

# ISSUES AND WORKAROUNDS FOR SETTING UP PRINTERS

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# SUMMARY

You can set up printers for end-user computers faster and with fewer problems if you use a few high-tech tricks, including "virtual machine" technology, temporary USB connections, and Local Area Network (LAN) communications.

# BASIC STRATEGIES

- **Strategy 1:**  
Use "virtual machine"  
computers to avoid permanent  
computer slow-downs caused  
by the printer management  
software that is bundled with  
most printers.

# BASIC STRATEGIES (continued)

- **Strategy 2:**

Use (temporary) USB cables and plug-and-play automation to "kick start" printer driver installation if your real or virtual computer does not automatically "see" a printer that is "shared" or "network connected".

# **BASIC STRATEGIES (continued)**

- **Strategy 3:**

In a totally-"Windows" environment where the printer is "shared" from a "Windows" computer, you can install the printer into additional end-user "Windows" computers by using the "Network" section of "Windows Explorer".

# **BASIC STRATEGIES (continued)**

- **Strategy 4:**

For any operating system environment, after you install a "shared" or "network-attached" printer successfully, you can use the "create a port" or "new port" feature to "install" the printer into additional computers.

# "STRATEGY 1" EXPLANATION

- **Strategy 1:** Use "virtual machine" computers to avoid permanent computer slow-downs caused by printer management software that is bundled with most printers.

## **Explanation of "Strategy 1":**

The installation procedures for most printers include putting in proprietary software programs/drivers to monitor the status of the printer.



# "STRATEGY 1" EXPLANATION (continued)

- Since the "printer software" that is bundled with most printers permanently slows down the end-user computers that you install it into, it is much better for you to do the initial installation of your printer inside a virtual machine to avoid the permanent deleterious effects of performing the printer manufacturer's recommended installation procedure directly on end-user computers:

# STEPS FOR STRATEGY 1:

- Step 1: Install one of the following printer-friendly "virtual machine programs" into a computer:
  - Oracle VM VirtualBox (free, for Windows, Macs, or Linux computers)
  - VMware Player (free, for Windows)
  - VMware Workstation (not free, for Windows )
  - Parallels (for Macs, not free)
  - VMware Fusion (for Macs, not free)

## **STEPS FOR STRATEGY 1 (continued):**

- Step 2: If your printer will be network-attached or "shared" from a client computer or server, configure your virtual machine so that it connects to your real "local area network"(LAN) by means of the "bridged" virtual network. See [http://aztcs.org/meeting\\_notes/winhardsig/virtualmachines/virtualnetworks/virtualnetworks-windows1.pdf](http://aztcs.org/meeting_notes/winhardsig/virtualmachines/virtualnetworks/virtualnetworks-windows1.pdf)

# **STEPS FOR STRATEGY 1 (continued):**

- Step 3: Start up the virtual machine.
- Step 4: If the printer was bundled with an "installation CD", attach it to the virtual machine.
- Step 5: Using the manufacturer's installation instructions that were bundled with the printer, install the printer.

# STEPS FOR STRATEGY 1 (continued):

- Step 6: If the manufacturer's instructions tell you to connect the printer using a USB cable, do not use a "USB 3" cable to connect the printer to the virtual machine, since no virtual machine programs can "see" "USB 3" devices: Instead if your real physical (host) computer has "USB 3" ports "dumb them down" by connecting the printer using a "USB 2" cable or an "USB 2 extension cable".

# "STRATEGY 2" EXPLANATION

- **Strategy 2:**

Use (temporary) "USB 2" cable and plug-and-play automation to "kick start" printer driver installation if your real or virtual computer does not automatically "see" a printer that is "shared" or "network attached".

# "STRATEGY 2" EXPLANATION (continued)

- **Explanation of "Strategy 2":** If your printer is wired or wirelessly network attached to your network and the computer that you are running the installation procedure does not "see" or "recognize" the printer when it is supposed to, use a "USB 2" cable to temporarily connect the printer to the end-user computer during the printer installation procedure.

# **"STRATEGY 2" EXPLANATION**

## **(continued)**

- The installation documentation for many printers do not tell you to use a USB cable, but we have discovered that the use of a USB 2 cable often "kickstarts" the process of installing drivers into the end-user computer.



# **"STRATEGY 2" EXPLANATION**

## **(continued)**

- This sometimes means that you might have to temporarily move the printer from it's current location to where the computer is located, so that you cause use a "USB 2" cable to connect the printer temporarily to the computer.

# **"STRATEGY 2" EXPLANATION**

## **(continued)**

- Since the use of a USB 2 cable is a temporary measure, you will eventually have to disconnect the USB 2 cable and do some additional tweaking, in order to get a network-attached printer to communicate with end-user computers over a local area network.

# "STRATEGY 3" EXPLANATION

- **Strategy 3:**

In a totally-"Windows" environment where the printer is "shared" from a "Windows" computer, you can install the printer into additional end-user "Windows" computers by using the "Network" section of "Windows Explorer".

# "STRATEGY 3" EXPLANATION (continued)

- **Explanation of "Strategy 3":**
  - "Strategy 3" only works for printers that are shared from a "Windows" computer (a Windows server or end-user desktop).

# "STRATEGY 3" EXPLANATION (continued)

- **Explanation of "Strategy 3" (continued):**
  - "Strategy 3 does not work for printers that are "network attached" or printers that are connected to a "print server" device.
  - Short description of the steps for "Strategy 3":

## "STRATEGY 3" EXPLANATION (continued)

- Connect your printer to Windows computer "A" and install the printer, using the printer manufacturer's instructions. Locate the printer inside "Printers" or "Devices and Printers". Use the RIGHT mouse button to click on the printer. Click on "Printer Properties" or "Properties". Click on the "Sharing" tab and share the printer.

## "STRATEGY 3" EXPLANATION (continued)

Go to Windows computer "B" and start up "Windows Explorer".

Locate and open up "Network" or "Workgroup".

Locate the computer that is sharing the printer and double-click on it.

Use the RIGHT mouse button to click on the printer.

Click on "Connect" in the pop-up context menu.

## (DETAILED) STEPS FOR "STRATEGY 3"

- Step 1: Connect your printer to Windows "Computer A" and install the printer, using the printer manufacturer's instructions. Use the "Quick Install Guide" or "Installation CD" that is packaged with the printer. If you cannot locate this document, download it from the Web site of the printer's manufacturer.



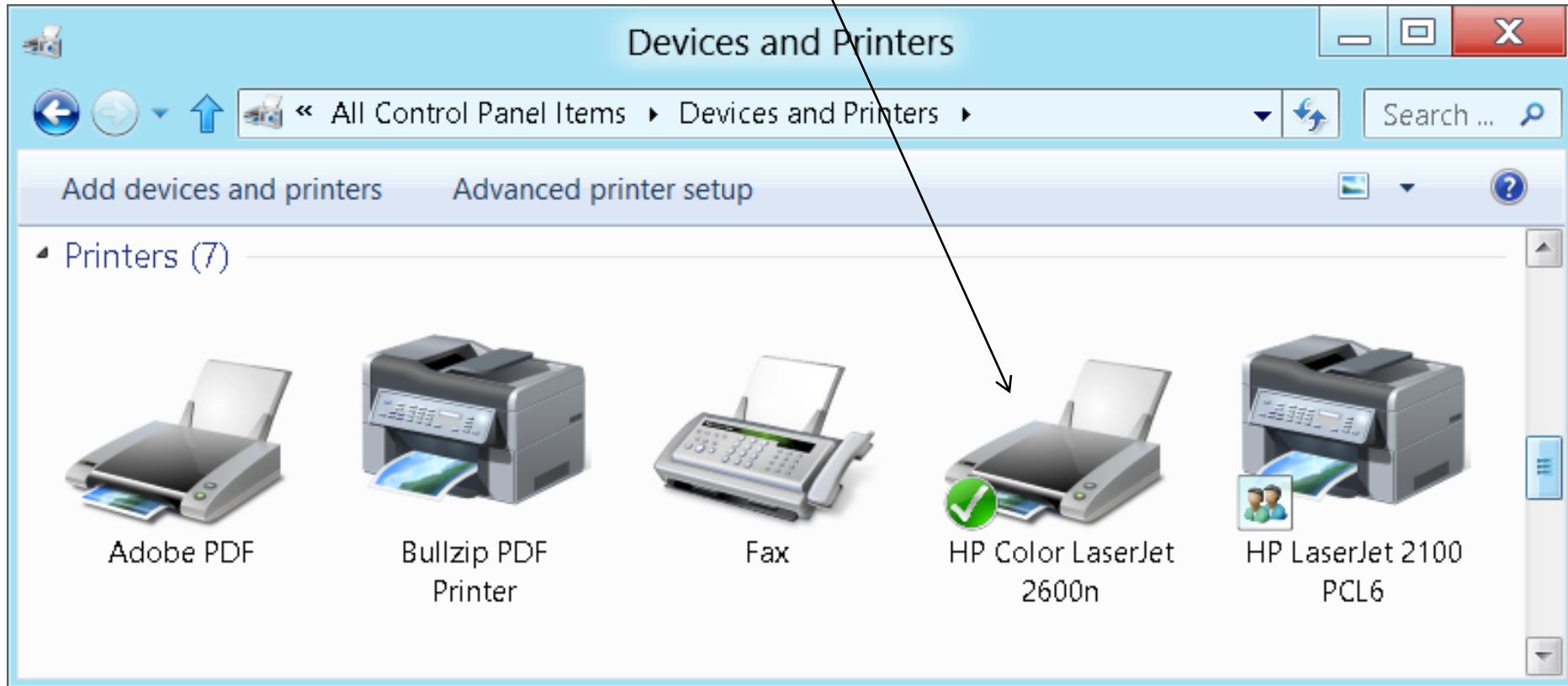
# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 2:  
From inside "Computer A", go into the Windows "Control Panel" and double-click on "Printers" (in "Windows XP" or "Windows Vista") or "Devices and Printers" (in "Windows 7 or "Windows 8"):

# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 3:  
Locate the printer:

