

Maximizing network printing efficiency by creating a printer pool



Does the bulk of your network use consist of printing to shared printers? If so, you probably hear a lot of complaints from your users regarding the amount of time they have to wait for print jobs to print.

When multiple users send print jobs to a single printer, the print server places the print jobs in a queue and then spools them one by one to the printer. If there are a lot of large print jobs in the queue, it's possible that several of your users will end up waiting a long time for a print job to print. If the printer malfunctions or runs out of paper, the wait can be even longer. Not only is this frustrating for users waiting for their print jobs, but it also hinders their productivity. Fortunately, you can avoid these types of network printing bottlenecks by setting up a printer pool.

A printer pool consists of several identical printers all connected to the same print server. This pool of printers together acts as a single printer. In this type of setup, when a user sends a print job to the printer, the system acting as the print server places the print job in the queue. Then, the print server polls the printers in the pool to see which printer is available. When it finds an available printer, the print server sends the print job to that printer. Subsequent print jobs are spooled to the other printers in the pool in the same manner. Therefore, you can have multiple print jobs all printing on different printers in the pool at the same time.

Another advantage of having a printer pool is that if one print job gets held up because a printer malfunctions or runs out of paper, the other printers in the pool will continue to receive print jobs. So instead of having several frustrated users whose

print jobs are held up due to a malfunctioning printer, you have only one.

As you can see, having a printer pool maximizes the use of the printers on your network while minimizing the amount of time users must wait for print jobs to print. Because of this, your users can be more productive.

In this article, we'll show you how to create a printer pool on your Windows NT print server to maximize network printing efficiency. As we do, we'll show you how to configure Print Manager to recognize additional printer ports.

Getting started

Before we show you how to create a printer pool, there are a few ground rules you need to understand. First, in order for a printer pool to function properly, all the printers

IN THIS ISSUE

- Maximizing network printing efficiency by creating a printer pool 1
- Making it easy to locate a network printer 4
- Naming a shared printer 6
- Installing Windows NT Server 3.5's online documentation 7
- Windows NT Workstation 3.5 also comes with online documentation 9
- Getting the most out of Windows NT 3.5's online documentation 9
- Keeping track of information in the online documentation 12
- Keyboarding comfortably with the new Microsoft Natural Keyboard 14
- Configuring a new system as the domain controller 16
- A guide to the Microsoft Connection forums on CompuServe 16

in the printer pool must be identical. At the very least, all the printers must be able to use the same printer driver.

For example, you could have a printer pool made up of HP LaserJet IIP and HP LaserJet IIP Plus printers. Both of these printer models can use the HP LaserJet IIP printer driver.

Furthermore, to be able to create a printer pool you must be logged in to the system that's acting as the print server as a member of the Administrators, Server Operators,

Print Operators, or Powers Users group. Once you're logged in properly, you're ready to get started.

Creating the printer pool

The steps you take to create a printer pool are very similar to the steps you take to install and configure a single printer. Basically,

you create a single printer definition and configure it to use the additional ports to which the printers in the pool are connected.

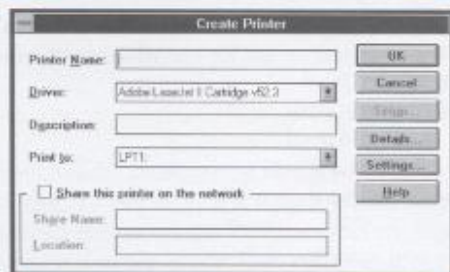
To begin, launch Print Manager by double-clicking its icon in the Main group. Once the Print Manager window appears, pull down the Printer menu and select the Create Printer... command. When you do, you'll see the Create Printer dialog box, shown in Figure A.

The first thing you need to do is type a name for the printer pool in the Printer Name box. This is the name that your network's users will see when they connect to the printer pool. You can use up to 32 characters for the name.

After you give the printer pool a name, you need to select a printer driver from the Driver dropdown list. You can select only one driver for all the printers in the pool. Therefore, all the printers must be identical or at least be able to use the same printer driver. Next, you can type an optional description in the Description box.

By default, the Print to box lists LPT1 as the port to send print jobs to. If the first

Figure A



To create a printer pool, you begin by creating a single printer definition in the Create Printer dialog box.

EXPLORING WINDOWS NT

Exploring Windows NT (ISSN 1070-6383) is published monthly by The Cobb Group.

