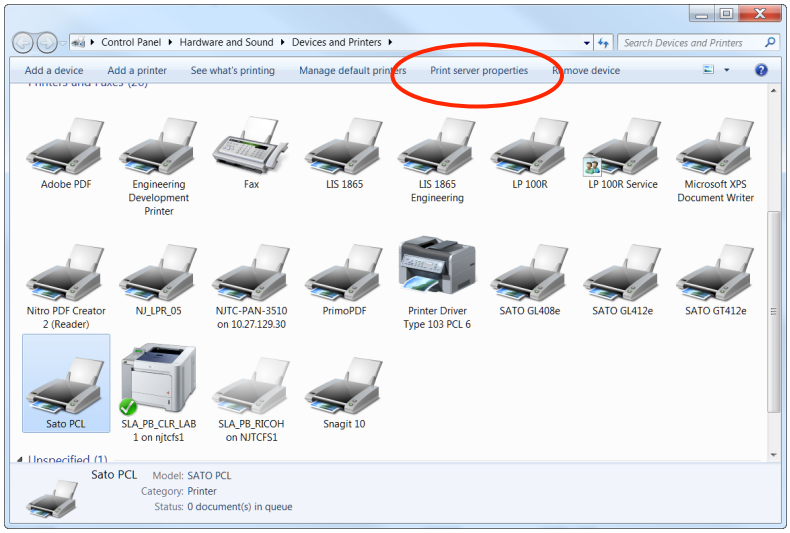
After installing the printer, the driver will also install several popular form sizes for the LP 100R printer.



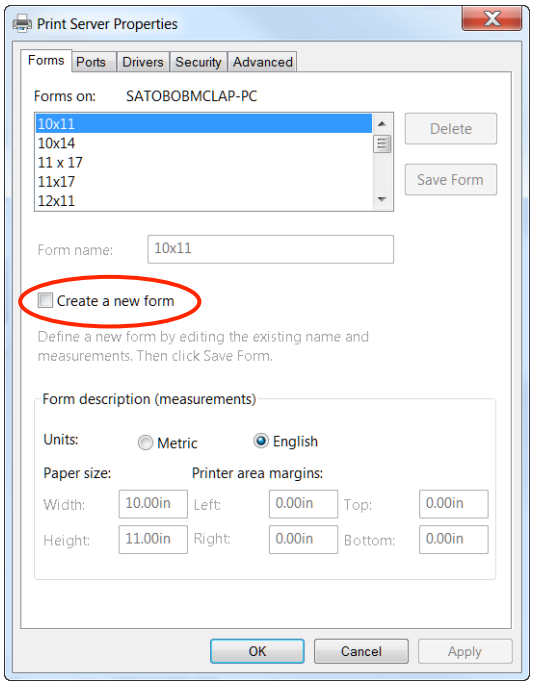
The new form sizes loaded with the driver are as follows:

Form Name	Form Width (inches)	Form Height (inches)
14.5 x 11	14.5	11
15 x 8.5	15	8.5
16 x 12	16	12
16 x 13	16	13
17 x 11	17	11

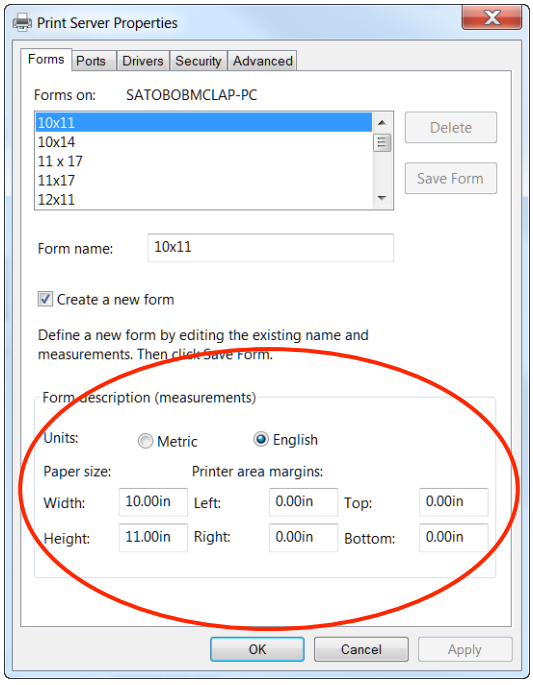
This is meant to cover some of the more common form sizes. It is likely that the user will need to define other paper sizes to fit the needs of their application. In order to do this, select the SATO PCL printer, and click "Print server properties" from the top menu:



This will bring up the server properties window:



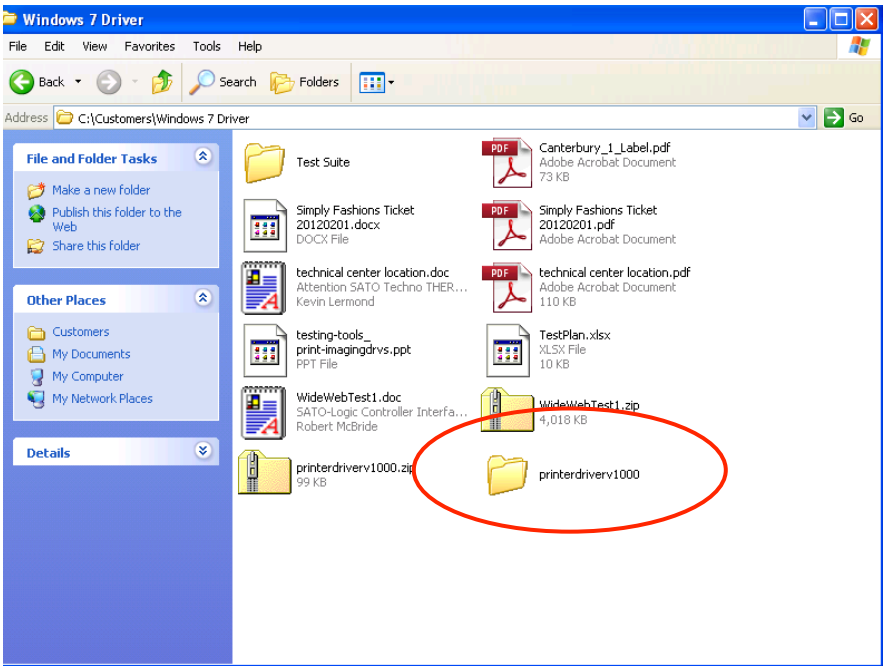
Check the "Create a new form" check box. This will allow the user to enter the necessary information in the boxes near the bottom of the tab:



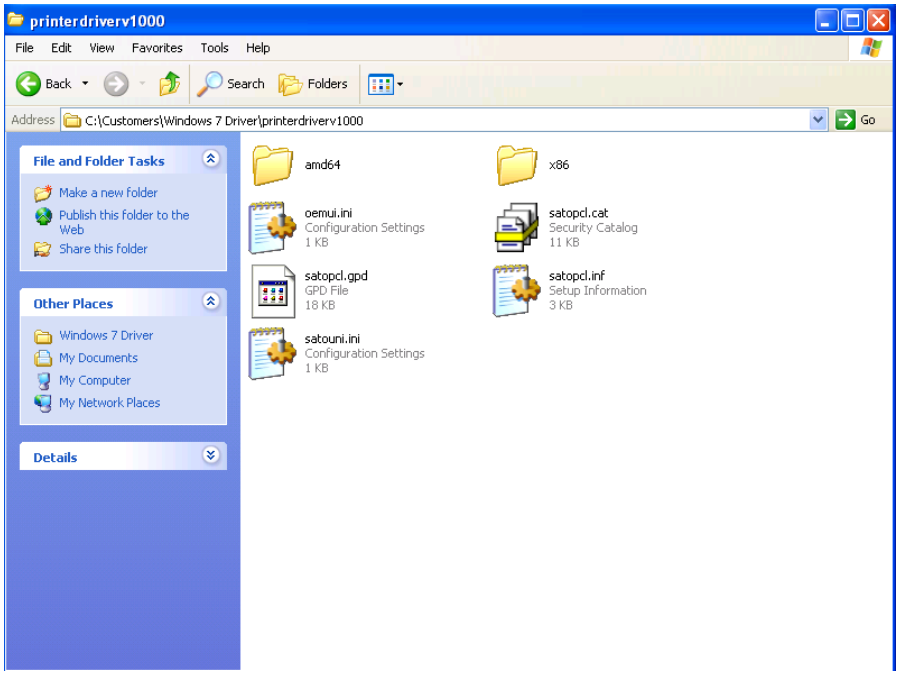
The forms for the LP 100R laser printer are generally created without margins, as the printer does not impose any margins on the printed output. Make sure to give the new form a name (above the "Create a new form " check box) and press the "Apply" button to add the form to those available to this printer. Note that although forms may be created for any size, only the forms with dimensions which conform to the printer's capabilities will be displayed in the "Paper Size" drop down in the driver setup.

Install on Windows XP Platform

The files necessary to install the SATO PCL driver for Windows XP are delivered in a zip file. The files must be unzipped prior to installation. Inside the zip file is one subfolder which contains all necessary files for the install. The folder may be unzipped to any location that is accessible from the workstation on which the driver is to be installed.

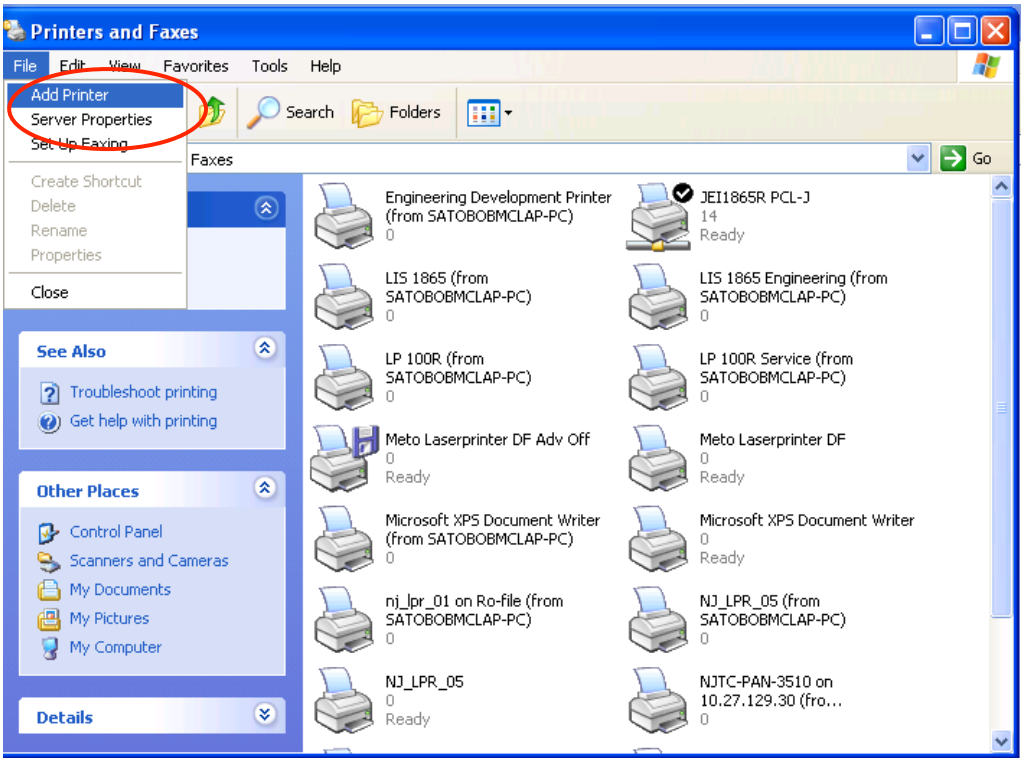


Note that the folder is named for the version of the driver to be installed. Inside this folder are four files and two sub folders.

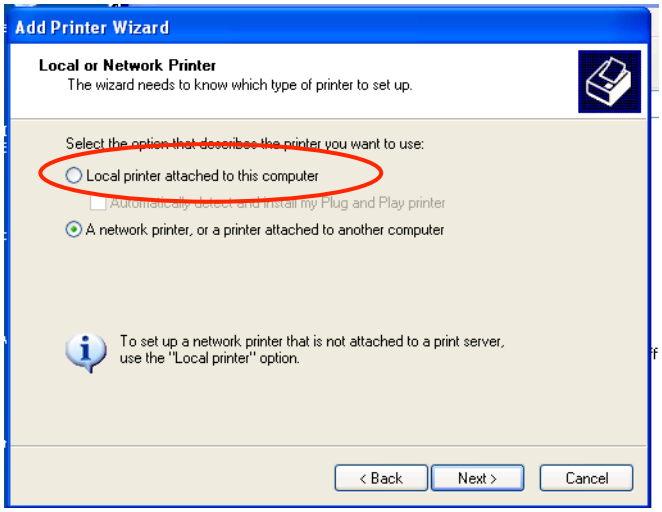


The file "satopcl.inf" is the file that the Windows install wizard will be looking for to install the driver to the proper printer.

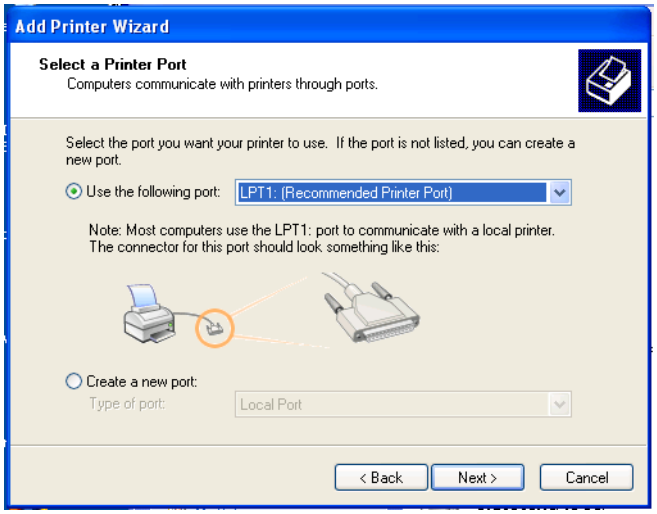
To install the printer, go to the Windows XP "Printers and Faxes" window and select "File" and then "Add Printer":



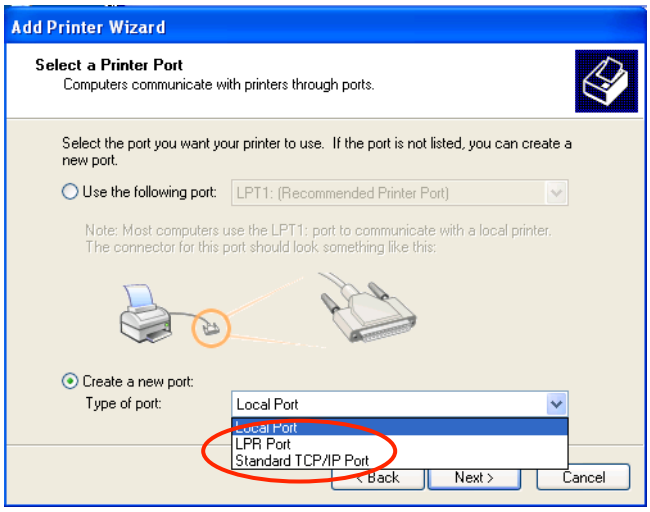
This will start the wizard, which will lead the user through the steps to define the port being used by the printer on this workstation. After the introduction screen, the wizard will ask the type of printer to be installed:



Select the first option, "Local printer attached to this computer". The user will then be asked to select a printer port.



If the port to the IP address of the printer has already been defined on the workstation, the user can select the printer from the "Use the following port" drop down. If the IP address has not been defined previously on the workstation, the user should select the "Create a new port" drop down. The "Create a new port" drop down allows the user to select the type of port to add. In this case, the port would be a Standard TCP/IP Port: (Note that if the printer is to be run as an LPR printer, the user would select the "LPR Port" option).

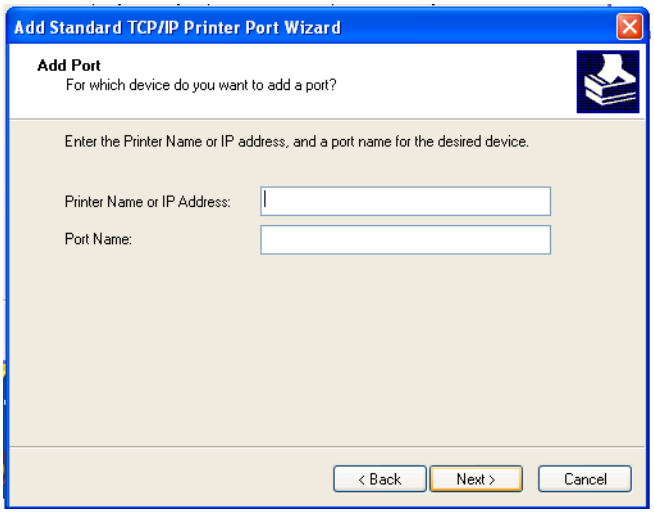


Clicking the "Next" button will either move to the next setup screen, or will start the "Create new port" wizard.

