

Modification History

1.1 01-07-94 The selection-criteria used on the NETPRINT statement in the NETPRINT/92 configuration file (NP92CONF) has been changed. The selection STATE=SAVE will match spoolfiles in the SAVE state. The selection STATE=SPSAVE will match spoolfiles whose SPSAVE flag is turned on.

When NETPRINT/92 finishes printing a spoolfile, if the file's SPSAVE flag is turned on, the spoolfile will be placed into the SAVE state. This follows the behavior of the MPE/iX Native Mode Spooler.

NETPRINT/92 now includes a utility program that will allow the HP3000 (MPE/iX 4.0 and later) to function as a BOOT protocol server. This will allow the 3000 to supply IP addresses to network printing devices that do not provide for setting of their IP address themselves. An example of such a device is the HP JetDirect card for the LaserJet series II. The BOOT protocol allows such a device to broadcast a message on the network that contains the device's hardware address. A BOOT protocol server on the network receives this request and then checks the hardware address against a table of hardware address to IP address mappings. If the hardware address is found, the boot server transmits the IP address back to the device. The details of setting up and running the BOOTP server are in the files BOOTPJOB and BOOTPTAB. Read these files for details.

NETPRINT/92 now includes a utility program that will allow the HP3000 (MPE/iX 4.0 and later) to function as a SYSLOG server. Some network printing devices, the HP JetDirect cards in particular, can be configured to send status messages to an IP address where a SYSLOG server is active. These messages reflect power on/off, paper out and etc. The SYSLOG server included with NETPRINT/92 can accept such messages and display them on the console or elsewhere. Read the file SYSLGJOB for details on using the SYSLOG server.

New files added to NETPRINT/92:

- BOOTPD - Boot protocol server program
- BOOTPTAB - Boot protocol configuration file
- BOOTPJOB - Boot protocol background job
- SYSLOGD - Syslog protocol server program
- SYSLGJOB - Syslog protocol background job
- NPNLMIN - Netware NLM download file
- NPREADME - New file that contains modification history of NETPRINT/92

NETPRINT/92 now includes support for receiving print files from Unix systems. NETPRINT/92 enables the 3000 to become an LPD (Line Printer Daemon) server. This means the 3000 looks just like another Unix host on the network. An actual Unix host can then be configured with the 3000 as a remote printer using the LPD remote printing protocol. A new configuration file statement, NETRECEIVE LPD, starts up the incoming LPD service. See the manual for more details on using incoming LPD.

NETPRINT/92 now prints from the HP3000 directly to Netware

server print queues. NETPRINT/92 employs a Netware Loadable Module (NLM) which is a program that runs on the Netware server and communicates directly with NETPRINT/92 on the 3000 via TCP/IP. This solution is the new state of the art in network printing integration for Netware and the 3000. The NLM is downloaded from the 3000 (after NETPRINT installation) to the server. You bring up Netware's TCP/IP support and then the NETPRINT/92 NLM and the server is ready to receive print from the 3000. A NETPRINT statement for the server is added to the NETPRINT/92 configuration file and you are ready to print. See the manual for more details on using NLM.

Note: This feature prints from the 3000 to the Netware server only. Server to 3000 printing is expected to be added to NETPRINT/92 in March of 1994...

1.2 04-01-94 Added a major new capability to NETPRINT/92. Implemented the
nplmin 1.1 second part of bidirectional HP3000 to Netware server print-
nplmout 1.0 ing. A new NLM called NPNLMOUT has been added. This NLM will
 send (export) print files from Netware server print queues to
 the HP3000. See the product documentation for installation
 and usage information.

Fixed a bug in printing from the HP3000 to Netware servers via the NLM. Spoolfiles with multiple copies would be sent to the server multiple times instead of once. Since the NLM correctly handles the copy count on a spoolfile sent to the server, this resulted in twice as many copies of the file as requested by the MPE copy count. Files are now sent to the server once, with the Netware copy count set correctly.

MPE spoolfiles with no file name would be rejected by the NLM on the server. The code has been corrected to handle this somewhat strange case.

Added two sample HP serial printer environment files called LJ132 and LJ170. These files can be used to print to LaserJet printers in landscape line printer font at 132 and 170 characters per line. The files can be used on the ;ENV= parm of the MPE file equation or with the ;E= option specified on the NETPRINT's OPTIONS statement. These files have an associated vfc file called LJ132VFC and LJ170VFC. These files can be customized with HP's TTUTIL program.

Added several new options for controlling new Netware queue files created by NPNLMIN (input nlm). On the OPTIONS statement used with NETPRINT, you can add the NETOPT="opt;opt" option with the following new Netware options:

PSERVER PS=name	Sets the new Netware queue file so it will only be printed by the print server specified.
USERHOLD UH	Set user hold on for the new queue file.
OPERHOLD OH	Set operator hold on for the new queue file.

An example of using these options:

```
NETPRINT D=class
        NODE server
        QUEUE queueName
```

```
OPTIONS PTYPE=NLM;PURGE;NETOPT="PS=LJ1;OH"  
END
```

You may now specify an IP address in place of a node name on the NODE statement inside the NETPRINT block. This address is of the form n.n.n.n (n=0-255). This allows more flexibility and the option to bypass setting up network printing targets in the HP3000's Network Directory. Example:

```
NETPRINT D=class  
  NODE 161.190.15.5  
  QUEUE queuename  
  OPTIONS PTYPE=NLM;PURGE  
END
```

The BOOT Protocol server (BOOTPD) shipped with Netprint/92 would not run on all MPE/iX 4.0 systems due to problems with HP's implementation of Berkeley Sockets. Version 1.1 of BOOTPD, which corrects this problem, is included in this release of Netprint/92.

When receiving print files from Unix systems with the LPD support in Netprint/92, the error 1225: LPD Protocol Error would be issued whenever an LPD status request was received. This is not an error, Netprint/92 just does not respond to LPD status requests other than to let the requesting Unix system know that the Netprint/92 LPD server is active. A new message is issued (1231) indicating that an LPD status request was serviced.

1.3 04-08-94 Added a major new capability to the NETPRINT/92 NLMs. Both npnlmin 2.0 the incoming (to the server) NLM (NPNLMIN) and the outgoing npnlmout 2.0 (from the server) NLM (NPNLMOUT) now fully support the LPD printing protocol. This means that the Netprint/92 NLMs can send and receive print files from Unix systems as well as the HP3000. No software is required on the Unix system. Netware server print queues are configured as Unix remote printers. See the Netprint/92 documentation for details.

When sending print files from the 3000 to the Netware server the Netware queue file's form name can be set from the form name on the source spoolfile or with the options statement. However, Netware ignores the form name and only uses the form number for forms control! In the future, the form number is going to be set from the form name, but for now you must set the form number explicitly as follows:

```
NETPRINT ...  
  NODE ...  
  QUEUE ...  
  OPTIONS ...;NETOPT="FORM=number"  
END
```

Some Unix LPD implementations did not work with Netprint/92 because we send the control part ahead of the data part in the LPD transaction. The order should not matter per the LPD standard (RFC1179) but many Unix implementations expect the data file part first and control second, and will malfunction if they are sent out of order. In order to follow this defactor standard, Netprint now sends the data part first followed by the control part.

Fixed minor bug that resulted in SOCKERR 29, INVALID DESC-RIPTOR on some MPE/iX 3.x systems.

Fixed two problems with NPNLMOUT and Netware 4.x servers. Files sent from the server to MPE would have the form name UNKNOWN and an incorrect user name.

Fixed two bugs in the incoming (to the 3000) LPD. One was the appearance of a line feed character at the end of the file name of the new MPE spoolfile. The second was an incorrect account name (should be name of the server) when the Netware username was longer than 8 characters.

When printing from the 3000 to a Unix system with Netprint LPD, you may now use the option ;NETOPT="string" to send option values to the Unix system. The option string will be included in the LPD control file sent to the Unix system.

When sending files from a Unix system to the 3000 with the Netprint LPD feature, you may override the MPE spoolfile's priority and copies values with lp command options. This allows a work-around for the Unix limitation of priority values of 7 or less and the fact that HPUX does not send the copy count in the LPD control file. An example of this is:

```
lp -dhpprinter -op=9 -oc=4 myfile
```

When myfile is sent to the 3000, the new spoolfile will have a priority of 9 and copy count of 4.