Prices Domestic \$119/yr (\$16.90 each)
Outside US \$139/yr (\$17.00 each)

Phone Toll free (800) 223-8720
Local (502) 453-3300
Customer Relations Fax (502) 491-8050
Editorial Department Fax (502) 491-3433

Address You may address tips, special requests, and other correspondence to

The Editor, Exploring Windows NT
9420 Burnson Parkway, Suite 300
Louisville, KY 40228

For subscriptions, fulfillment questions, and requests for bulk orders, address your letters to

Customer Relations
9420 Burnson Parkway, Suite 300
Louisville, KY 40228

Postmaster Second class postage is pending in Louisville, KY. Send address changes to

Exploring Windows NT
P.O. Box 35180
Louisville, KY 40232

Statement of Ownership, Management and Circulation (Required by 39 U.S.C. 3685A; Title of publication: Exploring Windows NT. 18. Publication No.: Pending. 2. Date of filing: September 21, 1994. 3. Frequency of issue: Monthly. 3A. No. of issues published annually: 12. Annual subscription price: \$119 (\$16.90/issue). 4. Complete mailing address of known office of publication: The Cobb Group, 9420 Burnson Parkway, Suite 300, Louisville, KY 40228. 5. Complete mailing address of publisher, editor, and managing editor: Publisher, Thomas Cottingham, The Cobb Group, 9420 Burnson Parkway, Suite 300, Louisville, KY 40228; Editor, David Reid, The Cobb Group, 9420 Burnson Parkway, Suite 300, Louisville, KY 40228; Managing Editor, Elaine Holzemeyer, The Cobb Group, 9420 Burnson Parkway, Suite 300, Louisville, KY 40228; Owner, Ziff Communications Co., Ziff Investment Partnership L.P., Robert Ziff, but address for all of the foregoing being 1 Park Avenue, New York, NY 10016. 6. Known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities: none. 9. For completion by nonprofit organizations authorized to mail at special rates (NEM Section 424.12 only): The purpose, function, and nonprofit status of this organization and the exempt status for Federal income tax purposes: (Check one) 10. Extent and nature of circulation—A. Total no. copies (net press run): Average no. copies each issue during preceding 12 months: 7,731; actual no. copies of single issue published nearest to filing date: 4,019. B. Paid and/or requested circulation—1. Sales through dealers and carriers, street vendors and counter sales: Average no. copies each issue during preceding 12 months: 402; actual no. copies of single issue published nearest to filing date: 376. 2. Mail subscriptions (paid and/or requested): Average no. copies each issue during preceding 12 months: 7,311; actual no. copies of single issue published nearest to filing date: 2,467. C. Total paid and/or requested circulation (sum of 10B1 and 10B2): Average no. copies each issue during preceding 12 months: 7,711; actual no. copies of single issue published nearest to filing date: 2,843. D. Free distribution by mail, carrier, or other means: Samples, complimentary, and other free copies: Average no. copies each issue during preceding 12 months: 2,243; actual no. copies of single issue published nearest to filing date: 1,148. E. Total distribution (sum of 10C and 10D): Average no. copies each issue during preceding 12 months: 7,731; actual no. copies of single issue published nearest to filing date: 4,019. F. Copies not distributed: 1. Office use, left over, unaccounted, spoiled after printing: Average no. copies each issue during preceding 12 months: 5,465; actual no. copies of single issue published nearest to filing date: 1,148. 2. Return from news agents: Average no. copies each issue during preceding 12 months: 0; actual no. copies of single issue published nearest to filing date: 0. G. Total (sum of 10C, 10D, 10E, and 10F): Total (sum of 10C, 10D, 10E, and 10F) and 2—should equal net press run shown in 10A. Average no. copies each issue during preceding 12 months: 7,731; actual no. copies of single issue published nearest to filing date: 4,019. 11. I certify that the statements made by me above are correct and complete. Manager/Fulfillment Operators.

Authorized Canada Post International Publications Mail (Canadian Distribution) Sales Agreement #XXXXX CANADA GST #123669673. Send return to Canadian Direct Mailing Sys. Ltd., 222 Mercer Street, Windsor, Ontario, N9A 7C2. Printed in the USA.