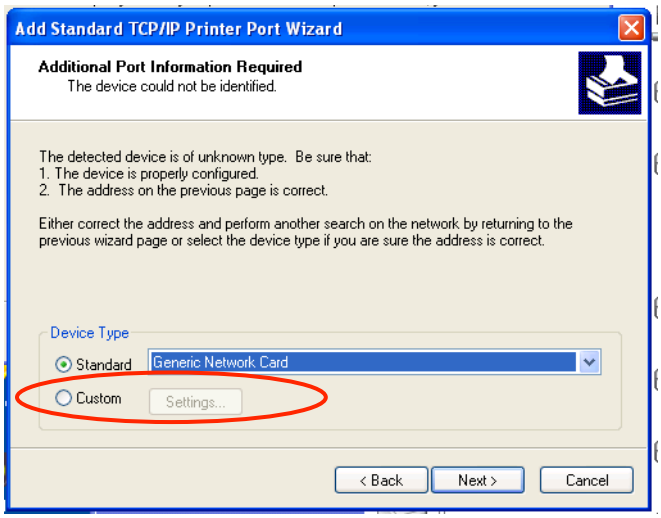
If "Use an existing port" is selected click this link.

If the printer is to be connected through an LPR protocol, click this link.

If it is necessary to create a new TCP / IP port, will start the wizard by clicking "Next":

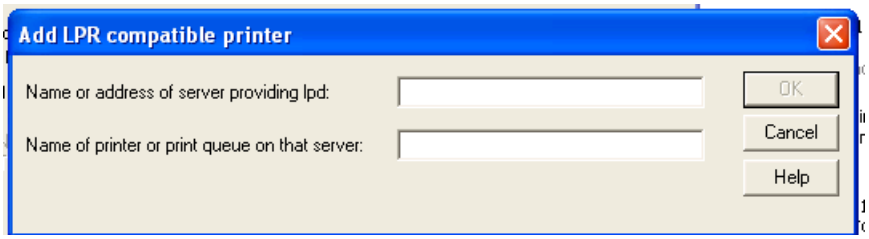


Type in the IP address of the printer, and Windows will fill in a suitable port name. Windows will then attempt to detect the TCP/IP port. This may take a moment. Windows will then ask for additional information:

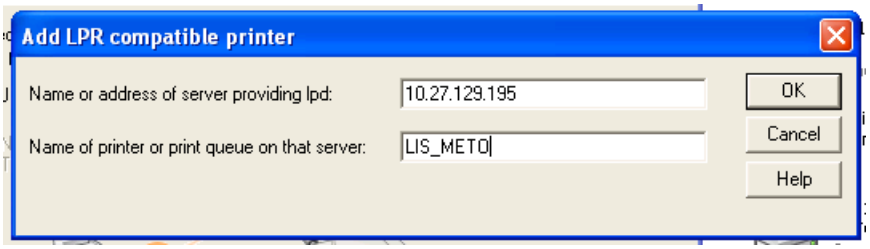


Select "Custom" and click "Next". This will bring up the "Install the printer driver" window. To get to that instruction, click here.

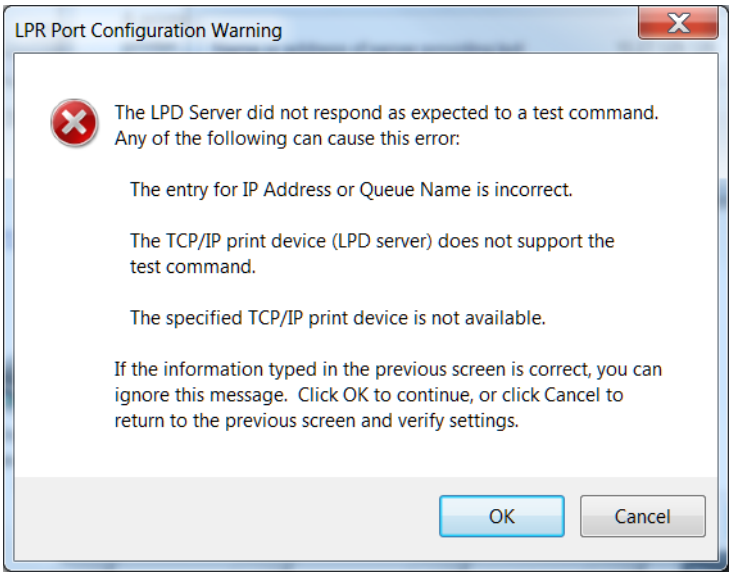
If the printer communication is to be LPR, the "Add LPR Port" wizard will be activated. The user will be asked for the IP address and print queue for the printer:



Enter the printer's IP address and the print queue name "LIS_METO":

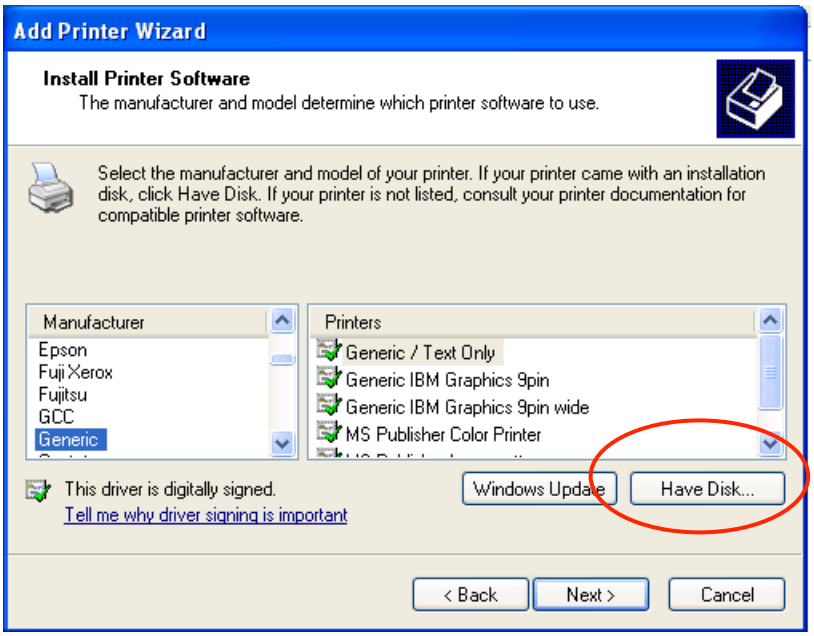


Click the "OK" button and Windows will test the connection. It is possible that a warning message will appear:

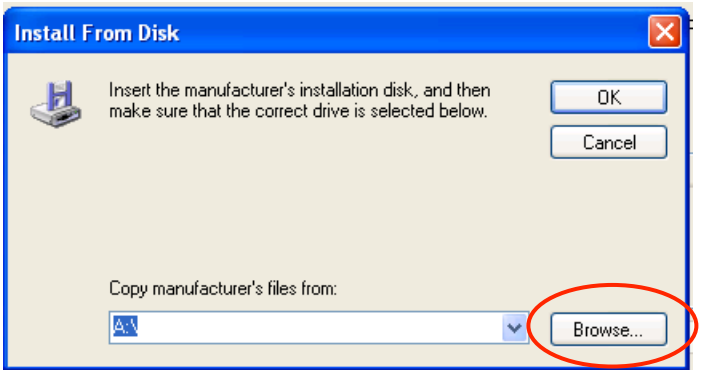


This is not unusual. Click "OK" to continue to the "Install the printer driver" screen.

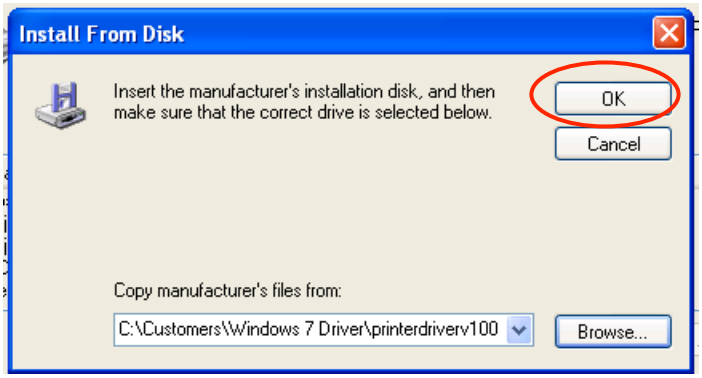
Once the port is selected, the wizard will ask for the driver to be used by the printer:



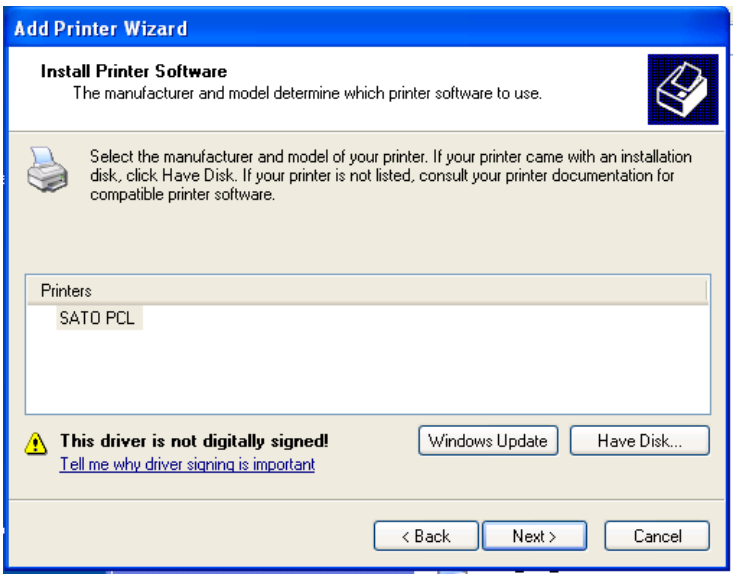
Select the "Have Disk…" button. The wizard will then ask for the place to find the driver. Press the "Browse…" button and navigate to the folder containing the driver files extracted previously:



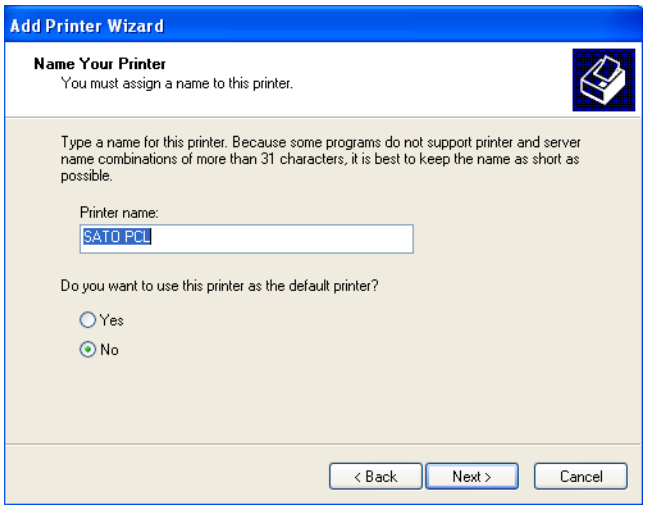
Once the user selects the "satopcl.inf" file and click open, this file will show in the "Install from Disk" window. Click the "OK" button:



This will bring up the next screen, to select the SATO PCL driver:

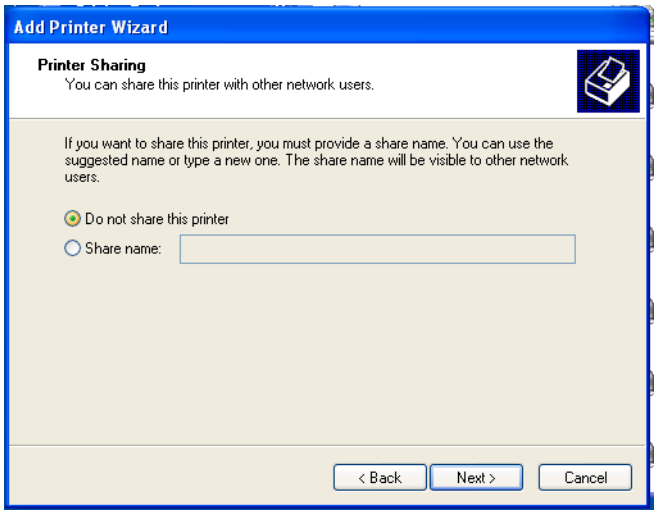


Select the SATO PCL driver and click "Next". This will install the driver and bring the user to the Printer Name screen.



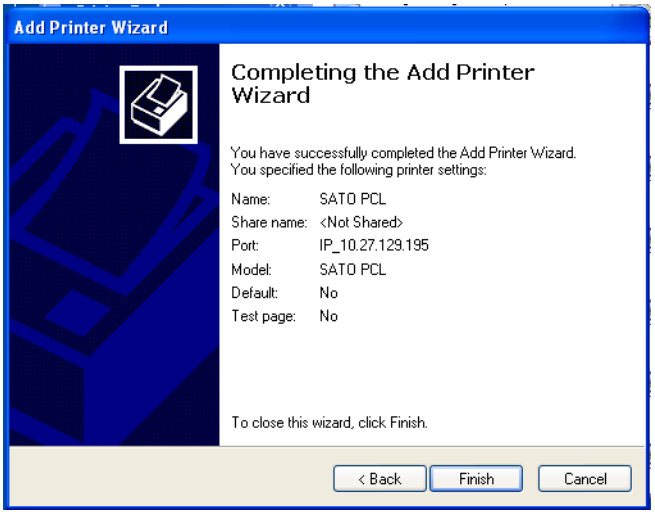
The system will default to naming the printer "SATO PCL". This can be changed to suit the purpose of the printer install.

Clicking "Next" will bring up the "Printer Sharing" screen:



The printer may be shared according to the needs of the situation.

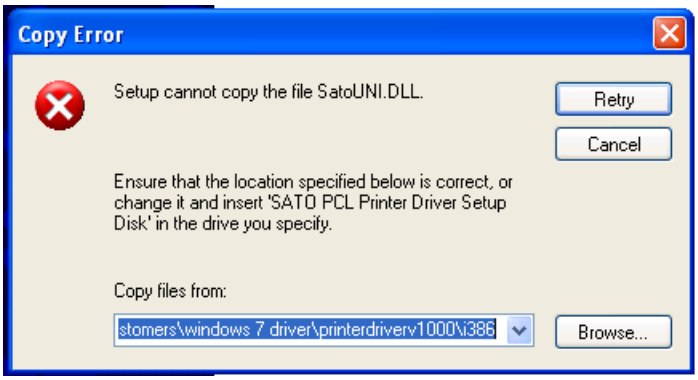
Clicking "Next" will ask the user to print a test page. Clicking "Next" on the test page screen will show the final screen:



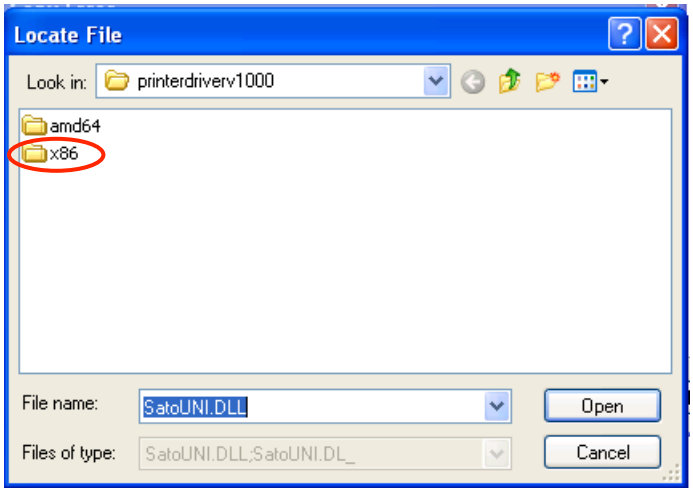
Clicking "Finish" on this screen will install the driver on the system. The user may see a "Hardware Installation" warning screen when the system goes to install the driver:

Click the "Continue Anyway" button to continue the installation.

As the installation progresses, the system may prompt the user to locate the file "SatoUNI.DLL" to complete the installation:



If this screen shows, click the "Browse" button to locate the file. This will bring the user to the folder containing the original "satopcl.inf" file to begin the driver install:

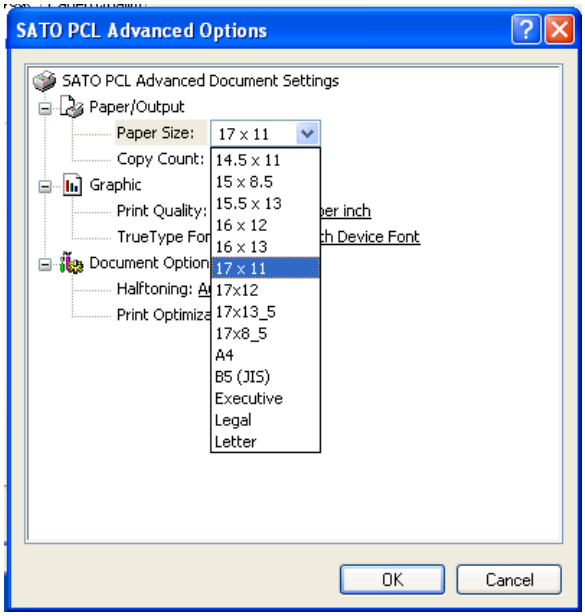


The file needed for the installation is in the "x86" folder. Highlight the file and click "Open" to return to the previous "Copy Error" screen. On this screen click "Retry" and the system will finish the installation.