The erasure of the NP92COMM file has been removed from the NP92STRT command file and placed into the NP92JOB file to make it easier to use this command file from outside the Minisoft account.

Printing from Netware to the HP3000 with NPNLMOUT normally changes tab characters to space characters in TEXT mode. Due to a bug, this replacement was also happening in BINARY mode and would it cause strange characters and other errors when the print file was printed on a printer. This has been fixed.

1.4 06-10-94

Corrected several problems in the NLMs.

nplmin 2.2

Fixed several timing problems with NPNLMOUT that caused it to sporadically fail to load on 3.1x servers and always fail to export more than one queue on 4.x servers.

nplmout 2.2

Fixed problems with NPNLMOUT and NetWare form names on 4.x servers. Caused unwanted forms mounts on the HP3000.

Fixed NPNLMOUT bug where it failed to use the exported queue name as the default MPE output device.

Added the STOP program mentioned in the documentation to the install tape. This program is used to clean shut down the BOOTPD and SYSLOGD programs. Just run STOP.PUB.MINISOFT to cause the boot and syslog jobs to terminate.

Fix minor problem in printing to Unix systems via LPD. Some spoolfiles (typically generated by Quiz or ASK) could not be sent to the Unix system/LPD printer. The transmission would fail with a time-out error.

Incomming (to the 3000) LPD files will now default to output priority 8 if the Unix system does not specify a priority. It was defaulting to 1, which meant the file had to be altered by a human to get it to print. This is a particular problem with Solaris.

1.4 06-16-94 Corrected defect in NPNLMIN.
nplmin 2.3 NPNLMIN had a problem when receiving LPD transmissions from
nplmout 2.3 Unix systems. Under some corner-case conditions, the buffers in the NLM would overflow and cause a server crash. This was due to a combination of a programming bug and unusual network behavior. The problem is fixed in the 2.3 version of NPNLMIN.

NPNLMOUT incorrectly rejected IP addresses on the ;NODE= option of the EXPORT statement if the last octet of the address was larger than 127. The address is now edited correctly.

1.5 06-24-94 Add ;SAVE option
nplmin 2.4 You may now use the ;SAVE option on the OPTIONS statement in
nplmout 2.4 the Netprint configuration file. This will cause successfully printed files to be placed into the SAV (save) state. This allows copies of printed files to be saved after printing. Netprint ignores spoolfiles in the SAV state when selecting files to print.

Netprint's LPD protocol support on the HP3000 and NetWare server does not include responding to LPR status/cancel requests from LPD clients. These requests were simply ignored. Netprint on the 3000 and NetWare (NPNLMIN) now respond to LPR status/cancel requests with a message indicating that such requests are not supported by the host (LPD server). This message is typically displayed to the client's user and is more informative (and standards compliant) than ignoring the request completely.

The QUEUE statement can now be used to specify a print destination on a UNIX system (PTYPE=UNIX or PTYPE=LPD) instead of having to use the ;DEST="dest" option on the configuration file's OPTIONS statement. This was done to make the Netprint script language more consistent.

The Netprint implementation of the LPD/LPR printing protocol did not support the print formatting options that are part of the standard. Netprint's ;NETOPT="opt opt" option (OPTIONS statement) has been enhanced to accept the print formatting options defined by the rlp command on the HPUX operating system. While the print formatting options may have different names on other UNIX operating systems, the encoding of the formatting options in the LPD/LPR transmission is according to standards and should work with any UNIX host. The options supported are:

- BSDh - do not print banner page
- BSDc - the print file contains cifplot output
- BSDd - the print file contains output from the tex utility (DVI format)
- BSDf - the print file contains standard Fortran carriage control
- BSDg - the print file contains output from the standard plot library
- BSDl - do not filter control characters (print as is)
- BSDn - the print file contains output from ditroff

```

BSDp      - use the pr utility to format the file
BSDt      - the print file contains output from troff
BSDv      - print file contains a raster image (print as is)
BSDk      - the print file contains kerberized data
BSDo      - the print file contains Postscript data
BSDz      - the print file contains data from the Palladium
            print system
BSDR      - print with troff R font (Times Roman)
BSDI      - print with troff I font (Times italic)
BSDb      - print with troff B font (Times bold)
BSDs      - print with troff S font
BSDinn    - set indent to nn columns (pr utility)
BSDwnnnn  - set width to nnnn cols (pr utility)
BSDPuser  - set originating user name
BSDCclass - set class name
BSDJjob   - set job name
BSDTtitle - set title for pr utility

```

An example of printing from the HP3000 to a UNIX host with a postscript file and no banner is:

```

NETPRINT selection-criteria
  NODE nodename
  QUEUE print_destination
  OPTIONS PTYPE=UNIX;NETOPT="BSDo BSDh"
END

```

The default print format sent in Netprint LPR transmissions is: print as a plain text file adding page breaks as needed.

NPNLMOUT has also been enhanced to allow the specification of LPR print formatting options on the EXPORT command. The same set of options described above is also supported by NPNLMOUT. The EXPORT statement has a new option: ;OPTION/OPT/O=value . This option allows you to specify a single LPR print format option and you may specify it as many times as you wish. An example of this is:

```
EXPORT queue;NODE=uxbox;D=printer;O=BSDv;OPT=BSDh
```

Netprint/92 now supports Walker, Ritcher & Quinn's Reflection Network Series for Windows Version 4.0 (RNSW). RNSW includes LPD server and LPR client utilities. When Netprint is enabled to receive LPD print files (NETRECEIVE LPD), it can receive print files from Windows PC's using the RNSW LPR utility. You may send print files from the HP3000 to a Windows PC that is running the RNSW LPD server utility just as if it was another UNIX host. To configure HP3000 to Windows PC printing, specify the queue name defined in the RNSW LPD setup on the QUEUE statement (or ;DEST="queue" option), use ;PTYPE=LPD and use ;NETOPT="BSDv" to set the correct print formatting option to be used by the PC.

Netprint/92 now allows some control over printing with the system outfence. If you add the ;READY option to the OPTIONS statement within a printer's NETPRINT statement in the configuration file, the printer driver process will check the current priority of any file it is directed to print against the system outfence and only print it if the file's priority is above the outfence. If the file is at or below the outfence, the file will not be printed and the Netprint driver will wait 60 seconds and recheck the file's priority against

the outfence. The file will not be printed until its output priority is greater than the system outfence. Note that if the current file to be printed by the driver is deferred, the driver will retry it until it is printed. The driver does not examine it's input queue for other files that are ready. This means that the outfence or file priorities can be used to hold/resume printing of the next file to be processed by the driver but not the printing of individual files.

The Netprint/92 manager process has a new NETPRINT selection criteria option that allows control of the files selected by the NETPRINT based on the system outfence. The selection criteria of P<rel-op>OUTFENCE can now be used to compare the priority of the spoolfile being examined to the current value of the system outfence. An example is:

```
NETPRINT D=NETLP AND P>OUTFENCE
```

Note that this selection-criteria is applied when the spool queue is scanned and files are selected to be queued for printing by the Netprint driver process for the printer. As discussed above, the driver process can then check the file's priority again at print time by using the ;READY option.

Corrected a problem in the Netprint manager program that made it occasionally ignore the NP92STOP command.

1.6 08-05-94
nplmin 2.5
nplmout 2.5

The LPD/LPR implementation in Netprint/92 did not support sending the number of copies in the lpd control file. Instead NP92 would just send the file several times to satisfy the required number of copies. This works fine for network printer interface cards but has problems when used for printing to UNIX systems. NP92 has been modified so that PTYPE=UNIX will send the print file once, encoding the number of copies into the lpd control file per the lpd standard. NP92 has also been modified to receive the number of copies from a sending UNIX system per the lpd standard. PTYPE=LPD still sends the print file multiple times.

The NLM's NPNLMIN and NPNLMOUT have had their LPD/LPR support modified in the same manner so that they correctly support the lpd standard for number of copies encoding.