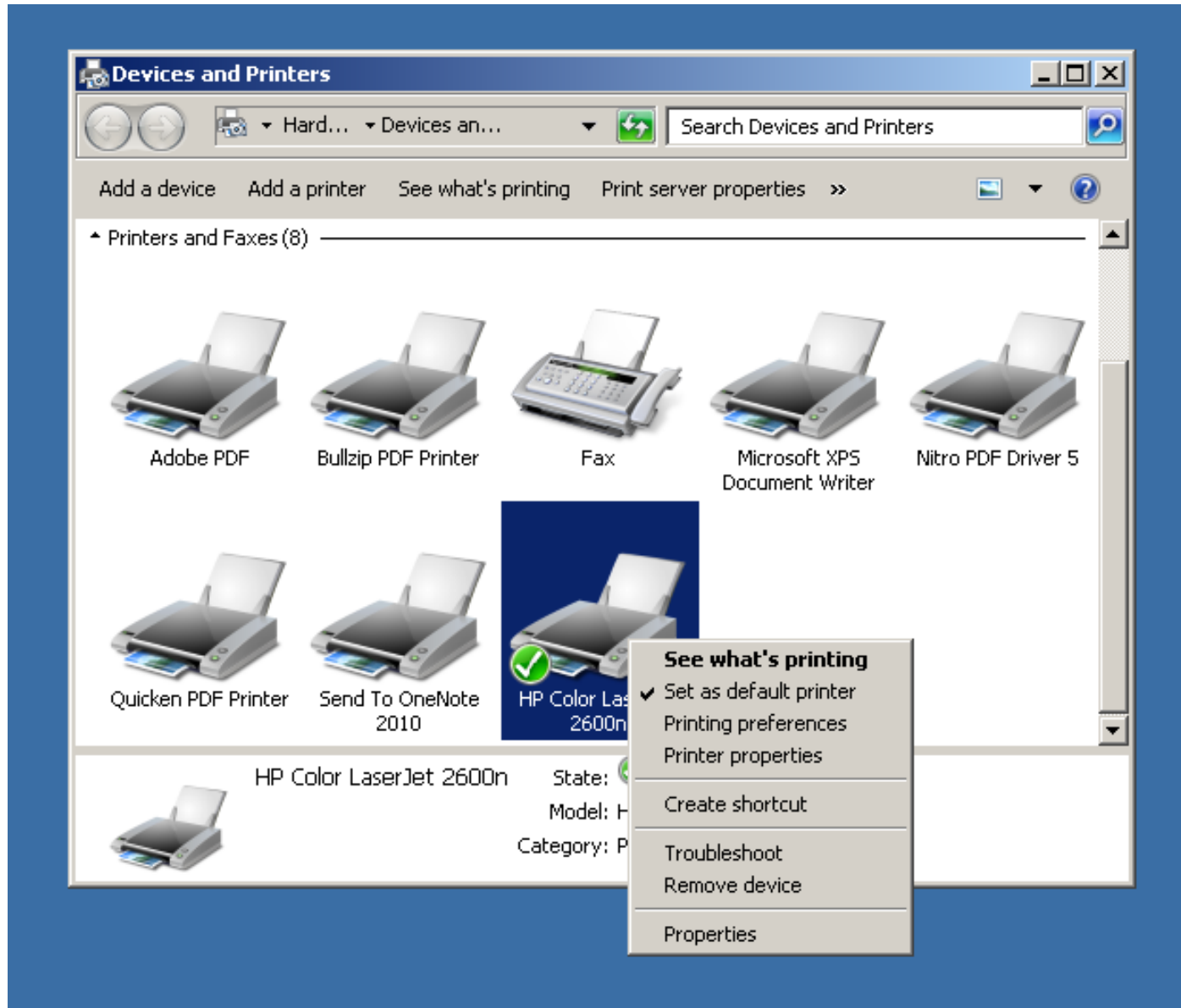
# (DETAILED) STEPS FOR "STRATEGY 3"



# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 4:  
Use the RIGHT mouse button to click on the printer.
- Step 5:  
A pop-up context menu will be displayed:

# (DETAILED) STEPS FOR "STRATEGY 3"



# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 6:  
Click on "Printer Properties"  
("Windows 7" or "Windows 8") or  
"Properties ("Window XP" or  
"Windows Vista").

# (DETAILED) STEPS FOR "STRATEGY 3"

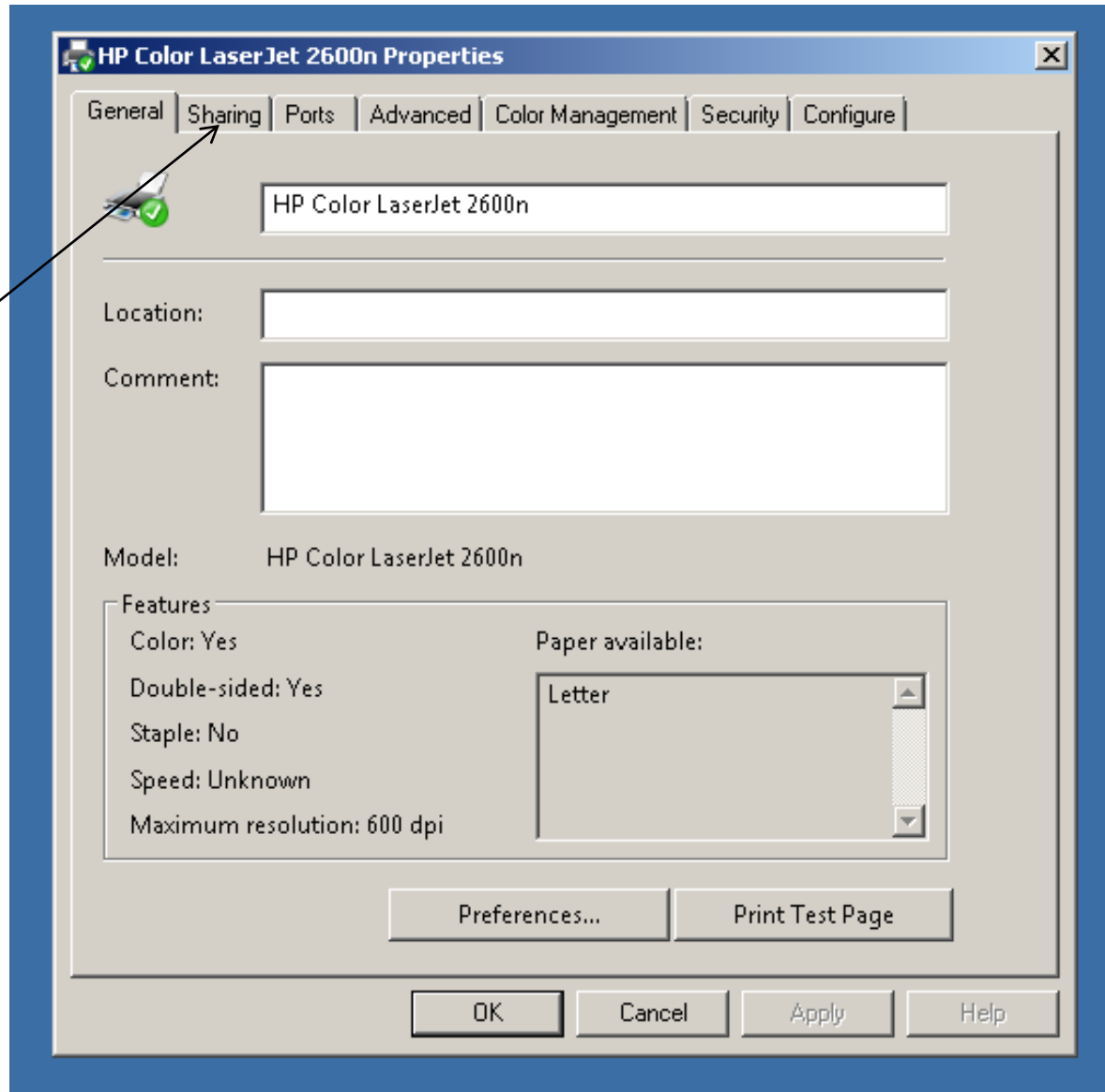
- Step 7:  
Click on "Printer Properties"  
("Windows 7" or "Windows 8") or  
"Properties ("Window XP" or  
"Windows Vista").

# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 8:  
A "..Properties" dialog box will be displayed.
- Step 9:  
Click on the "Sharing" tab of the  
"..Properties" dialog box:



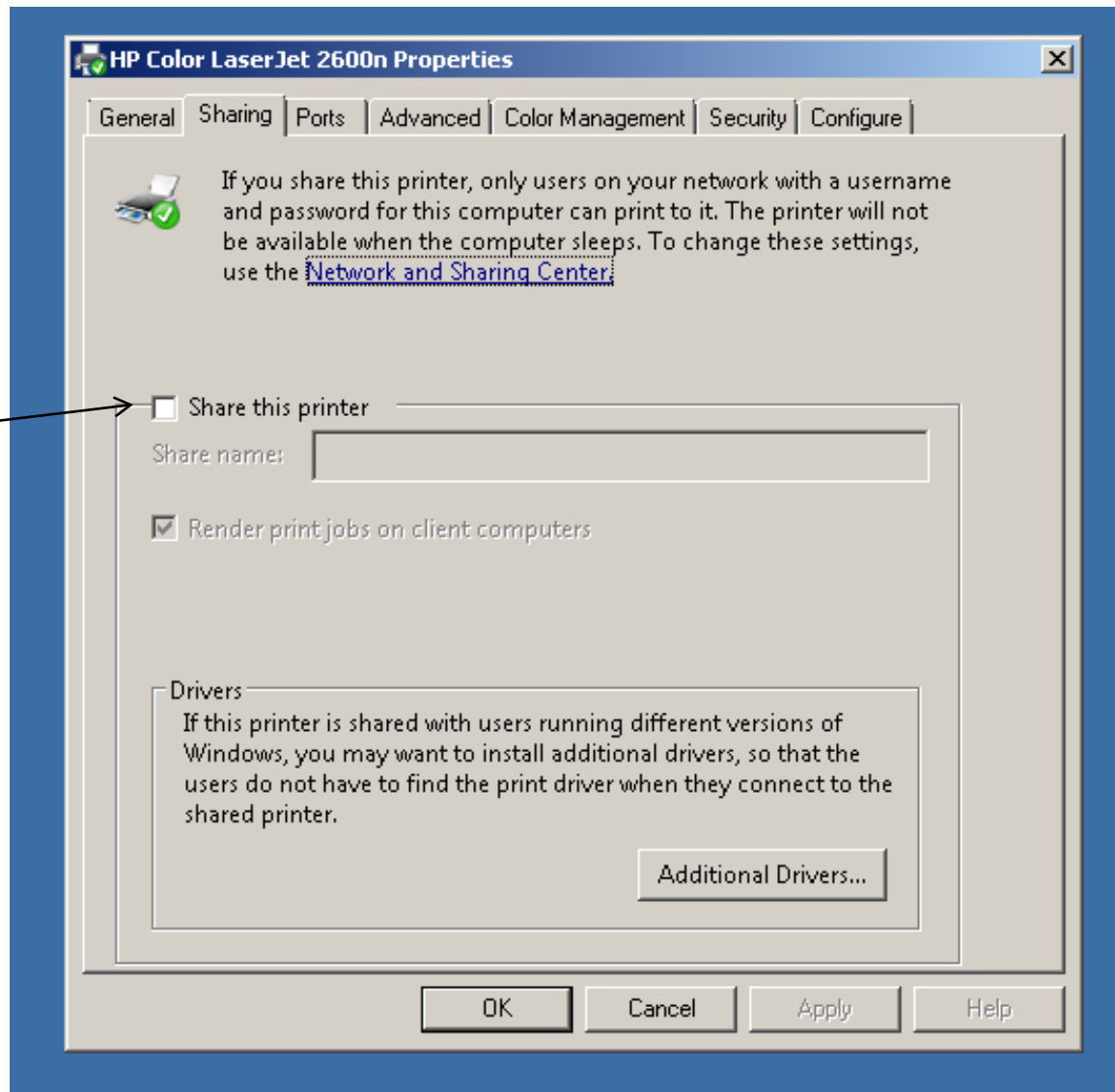
# (DETAILED) STEPS FOR "STRATEGY 3"



# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 10:  
Click on the checkbox to the left of "Share this printer".