After installation, the printer is set to the default of 300 dpi and Letter form size. Make sure these settings match the printer's setting before sending any data to the printer (including the test print from the driver install).

Forms

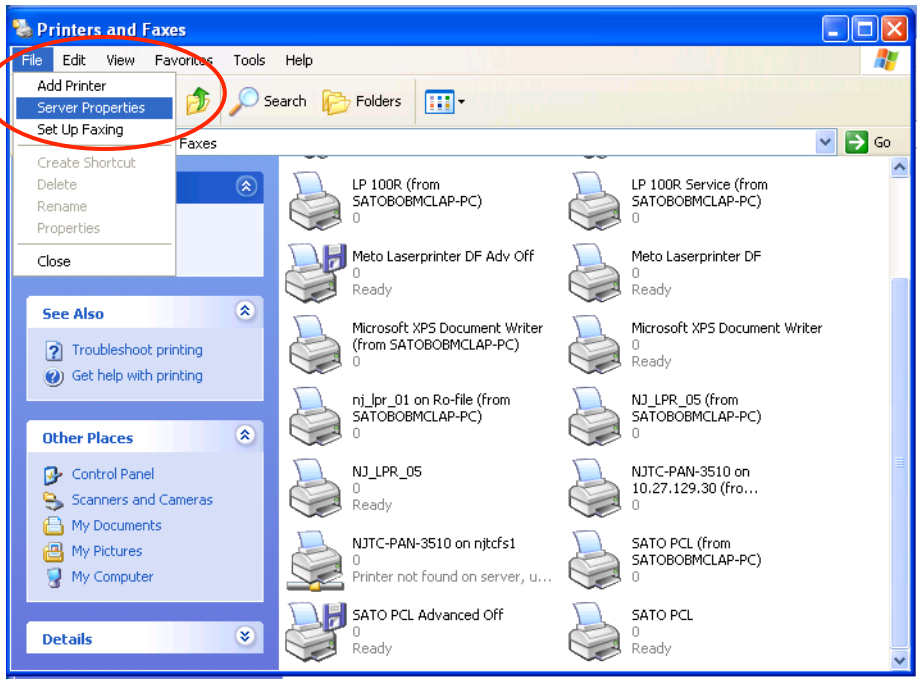
After installing the printer, the driver will also install several popular form sizes for the LP 100R printer.



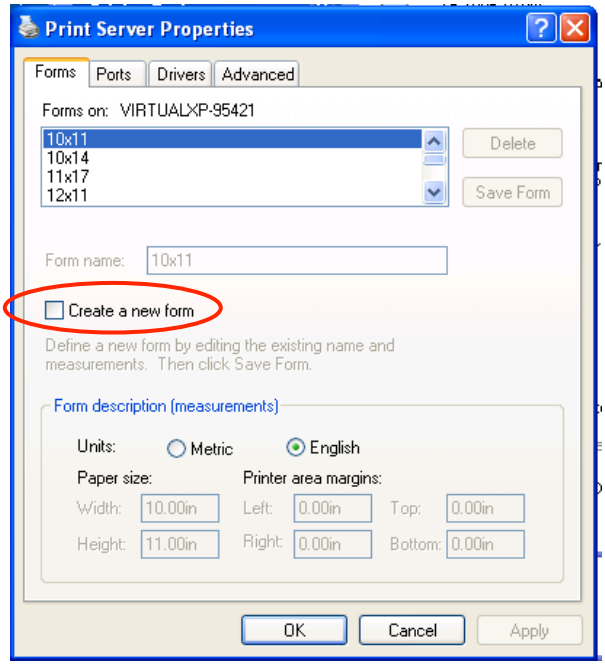
The new form sizes loaded with the driver are as follows:

Form Name	Form Width (inches)	Form Height (inches)
14.5 x 11	14.5	11
15 x 8.5	15	8.5
16 x 12	16	12
16 x 13	16	13
17 x 11	17	11

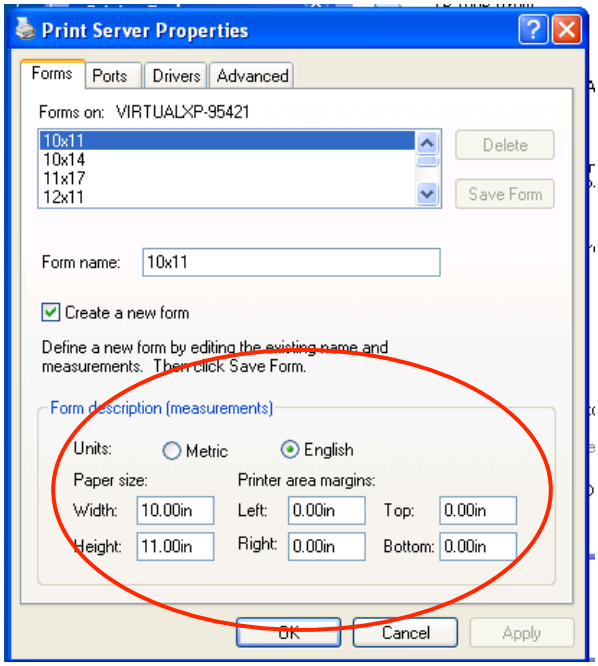
This is meant to cover some of the more common form sizes. It is likely that the user will need to define other paper sizes to fit the needs of their application. In order to do this, ensure that no printers are selected in the main "Printers and Faxes" window and click "File" then "Server Properties":



This will bring up the server properties window:



Check the "Create a new form" check box. This will allow the user to enter the necessary information in the boxes near the bottom of the tab:

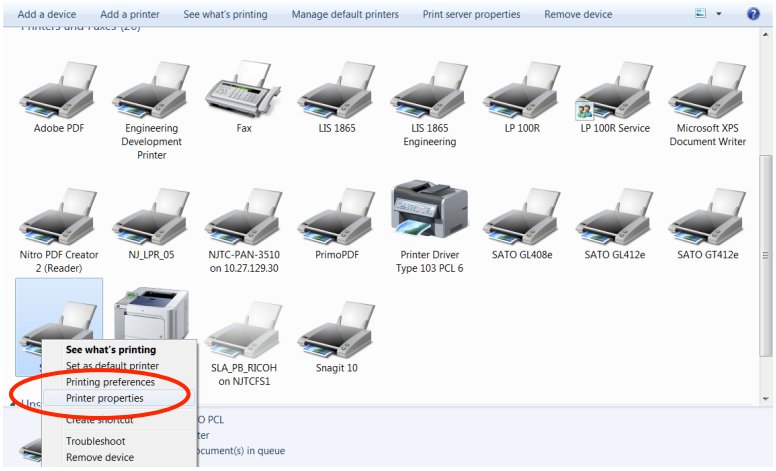


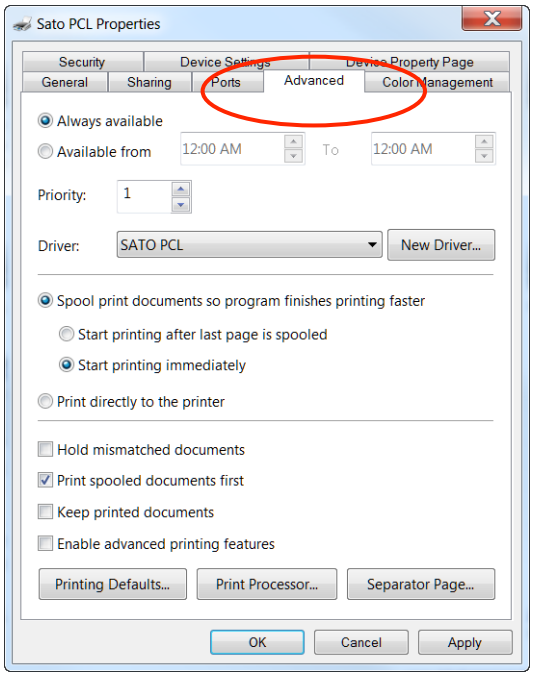
The forms for the LP 100R laser printer are generally created without margins, as the printer does not impose any margins on the print. Make sure to give the form a new name (above the "Create a new form " check box) and press the "Apply" button to add the form to those available to this printer. Note that although forms may be created for any size, only the forms with dimensions which conform to the printer's capabilities will be displayed in the "Paper Size" drop down in the driver setup.

Uninstall on Windows 7

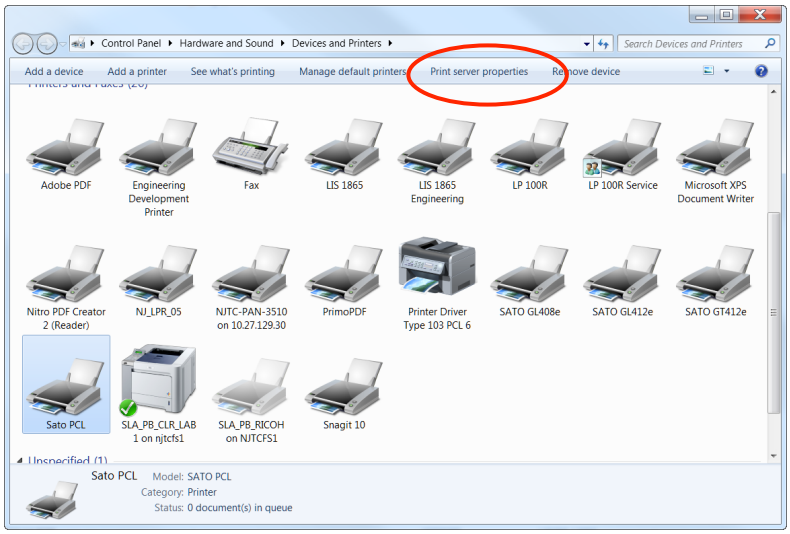
If the driver needs to be uninstalled for any reason there are several steps which must be taken to ensure that the driver and all components are removed from the system. Typically, the driver must be uninstalled prior to an upgrade on the driver. In order to uninstall a driver in Windows 7, all printers which use the driver must be deleted or changed to use a different driver before the driver can be uninstalled.

Open the "Devices and Printers" window and look at each printer to see if it is using the driver the user wishes to uninstall. This is under the "Advanced" tab in "Printer Properties".

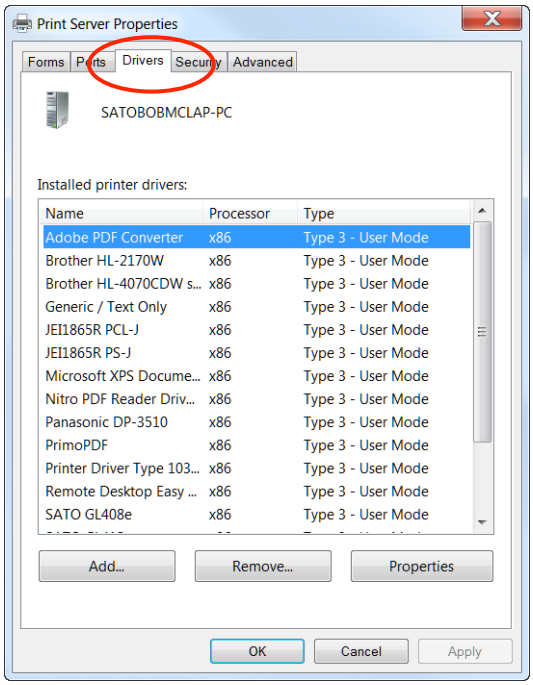

Add a device
Add a printer
See what's printing
Manage default printers
Print server properties
Remove device
Adobe PDF
Engineering Development Printer
Fax
LIS 1865
LIS 1865 Engineering
LP 100R
LP 100R Service
Microsoft XPS Document Writer
Nitro PDF Creator 2 (Reader)
NJ_LPR_05
NJTC-PAN-3510 on 10.27.129.30
PrimoPDF
Printer Driver Type 103 PCL 6
SATO GL408e
SATO GL412e
SATO GT412e
SLA_PB_RICOH on NJTCFS1
Snagit 10
See what's printing
Set as default printer
Printing preferences
Printer properties
Troubleshoot
Remove device


Sato PCL Properties
Security
Device Settings
Device Property Page
General
Sharing
Ports
Advanced
Color Management
Always available
Available from
12:00 AM
To
12:00 AM
Priority:
1
Driver:
SATO PCL
New Driver...
Spool print documents so program finishes printing faster
Start printing after last page is spooled
Start printing immediately
Print directly to the printer
Hold mismatched documents
Print spooled documents first
Keep printed documents
Enable advanced printing features
Printing Defaults...
Print Processor...
Separator Page...
OK
Cancel
Apply

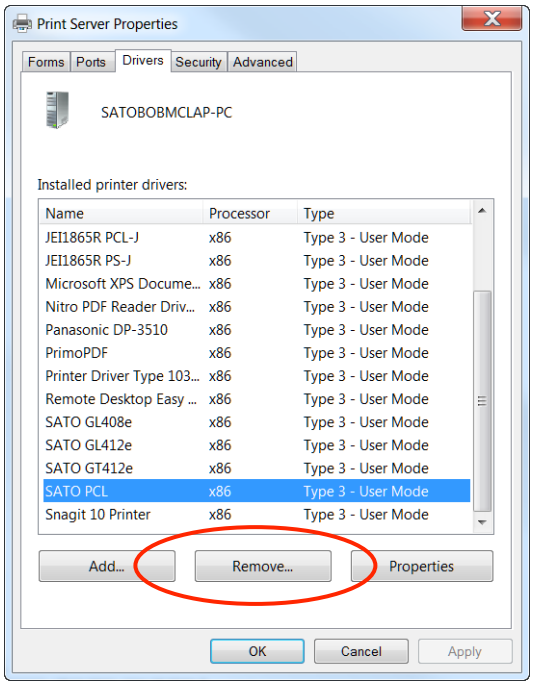
Once the printers are no longer using the driver, select one of the printers from those that are left and select the "Print server properties" menu item:



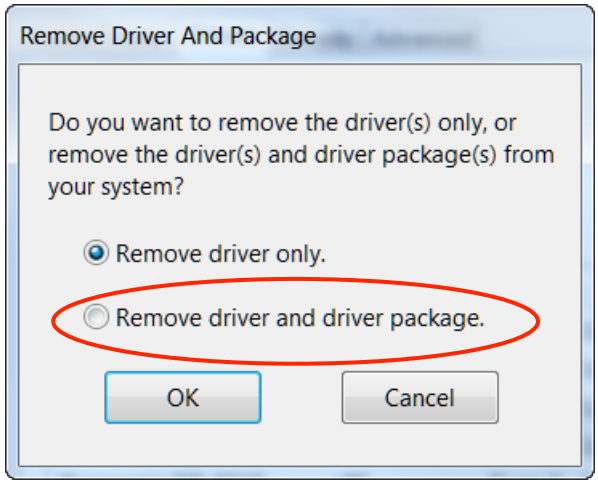
On the "Print server properties" window, select the "Drivers" tab:



Select "SATO PCL" and click the "Remove…" button:

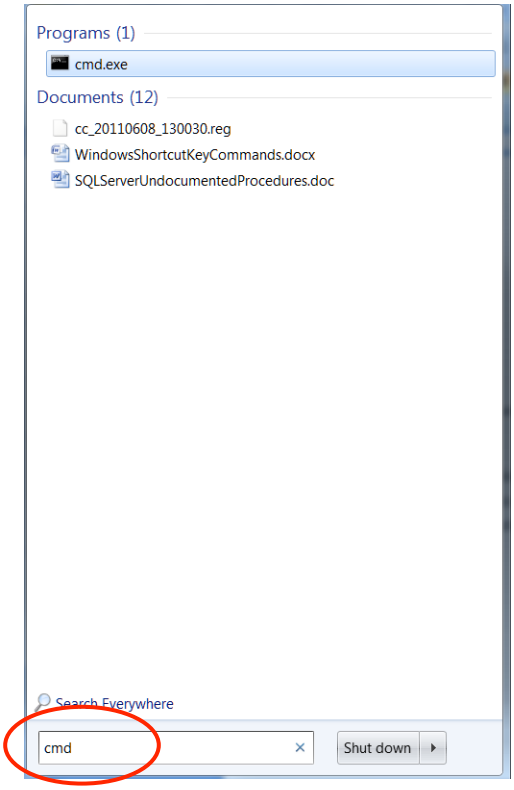


On the next window, check the box next to "Remove driver and driver package." And click "OK":

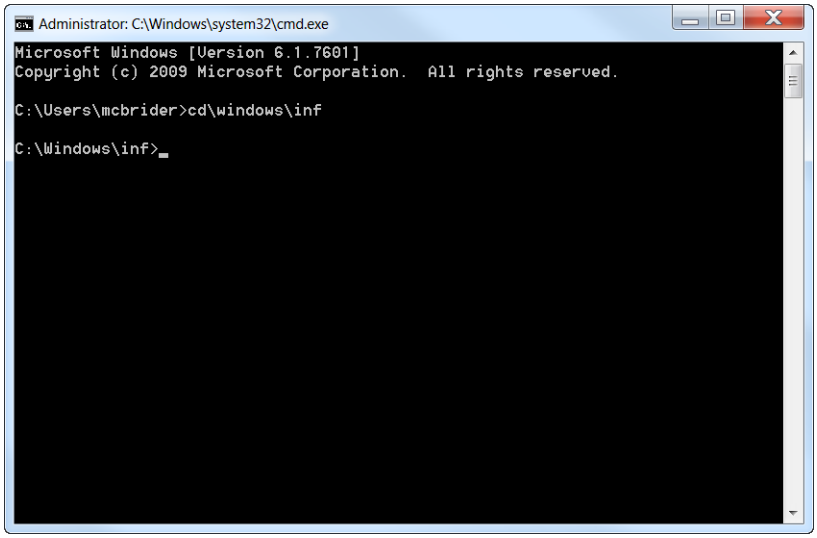


If it is possible to remove the driver, Windows will indicate that the driver has been successfully removed.