Since UNIX systems can send multiple print 'files' as part of a single print 'job' or LPD transmission, NP92 and NPNLMIN have been modified to receive multiple print files in an lpd transmission. The multiple files are written to a single new spool or queue file with a form feed between the files.

The NLM NPNLMOUT had a bug in the ;BSD option and did not generate correct lpd packets for a BSD system. This has been fixed and correct packets for BSD systems are now sent.

Due to recurring compatibility problems with HP's Berkeley Sockets product, the BOOTPD, SYSLOGD and STOP programs have been changed to use the local Sockets XL instead of the Sockets RL on our system (bound at compilation time). Note that you must have a SOCKET/XL C LIB overall version of B.05.00. You can display the version with NMMINT.PUB.SYS.

The conversion of incoming LPD files to HP carriage control tries to handle any type of line termination used by the

sending host. This had caused a problem with some types of files. NP92 normally views converts single CR or LF codes as the end of a data line and writes the line to the new HP spoolfile with a single space. CR LF pairs are treated the same way, end of line single space. In some situations the CR is not an end of line, it is simple a nospace, return the carriage directive. This is how underlining is done on UNIX systems. A new jcw has been added called ESPULLPDCRNS which when set to 1, causes the CR to be viewed as an end of line, but the line is written to the HP spoolfile with a nospace (%53) carriage control code.

Cleaned up some minor problems in NP92NWI, which is NP92's interface to Netware/iX.

BOOTPD had a bug that caused to fail to recognize the word none for a syslog ip address if none was upper case. This then caused a nonsense ip address to be sent to the booting device. Some devices (such as the JetDirect EX) will fail to boot if this address is incorrect.

And now the major enhancement for release 1.6:

When connected and printing to a printer network interface card or UNIX system, NP92 can now detect paper out, paper jam and offline conditions. Previously, NP92 would simply wait for these problems to be cleared and give no indication that printing was not proceeding. Now, NP92 detects the fact that data is not flowing to the target printer and after one minute of inactivity, a warning is displayed on the HP3000 console to notify the operator that the printer needs attention. The warning is repeated on one minute intervals until data begins to flow again. This change addresses one of the most popular enhancement requests for Netprint/92.

2.0 11-16-94 Netprint/92 now supports the control of individual network
nplmin 2.7 printers (handled by the NP92JOB background job) from an
nplmout 2.8 on-line session. This feature greatly expands the flexibility
np92nwi 1.5 and user control of Netprint/92. Control of network printers
 is performed with the command file NP92CNTL.PUB.MINISOFT. The
 syntax for this control file is:

```
NP92CNTL printername,action
NP92CNTL printername,RESUME[, [+/-]startpage][, pagelen]
NP92CNTL printername,OUTFENCE[,value]
```

printername is the name of the printer to be controlled as specified on a NODE statement in the NP92CONF control file.

action is one of the following:

- CLOSEQ - Suspend the addition of new spoolfiles to the network printer driver's input queue
- OPENQ - Resume queuing of spoolfiles to the network printer driver's input queue
- SKIP - Stop printing the file currently being printed and skip over it. File is not purged even if ;PURGE has been requested. File is ignored for the duration of the np92job in which it is skipped.

- DELETE - Stop printing and purge the file currently being printed.
- PAUSE - Pause printing of current file. Driver process retains ownership of network printer.
- SUSPEND - Suspend printing of current file. Driver process releases network printer.
- RESUME - Resume printing of a PAUSEd or SUSPENDED print file.
- OUTFENCE - Set/display the outfence for a network printer driver process.

[+/-]startpage may be specified with RESUME to set the page on which printing will resume. A number without +/- specifies a specific page on which to restart printing. +/- specifies a page offset from the page on which printing was stopped on which to resume printing. RESUME without a specific page request restarts a PAUSEd file exactly where it was paused and restarts a SUSPENDED file at the beginning.

When resuming on a specified page, pages are determined by examining the spoolfile and counting hard page breaks and overflows of the pagelen value.

pagelen sets the length of page used to determine page breaks when resuming on a specified page (defaults to 66 lines/page)

Thus an on-line session can delete a file printing on a network printer as follows:

```
NP92CNTL NETPR6,DELETE
```

A file printing on a printer could be backed up several pages as follows:

```
NP92CNTL NETPR6,PAUSE
NP92CNTL NETPR6,RESUME,-3
```

There is an important difference between PAUSE and SUSPEND. Pause stops printing to a network printer but keeps the connection to the printer active, retaining ownership of the network printer. RESUMEing a PAUSEd printer resumes printing at the point paused by default. SUSPEND releases the connection to the network printer making it available to other users. By default, when you RESUME a SUSPENDED spoolfile, printing will start over from the beginning of the file.

When RESUMEing a SUSPENDED print file on a specific page, you may skip over escape sequences for other formatting controls embedded in the spoolfile's data. This could cause incorrect formatting of the output.

Note that when pausing a printer with an HP JetDirect network interface, the JetDirect has an inactivity timer and it will disconnect on its own if you PAUSE longer than the timer. The default inactivity timer is 90 seconds. If you wish to use PAUSE with JetDirect interfaces, you should set the inactivity timer to a much longer value or disable it.

On network printer interfaces that use the LPD protocol, you cannot use the startpage feature resuming from a PAUSE. LPD printers may only resume where they were when PAUSED. If you SUSPEND an LPD protocol printer, you may resume it on any page you wish.

When you issue the NP92CNTL command, a message is sent to the NP92MGR process, where it is dispatched to the appropriate NP92DRV (printer driver) process for action. When the driver process receives the command, it will send a message to your session acknowledging receipt of the command. Depending on what the various processes are doing when NP92CNTL is executed, it may take several seconds before the message reaches the driver process and acknowledgement is sent to you.

Note that when you issue NP92CNTL commands to stop printing, the printer will continue to print for some time due to the buffering in the network, the network interface card and the memory in the printer. Some interfaces which don't have large buffers respond fairly quickly to commands. Some interfaces with large buffers may continue to print for some time until buffers and printer memory are flushed.

You may also issue the command NP92CNTL PSTATUS which causes any printer driver process actively printing or in a paused or suspended state to send a message to your session indicating its status. This helps keep track of paused or suspended driver processes. Printer driver processes that are idle or in the connection phase do not respond to the PSTATUS request message.

You may issue the command NP92CNTL OUTFENCE which causes the NP92MGR process to report to your session the outfence value for each network printer. You can display the outfence value of a specific printer with NP92CNTL printer,OUTFENCE. You can change the outfence value for a specific network printer with NP92CNTL printer,OUTFENCE,fencevalue. Examples:

```
NP92CNTL OUTFENCE
NP92CNTL NETPRT6,OUTFENCE,12
```

There is a new action statement for the NETPRINT block in the NP92CONF configuration file. It is OUTFENCE value. This will set the outfence for the network printer. The outfence will default to 0. A spoolfile's output priority must be over the outfence to be printed. This outfence is implemented in the Netprint product and has nothing to do with the MPE outfence. The Netprint outfence is applied to spoolfiles after they have been selected by the NETPRINT statement's selection criteria. The selection-criteria keyword P<relop>OUTFENCE is unchanged and continues to apply the MPE system outfence to candidate spoolfiles during selection-criteria processing. An example of the OUTFENCE action statement:

```
NETPRINT D=NETLP
      NODE NETLASER
      OPTIONS PTYPE=JD;PURGE
      OUTFENCE 8
      NETLOG
END
```

The NP92CNTL command file also supports the existing NP92 functions of START, STOP, SUSPEND and RESUME. These functions control the NP92JOB and the print manager process. They were implemented in individual command files but are now included in NP92CNTL to allow that command file to perform all NP92 management functions. The individual command files NP92STRT, NP92STOP, NP92SUSP and NP82RESU will still be available.

