Setting Up and Troubleshooting RPRINTER

By Doug Archell

As a network administrator, you have probably discovered that setting up and maintaining NetWare 3 print services can be one of your more challenging management tasks. NetWare 3 includes all the utilities and functionality you need for network printing, so why is it sometimes so difficult? If you were to survey network administrators, an overwhelming majority of them would probably point their fingers at the RPRINTER utility.

RPRINTER allows you to attach a printer to a network workstation and configure it as a network printer. In most cases, RPRINTER performs flawlessly; sometimes, however, it fails to work for no apparent reason. This article offers several suggestions to help you properly set up RPRINTER workstations on a NetWare 3 network and then provides some solutions to common problems. (This article deals only with RPRINTER and assumes you have already set up your NetWare print server. If you have not done so, please refer to your *NetWare 3.1x Print Server* manual.)

Loading RPRINTER

After you have configured your printing services in PCONSOLE and defined one or more remote printers, you must set up the workstations that will be running RPRINTER. To do this, you must first determine how you want to load RPRINTER.

One popular method is to run RPRINTER from the file server's PUBLIC directory. This method has a drawback, however: The RPRINTER workstation must be logged in to the file server. If the workstation is rebooted or if the power fails, you must log in to the file server again before you can use RPRINTER.

Another method is to copy the necessary files to the local workstation. In this way, you can run RPRINTER without logging in to the file server, as long as the network drivers are loaded on the workstation. If you choose this method, you should copy the following files from the server to the local workstation drive:

- RPRINTER.EXE
- IBM$RUN.OVL
- SYS$ERR.DAT
- RPRINTER.HLP
- SYS$MSG.DAT
- SYS$HELP.DAT

Only RPRINTER.EXE is required to run RPRINTER from the command line, but if all the other files are available, you will have the option of running RPRINTER as a menu interface.

You may also want to consider a third method. Once the network drivers have been loaded onto the workstation, you can access your file server's LOGIN directory and its subdirectories without logging in to the server itself. By copying the files listed above to the LOGIN directory, you can run RPRINTER without logging in to the file server. This method offers an additional benefit: If workstations are configured to run RPRINTER from the LOGIN directory, updating these files will be easy. Instead of taking an update diskette to each workstation or writing a script to copy the files to the workstation, you can simply create a LOGIN subdirectory and copy the files there.

Automating RPRINTER

Although RPRINTER can be used as a menu-driven utility, it also accepts command line options. By entering the required information from the command line, you can automate the RPRINTER process for your users, thereby eliminating the chance of user error. You can even ensure that RPRINTER will be loaded whenever the workstation is rebooted: You simply include the appropriate commands in the workstation's AUTOEXEC.BAT file, after the network drivers have been loaded.

Although this process simplifies running RPRINTER, you may encounter one problem: When a workstation is rebooted, an error message may appear, stating that the requested printer is already in use. This error appears if the print server does not have enough time during the workstation's reboot process to realize that the remote printer is no longer connected. To fix this problem, use the -R parameter with RPRINTER. If the print server is holding any connection information about the workstation and the specified printer in memory, this parameter ensures that the print server removes it. Only then will the print server establish a remote printer connection with the workstation.

To ensure that RPRINTER is loaded successfully, include the following commands in the workstation's AUTOEXEC.BAT file:

```
:LOOP
RPRINTER printservername printernumber -R
RPRINTER printservername printernumber
IF ERRORLEVEL 1 GOTO LOOP
```

In this example, you must replace *printservername* with the name of the print server to which you are connecting and *printernumber* with the correct printer number. The first and last lines place the commands in a continuous loop. On some faster

computers, an RPRINTER connection may fail on the first pass when a warm boot is performed. With a command loop, the workstation continues to try to load RPRINTER until it succeeds.

Although you can load RPRINTER from the command line, you should not load RPRINTER from within the NetWare login scripts. Doing so can reduce the amount of memory available to LOGIN.EXE during the login process, causing problems if that memory is needed after the command is issued. Loading RPRINTER from within the login script may also cause the workstation to "lock up" when the RPRINTER command is issued during the login process.

In addition, you should avoid the temptation to load RPRINTER into upper memory. RPRINTER may not function correctly if it is loaded into upper memory. When loaded into conventional RAM, it will only use approximately 5KB.

Updating Files

To avoid problems, you should use the latest version of utilities and drivers. Since RPRINTER is a workstation-based utility, you should download the latest client software from the NOVFILES forum on NetWire (Novell's information service on CompuServe) or from Novell's FTP site on the Internet (ftp.novell.com). The following are the current updates for using RPRINTER. (These files were current at press time; however, they are updated periodically, so look for the most current versions.)

- **VLMUP2.EXE.** This file contains the latest Virtual Loadable Modules (VLMs) and Open Data-Link Interface (ODI) drivers (LSL.COM and IPXODI.COM), as well as the latest Novell-supplied, Multiple-Layer Interface Drivers (MLIDs). If Novell does not supply an MLID for your network interface board, you should contact the vendor for the latest release.
- **WINDR2.EXE** contains updated, Novell-supplied Windows drivers.
- **NWDLL2.EXE** contains updated, Novell-supplied Dynamic Link Library (DLL) files.
- **NET33X.EXE** contains the latest version of NETX.EXE.

If RPRINTER is running on a workstation that is using Windows 3.1 or Windows for Workgroups 3.11, you will also

need to download several updates from the Microsoft library on CompuServe. To access this library, type GO MSL. (For a list of files, see "Updates for Workstations Running MS Windows and RPRINTER.")