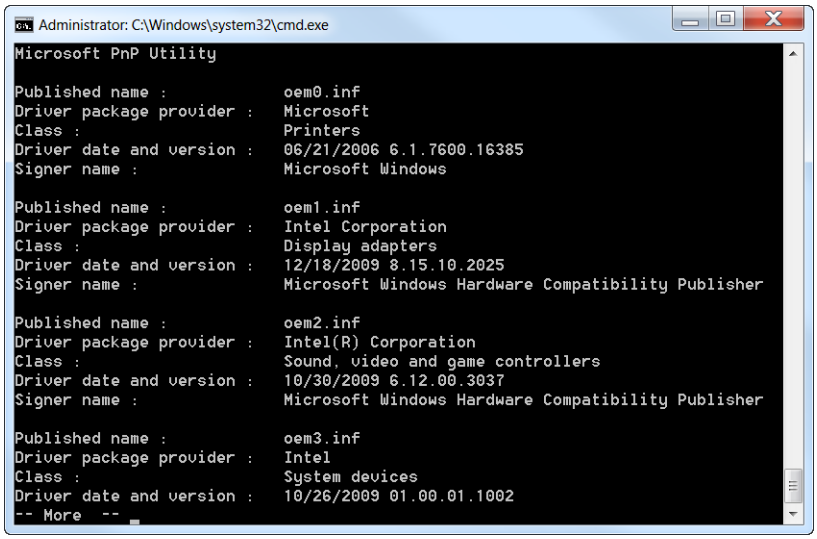
When Windows has finished removing all files, there is a chance that one file remains on the workstation. In order to ensure a clean install of the new driver, the user should check for an ".inf" file remaining on the workstation after the uninstall. This is accomplished by going to the command prompt:



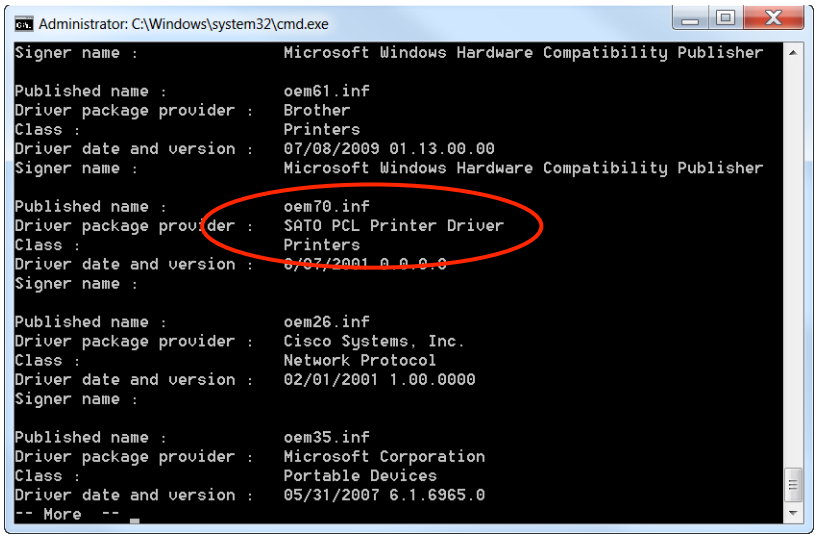
From the command prompt, navigate to the "C:\windows\inf" folder:



Next, run the command "pnputil –e". This will result in a listing of all inf files with information about the company owner and purpose of each file:



Scroll through this listing to find the file which shows the "Driver package provider" is "SATO PCL Printer Driver":



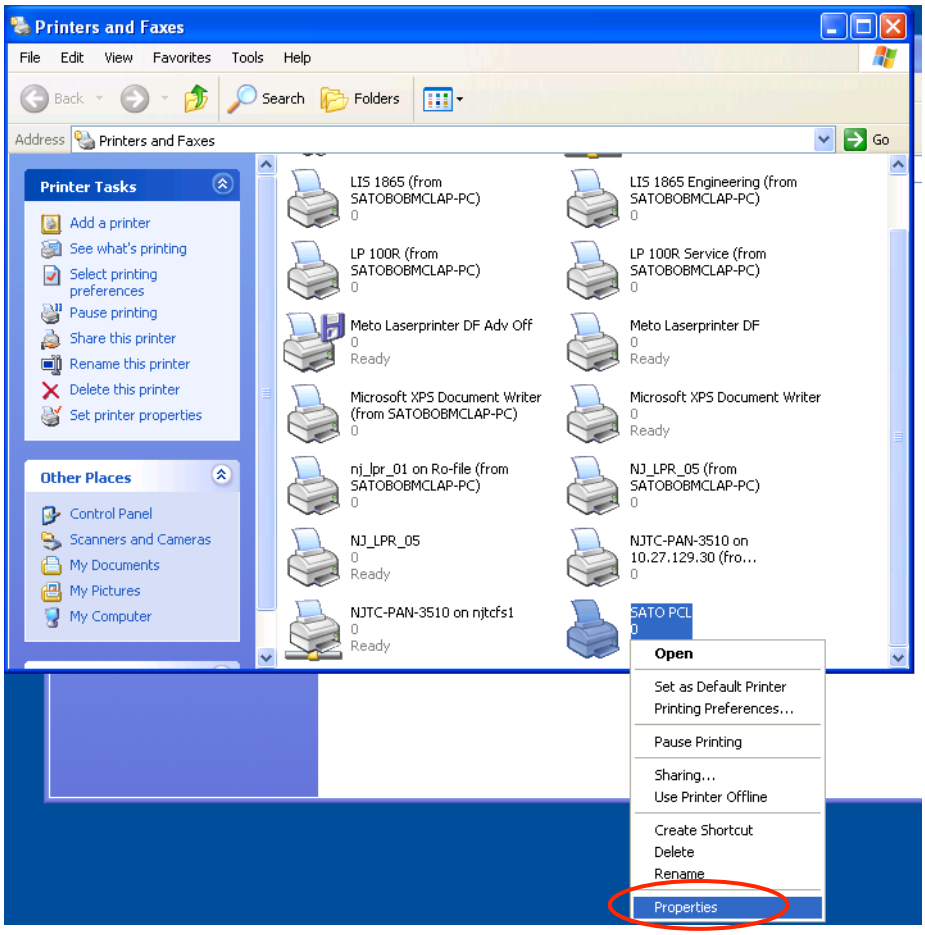
Note the name of this ".inf" file. In this case the name is "oem70.inf". Next run the command "pnputil –d oem70.inf". Substitute the name found in the previous step for the inf file in the command. This will delete the remaining file from the old driver.

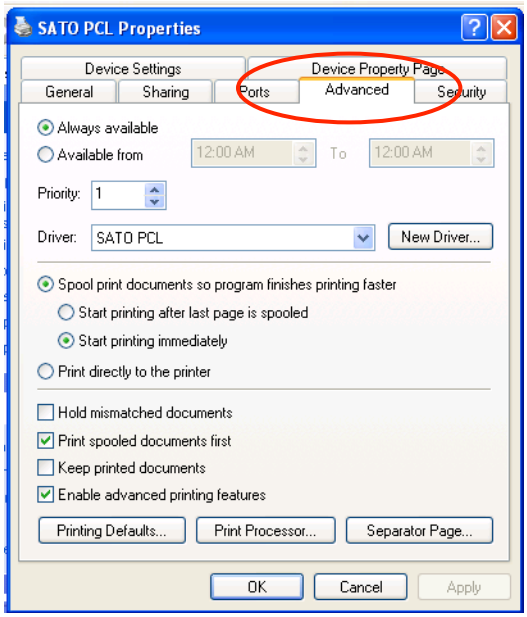
Uninstall on Windows XP

If the driver needs to be uninstalled for any reason there are several steps which must be taken to ensure that the driver and all components are removed from the system. Typically, the driver must be uninstalled

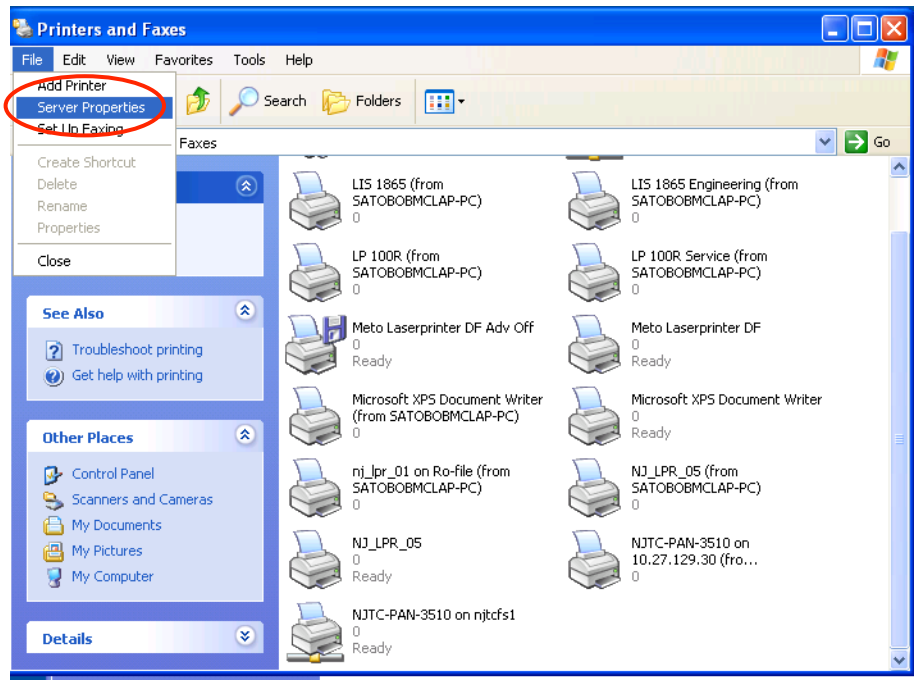
prior to an upgrade on the driver. In order to uninstall a driver in Windows XP, all printers which use the driver must be deleted or changed to use a different driver before the driver can be uninstalled.

Open the "Printers and Faxes" window and look at each printer to see if it is using the driver the user wishes to uninstall. This is under the "Advanced" tab in "Properties".

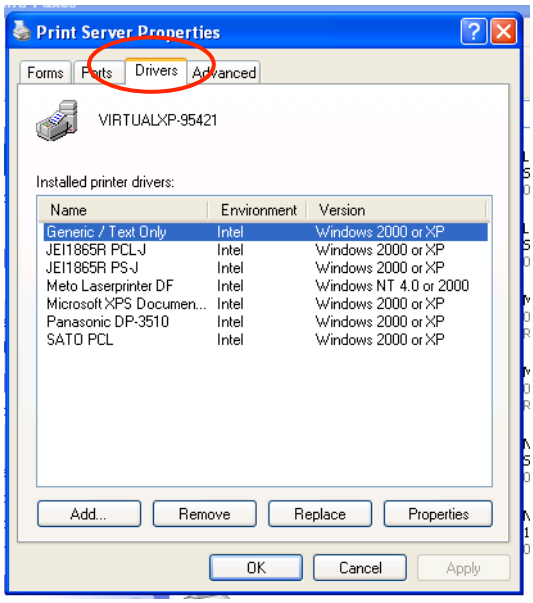




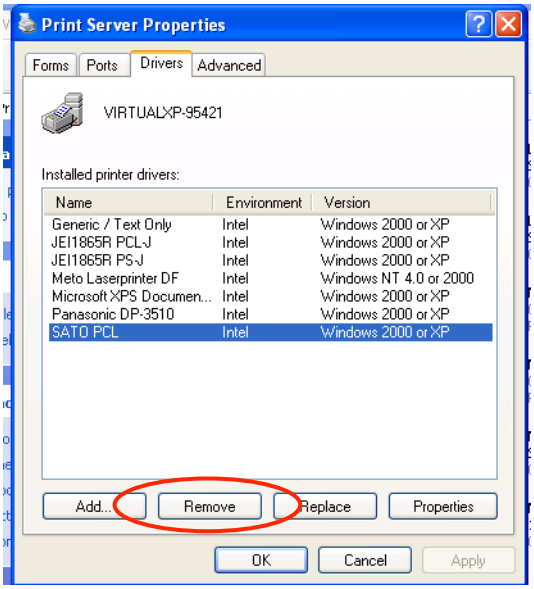
Once the printers are no longer using the driver, make sure no printers are selected and click "Server Properties" from the "File" menu:



On the "Print Server Properties" window, select the "Drivers" tab:



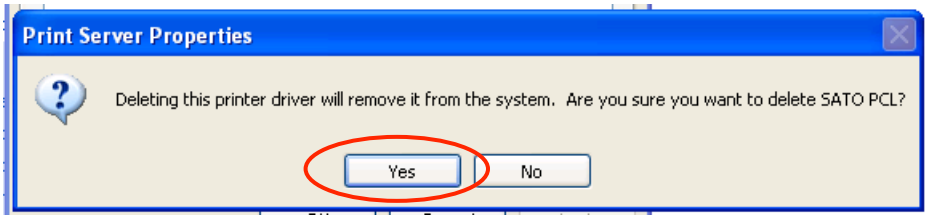
Select "SATO PCL" and click the "Remove…" button:



When the user clicks the "Remove" button and any printer on this workstation is using the driver, the following message will appear on the screen:

If this appears, the user must return to the "Printers and Faxes" window, and look at the driver used by each printer displayed in that window. If any printer uses the driver the user is trying to remove, the user must first delete the printer, or change the driver used by that printer to another driver before attempting to remove the driver.

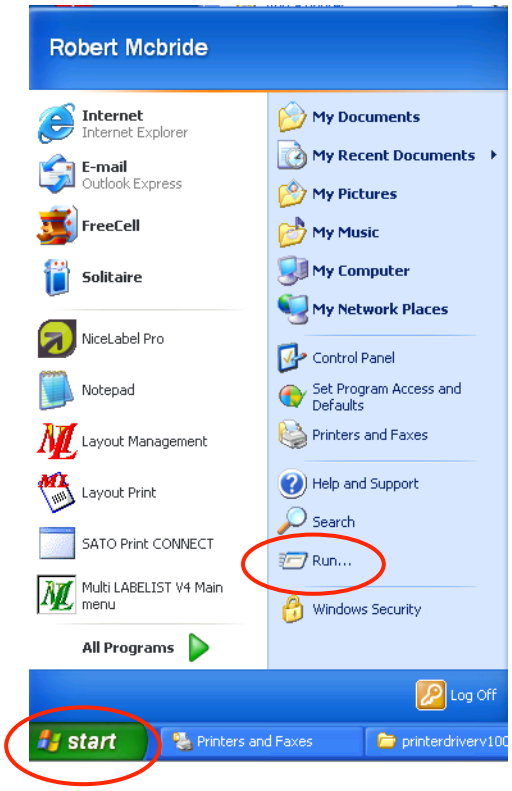
On the next window, check to make sure SATO PCL is selected to delete and click "Yes":



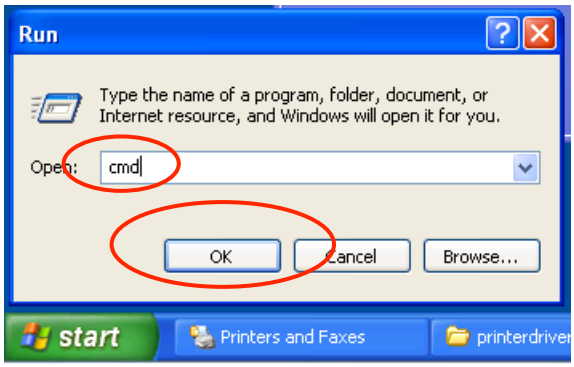
If it is possible to remove the driver, Windows will return to the driver window and the SATO PCL driver will no longer be listed in this window.

Note: In some cases, even though all of the printers assigned to the driver have been removed or reassigned, the Windows system will show the "Unable to remove…" error shown above. If this happens, the user needs to reboot the computer and try once again to remove the driver.