The NETPRINT statement has two new spoolfile selection criteria keywords. The are:

```
DAY<relop>dow|dom|-nn
    dow=day of week (SUN, MON, TUE etc)
    dom=day of month (1, 15, 20 etc)
    -nn=nn days from the end of the month
```

```
TIME<relop>hh:mmxx      (xx is AM or PM)
```

These keywords allow you to condition network printing on the day of month and time of day. Examples are:

```
NETPRINT D=JUNK AND DAY=SUN
NETPRINT D=JUNK AND DAY>FRI
NETPRINT D=JUNK AND DAY=1
NETPRINT D=NETPR6 AND TIME>5:00PM
```

Fixed a bug in Netprint/92's handling of environment files. When writing the env file's initialization string to the network printer, NP92 added a carriage return to the string. The carriage return would disrupt some initializations. The CR has been removed.

When receiving LPD/NLM print with the NETRECEIVE statement, the conversion from UNIX/PC files to HP carriage control had a bug where it could fail to detect the end of a print line in the incoming print file. This was only a problem when receiving data in the TEXT mode. This has been fixed.

The Netprint/92 control command files, NP92STRT, NP92STOP, NP92SUSP, NP92RESU and NP92CNTL will now work correctly if executed from outside the Minisoft account. However, to do this you must relax the security of the Minisoft account. As manager.sys, execute these commands to change the security:

```
ALTACCT MINISOFT;ACCESS=(R,X,A:ANY;W,L:AC)
ALTGROUP PUB.MINISOFT;ACCESS=(R,X,A:ANY;W,L,S:AC)
```

In this case, you are responsible for protecting any MPE passwords hard coded in the jobs in the Minisoft account. You can issue the following command to protect a job after editing a password into it (each time):

```
ALTSEC jobname;ACCESS=(X:ANY;R,W,A,L:AC)
```

A note on using the Netprint/92 NLMs on Netware 4.x servers. NPNLMIN and NPNLMOUT employ Bindery Emulation. This means that the print queues processed by the NLMs must be created in the context of the server on which the NLMs will execute. The Bindery emulation only sees the context of the server on which emulation is running and so the NLMs are limited to this view of the Netware 4.x environment. You may alias queues outside of the server context to queues in the server

context in order to print to/from queues anywhere in the 4.x directory. A native 4.x implementation of the NLMs is planned for early 1995. Call tech support if you have problems or questions with 4.x installation of the NLMs.

Fixed a bug in the incoming LPD feature of Netprint. When receiving print files via the LPD protocol onto the HP3000, if an 8 character output device name was used, Netprint would incorrectly reject the name as an invalid device. This has been fixed and 8 character device names are accepted.

NPNLMOUT has been enhanced to not fail when it detects that the NetWare Bindery is closed or locked. It will treat this condition the same as if there were no files to be processed and continue to retry until the Bindery is available. This will allow NPNLMOUT to continue running during server backups that close/lock the Bindery.

Netprint's support for LPD on the HP3000 has been enhanced to allow files to be received on the HP3000 from UNIX systems to MPE device numbers as well as device classes. Only device class names were supported prior to this release.

The NP92MGR process has been restructured to reduce cpu consumption during spoolfile scans. The functions that check for external commands (stop, suspend, outfence etc.) and copy the son process log information to the NP92LOG were being executed too often. External command checking is now performed only after a spoolfile is successfully selected for printing. The copying of the logs occurs when NP92MGR reaches the end of the list of spoolfiles on the system during a queue scan. These changes may have minor effects on appearance of the log file and may somewhat slow NP92MGR's response to on-line commands, but the changes should not be a problem and will make a significant contribution to reduction of cpu consumption.

When using a NETRECEIVE LPD, LPSTAT requests from UNIX hosts appeared in the NP92LOG as indications that a spoolfile was received into a new file with an id of 0. This was a bug in the handling of messages between the driver and manager processes. NP92LOG will now correctly report when the driver processes service and LPSTAT request.

Corrected a bug in the LPD printing to UNIX hosts (when the ;PTYPE=UNIX option is used) that will significantly reduce the time to transfer print files to the UNIX system.

A number of improvements have been made to the code for the MGR and DRV programs that should translate to reduced cpu consumption by Netprint.

Netprint/92 now support special forms for direct TCP/IP network printers. If a spoolfile with a special forms message or forms id is printed on a TCP/IP printer, the HP3000 console operator will be prompted to mount the form on the printer before Netprint connects to the printer. If the operator refuses the forms mount request, the spoolfile will be deferred and not printed until it is undeferred. If the operator does accept the mount request, printing occurs and then the operator will be asked to dismount the form before the next file is printed by the printer driver. NOTE: This is not intended for shared printing environments. During the forms mount and

dismount prompting, the driver does not own the printer and if other network entities connect to the printer, they may print on the special form or interfere with the special form printing operation. Note that connecting to the printer before performing the mount and not disconnecting until after the dismount cannot be done due to the inactivity timer in HP JetDirect printer interfaces. It would hard for the operator to complete form mount/dismount in the timer window and it is difficult/impossible to change the timer on many of the LaserJet printers. For now, we will assume the printer is not being shared and we do expect to fine tune this support for special forms as practical experience is gained.

NOTICE BOOTP
USERS !!!!!

This release of Netprint contains version 2.1 of the BOOTP server program BOOTPD. The BOOTPD program now supports sending the sub-net mask and default gateway values to the device being booted. The BOOTPTAB file has been redesigned to use an improved format employing keyword=value style specification of boot parameters instead of positional parameters. The file BOOTPTAB from the tape contains the details of the new format for BOOTPTAB entries. IF YOU USE BOOTP, you MUST change your current BOOTPTAB file to conform to the new format.

BOOTP is now able to set the Inactivity Timer on HP JetDirect printer interfaces. See the BOOTPTAB file for details.

By default, Netprint prints spoolfiles to network printing destinations just as they appear in the MPE spoolfile, that is with trailing blanks. If trimming trailing blanks will not affect report formatting, you can now use the ;TRIM option on the OPTIONS line to trim trailing blanks. This can reduce the transfer time and overhead on the HP3000 and the network in a big way depending on how your reports are generated and their content.

There is a new option for the NETPRINT statement. You may use the ;X= option to perform character translation on the print file as it is printed to the network printing destination. The values for ;X= are:

- 1 - EBCDIC->ASCII
- 2 - ASCII->EBCDIC
- filename - User defined translation table in MPE file. The format of the table is described in the MPE Intrinsic Manual under the CTRANSLATE intrinsic. The file is expected to contain 1 256-byte record, each byte of which contains the conversion value for each ASCII character value used as an index into the table (first byte is ASCII value 0).

The ;X= option invokes the MPE CTRANSLATE intrinsic to perform the translation. Please read the section on CTRANSLATE in the MPE Intrinsic Manual for details on the value that are used with ;X=. Note that HP's Native Language sub-system is supported. If the jcw NLDATALANG is present and contains a valid, installed language number, the character translation is performed with the NLS translation table for the specified language. As noted in the NLS manual, this is only valid for ASCII to EBCDIC conversions. See the NLS manual for more information.

There is a new option for the NETRECEIVE statement. You may use the ;X= option to perform character translation on the print files received from LPD and NLM clients. See the above discussion of the ;X= option for more information.

NPNLMOUT had a problem that could cause server abends on 4.x NetWare servers. This bug has been located and corrected.

Both NLMs suffered from a bug in the NetWare 4 operating system. The NLMs relied on NetWare to set an appropriate thread stack size by asking for the default value. The stack size defaulter on NetWare 4 is broken and allocates only half the recommended stack. This caused server abends due to stack overflows. Both NLMs now check the NetWare version and set the stack size on NetWare 4 to the correct value.

Both NPNLMIN and NPNLMOUT have been tested on NetWare 4.1 and have no outstanding problems at this time.

2.1 04-07-95 Release 2.1 is a significant update to Netprint/92.

npnlmin 3.0

npnlmout 3.0

np92nwi 1.5

bootpd 2.2

Program aborts that occurred when using the ;X= character translation option at the same time as the BANNER statement have been fixed.

There is a new option, ;TRIM that will trim trailing spaces from print files. This can significantly reduce the amount of data transferred to a network printer, but may in some cases affect the formatting of the output.

The ;E= option to specify a new environment file would strip all existing Fdevicecontrol records from the print file. Now Fdevicecontrol records are removed up to the first Fwrite (data) record in the print file.