Copyright

Copyright © 1994, The Cobb Group. All rights reserved. Exploring Windows NT is an independently produced publication of The Cobb Group. The Cobb Group reserves the right, with respect to subscribers, to revise, republish, and authorize its readers to use the tips submitted for personal and commercial use.

The Cobb Group and its logo are registered trademarks of Ziff Communications. Exploring Windows NT is a trademark of Ziff Communications. MS, Windows, Windows NT, NT, Win 32, and Win 32s are trademarks of Microsoft Corporation. MS-DOS and Microsoft are registered trademarks of Microsoft Corporation. OS/2 is a registered trademark licensed to Microsoft Corporation. CompuServe is a registered trademark of CompuServe, Inc. Intel is a registered trademark and OS/2 and i486 are trademarks of Intel Corporation. NetWare is a registered trademark of Novell, Inc. PostScript is a registered trademark of Adobe Systems, Inc. TrueType is a registered trademark of Apple Computer, Inc. UNIX is a registered trademark of UNIX Systems Laboratories.

Staff

Editor-in-Chief Greg Shultz
Editors Julie Teresi
Polly Blakemore
Elizabeth Welch
Production Artists Margaret Stith
Maureen Spencer
Design Matt Page
Managing Editor Elaine Holzemeyer
Circulation Manager Louise Ordish
Editorial Director Mark Kimball
Publishers Mark Crane, Jon Pyles
President/CEO J. Thomas Cottingham

Advertising

For information about advertising in Cobb Group journals, contact Tracee Bell Troutt at (800) 223-8720, extension 430.

Back Issues

To order back issues, call Customer Relations at (800) 223-8720. Back issues cost \$15.50 each, \$17.00 outside the US. You can pay with MasterCard, VISA, Discover, or American Express, or we can bill you.

printer in the pool is connected to LPT1, simply click OK—otherwise, click the drop-down arrow and select the correct port.

For example, suppose you want to create a printer pool that consists of two HP LaserJet IIP printers connected to a print server. If the printers are connected to LPT1 and LPT2 on the system acting as the print server, you might fill in the Create Printer dialog box as shown in Figure B.

At this point, click OK—you'll share the printer pool on the network in a moment. If the printer driver for the printers in your pool isn't already installed, Windows NT will prompt you to specify the path to the installation disk or to the Windows NT CD and then allow you to install the printer driver and configure the printer.

Once the driver is installed, make sure the printer pool's window is selected. Then, pull down the Printer menu and select the Properties... command. When the Printer Properties dialog box appears, select the Details... button. Doing so brings up the Printer Details dialog box, shown in Figure C.

Now, you'll specify the ports to which the other printers in your pool are connected. To do so, simply select the appropriate ports in the Print to Additional Ports list box and click OK. For example, to specify the port for the second HP LaserJet IIP in the LaserJet Pool, you'd select LPT2 and click OK.

If you have a port on your print server that's not in the Print to Additional Ports list box, you'll need to add it to Print Manager. In a moment, we'll show you how to do so.

When you return to the Printer Properties dialog box, select the Share this printer on the network check box. When you do, Print Manager automatically fills in the Share Name box. By default, Print Manager takes the first eight characters in the Printer Name box and creates a share name that follows the MS-DOS file-naming conventions of an eight-character filename with an optional three-character extension. If you don't have any MS-DOS-based network operating systems (such as Windows for Workgroups) on your network, you can use a longer share name.

Next, you can type an optional location description in the Location box. (For tips on specifying the location of a network printer, see the article "Making It Easy to

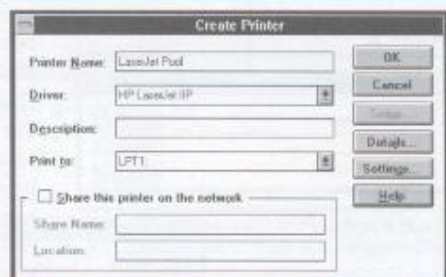
Locate a Network Printer" on page 4.) To complete the printer pool configuration, click OK. Once you do, your printer pool is available to the users on the network.

Adding other ports

If you have additional ports installed on your print server that aren't shown in the Print to Additional Ports list box, you can add the ports to Print Manager. You'll do so from the Printer Properties dialog box.