After you have updated the utilities and the drivers on your workstations, you should also update the file server files. Although RPRINTER runs on the workstation, it communicates with the server to receive print jobs. To update the server, download the latest operating system patches, SPX-related patches, and library updates from NetWire. You will need to download STRTL3.EXE, 312PT6.EXE, and LIBUP5.EXE. The first two files are located in the NOVLIB forum; the third file can be found in the NOVFILES forum. You can also download these files from Novell's FTP site (ftp.novell.com).

Finally, update your printing utilities so RPRINTER can communicate correctly with the printer. To do this, download the latest printing utility files, PS3X01.EXE and PU3X01.EXE, from the NOVLIB forum on NetWire or Novell's FTP site.

Troubleshooting Tips

To help you resolve your RPRINTER problems, I have compiled a list of common problems. Although there are no surefire solutions, the suggestions listed below should solve your more basic problems:

Generic Troubleshooting
- If RPRINTER fails to connect to the print server, make sure you are not loading IPXODI with the /A parameter, which is used to disable SPX communications.
- A terminate-and-stay resident (TSR) program can sometimes cause a conflict with RPRINTER, resulting in various problems such as the workstation hanging or RPRINTER losing its connection to the print server. If this happens, delete all but the essential commands in the CONFIG.SYS and AUTOEXEC.BAT files. Do not load any TSRs, and load all drivers in conventional memory. Then replace the

TSRs one at a time until you discover which one is causing the problem.

- Hardware conflicts can result in the workstation hanging, RPRINTER losing its connection to the print server, or poor performance. Make sure there are no hardware configuration conflicts on the workstation, particularly involving the network interface board. Typical IRQ assignments are listed below.

Interrupt	Function
0	system timer
1	keyboard
2	cascade
3	COM2
4	COM1
5	LPT2
6	floppy controller
7	LPT1
8	real-time clock
9	redirected IRQ 2
10	available
11	available
12	mouse
13	math coprocessor
14	hard disk controller
15	available

- If performance is slow, if print jobs are garbled, or if RPRINTER is losing its connection to the file server, try loading RPRINTER in polled mode. Polled mode is useful when a workstation lacks available interrupts or does not properly support the use of interrupts. To use polled mode, use this command:

RPRINTER *printservername*
 printernumber -P

- RPRINTER can be sensitive to communications delays on the network. If RPRINTER is disconnecting from the print server periodically, communication problems may be the cause. To solve this problem, try adding the following statements to the NET.CFG file on the workstation that is running RPRINTER. (You may need to experiment with these values, setting them as high as 2000 and 100, respectively.)

SPX ABORT TIMEOUT 1000
IPX RETRY COUNT 60

- Make sure users are using the correct CAPTURE statement. I have found the following CAPTURE statement to be effective. (Replace *port* with the LPT port number the user will be capturing and *queuename* with the name of the appropriate print queue.)

CAPTURE L=*port* Q=*queuename* NB NT
 NFF TI=45

- Problems such as corrupt printouts or slow printing can often be resolved by replacing older printer cables with new, high-quality cable.

Windows-Related Troubleshooting
- If the RPRINTER workstation is freezing up when users send print jobs or if the workstation is disconnecting from the print server, add the EMMExclude=A000-DFFF command to the [386Enh] section of your SYSTEM.INI file. If this resolves the problem, you can then investigate further to determine the exact memory region that should be excluded.
- Disable the Fast Printing Direct to Port feature. If this feature is not disabled, Windows will communicate directly with the hardware port, which will create network printing problems.
- Disable the Print Manager feature. If this feature is not disabled, Windows will spool each print job to the defined temporary directory (\TEMP), which will then transfer the whole job to the network. This could cause problems by flooding the network.
- If you experience problems such as incorrectly formatted print jobs, "garbage" printouts, and documents with missing letters, make sure you are using the correct Windows printer driver for your type of printer.

Please Write!

The purpose of this column is to provide you with helpful tips and tricks for managing your network, so please let me know what topics interest you. If you want me to address a particular issue, drop me a line at my CompuServe address.

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What's New on the Wire

Several updates have recently been released for the NetWare operating system. The following files are available on NetWire (Novell's information service on CompuServe) in the NOVLIB forum or on Novell's FTP site on the Internet (ftp.novell.com).

The information given here is accurate at press time. However, files on these services are periodically moved, renamed, or updated. If you cannot find a file or have questions, leave a message for the NetWire System Operators (SysOps).

P2SCSI.EXE Contains an updated PS2SCSI.DSK driver for NetWare 4.1. The new driver resolves the problem of SBACKUP recognizing the tape drive but not recognizing the tape within the drive.

SYS376.EXE. Contains an updated SYSCON.EXE for NetWare 3. Resolves problems such as error messages that appear when you view the SYSCON Groups Belonged To screen and problems with changing the Days Between Forced Changes password restriction.

LOG412.EXE. Contains an updated LOGIN.EXE for NetWare 4.1. Resolves several problems such as drive mappings being deleted when the DRIVE login script command is used and IF-MEMBER-OF-GROUP statements always resulting in a value of true.

SMSUP2.EXE Contains updated Target Service Agent (TSA) files for NetWare 3 and 4 using SBACKUP or third-party backup solutions that use these files.

410PT1.EXE Contains the latest patches for the NetWare 4.1 operating system.

PU4X03.EXE Contains updated NetWare 4 printing utilities that resolve problems such as users not being able to use the CAPTURE create feature if they are logged in as bindery users with NETX, users not being able to see the captured queue name when using NWUSER in NetWare 4.02, and the 60 print job per container limitation in NetWare 4.01.

SBACK3.EXE Contains the updated SBACKUP and support files for NetWare 3.1x and NetWare 4. n