Added a new option, ;EK=filename that specifies an environment file that is added to the print file at print time and any existing environment file specification in the print file is KEPT and also sent to the printer. The env file specified on the ;EK= option is sent first followed by the environment in the print file.

Added three new options, ;SD=device ;SP=pri ;SC=copies that set the device, priority and copies of the source spool file after printing. Assumes you do not purge the source file after printing.

Added a new action statement called SETVAR. This causes the attributes of the spoolfile selected for printing to be set into MPE variable names. These variables can then be substituted on CONSOLE, LOG, TELL and OPTIONS statements. The names of the variables are:

SPFDFID	- spoolfile device file id
SPFNAME	- spoolfile file name
SPFJOBNAME	- spoolfile job name
SPFJOBNUMBER	- spoolfile job number
SPFJOBTYPE	- spoolfile job type (S S' J J')
SPFUSER	- spoolfile owner user name
SPFACCOUNT	- spoolfile owner account name
SPFDEVICE	- spoolfile output device

SPFSTATE - spoolfile state
SPFFORMID - spoolfile form id
SPFFORMMSG - spoolfile forms message
SPFDISPOSITION - spoolfile disposition (S for save)
SPFPRIORITY - spoolfile output priority
SPFCOPIES - spoolfile copies
SPFLINES - spoolfile lines
SPFPAGES - spoolfile page count
SPFRDYTIME - spoolfile ready time
SPFRDYDATE - spoolfile ready date

An example:

```
NETPRINT D=MYDEVICE
  NODE LJ5
  SETVAR
  OPTIONS .....
  CONSOLE "File !SPFDFID has been printed"
END
```

The default for the RESCAN statement was NORMAL. Experience has shown that most sites use FINISH. FINISH is now the default for RESCAN.

You can now say RESCAN NO. This will cause the MGR program to sleep after every spool queue scan instead of after a scan that yields no files to print.

When Netprint detects that a TCP/IP printer that it is connected to is no longer taking new data, it will send a warning to the console after 60 sec of pause and again each 60 sec thereafter until the problem is cleared. You can silence the console message with the command:

```
NP92CNTL printer,ALARMOFF
```

This will silence the current alarm on the printer. New alarm warnings will be displayed after the current alarm is fixed.

Previously, when in an alarm condition, a printer would not accept NP92CNTL SKIP/DELETE/SUSPEND commands. The printer driver now obeys these commands even if an alarm is in progress on the printer.

This release includes version 2.2 of the BOOTP server. This allows you to set the idle timer in JetDirect interface cards including disabling the timer and supports routed bootp requests when using routers that have Bootp Relay Agents.

When errors are reported to Netprint on the 3000 by NPNLMIN on the NetWare server, the error messages are supposed to appear in the NP92LOG file. Due to a program bug, these messages were not written to the log file. This has been fixed and NLM errors now appear in the 3000 log file.

Netprint's HP carriage control conversion routine now supports conditional form feeds in the source spoolfile.

NPNLMOUT had a bug in it's outgoing LPD service that caused it to generate incorrect print file names for the target UNIX host, causing the files not to print after arrival on the newt host. This has been fixed.

NPNLMOUT has a new option for the EXPORT statement. This new option, ;SPSAVE will set the SPSAVE flag on the new HP3000 spoolfile when queue files are sent to the HP3000.

Fixed several problems with the NETPRINT statement's spool file selection-criteria. The criteria was not always parsed correctly when AND's and OR's were used.

The code that converts incoming NLM or LPD files to HP's carriage control (text mode) had a bug that sometimes caused blank lines to be dropped. This has been fixed.

Added a new BSDx netopt for LPD printing. ;NETOPT="BSDNname" will override the setting of the spoolfile's file name as the LPD control file's N parameter (source disk file name).

When receiving LPD files, NPNLMIN will always append a form feed to the new file (text or binary modes) unless you use the new /lnoff switch when you load the NLM.

----- And now the really GOOD stuff!! -----

Netprint/92 now supports 2-UP and 4-UP printing in both landscape and portrait orientations. You can use the new environment files PORT2UP, LAND2UP, PORT4UP and LAND4UP on the ;E= and ;EK= options to perform this type of printing. These environment files may also be used on the MPE file equation's ENV= parameter, however such spoolfiles are not compatible with MPE's serial printer driver. They must be printed by Netprint.

Netprint/92 now includes a GreenBar paper simulation environment file for PCL printers. Use the env files ending in GB for green bar. These files are not compatible with the MPE serial printer driver.

More environment files are included for 80-col portrait, 132 and 170 col landscape with duplex printing options. See the disk file ENVINFO.PUB.MINISOFT for a list of the new environment files. Note that LJ132 and LJ170 have been corrected to print 66 lines per page.

NPNLMIN and NPNLMOUT have been extensively modified. Both now have 'CORTHY' style screen interfaces making them appear just like Novell NLMs and utilities. You can now exit from the NLM's screen by pressing escape. NLM statistics are now constantly displayed and updated as the NLMs run.

On some 3.x servers, the NLMs may not run because of a missing library called AFTER311.NLM. This library NLM is included as AFTER311.PUB.MINISOFT and can be downloaded to the SYSTEM directory of your server as AFTER311.NLM (binary xfer) if you DO NOT already have AFTER311.NLM.

NPNLMIN and NPNLMOUT now support Directory Services on 4.x NetWare servers. The NLMs will automatically recognize 4.x servers and run with Directory Services instead of Bindery Emulation. This means that the NLMs can address print queues anywhere in your directory environment instead of just where the 3.x Bindery is being emulated.

When the NLMs run under Directory Services on a 4.x server, you must specify a Directory Context in which each NLM executes. With NPNLMIN, use the /context=name load switch to specify the context. With NPNLMOUT, there is a new option on the SET statement in the NPNLMOUT.CFG configuration file. SET CONTEXT=name specifies the context. We recommend using the highest container object in your directory tree, which is typically the Organization object. All references to print queues in the NP92CONF file and in the NPNLMOUT.CFG file must be qualified appropriate to the context assigned to the NLMs.

For example, lets say I have an organization of MINISOFT, an organizational unit called DEV which contains a queue MYQ. If I set a context of MINISOFT: LOAD NPNLMIN /CONTEXT=MINISOFT then on the HP3000 I would use a queue name of MYQ.DEV to reach MYQ.

When installing the new NPNLMOUT on a 4.x server where the prior version of NPNLMOUT was in use, purge the NPNLMOUT Print Server object from the directory before running the new NPNLMOUT for the first time. This will allow the new NPNLMOUT to create the Print Server object in the directory context you have set for the NLM in the .CFG file.

Just a reminder that YOU have to copy the new NLMs from the PUB.MINISOFT group on the HP3000 to the SYSTEM directory on the server in order to install the new versions.

2.11 06-01-95

npnlmin 3.0
npnlmout 3.0
np92nwi 1.5
bootpd 2.2

When printing to UNIX systems or LPD printers with ;PTYPE=UNIX or LPD, on the first print file printed after printer driver start-up, if that file's first cctl code was a form feed (%61), the driver would miscount the bytes in the file and the print transfer would hang until the UNIX system timed out. This could take as long as 10 minutes. After the time out, Netprint would retry and the driver would correctly count the bytes from then on and work normally. This has been fixed.

Some UNIX systems, RS/6000 in particular, require that the sending system (the 3000), use a source TCP port number less than 1025. The HP3000's automatic TCP port assignment (used by Netprint) assigns port numbers greater than 32000. This would cause the RS/6000 to reject LPD transmissions from Netprint with the TARGET DEVICE REJECTED BY REMOTE HOST error message. You may now explicitly assign the TCP source port with the ;SPORT=number option on the OPTIONS line in the np92conf configuration file. You must select and assign the port number, using a different port number for each target system that requires the low port numbers. This port number issue is a security feature of the LPD protocol that is not implemented on many UNIX systems, but is on some. If you have questions or get target device rejection on non-HPUX UNIX systems, call Minisoft tech support for assistance in using ;SPORT= to correct the problem.