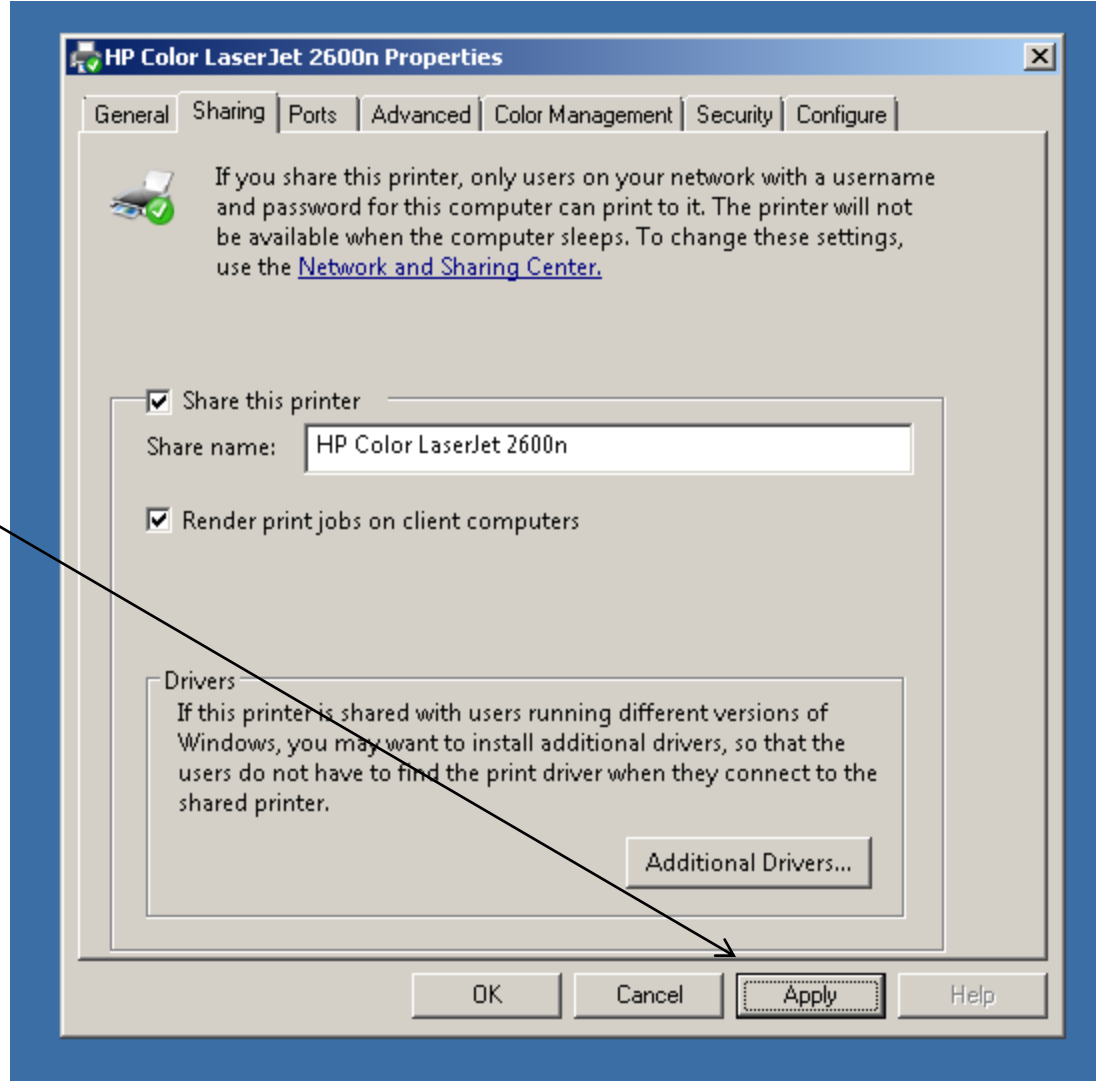
# (DETAILED) STEPS FOR "STRATEGY 3"



# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 11:  
The checkbox should now have an "X" in it.
- Step 12:  
Click on the "Apply" button:

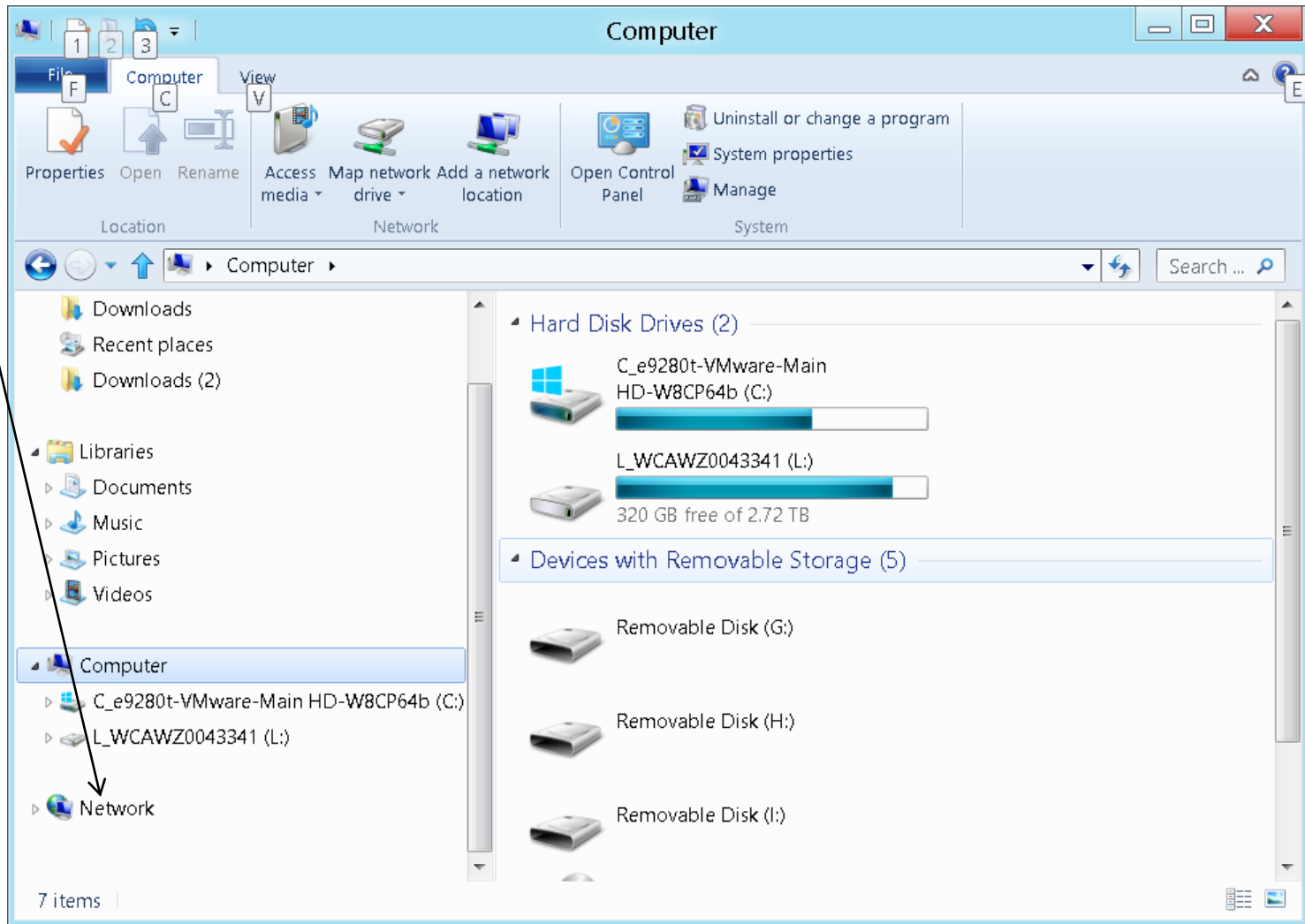
# (DETAILED) STEPS FOR "STRATEGY 3"



# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 13:  
Go to "Computer B" (any other "Windows" end-user computer).
- Step 14:  
Start up "Windows Explorer".
- Step 15:  
Click on "Network" inside "Windows Explorer:

# (DETAILED) STEPS FOR "STRATEGY 3"

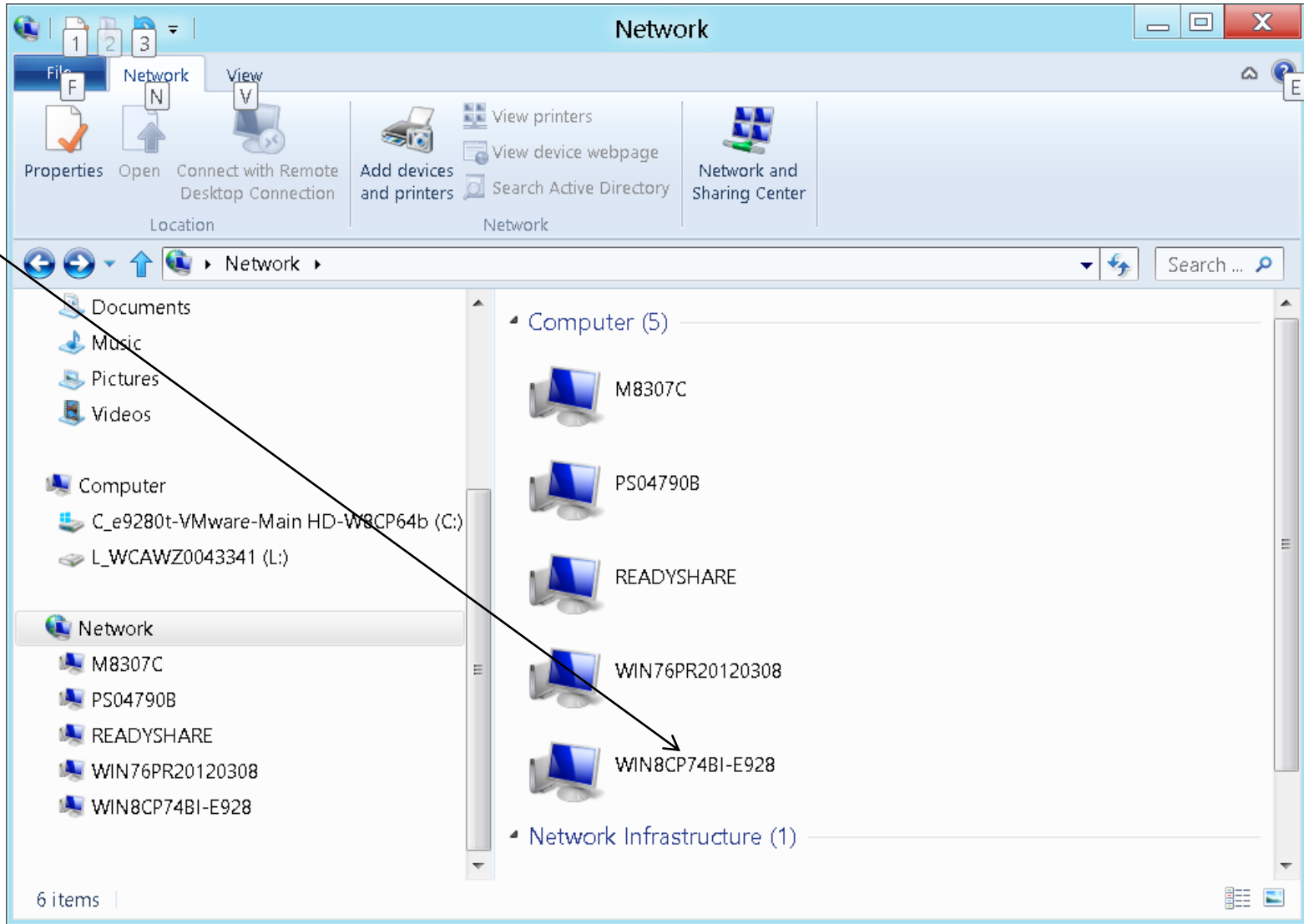


# (DETAILED) STEPS FOR "STRATEGY 3"

- **Step 16:**  
Locate the icon for the computer that is sharing the printer and double-click on this icon:



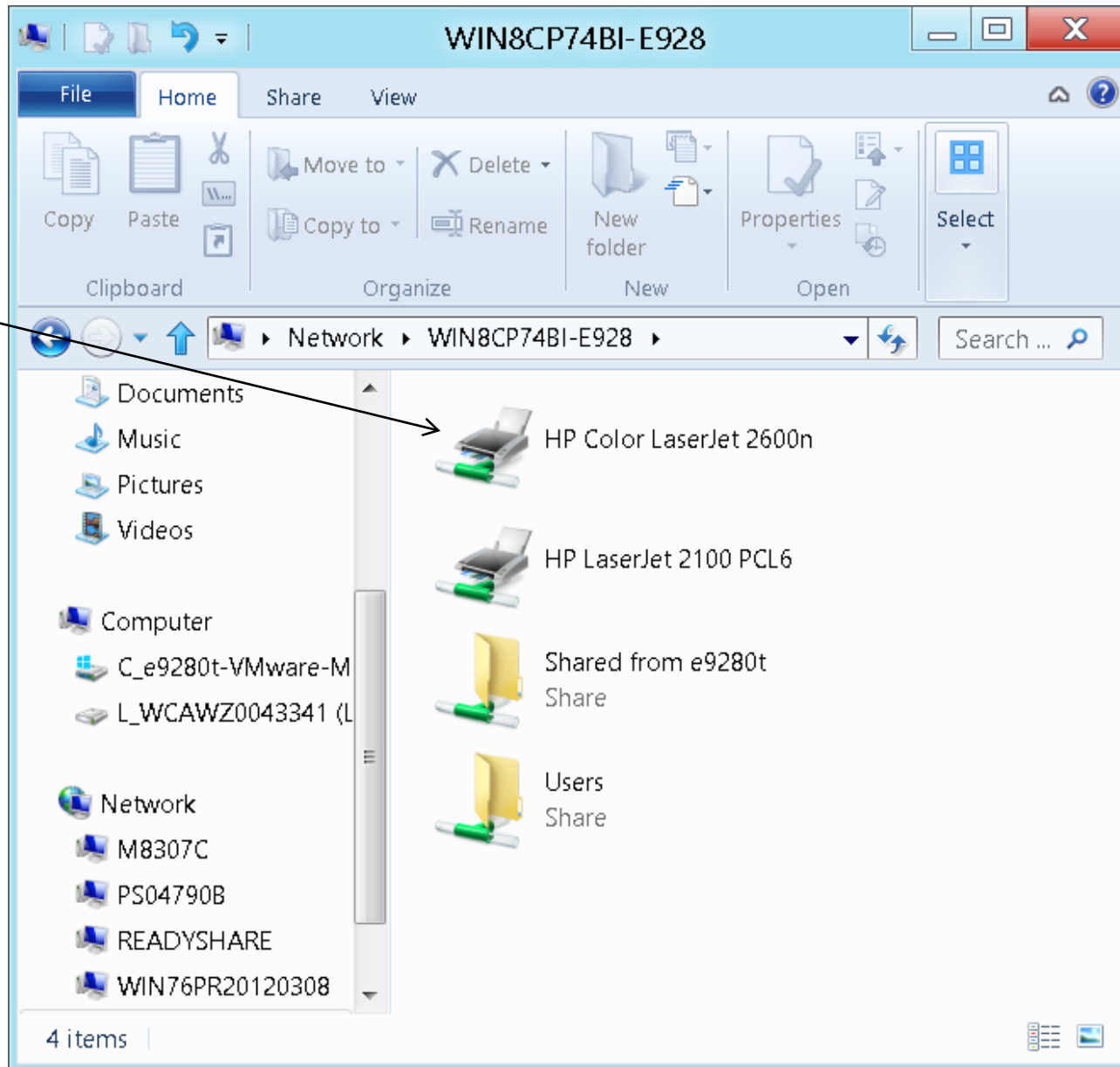
# (DETAILED) STEPS FOR "STRATEGY 3"



# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 17:  
Locate shared printer.
- Step 18:  
Use the RIGHT mouse button to click on the shared printer.

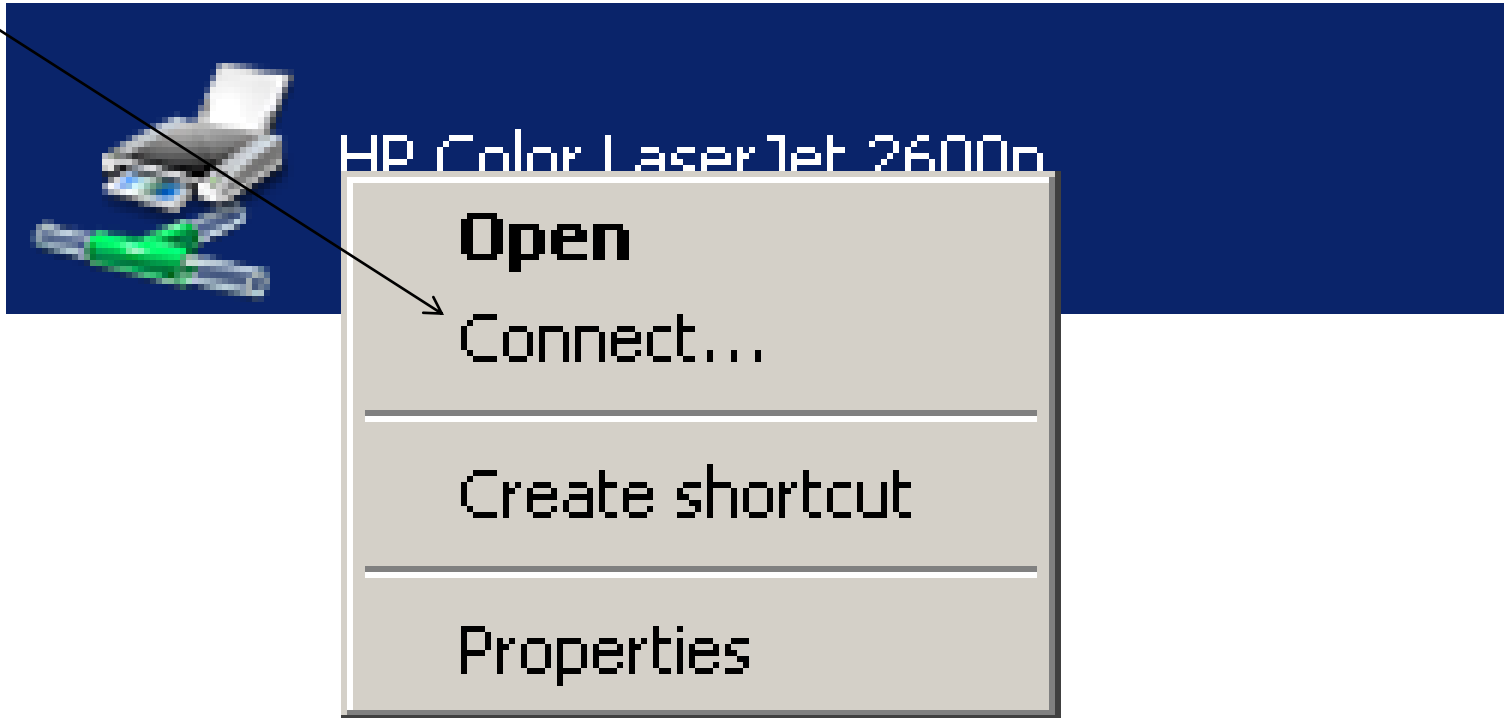
# (DETAILED) STEPS FOR "STRATEGY 3"



# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 19:  
A pop-up context menu will be displayed.
- Step 20:  
Double-click on "Connect" in the pop-up context menu:

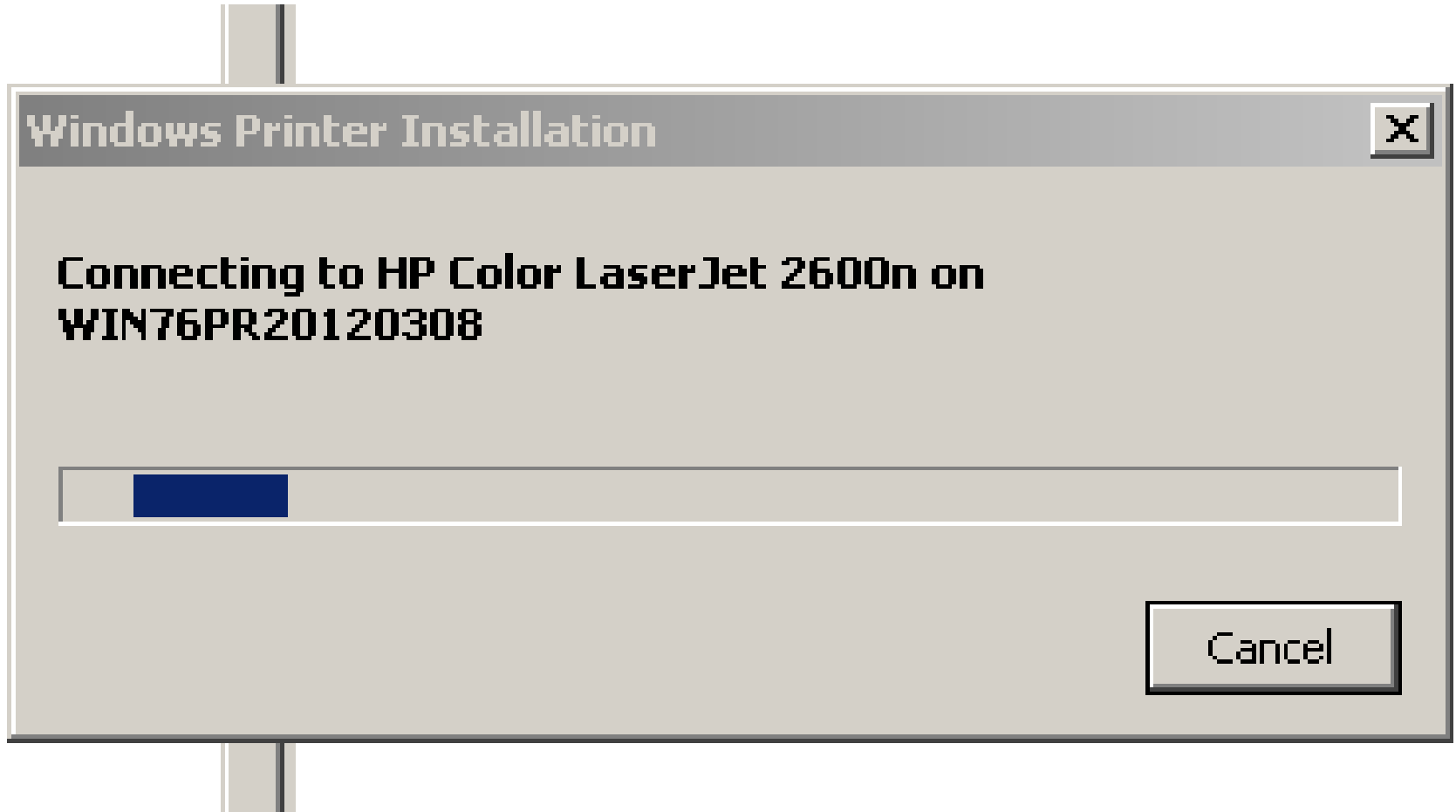
# (DETAILED) STEPS FOR "STRATEGY 3"



# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 21:  
"Computer B" will now download printer drivers from "Computer A". This process can take anywhere from 1 second to 5 hours.