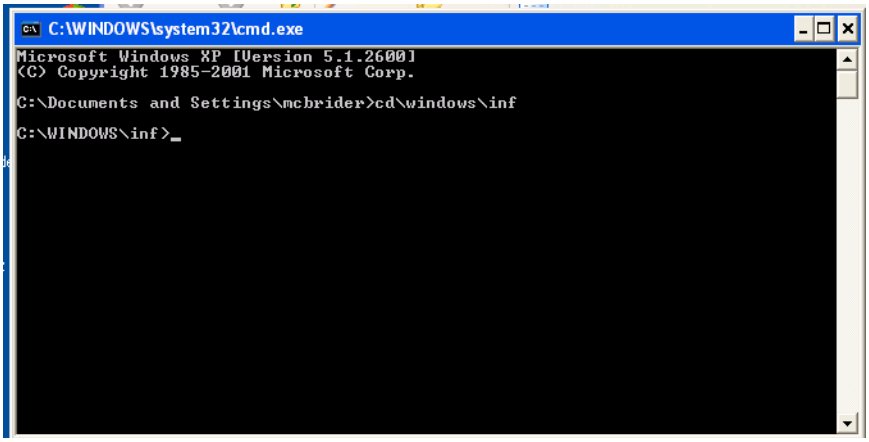
When Windows has finished removing all files, there is a chance that two files remain on the workstation. In order to ensure a clean install of the new driver, the user should check for an ".inf" and ".pnf" file remaining on the workstation after the uninstall. This is accomplished by going to the command prompt. Go to "Start" and "Run":



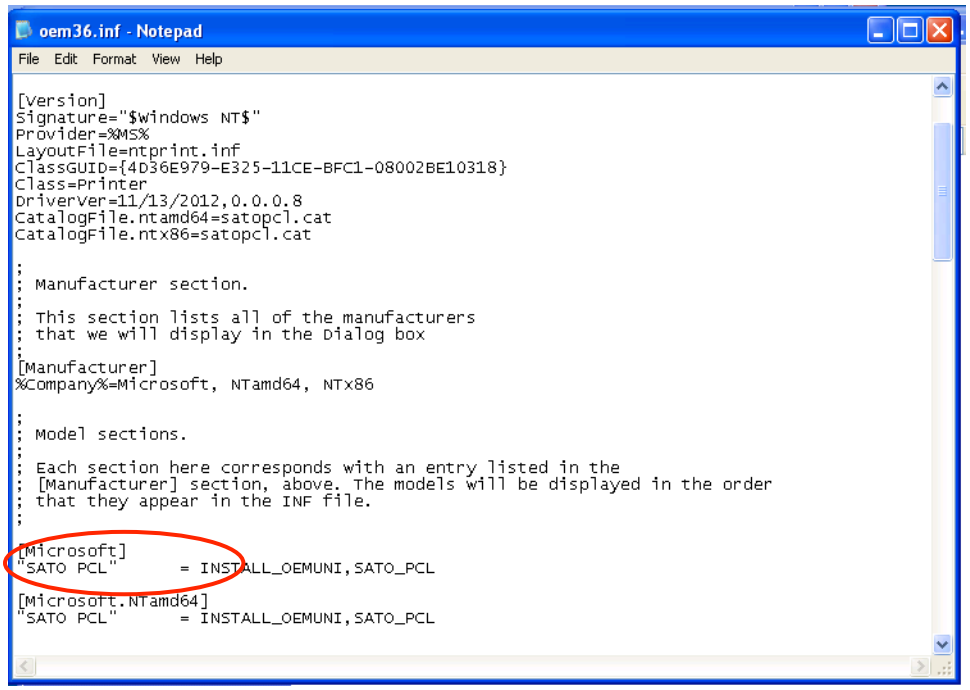
In the "Run" window type "cmd" into the text box and click "OK":



From the command prompt, navigate to the "C:\windows\inf" folder:



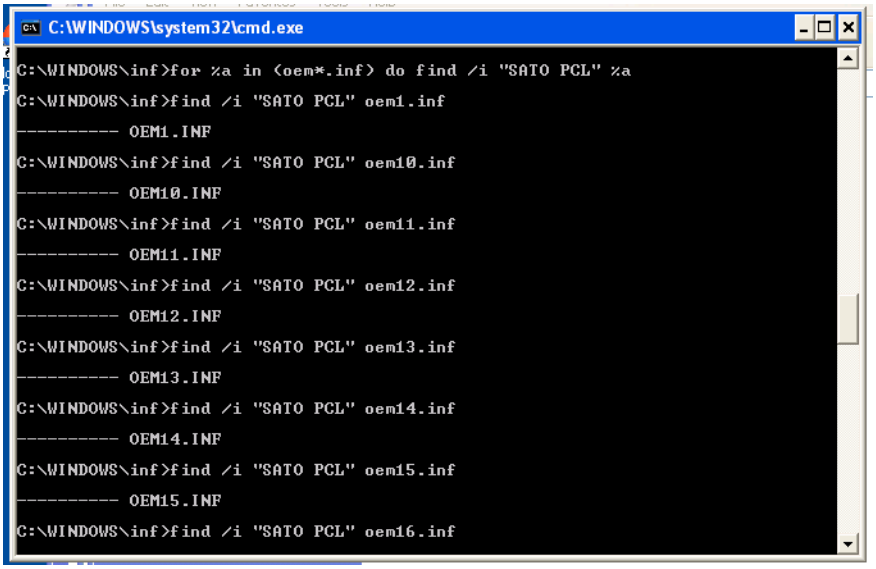
In this folder there are a number of files with the ".inf" and ".pnf" extensions. Many have the name "OEMxx.inf" or "OEMxx.pnf" where "xx" is a sequential number assigned by Windows. It needs to be determined which of the "oemxx.inf" files contains the information for the SATO PCL driver. One way to find this out is to open each of these files in Notepad and see which one identifies the SATO PCL driver:



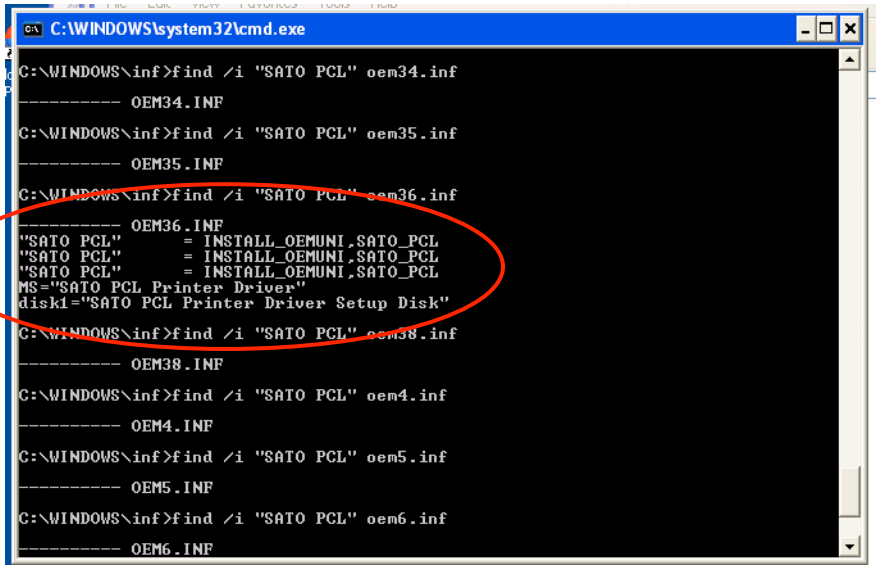
A quicker way to find the ".inf" file associated with the SATO PCL driver is to run the following command line command:

```
for %a in (oem*.inf) do find /i "SATO PCL" %a
```

This will run the find command recursively for every file in the folder which is named with the pattern "oem*.inf". If it finds the text "SATO PCL" in the file, it will identify the line where this text was found, and show the name of the file containing this text. The listing is as follows:



The exact file containing the string is identified as the following:

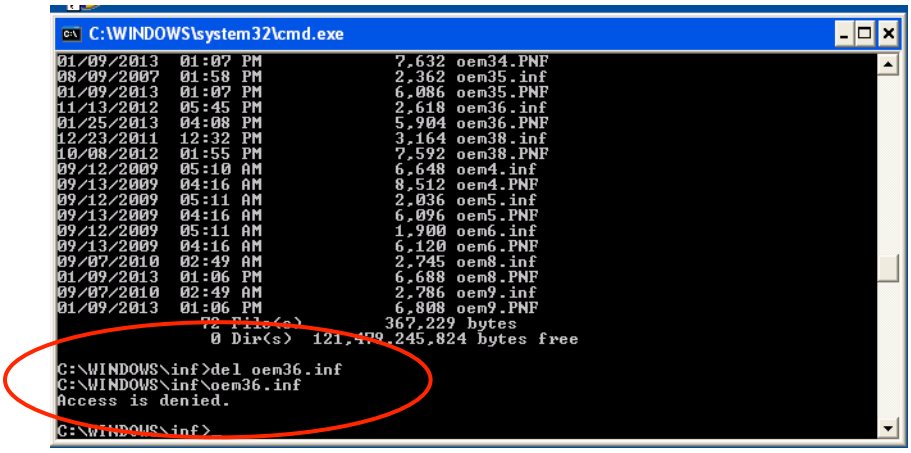


Next, delete the ".inf" file and the ".pnf" file associated with the SATO PCL driver. In this example, the file is "oem36.inf", so the command to delete these files would be:

del oem36.*

This will delete both of the files associated with the SATO PCL driver.

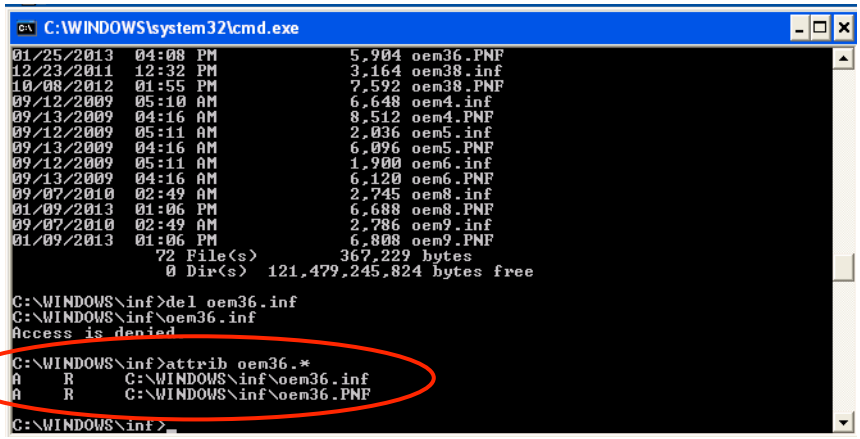
On some systems, the "Read Only" bit may be set on the ".inf" and ".pnf" files. If this is the case, the user will receive the message "Access is denied" when the command "del" is run:



If this is the case, run the following command to show the attributes of the file (in this example, "oem36.inf" and "oem36.pnf"):

Attrib oem36.*

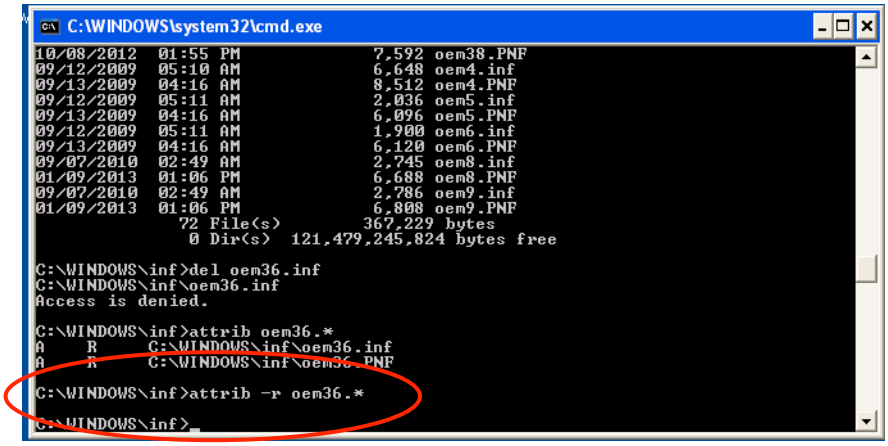
This will show the property attributes of the files in question:



Note the "R" attribute, indicating that this file has been marked "Read only", no one can make a change to the file. In order to remove the "Read only" condition on the file, run the following command for these files only (in this example, "oem36.inf" and "oem36.pnf"):

Attrib –r oem36.*

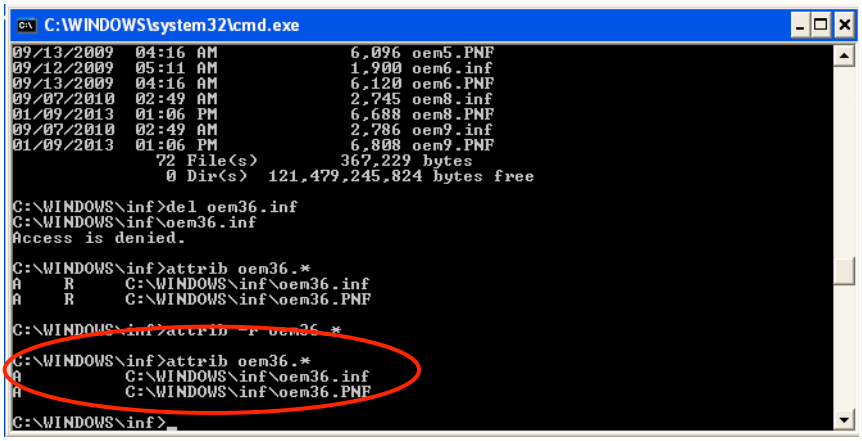
This command will not give an indication of success or failure, but will return the user to the command prompt:



To check the success of the command, run the command listed above,

Attrib oem36.*

To see the current status of the attributes of the files in question:



In this example, the "Read only" attribute has been successfully removed. Rerunning the delete command above will now end in the files' successful deletion.

Once the driver has been completely removed, reboot the workstation prior to installing the new driver.

Running NiceLabel in Windows 7

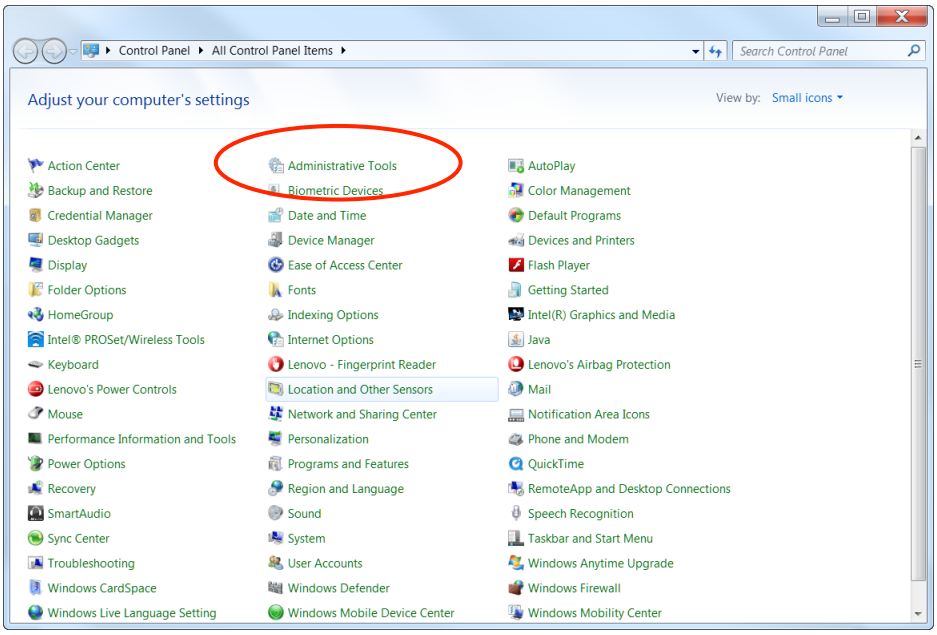
If the user does not use the newest version of NiceLabel, version 5.4.4 Build 7005, to print tags or labels, it has been noted that when the user leaves the application and return to a previously printed label, the label setup dimensions and the setup of the stock size on the printer are lost. The user must re-enter the dimensions of the label and then enter the form size on the printer before printing, or it is possible that the printer will not produce the desired output. Using the latest version of the application, version 5.4.4 Build 7005, makes this procedure unnecessary and should be downloaded in order to make the printing of the labels in this application more efficient for the user.

This procedure will work on any earlier versions of the NiceLabel application.

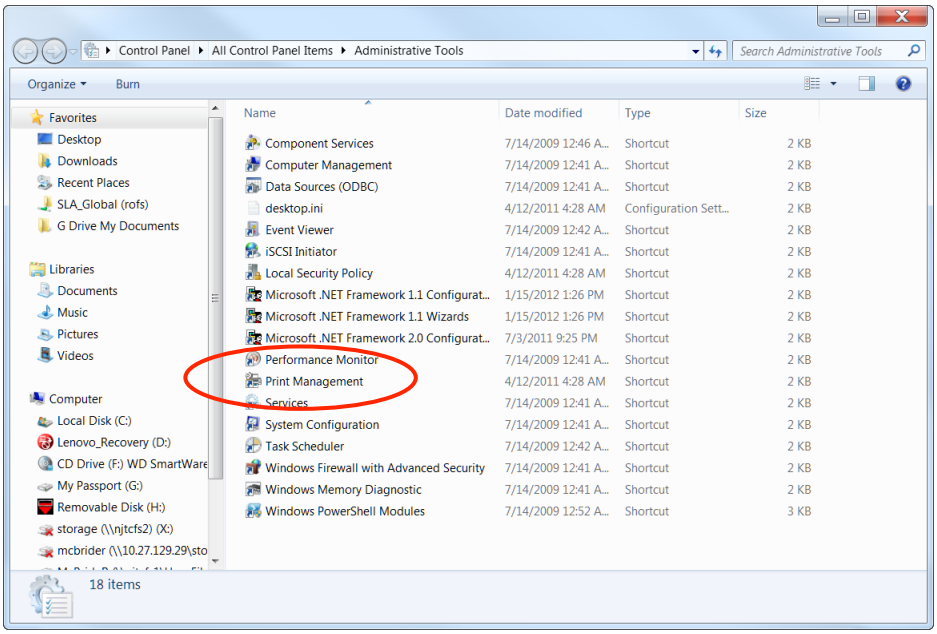
Although this example uses NiceLabel to demonstrate the behavior, this procedure will apply to any of the label design and print applications, such as Bartender or EasyLabel.