When printing to TCP/IP network interfaces in shared printer environments, it is not unusual to get a large amount of NETWORK PRINTER UNAVAILABLE errors. These errors are relayed to the system console by Netprint and can become disruptive to console operations. You may now specify the NOCONSOLE statement after the INTERVAL statement in the np92conf configuration file to cause error messages from the printer

driver processes to NOT be relayed to the system console. All other error and notification messages will continue to be sent to the console.

2.12 10-10-95 When receiving print files on the HP3000 from NPNLMOUT, if
nplmin 3.21 the disk file that created the queue file had a name starting
nplmout 3.2 with a numeric digit, the create of the new spoolfile on the
np92nwi 1.5 3000 would fail. Such files could not be transferred. The NLM
bootpd 2.3 has been modified to replace the numeric first character with
the letter A so that the spoolfile can be created.

The BOOTP server (BOOTPD) has been upgraded to version 2.3 with this release of Netprint. Problems with the MPE/iX 5.0 push release caused BOOTPD 2.2 to fail to work correctly. This problem has been corrected and BOOTPD is working on 5.0 and seems to work better on 4.0 as well. On 5.0 systems, the BOOTP server can determine the IP address of the HP3000 on it's own, so the requirement that the first line of BOOTPTAB file contain the 3000's IP address is now optional on 5.0.

The NP92CNTL command file did not work right when used in a job. This problem has been corrected and NP92CNTL may be executed in a job.

Netprint only handled spoolfile lines up to 512 bytes in length. This limit has been raised to 1007 bytes, which is the maximum record length of a spoolfile on MPE.

Netprint now supports the "channel skip" carriage control codes %300-%317. These codes are mapped to the channel skip escape sequence ESC&lnnV, where nn is the cctl code - %320 + 1. This escape sequence is recognized and executed by PCL printers but is not documented in the PCL standard and may not work in the future.

Netprint had a bug where it would "hang" or become unresponsive after running without a shutdown for a long period of time. The job would have to be aborted. This problem is now fixed and the Netprint job is able to run indefinitely.

Netprint had a bug where the combination of PTYPE=LPD/UNIX and the 2up/4up environment files would not work. Symptoms were time-outs on the HP3000 and print jobs not appearing at the lpd destination. This has been fixed.

When sending commands to the Netprint job with NP92CNTL, the acknowledgement message sent back to the user's session would not appear if the user's session number was greater than four digits. This has been fixed.

The NP92MGR process, which is a key component of Netprint, is a large consumer of cpu. CPU consumption by the Netprint job has been an ongoing source of complaints from Netprint users. One cause of the cpu usage is the requirement that Netprint scan the entire spool queue each time it wakes up from the sleep interval. Scanning the queue is a high overhead activity and many times the scan is wasted if there are no spoolfiles to process. Scanning is a necessary evil for 3rd party spooling products because there is no other way to locate the files to be processed...until now!

Netprint has been enhanced to include an alternative to the

repetitive scanning of the spool queue. Using new features in MPE/iX 5.0, Netprint can now determine when new spoolfiles have been created and only scan the queue then. Netprint can further determine which files are the new files and scan only those files instead of the entire queue. The cpu savings with this new feature are significant. Again, this new feature is only available on MPE/iX 5.0 systems.

This new feature is controlled by a new statement in the NP92CONF configuration file. The statement is:

```
SCANMODE=TIMED|NEWSPF|NEWONLY
```

It is issued at the top of the config file, right after the INTERVAL statement. It controls how Netprint scans the spool queue for new files.

Lets review how Netprint works today using repeated scans of the spool queue on a timed (TIMED) basis. Starting at the point where Netprint wakes up from sleeping, Netprint makes a list of all spoolfiles in the spool queue. It then takes each file from the list and compares it to the NETPRINT statements in the config file. If the file matches a NETPRINT statement, it is processed by that statement. Netprint must then decide what to do next. That is controlled by the RESCAN statement. If RESCAN=NORMAL, Netprint discards the current list of spoolfiles and makes another (starts the scan over). This option is most responsive in terms of picking up new files in the queue in their order of appearance in the queue but is most costly in terms of cpu. If RESCAN=FINISH or NONE, Netprint continues with the next spoolfile on the existing scan list. When Netprint reaches the end of a the list of spoolfiles, if any spoolfiles were selected from the list for printing and RESCAN=NORMAL or FINISH, Netprint starts a new scan of the spool queue. If no files were found to print or RESCAN=NONE, Netprint sleeps for the number of seconds set on the INTERVAL statement. When Netprint wakes, the entire process starts again.

The new SCANMODE statement gives new options in terms of what Netprint does when it reaches the end of the list of spoolfiles on a scan. If SCANMODE=TIMED (the default), then Netprint operates as described above, as it has in the past. If SCANMODE=NEWSPF, when the end of the file list is reached OR when Netprint wakes up from sleeping, it determines if any new spoolfiles have been allocated on the system since the last list of spoolfiles was made. If no new files are present Netprint goes to sleep. If new files are present, then a scan of the entire queue is performed as described above. In this manner, the queue is only scanned when new files are present and wasted scans are avoided. If SCANMODE=NEWONLY, Netprint operates just as described above for NEWSPF, but when new files are allocated, it does not scan the entire queue, just the new files themselves.

With NEWSPF or NEWONLY, it makes sense to lower the INTERVAL to make Netprint wake more often (to find and print new files quickly) given that cpu is only expended when there are files to process that Netprint has not seen before. The cpu savings with the new scan modes can be very significant.

Sound too good to be true? Well, there are two catches. As

stated before, you must be on MPE/iX 5.0 to use the new scan modes. Second, if Netprint only scans the spool queue when new files are allocated, it will not detect existing files that you have altered to become printing candidates until a new file is allocated. If you use NEWONLY, it will never see existing files you have altered. This is not as big a problem as you might think since our experience shows that processing of new files (unaltered) accounts for about 98% of Netprint processing. However, to mitigate this problem, a new command has been added to NP92CNTL. This new command, SCAN, causes the NP92MGR process to wake up immediately and perform a full scan of the spool queue. The syntax is NP92CNTL SCAN. If you are using SCANMODE=NEWSPF or NEWONLY and you alter a file for printing, simply issue the NP92CNTL SCAN command to cause the file to be picked up.

Use of the new scan modes has been very successful in testing in terms of reducing cpu consumption to the point where it is no longer an issue. This new feature makes the setting of execution priorities and other performance work-arounds no longer necessary.

The NLMs for NetWare printing, NPNLMIN and NPNLMOUT have been significantly enhanced. The list of enhancements follows. Don't forget to download the new NLMs from the 3000 to your server(s).

NPNLMOUT has a new option for the EXPORT statement in the NPNLMOUT.CFG configuration file. The new option, ;SPORT=port sets the source TCP/IP port number used by NPNLMOUT. This is useful when sending print files to UNIX systems that require the sending system to use a 'privileged' source port for security reasons. A privileged source port is typically any port number below 1024, but in some cases may have to be between 721 & 725. Normally, the source port in a TCP/IP conversation is not important and NPNLMOUT uses a randomly assigned port above 1024.

NPNLMIN now supports the LPR protocol's remote queue status request and remote queue cancel request functions. UNIX systems using the LPR remote printing protocol can request the remote system report the status of the remote printer queue and that information is displayed on the local system to the requesting user. UNIX systems can also request that print jobs waiting in the remote queue be cancelled (deleted). NPNLMIN now supports LPR status and cancel requests when LPD protocol is enabled in NPNLMIN with the /lpd load switch. You may add the switch /lpstatus to enable status reporting. When status reporting is enabled, if NPNLMIN receives an LPR status request for a queue, the contents of the NetWare queue is formatted and returned to the UNIX system for display. No security is applied. You may add the /lpcancel or /lpcancels switch when loading NPNLMIN to enable cancel requests. If NPNLMIN receives a cancel request for a queue, the job number sent by the UNIX system is removed from the NetWare queue. If you use /lpcancel, no security is applied. If you use the /lpcancels switch, the UNIX user must be the user who created the queue file by sending it from the UNIX system to NPNLMIN. UNIX user name root can cancel any file in the NetWare queue.