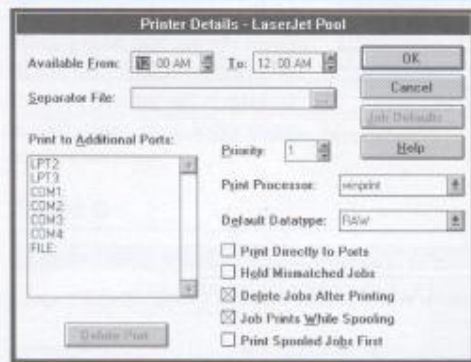
To begin, launch Print Manager by double-clicking its icon in the Main group. Once the Print Manager window appears, select the printer pool's window. Then, pull down the Printer menu and select the Properties dialog box. When you see the Printer Properties dialog box, click the drop-down arrow in the Print to box and select Other... from the list. You'll then see the Print Destinations dialog box, shown in Figure D.

Figure B



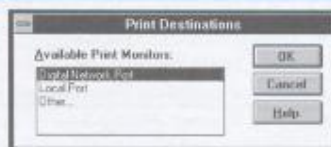
To set up the LaserJet Pool, you fill in the Create Printer dialog box.

Figure C



The Printer Details dialog box allows you to specify the other ports to which the printers in your pool are connected.

Figure D

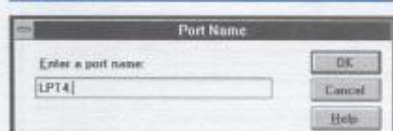


You set up other printer ports from the Print Destinations dialog box.

To add a port, select Local Port and click OK. Doing so brings up the Port Name dialog box, in which you type the name of the port followed by a colon. Then click OK.

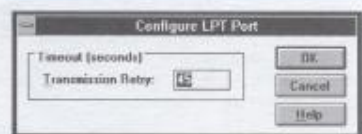
Depending on what type of port you're adding (parallel or serial), Print Manager will prompt you for other configuration settings. For example, if you're adding a parallel port, Print Manager will prompt you to specify the number of seconds for the Transmission Retry. The Transmission Retry setting determines how long Print Manager will wait for a printer to accept more data before notifying you that an error has occurred. By default, Print Manager uses 45 seconds for the Transmission Retry setting. This setting should be adequate.

Figure E



To add a port to Print Manager, you type the port's designation in the Port Name dialog box.

Figure F



The default value of 45 seconds for the Transmission Retry setting should be adequate.

If you're adding a serial port, Print Manager will prompt you to specify the communications settings. These settings include baud rate, data bits, parity, stop bits, and flow control. If you'll be connecting a serial printer to this new port, you can check your printer manual for more detailed information on what values to use for the communications settings.

For example, if your print server has four parallel ports to which you want to attach the printers of your pool, you may dis-

cover that the Print to Additional Ports list box doesn't include LPT4. Therefore, you'll need to type LPT4: in the Port Name dialog box, as shown in Figure E, and click OK.

When the Configure LPT Port dialog box appears, as shown in Figure F, you can specify the number of seconds for the Transmission Retry. As we mentioned, by default Print Manager uses 45 seconds for this setting. This should be an adequate value for most situations, so click OK.

When you add a new port to Print Manager, it will replace whatever port was in the Print to box when you began. Once you return to the Printer Properties dialog box, you can reselect the original port. Then, you can return to the Printer Details dialog box and select the new port in the Print to Additional Ports list box.

For example, suppose the port in the Print to box is LPT1, as it is in Figure A. After you add the LPT4 port to Print Manager, LPT4 will replace LPT1 in the Print to box. You then reselect LPT1 in the Print to box, click the Details... button, and select LPT4 in the Print to Additional Ports list box.

Conclusion

If printing to shared printers makes up a big part of your network's load, you can create a printer pool to maximize the use of the printers on your network while minimizing the amount of time users must wait for print jobs to print. In this article, we've shown you how to create a printer pool as well as how to add ports to Print Manager. ❖



MANAGEMENT TIPS

Making it easy to locate a network printer

When you configure a printer share on a large network, you should clearly specify the location of the printer in the Create Printer dialog box. This makes it easy for users on the network to use the Connect to Printer dialog box to quickly locate the nearest printer. While this may sound like a simple task, it's trickier than you

might think because of how the Connect to Printer dialog box displays this information.

In this article, we'll show you why the most obvious place to specify the location of a network printer may not be the best place to do so. Then, we'll show you how to make it easy for users to locate the printer that's nearest them.