In order to avoid this situation, a procedure needs to be followed in order for NiceLabel to setup the parameters of the label to be printed. The first time the label is printed, all of the settings must be adjusted, as is usual. In order to preserve the setup, when leaving the program, select to save the changes in the label.

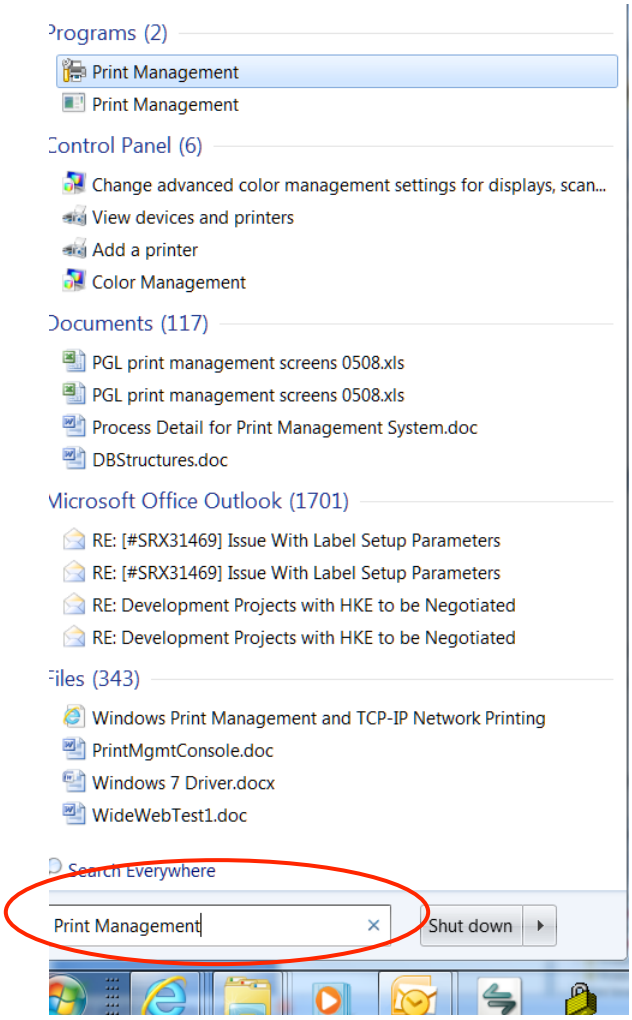
The next time the label is to be printed, prior to opening the NiceLabel program, it is necessary to set up the desired form on the printer through the Windows 7 "Print Management" window. This window is accessed through the "Administrative Tools" icon in the Control Panel:



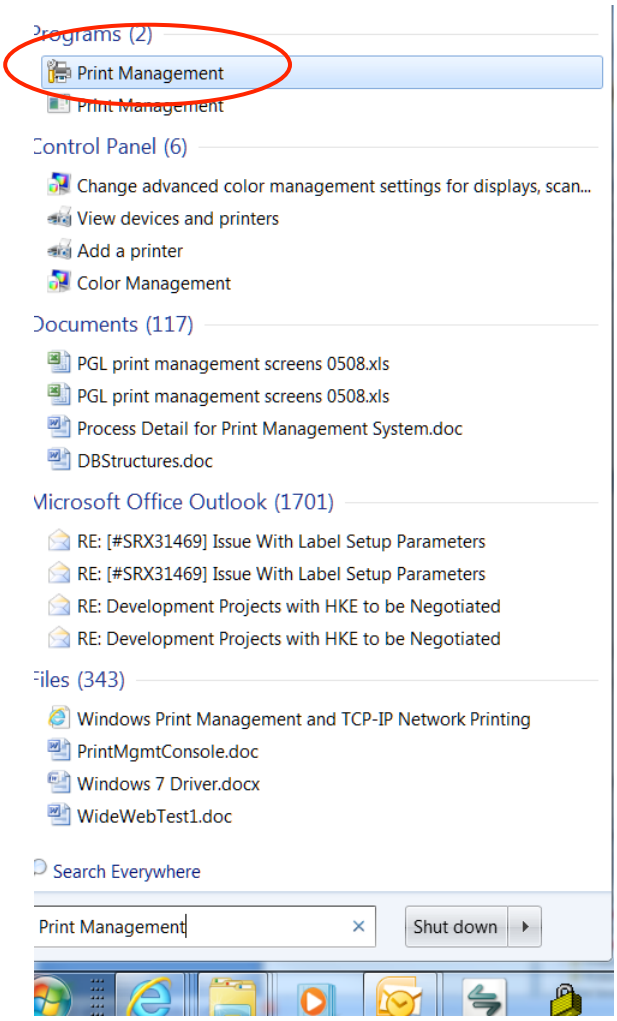
In the Administrative Tools window, select "Print Management":



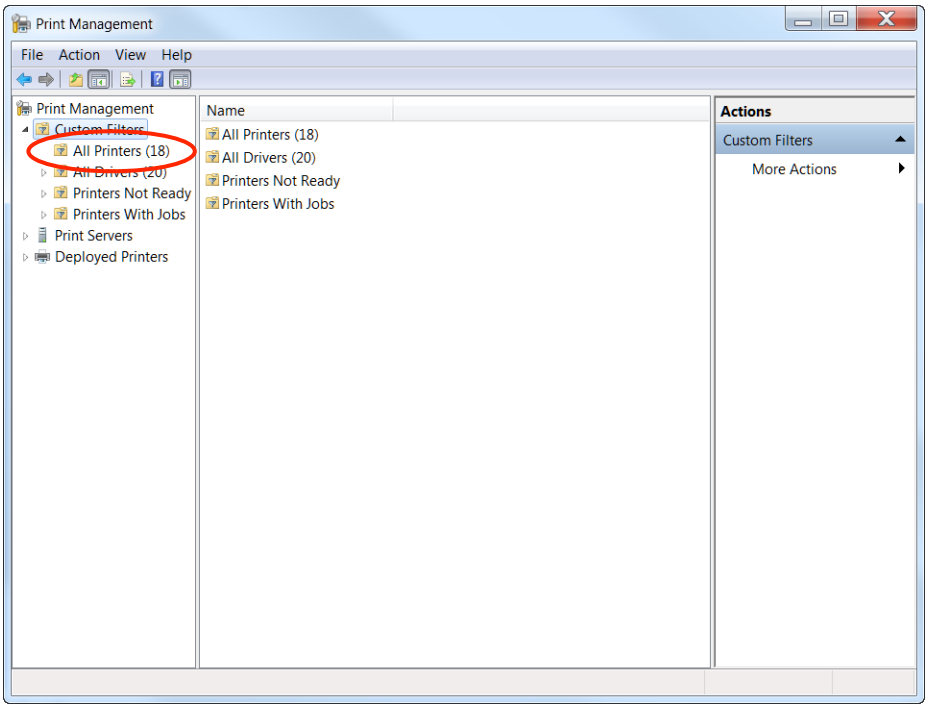
If the "Administrative Tools" icon is not available from the control panel, the user may enter the words "Print Management" in the search box in the "Start" menu:



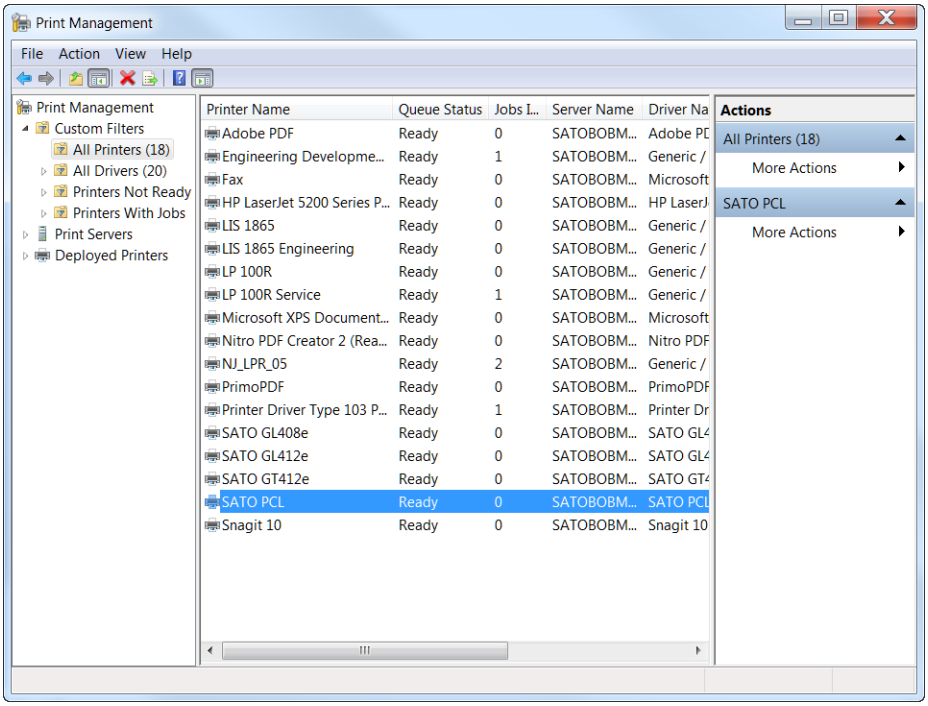
Next click on the "Print Management" shortcut at the top of the window:



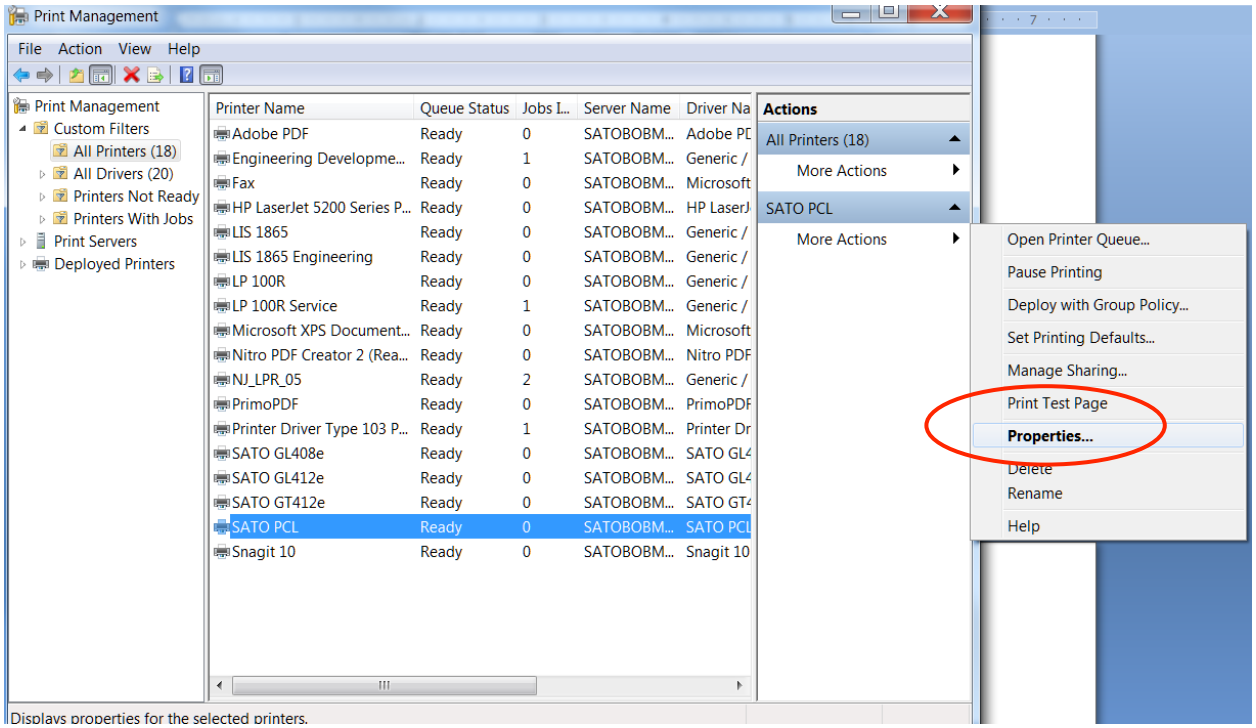
This will bring up the "Print Management" window. Select the "All Printer" option:



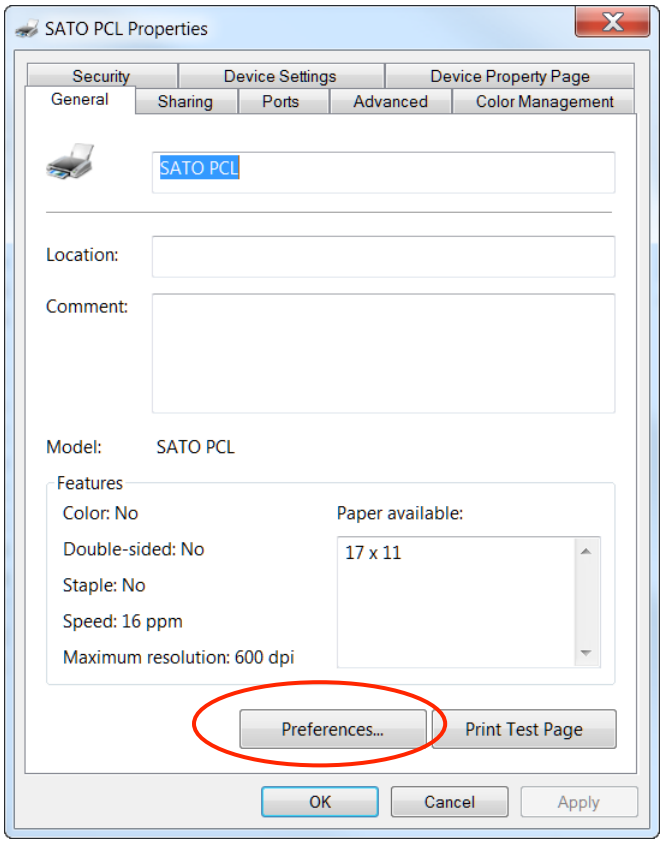
Select the printer to be used by NiceLabel (in this case "SATO PCL"):



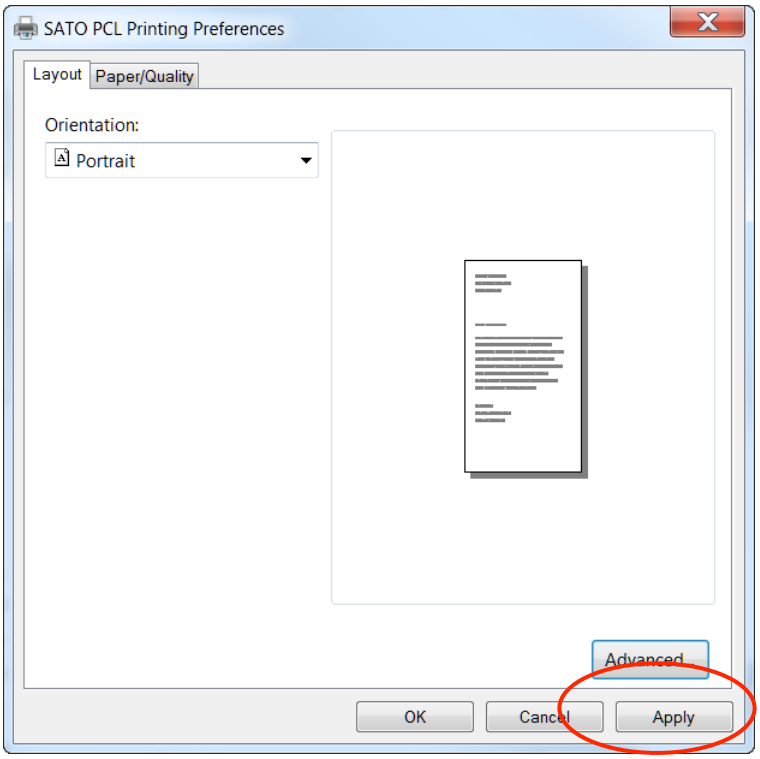
In the right pane, under "SATO PCL" select "More Actions" and then "Properties" in the resulting sub menu:



This will show the "Printer Properties" window, the same as would be displayed from the "Devices and Printers" window:



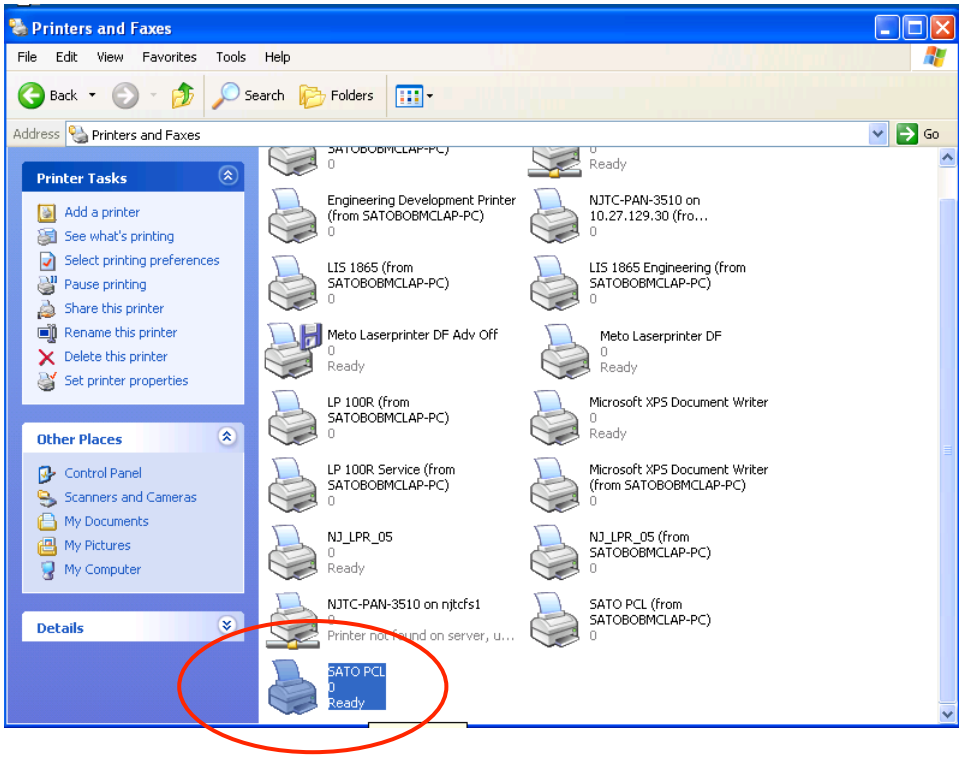
Select the "Preferences" button, and then the "Advanced" button to enter the proper page size for the job to be printed. Once the job has been selected, the user may close the "Advanced" window, and click the "Apply" button in the "Preferences" window:



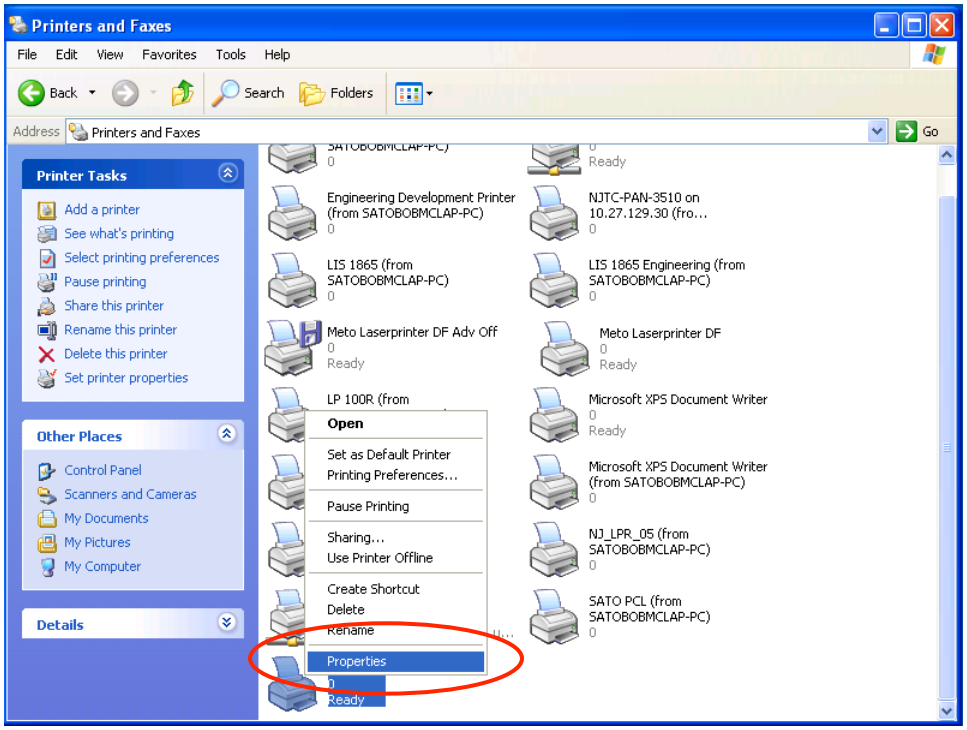
The user may then close the "Print Management" window and enter the NiceLabel program to select the proper label to be printed.

Running NiceLabel in the Windows XP Environment

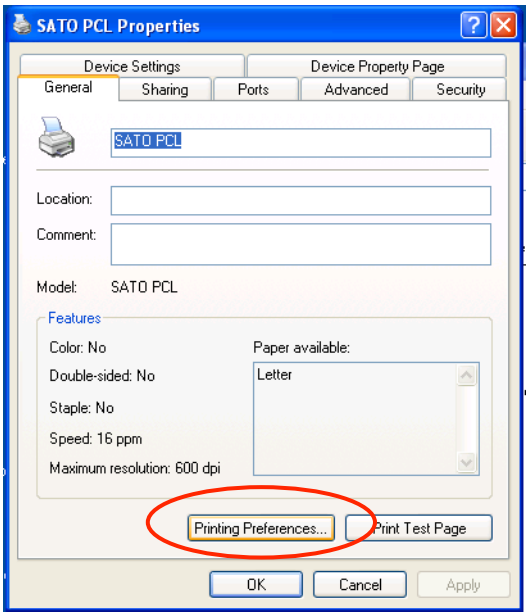
Running NiceLabel in the Windows XP environment encounters similar problems to that experienced in Windows 7. Because the Print Management Console is not a part of the XP environment, the solution detailed above is not available in this environment. In order to run NiceLabel documents reliably, it is necessary to follow a sequence of setup procedures each time a tag or label is run in this environment. The procedure consists of setting up the label for the first time, as was done in Windows 7 and saving the document for later use. Then, before reopening the document, the user must go into the "Printers and Faxes" window and set up the proper form size on the selected printer's properties. Open the "Printers and Faxes" window and select the printer to be used:



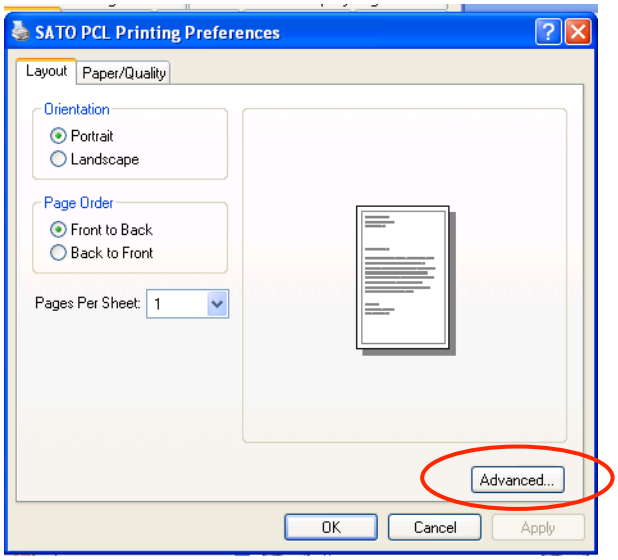
Right click on the printer and select "Properties":



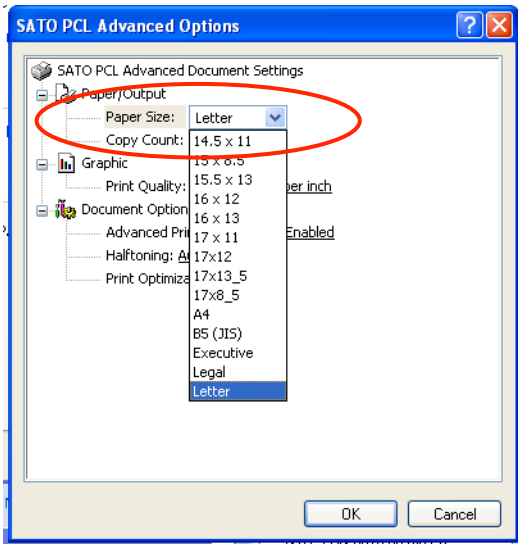
On the first "Properties" window, click the "Printing Preferences" button:



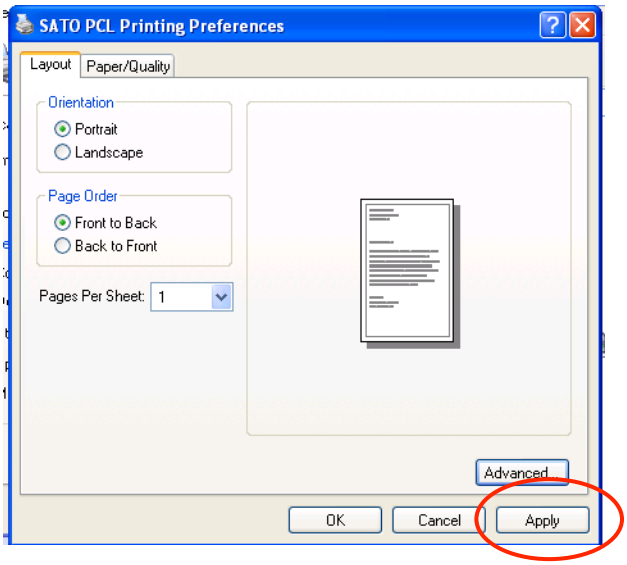
On the first "Printing Preferences" window, click the "Advanced" button:



The "Advanced" window allows the user to select the proper paper size:

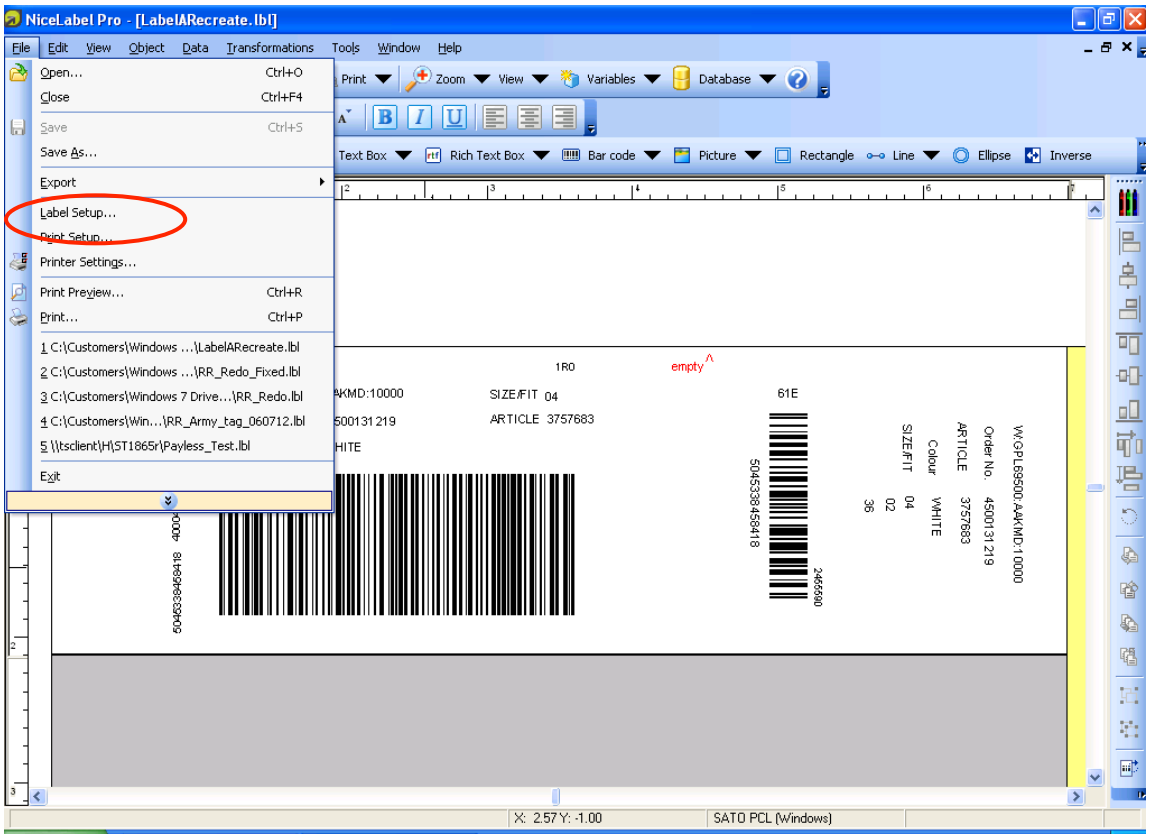


Once the proper paper size is selected, click the "OK" button and on the first "Printing Preferences" screen, click the "Apply" button:

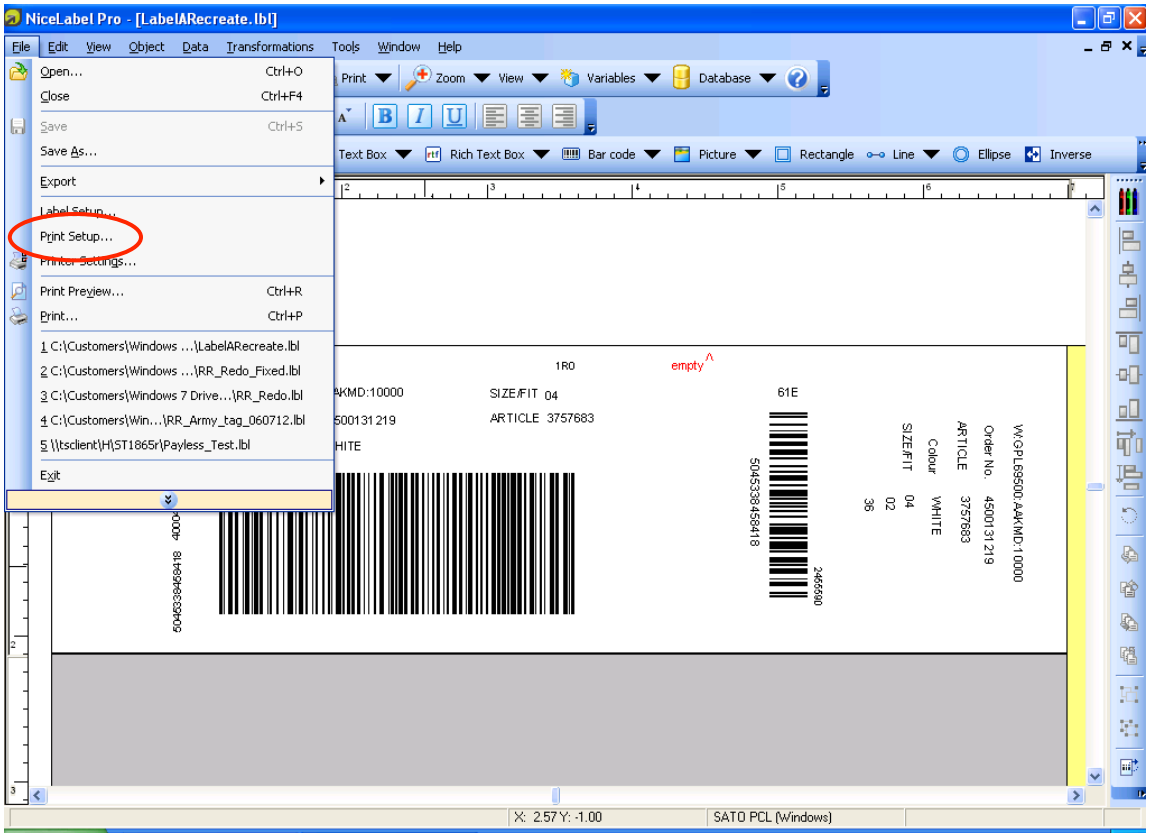


Next, close the "Printing Preferences" window and start the NiceLabel application.