NPNLMIN will now print incoming print files to disk files on the server as well as into print queues. If the queue name

sent to NPNLMIN contains at least one \ character, the name is assumed to be a disk directory name or full disk file name. If it does not end in \ or _, it is assumed to be a full disk file name and is created as such. If the name ends in \ or _, a disk file name is generated automatically by NPNLMIN in the server disk directory specified in the queue name. When the queue name ends in \, a disk file name of the form #####.PPN will be created. The numeric part will be one higher than the highest name already on disk. If there are no files of this form in the specified directory, the name 0000001.PPN is assigned. If the name ends in _, the disk file name will have the form PPN_####, with the numeric portion assigned in the same manner, starting with PPN_0001. The real difference between the two forms is the .PPN extension or no extension. Note that drive letters have no meaning for NLMs but you may use volume names. Some examples:

```

QUEUE MYQUEUE                print queue
QUEUE \MYDIR\MYFILE          print to file MYFILE
QUEUE \MYDIR\MYSUBDIR\       print to file n.PPN
QUEUE \MYDIR\_               print to file PPN_n

```

NPNLMIN now supports the use of NetWare Print Jobs created with the NetWare PRINTCON utility. You may specify a job's name in place of a queue name when sending files to NPNLMIN. The job definition contains the name of the queue where the print file will be sent. The job may also contain a Device Mode or printer initialization string. If a device mode is present, NPNLMIN extracts the escape sequences that make up the device mode and writes them to the new queue file. This becomes an alternative way to control print formatting. You may also use the special job name 'default' to select the default print job defined with PRINTCON.

You select a print job with a queue name with the following form: \$<user/>jobname. On 3.x servers, print jobs are owned by users and on 4.x servers, print jobs are owned by directory objects. You must specify the print job's owner or take the default owner name of SUPERVISOR (3.x) or ADMIN (4.x). Some examples are:

```

QUEUE MYQUEUE                print to queue
QUEUE $MYJOB                  use job myjob
QUEUE $BILL/JOB1              use Bill's job JOB1

```

When a job is used, any form or banner information defined is applied to the new queue file. If printing from a UNIX system to NPNLMIN with a job, the text/byte-stream flag in the job sets the TEXT or BINARY mode used to receive the print file. Text selects TEXT mode, byte-stream selects BINARY mode.

To use print jobs, you must load the printer services library NLM before loading NPNLMIN. Load NWPSRV3X on 3.x servers or NWPSRV on 4.x servers. NWPSRV3X is provided on the Netprint installation tape. You do not have to load these NLMs to use NPNLMIN, but if they are not loaded, job names cannot be processed. Further, to use NWPSRV3X on 3.x servers, you need to have the current versions of CLIB.NLM and AFTER311.NLM loaded on your server. A current version of AFTER311 is supplied on the installation tape. Note that AFTER311 has been split into two NLMs, AFTER311.NLM and A3112.NLM. Both are supplied on the tape and should be downloaded to your server.

When using NPNLMIN to receive print files from UNIX systems, long queue names or queue names with special characters can be a problem since UNIX systems typically limit the length and character content of queue names. To solve this problem, NPNLMIN now supports queue name aliases. You can create a disk file in the server's SYSTEM directory called NPNLMIN.ALI that contains aliases. Each line in the file contains one alias of the form: queuename=alias. This allows you to define a short or non-special character name on the UNIX system and have it expanded at the NLM end into the name you need. Some examples are:

```
MYQ=myqueue.ou.ou.ou.ou.org      long NDS name
MYJOB=$myjob                      special char
disk_file=system\mydir\          special char
```

This feature should help UNIX users take better advantage of the features of NPNLMIN that use special characters in the queue name or get to long queue names on the server.

The special versions of the NLMs called XXNLMIN and XXNLMOUT that were on the last install tape are now obsolete and are no longer on the install tape.

2.13 11-07-95 Netprint has had a hard limit on the number of spoolfiles in the MPE spool queue that it could handle. This limit was 2048 spoolfiles. Files beyond the first 2048 on the system would be ignored. Netprint has been enhanced to allow an optional mode of operation that raises the limit to 6144 spoolfiles. The method used to raise the limit does cause Netprint to use more cpu when scanning the spool queue, so the old method and 2048 file limit are the default mode of operation. If you wish to use the higher limit, set the jcw ESPULSPFIDMAX=6144 with an MPE statement at the top of the NP92CONF file. This will cause the NP92DRV program to use the higher limit.

There was an additional bug when using the landscape 2/4 up environment files and PTYPE=LPD or PTYPE=UNIX. Printing with these ptypes and the LANDxUP env files would fail with a time out error. This is now fixed and all 2/4 up env files work correctly with the LPD protocol ptypes.

** NOTICE: Support for printing to NetWare servers via HP's Netware/iX portable NetWare for the HP3000, will be discontinued on MPE/iX 5.0. Any users who are currently using this feature should contact tech support to discuss your options.

2.14 01-25-96 Netprint has been enhanced in several ways to improve performance and remove limitations. These enhancements are:

npnlmin 3.24
npnlmout 3.21
np92nwi 1.5
bootpd 2.3

The spool queue scanning code used by Netprint has been rewritten to use direct calls to the MPE AIF library. This reduces cpu consumption during spool queue scans significantly.

Netprint now automatically supports 6144 spoolfiles as the maximum number of files it can handle on any one scan of the spool queue. The setting of the jcw ESPULSPFIDMAX=6144 is no longer needed and should be removed.

NP92MGR now uses mapped file i/o on the compiled NP92CONF file, if the number of records in NP92CONF is 4000 or less.

A new global statement has been added to the NP92CONF language that allows you to filter or reduce the number of spool files that NP92MGR must process during a spool queue scan. The new statement is:

```
FILTER=[mpe listf command seleq]
```

The object of this statement is a spoolfile selection equation as defined for the 'seleq' parameter of the MPE LISTSPF command. The selection equation is applied to the scan of the spool queue by Netprint and only those spoolfiles that MEET the selection criteria are considered by Netprint. You can use the FILTER statement when there is a significant subset of spoolfiles on your system that you do not want to be processed by Netprint. You do this by limiting the queue scan to only those files that ARE to be printed. Note that the FILTER statement is ignored if SCANMODE=NEWSPF is used. The filtering is done by MPE and reduces the amount of work Netprint must do to process a queue scan.

Finally, the NP92MGR code was reviewed and a number of minor changes were made to improve performance.

All of these changes together can reduce CPU consumption by Netprint for spool queue scanning by 50% or more, depending on the situation. Note that if you are using SCANMODE=NEWSPF the reduction in CPU consumption may not be this dramatic as this scan mode greatly reduces the need to scan at all.

When using SCANMODE=NEWSPF or NEWONLY, Netprint now detects when the current spoolfile dfid number is set backwards with the MPE SETCOUNTER command, and adjusts itself accordingly.

NPNLMIN has had several bugs fixed.

- 1) NPNLMIN could fail the NetWare server when receiving LPD print jobs from a system running IBM's AIX. NPNLMIN now works correctly with AIX.
- 2) HPUX 10.0 can insert an undocumented code in the LPD control file (header) portion of an LPD print job. This code could cause NPNLMIN to set the number of copies on the new NetWare queue file incorrectly. NPNLMIN now ignores this new control code and sets copies correctly.
- 3) NPNLMIN had a bug where it would fail the server when receiving LPD print jobs with multiple data files in the job and the size of the LPD control file (header) exceeded NPNLMIN's receive buffer. NPNLMIN now handles an LPD control file of up to 2048 bytes in length. Jobs with a control file longer than 2048 bytes will be rejected. You may send multiple data files in an LPD print job to NPNLMIN as long as the control file does not exceed 2048 bytes. It is hard to predict how many files will fit in this limit as the amount of data in the control file varies not just by number of data files but by several other factors as well. Minisoft recommends that you limit the number of data files in an LPD print job to 10, but you can send more up to the point where the print job is rejected.