# (DETAILED) STEPS FOR "STRATEGY 3"

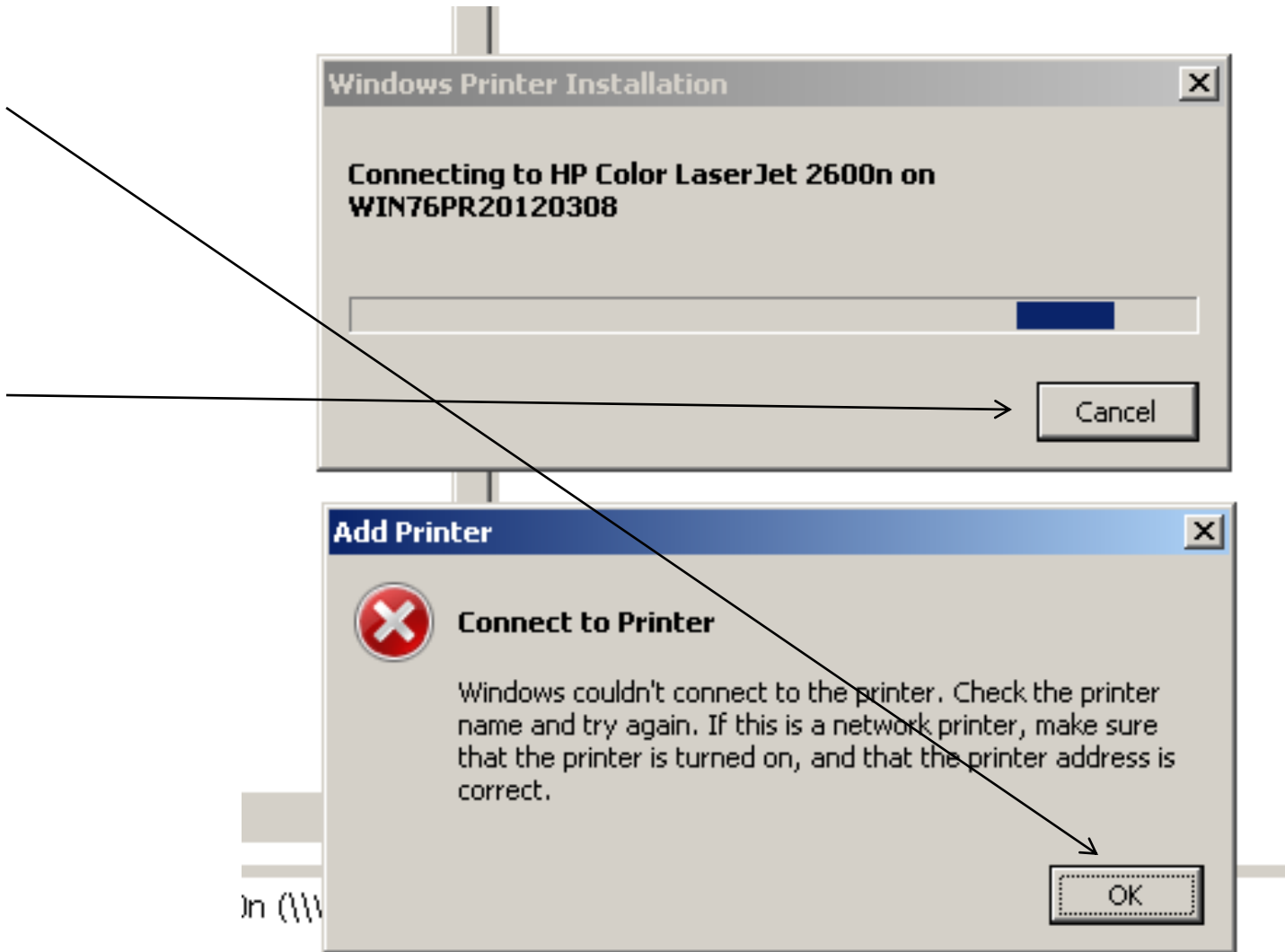


# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 22:  
If a message box states that "Windows couldn't connect to the printer, click on it's "OK" button and click on the "Cancel" button of the "Windows Printer Installation Box". Then go to "Step 35".



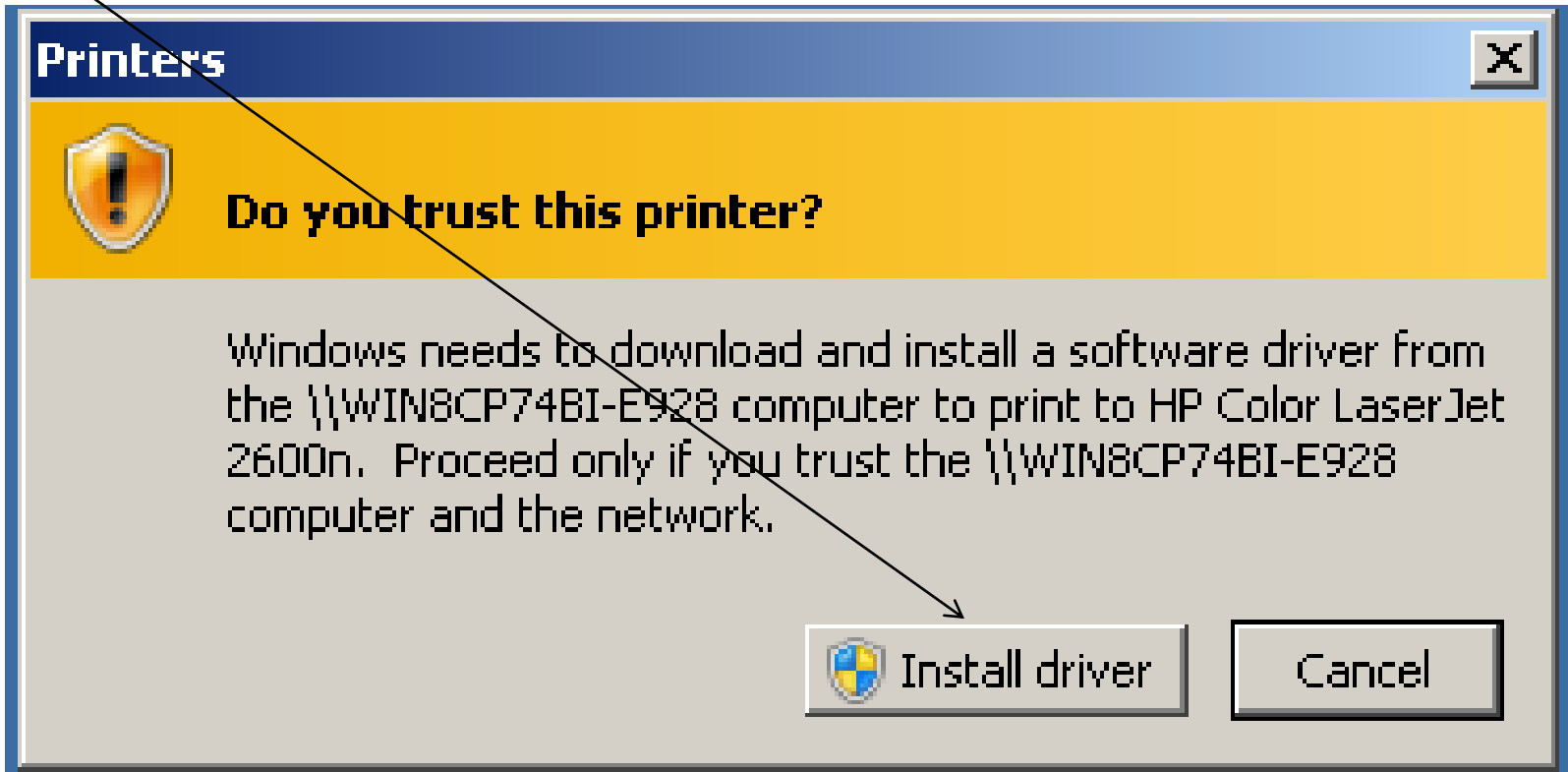
# (DETAILED) STEPS FOR "STRATEGY 3"



## (DETAILED) STEPS FOR "STRATEGY 3"

- Step 23:  
"Computer B" will now download printer drivers from "Computer A". This process can take anywhere from 1 second to 5 hours.
- Step 24:  
Click on the "Install driver" button if you get a "Do you trust this printer" dialog box:

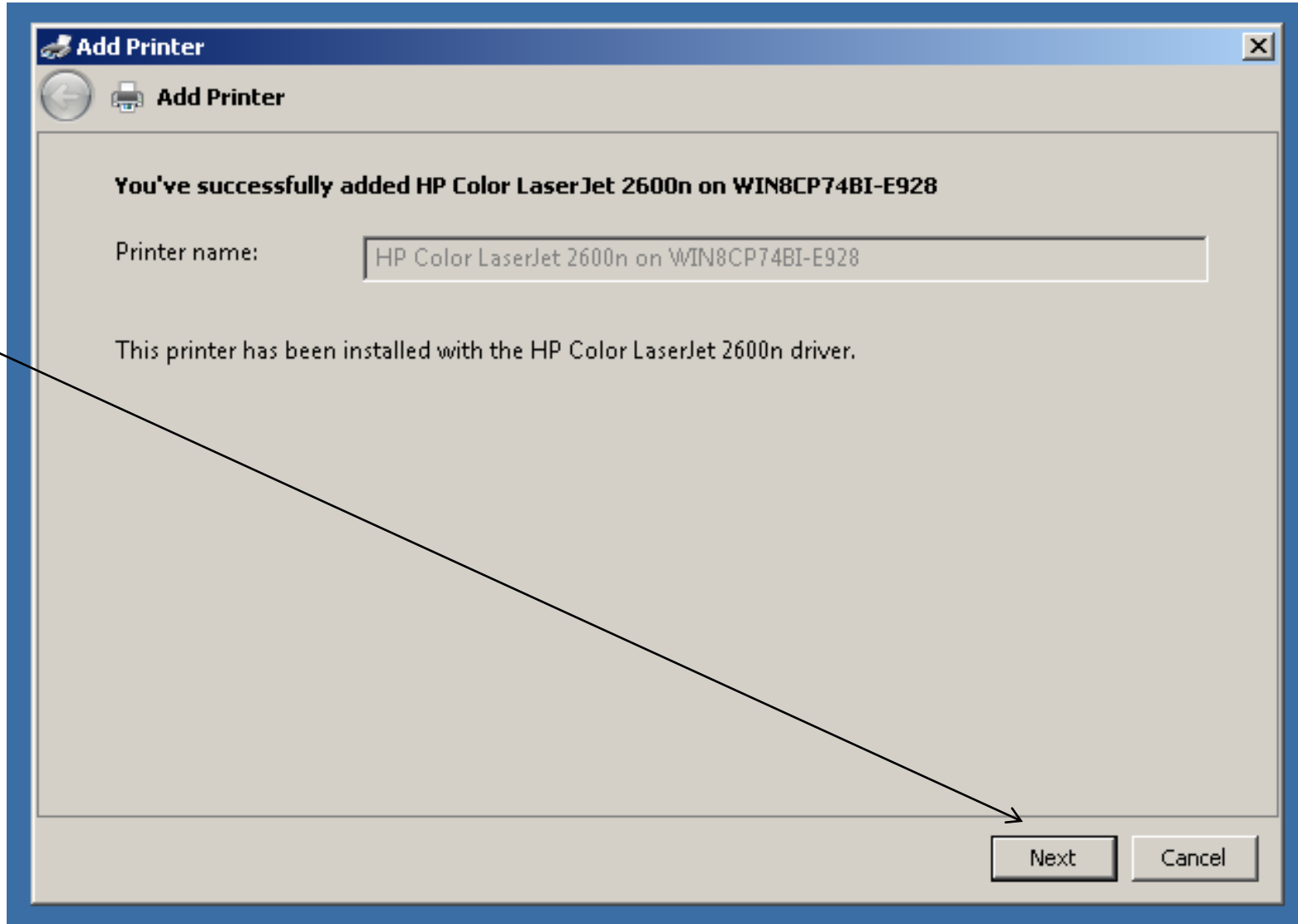
# (DETAILED) STEPS FOR "STRATEGY 3"