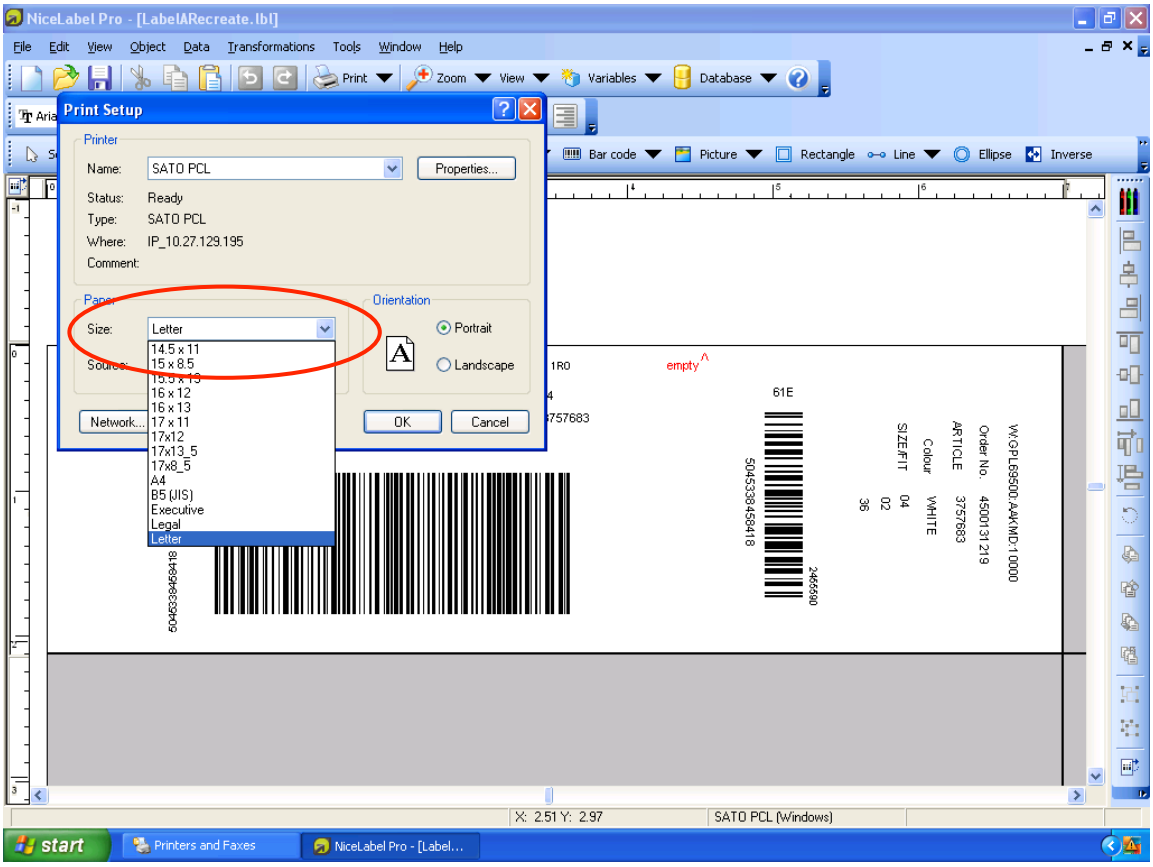
When the desired label is loaded, the user will need to enter the "Label Setup" menu to set the label parameters and form size:



In this menu, it will be necessary to select the form size, and set the parameters for the label to be printed. Once the parameters have been entered, it will also be necessary to enter the proper form size in the "Print Setup" menu:



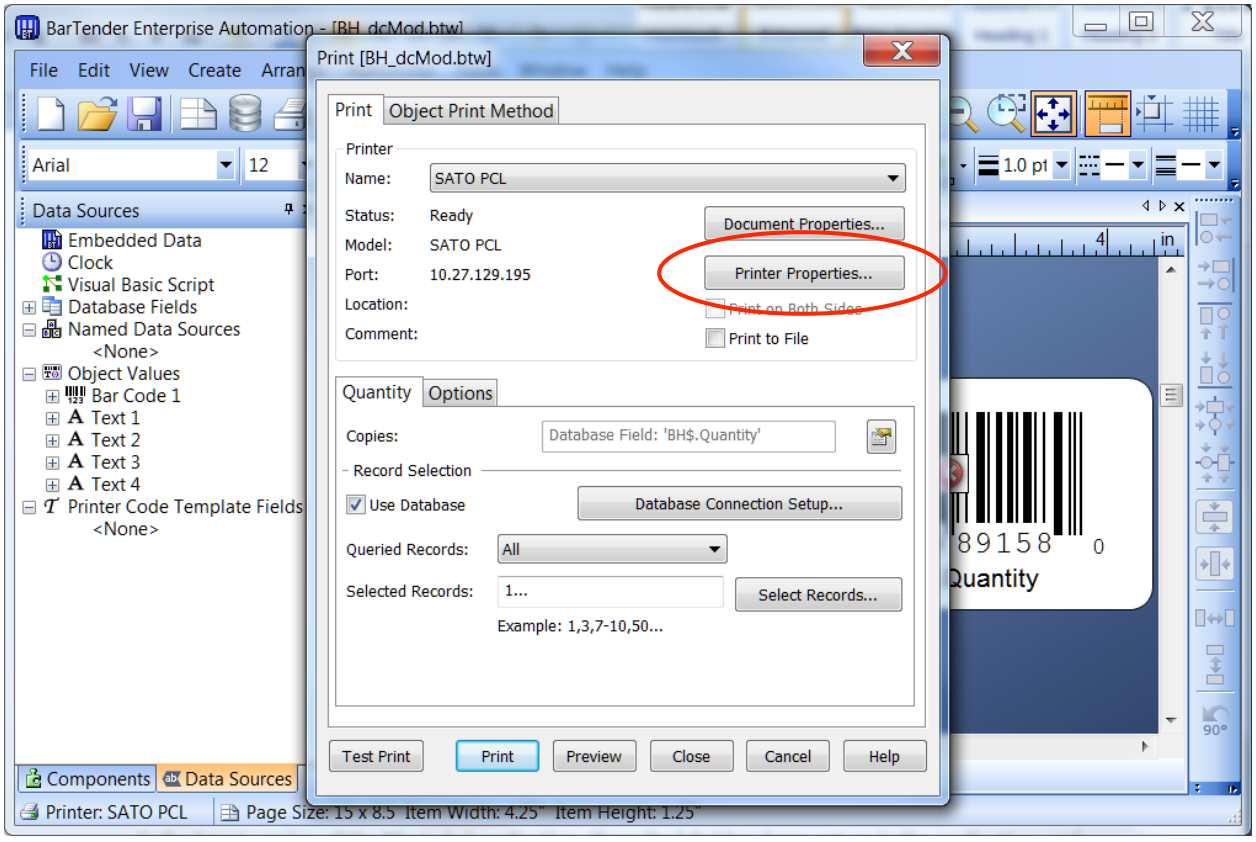
Enter the proper form size on the first "Print Setup" window:



With these steps done, the label will print properly on the wide paper web.

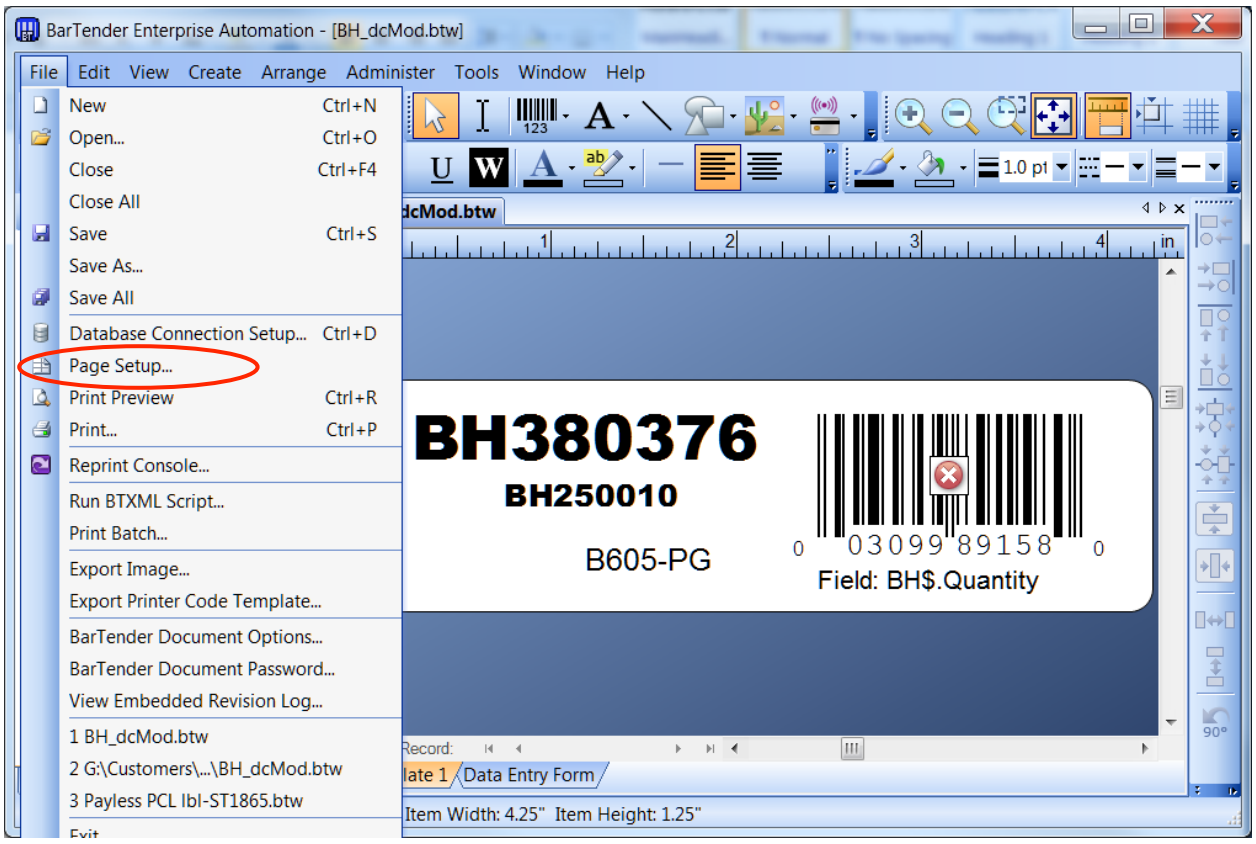
Running BarTender in the Windows 7 Environment

Using the latest release of the BarTender software, version 10.0 SR4 worked similar to that experienced in the latest version of the NiceLabel application. Once the label has been set up in the application, and the proper form sizes have been selected, if the label is then saved, these settings are remembered the next time the same label is run in the application. Running a repeat label is basically a case of opening the label and selecting "Print" from the "File" menu. When printing, it is best to verify that the proper form is set up in the printer. This is done by clicking the "Printer Properties…" button from the print menu:

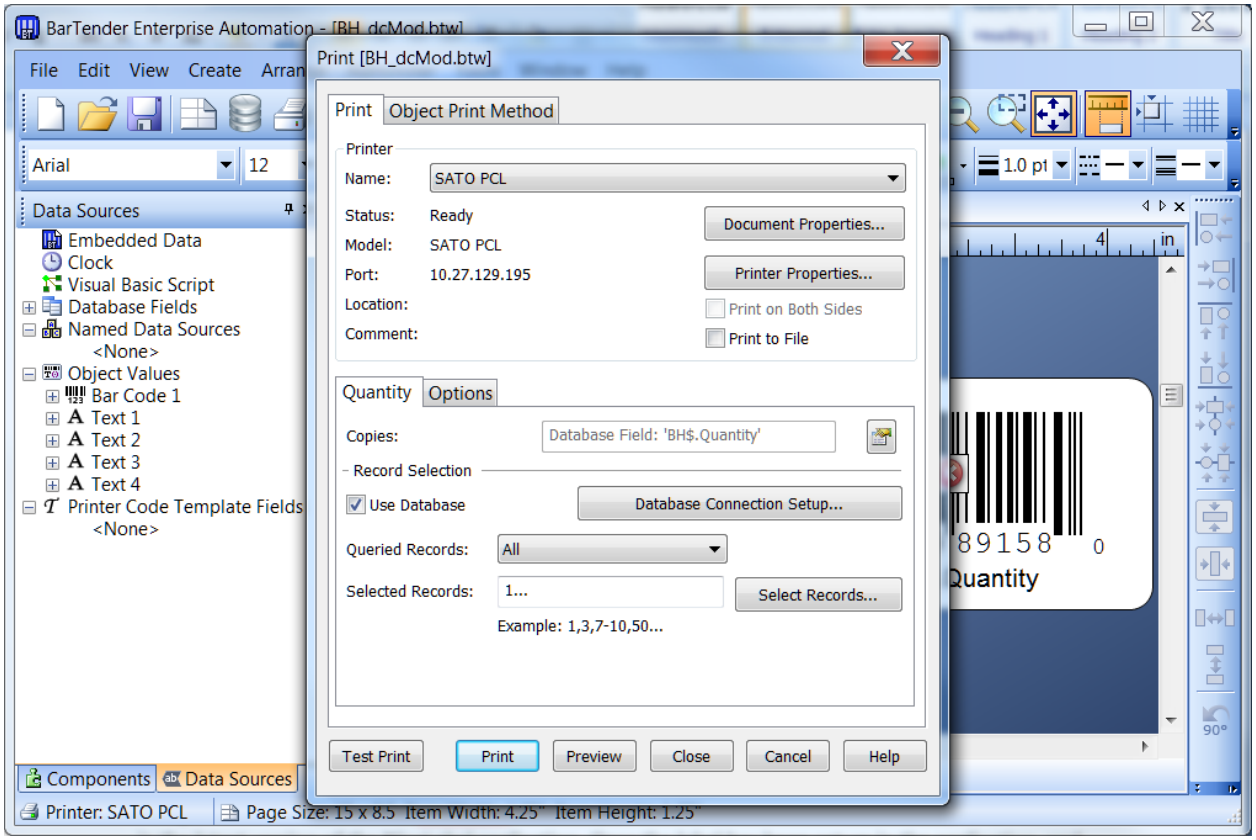


Once the form is selected, the printing can proceed without further settings.

Care should be taken to ensure that the user not select any of the setup options, as this may affect the printing on a form. These selections would be in the "Page Setup…" option in the file menu:



Also, in the "Print…" menu, the "Document Properties…" button may affect the other parameters set in the label, if the document currently selected to print is changed in this option:



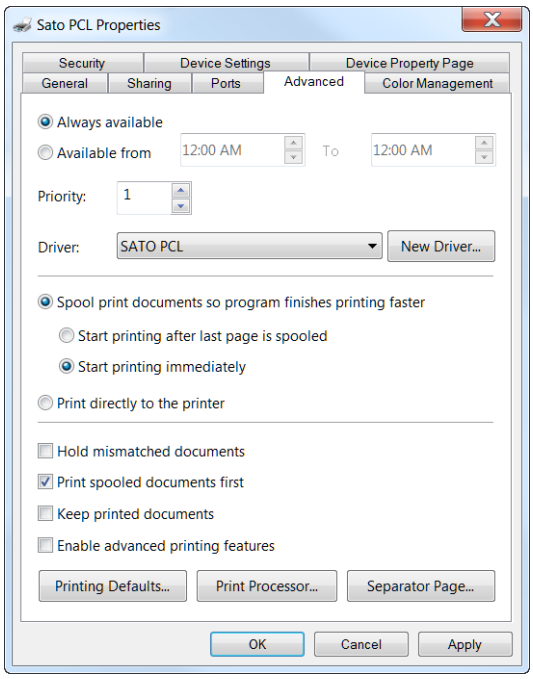
Settings

Most of the settings for the SATO PCL laser printer driver follow normal Windows setup and are relatively intuitive. The driver page shows settings for page size, page orientation, copy count, resolution, etc.

The main page shows only Orientation (Portrait or Landscape), and Tray Selection (Automatically Select or Continuous). The tray selection does not affect the operation off the printer. The Orientation turns the print 90 degrees on the paper. Remember when printing in Landscape mode, the length setting on the printer must be set to accommodate the selected paper's width.

The "Advanced" page contains Paper Size selection (remember the paper size must match the printer paper size or clipping may occur), Copy Count, Print Quality (Resolution, as with the paper size, the resolution in the driver must match that set in the printer), True Type Font handling, Halftoning method, and Print Optimization. These last two are generally left at the default setting. The halftoning method determines the way the driver renders a halftone graphic to print on the page. The Print Optimization enabled or disabled affects the way the driver handles certain features of image creation for the printer.

The setup in Windows includes the port assignment, the driver assignment, and sharing settings. On the "Advanced" settings tab of the Windows Properties there are several settings which affect the printing to the LP 100R printer. The tab is as follows:



The choice of driver affects the printing. Also, as needed, the user may elect to start printing only after the application has spooled all the pages of the print job. This may be useful if the application is taking a longer time to spool the job because of a database lookup or some other complication. Once the job is complete in the spooler, the work can be sent to the printer much more quickly.

The bottom checkbox on this page, labeled "Enable advanced printing features", controls how the print job is prepared by the driver to be placed in the spooler, and then how the job is sent to the printer. If the feature is enabled, the box is checked, as is the default, the job as held in the print spooler is not finished and ready for printing. In this case, the Windows print engine completes the preparation of the file for the printer as the spooler releases it to the printer.

When using the NiceLabel application, the print module recognizes this setting. If the user needs to print a large number of the same label, the application will instruct the driver to print a number of copies of the same page to shrink the size of the file. This is accomplished with the copy command, a feature of the PCL language. Because of an incompatibility, the printer will not print the desired number of a repeated label. It will only print a single copy of the page that is to be repeated. For this reason, it is recommended that this feature be put to disabled (the box unchecked) to avoid a problem with the number of labels actually printed.

This behavior is also seen in the BarTender application with similar results to that described above. In addition, in some cases, selecting the "Advanced Printing Features Enabled" option could cause the first large quantity label to print the correct number of pages however from this point on, every page will print exactly this same number of pages. BarTender has recognized this behavior and includes a file in the application folder (default is "C:\Program Files\Seagull\BarTender Suite") to alleviate this problem. This file is "btwprn.ini" and has a section called "[Copy Incapable Printers]". Adding the "SATO PCL" model

printer to this list will stop the repeating of pages throughout the batch run. This does not eliminate the problem of the proper number of pages printing according to the copy count. For this reason, the "Enable advanced printing features" checkbox should always be left unchecked when printing to the SATO PCL printer.

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