# (DETAILED) STEPS FOR "STRATEGY 3"

- **Step 25:**  
When you see a box that tells you that you have successfully "installer" the printer (into "Computer B"), click on its "Next" button:

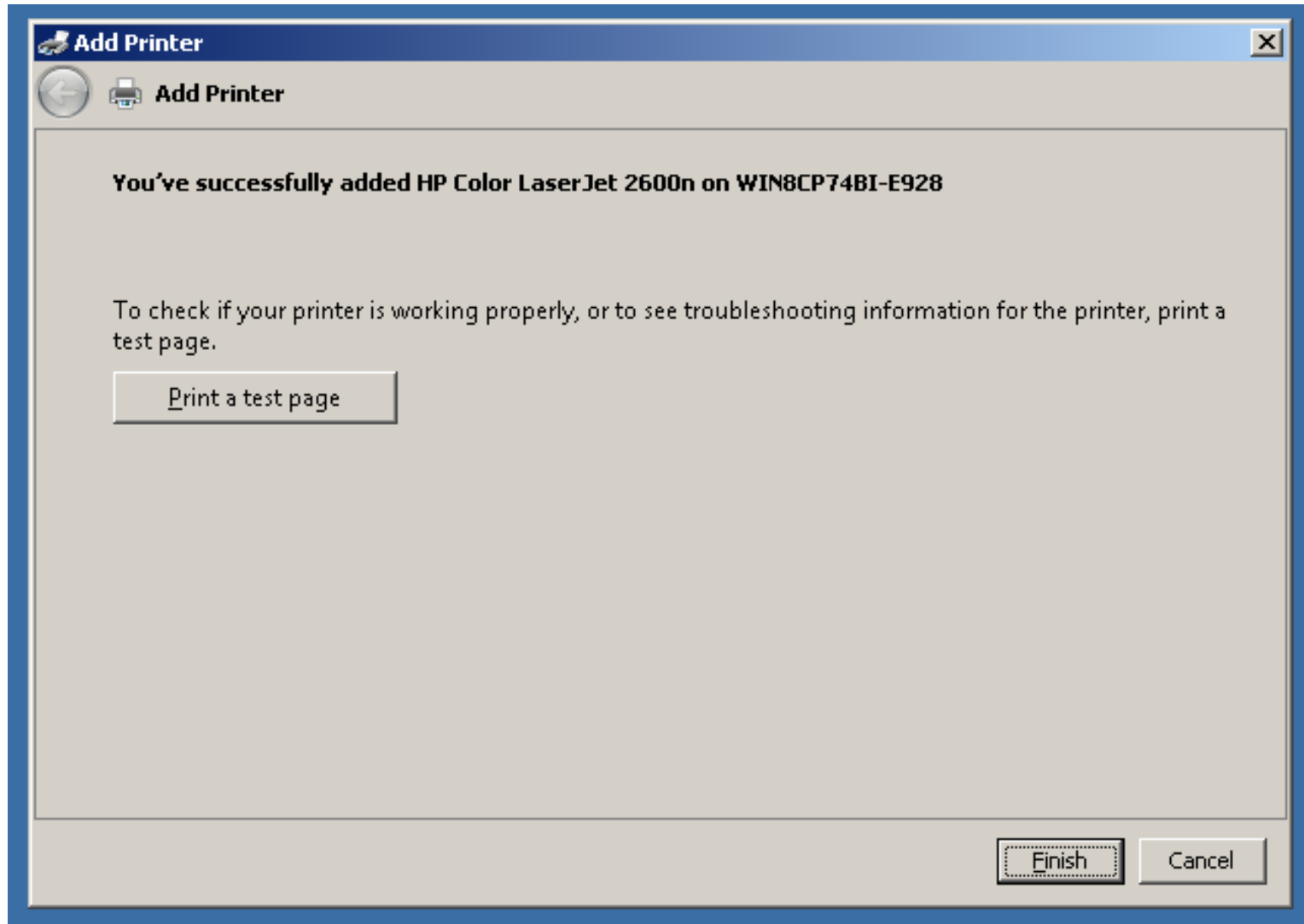
# (DETAILED) STEPS FOR "STRATEGY 3"



# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 26:  
Click on the "Finish" button of the  
"Add Printer" box:

# (DETAILED) STEPS FOR "STRATEGY 3"



# (DETAILED) STEPS FOR "STRATEGY 3"

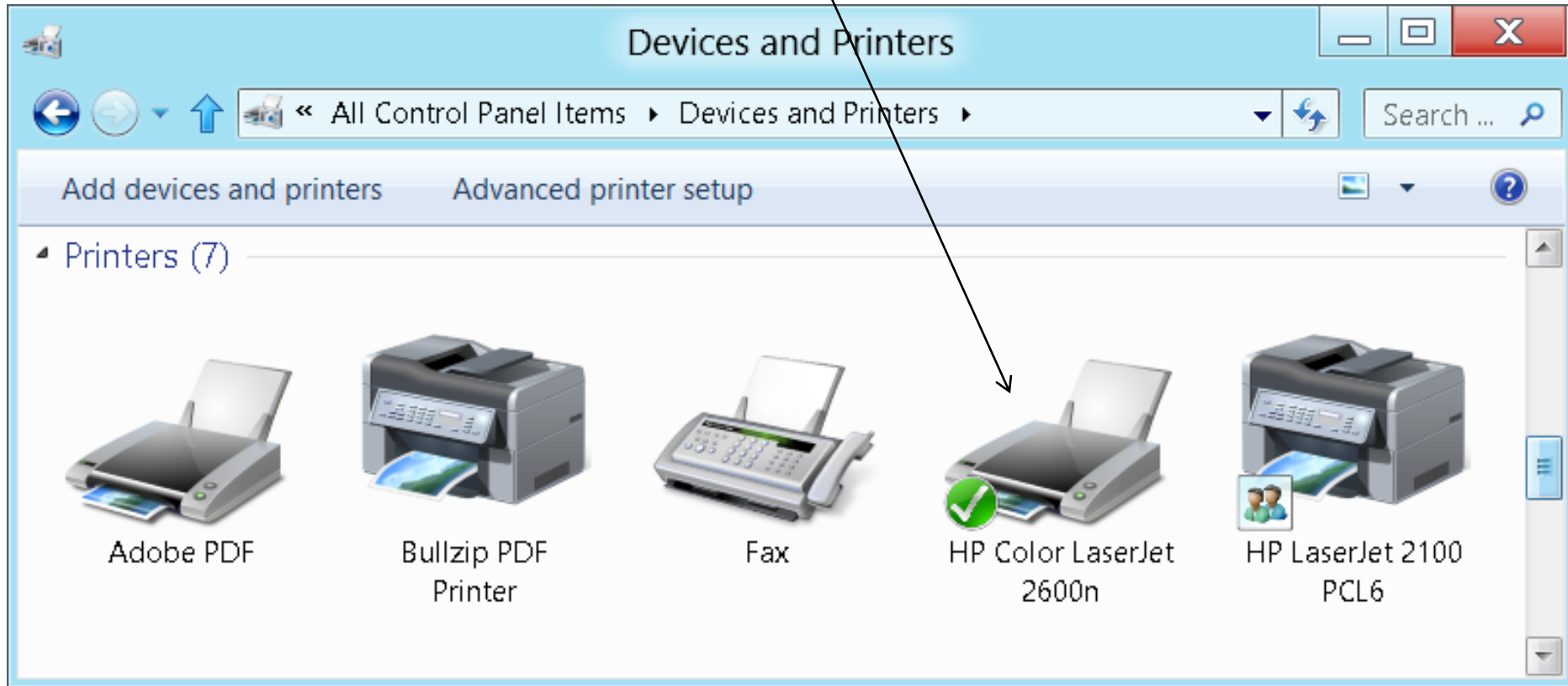
- Step 27:  
From inside "Computer B", go into the Windows "Control Panel" and double-click on "Printers" (in "Windows XP" or "Windows Vista") or "Devices and Printers" (in "Windows 7 or "Windows 8"):



# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 28:  
Locate the newly-"installed"  
printer:

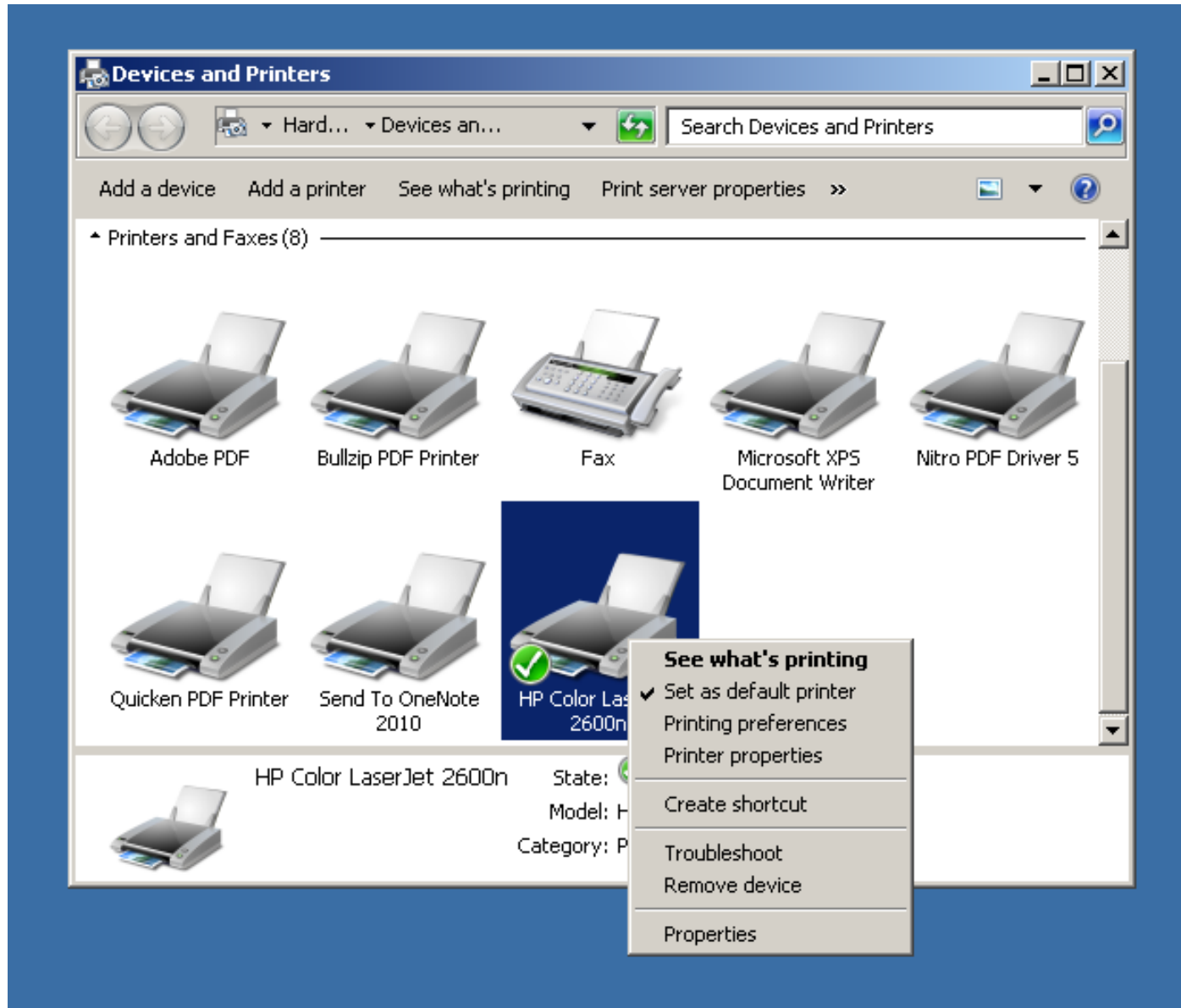
# (DETAILED) STEPS FOR "STRATEGY 3"



# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 29:  
Use the RIGHT mouse button to click on the printer.
- Step 30:  
A pop-up context menu will be displayed:

# (DETAILED) STEPS FOR "STRATEGY 3"



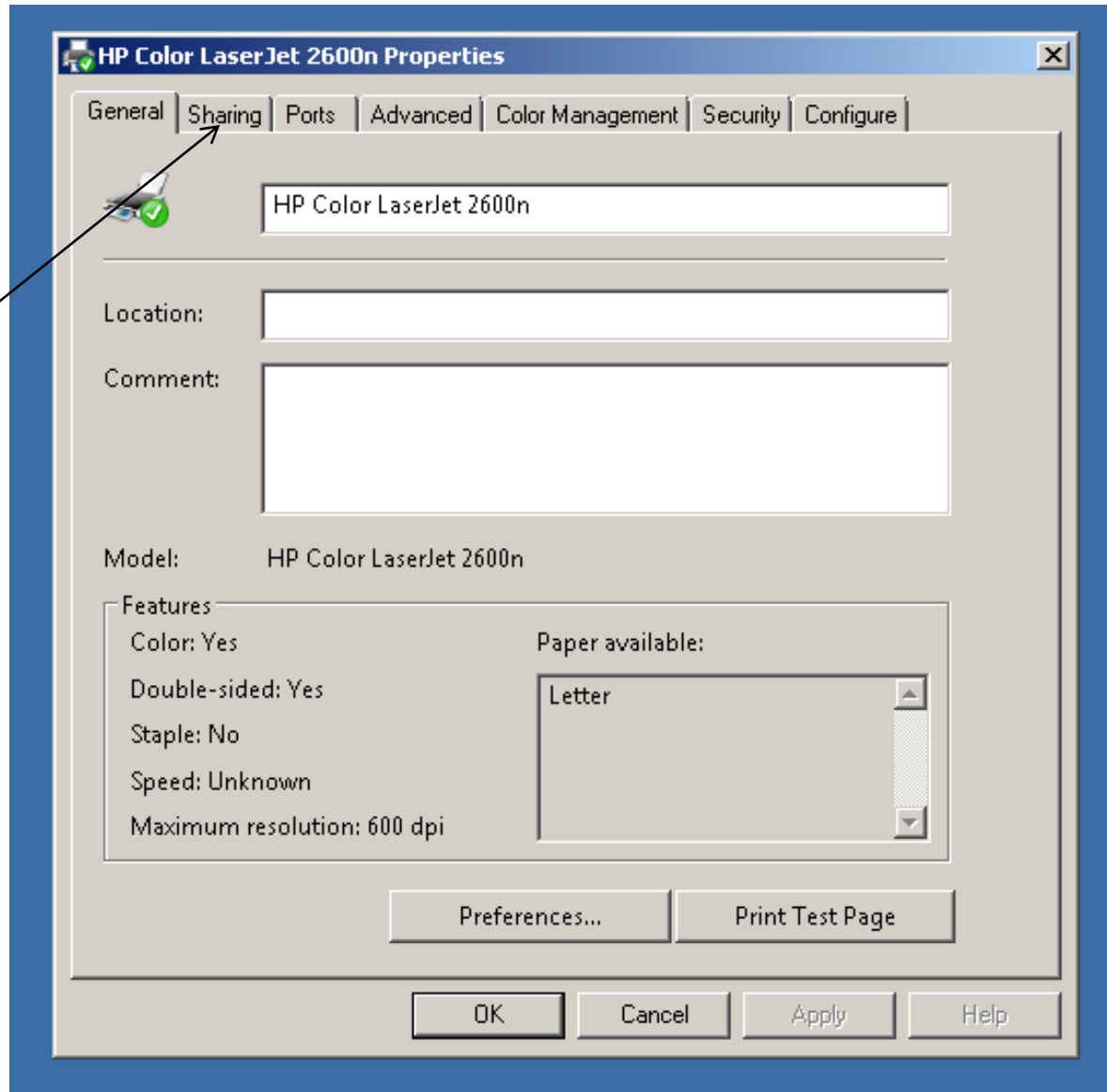
# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 31:  
Click on "Printer Properties"  
("Windows 7" or "Windows 8") or  
"Properties ("Window XP" or  
"Windows Vista").

# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 32:  
A "..Properties" dialog box will be displayed.
- Step 33:  
Click on the "Print Test Page" button to print a test page:

# (DETAILED) STEPS FOR "STRATEGY 3"



# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 34:  
If a test page is successfully printed, do not perform Step 35 through Step 40.



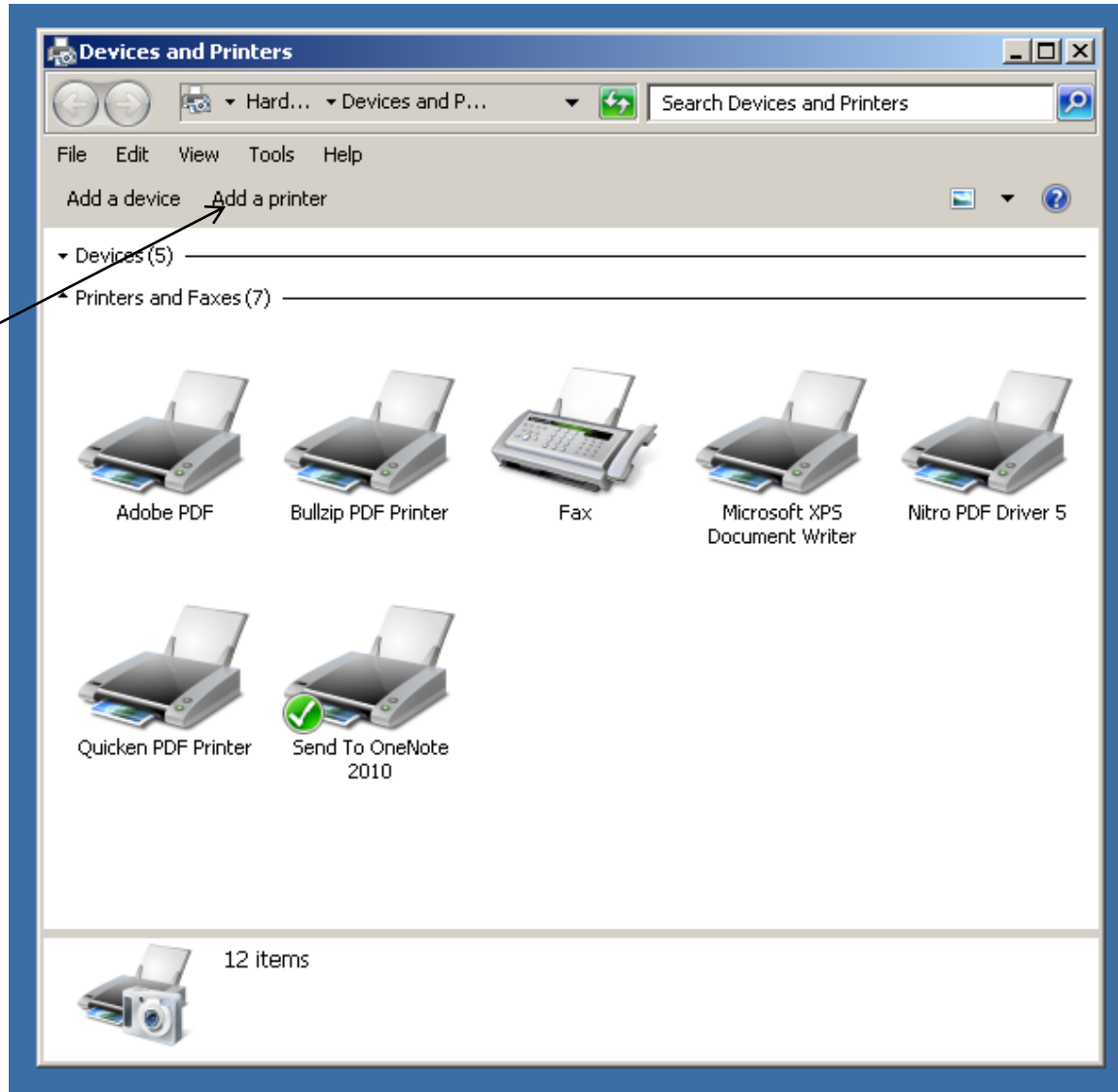
# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 35:  
From inside "Computer B", go into the Windows "Control Panel" and double-click on "Printers" (in "Windows XP" or "Windows Vista") or "Devices and Printers" (in "Windows 7 or "Windows 8"):

# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 36:  
Double-click on "Add a printer" or  
"Add devices and printers":

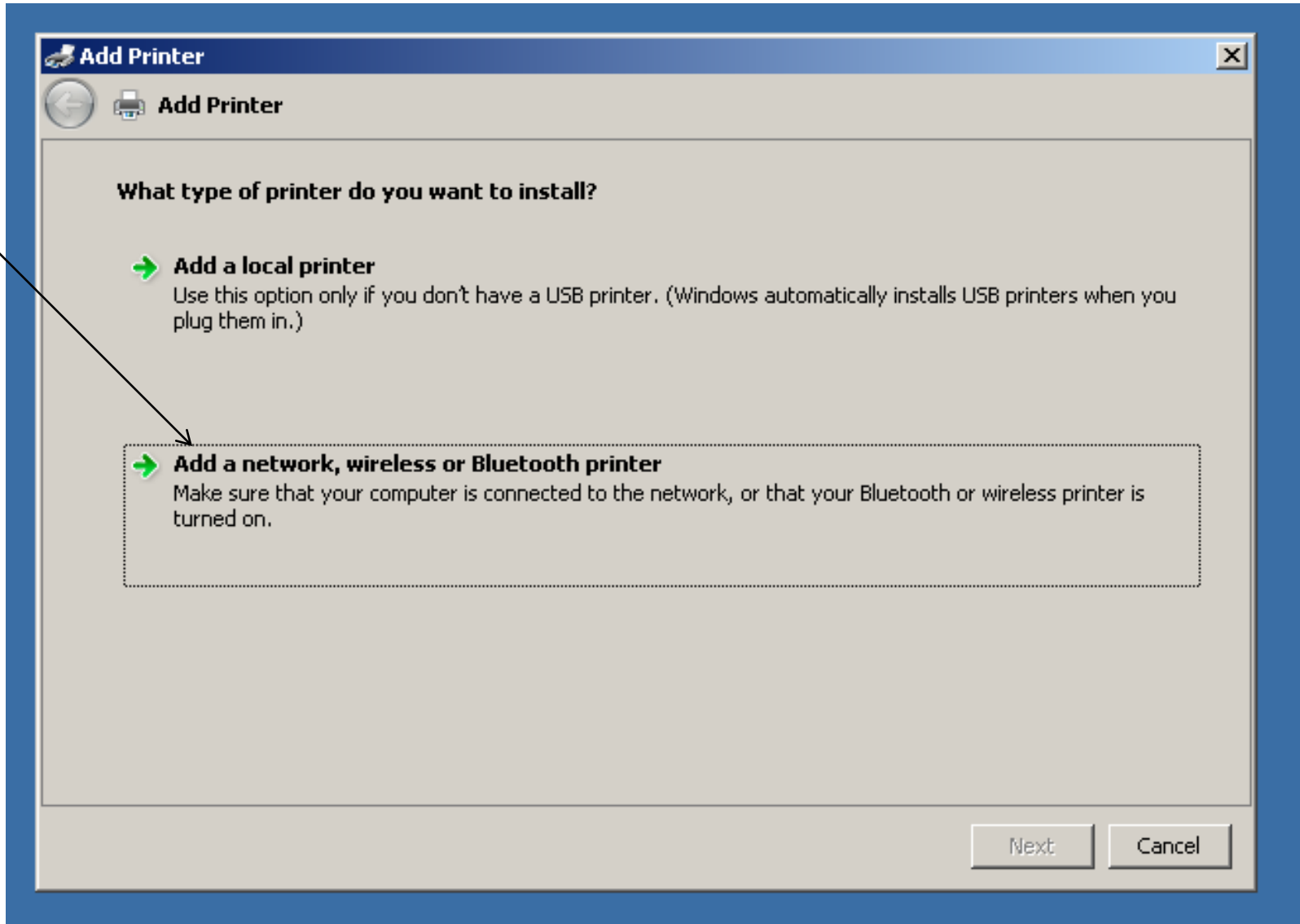
# (DETAILED) STEPS FOR "STRATEGY 3"



# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 37:  
Double-click on the "..network  
printer.." button:

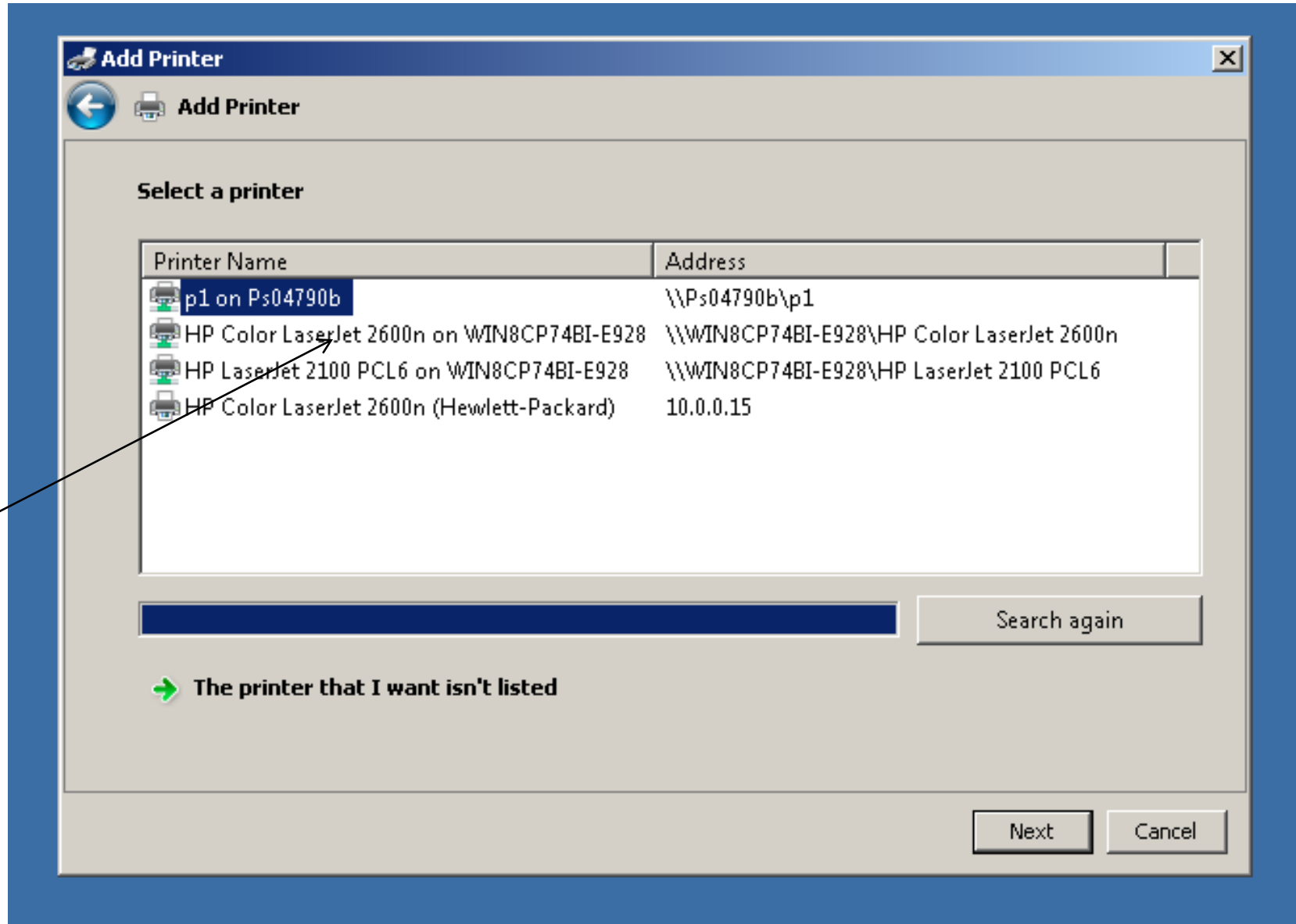
# (DETAILED) STEPS FOR "STRATEGY 3"



# (DETAILED) STEPS FOR "STRATEGY 3"

- **Step 38:**  
**Click on the desired shared printer in order to highlight it:**

# (DETAILED) STEPS FOR "STRATEGY 3"

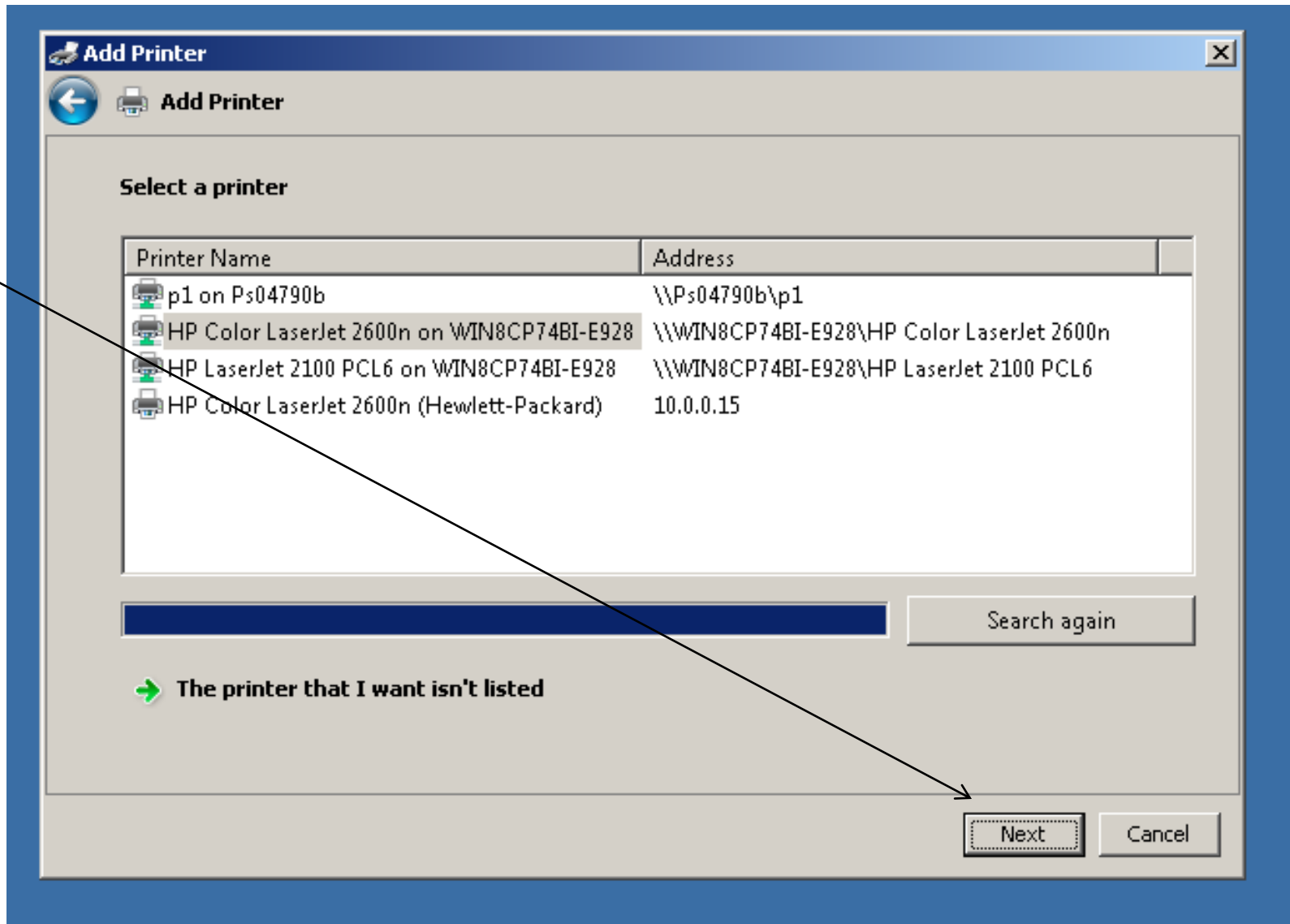


# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 39:  
Click on the "Next" button:



# (DETAILED) STEPS FOR "STRATEGY 3"



# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 40:  
Go to "Step 21":

# "STRATEGY 4" EXPLANATION

- **Strategy 4:**  
For any operating system environment, after you install a "shared" or "network-attached" printer successfully for one end-user computer, you can use the "create a port" or "new port" feature to "install" the printer into additional computers.

# "STRATEGY 4" EXPLANATION (continued)

- After you install a "network-attached" printer or a "shared" printer successfully and get one end-user computer to print to this printer, you can use a faster, abbreviated procedure for installing the same printer into additional end-user printer.

# "STRATEGY 4" EXPLANATION

## (continued)

- After you install a "network-attached" printer or a "shared" printer successfully and get one end-user computer to print to this printer, you can use a faster, abbreviated procedure for installing the same printer into additional end-user computers.

# **"STRATEGY 4" EXPLANATION**

## **(continued)**

- The trick to a shorter, easier installation procedure is to use the IP address of the "network-attached" or "shared" printer.

# **"STRATEGY 4" EXPLANATION**

## **(continued)**

- For additional end-user computers, either during or after the installation of drivers for the "network-attached" or "shared" printer, you create an "IP port" to "kick start" the communications between the printer and the end-user computer.

# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 1:  
Go to the end-user computer that is already successfully printing to the "network-attached" or "shared" printer.
- Step 2:  
Locate the icon for the printer in the configuration screens of the end-user computer.



# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 3:  
Write down the IP address of the printer.
- Step 4:  
Go to the end-user computer where the printer needs to be "installed".

# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 5:  
Locate the installation CD that was packaged with the printer or download the "driver files" from the printer manufacturer's Web site.
- Step 6:  
Using the installation CD or the manufacturer's "driver files" to start the installation of the printer.

# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 6:  
If possible, at the appropriate point in the installation process, create an "IP port" for the printer by using the IP address of the printer (as determined in "Step 3").

# (DETAILED) STEPS FOR "STRATEGY 3"

- Step 7:  
If there was no appropriate point in the installation process for creating an "IP port" for the printer, you can do so after the manufacturer's installation procedure has been completed.

# APPENDIX 1

## Using a Virtual Machine to Configure Ancient Print Server Devices

- See [http://www.aztcs.org/meeting\\_notes/winhardsig/virtualmachines/printservers/printservers.pdf](http://www.aztcs.org/meeting_notes/winhardsig/virtualmachines/printservers/printservers.pdf)