It has been found that the new scan modes introduced in 2.12

(SCANMODE=NEWSPF|NEWONLY) have a design defect and do not work correctly all of the time. If a spoolfile is new on the system when Netprint wakes up, and SCANMODE=NEWSPF or NEWONLY have been specified, either that spoolfile or the entire queue is scanned at the moment of wake up. If the new spoolfile is ready and meets the selection-criteria on a NETPRINT statement, the file is printed. However, if the file is still in the create (CRE) state when it is scanned, it cannot be processed at that time and is skipped. The problem is that the internal pointers used to detect new files have been updated and the new file will not be considered for printing again, unless a full scan of the queue occurs. When SCANMODE=NEWSPF the missed file will be found the next time the spool queue is scanned in response to a new file being allocated. The file will be printed but there can be a delay until another file is allocated. If SCANMODE=NEWSPF, the missed file will not be processed unless a full scan is forced with by issuing the :NP92CNTL SCAN command.

If you are using SCANMODE=NEWONLY and experiencing missed files, try SCANMODE=NEWSPF. If this does not solve the missed file problem, go back to SCANMODE=TIMED. With the new performance enhancements, regular full queue scans won't be so bad. Minisoft is researching this problem and intends to fix the design errors and make the SCANMODE=NEWSPF|NEWONLY work as intended.

2.15	07-01-96	In the QUEUE statement, the use of a : character in the queue name would cause a parsing error to occur and the colon could not be used. This has been fixed and the colon is now allowed in the queue name.
nplmin	3.24	
nplmout	3.21	
np92nwi	1.5	
bootpd	2.3	

When printing a spoolfile, Netprint now places the spoolfile into the PRT (print) state while it has the spoolfile open. This makes the file(s) being printed more visible to system users.

Added support for special forms message inclusion in the data sent to the network printer. If the option ;M=text or M="text string" is used on the OPTIONS line, the text will be written to the network printer after environment file processing and before any user data. If ;M=\$PRINT is used and the form contains a special forms message, the message is sent to the network printer (operator is not prompted). If both M=text and M=\$PRINT are specified, the text is printed first, followed by the forms message text from the spoolfile. A common use of this feature is to allow fax phone numbers assigned to spoolfiles in the forms message to be sent to server print queues or disk files as the first record in the print file. This allows the print file to be sent to a network fax server for transmission.

Netprint has been tested with Castelle's FAXWARE product for NetWare servers. FaxWare will monitor a print queue on the server and fax print files submitted to the queue. The 3000 can print files to the NetWare queue via NPNLMIN (nlm) and have them faxed. Phone numbers can be assigned with the new ;M= option (above), banners, application code changes, etc. FaxWare server based phone books can be used.

Added a new command to NP92CNTL. The new command is:

NP92CNTL printer,RELEASE
or NP92CNTL printer,RELEASE,newdevice

The RELEASE command causes the Netprint printer driver to release the currently printing spoolfile back to the spool queue to be rescanned or processed outside of Netprint. You can optionally assign a new print device.

When printing a spoolfile, the Netprint printer driver will now detect a change in the MPE output device of the spoolfile being printed. If the output device is changed externally, with the MPE SPOOLER or ALTSPoolFILE commands for instance, the driver detects this change and stops printing the file and returns it to the spool queue to be rescanned or processed external to Netprint (see RELEASE above).

When printing a spoolfile, the Netprint printer driver will now detect an external request to purge the spoolfile being printed. This means if you try to purge the spoolfile with the MPE SPOOLER or DELETESPOOLFILE commands, the Netprint driver will detect this, stop printing the spoolfile and then purge it.

When printing a spoolfile, the Netprint printer driver will detect a change in output priority of the file being printed and if the priority falls below the outfence assigned to the network printer, the driver will stop printing the spoolfile and return it to the spool queue for reprocessing (see the RELEASE command above).

A problem turned up on MPE/iX 5.0 when doing NETRECEIVE to receive LPD or NLM print jobs on the 3000. The NP92JOB would fail randomly with IPCERROR 27. This problem has been traced to a bug in MPE/iX 5.0 and later. This release of Netprint contains a code change that works around the MPE bug and prevents unexpected shutdown of the print job.

Netprint has been modified to shutdown quicker after the STOP command has been received by the print job.

Netprint has been modified to respond much quicker to the commands sent to the background print job with the NP92CNTL command file. Netprint is now interrupted when commands are received instead of waiting until the end of the current queue scan to process external commands.

Netprint's maximum number of printer driver processes has been raised from 98 to 254.

The problems with the SCANMODE=NEWSPF|NEWONLY option have been fixed. These scan modes can be very beneficial due to the reduction in cpu consumption by the netprint job when using either mode. The original implementation had a design problem that caused the file scanner to miss files in the CRE state when using the NEW@ scan modes. The code has been modified to track candidate files in the CRE state and continue to scan them until they become ready. This allows the new scan modes to be used without missing files, but watching for CRE state files to become RDY means the job scans on each interval until all CRE files have become RDY and queued for printing. Because of this, the interval should not be as short as has been suggested. It is recommended to set the

interval to the longest value you can live with, balancing cpu consumption and printer response. It had been suggested that with the new scan modes, an interval of 5 seconds would be good. It is now suggested that even with one of the new scan modes, the interval should be at least 30 seconds.

Further, if you have background jobs or very long running jobs on your system, you make sure these jobs DO NOT qualify for any NETPRINT statement if you use the new scan modes. A very long running job will be in the CRE state and would cause the netprint job to scan repeatedly...

The new SCANMODE=NEWONLY|NEWSPF can be very effective at lowering cpu consumption by Netprint. However, setting this up can be tricky. It is recommended that you consult with Minisoft tech support before using the new scan modes.

An additional scan mode has been added. SCANMODE=NOQUEUE is used to make Netprint behave more like the MPE spooler. Normally, Netprint queues all qualifying files to a printer driver process as soon as they are found in the spool queue. This can be a problem if files are waiting to be printed and the operator changes attributes of the file that would effect queueing, such as priority. With SCANMODE=NOQUEUE, files are not queued for a printer driver process unless it is idle. This means that files are 'alterable' right up to the point that they enter the PRT state. The behavior more closely follows that of the MPE spooler. However, if you are using the new scan modes (see above), and a file is not queued due to a driver process being busy, the job will scan again the next time it wakes up to see if the driver has become idle and the waiting file can be queued. This means that the job will scan more often than it would otherwise.

2.16	01-22-97	Added a new option to the OPTIONS statement, ;B=n. This option sets the buffer threshold used by Netprint for network transmissions. By default, Netprint uses a threshold of 1024 which results in packets less than the HP3000's normal media size of 1411. This works fine with most network interfaces. However, there are some interfaces, such as those on Data Products printers, that want a packet size of 1000 bytes or less. If a buffer greater than 1000 bytes is submitted to the HP3000 TCP/IP, the buffer is broken up into two packets, which is normal TCP/IP protocol. However, this breaking up of the buffer into multiple packets triggers a bug in the HP3000 TCP/IP stack and results in slow transmission and slow printing. You can use the ;B= option to set a lower buffer threshold (800 bytes for Data Products) so that the buffers sent by Netprint are not broken up.
npnlmin	3.25	
npnlmout	3.21	
bootpd	2.3	

The command NP92CNTL PSTATUS now reports % complete for printers that are in progress on a spoolfile. The % is computed from total lines in the spoolfile and lines sent to the printer.

The special forms dialog that Netprint does with the system console was done with three messages to the console. Only the last message would be returned by a RECALL command and if did not have enough information to allow the request to be processed if the operator had not seen the previous two messages. The special forms prompt has been reworked to appear in one message to the operator and is now visible on

a RECALL.

Netprint has been modified to support the FlexForm electronic forms package from Productive Systems Inc. of Auburn Hills, MI. FlexForm uses prepackaged form files and also has a PC based forms design tool. Netprint can now automatically merge spoolfiles being network printed with FlexForm form files to produce formatted output. If you are interested in using the FlexForm package with Netprint, contact MiniSoft technical support for details.

2.17 05-06-97 Fixed minor bugs in FlexForm support.
npnlmin 3.31 Included new versions of NPNLMIN and NPNLMOUT. They have been
npnlmout 3.31 modified to work with version 4.11 of NetWare.
bootpd 2.3

2.2 12-20-97 Added new jcw to control "Printer Needs Attention" messages.
npnlmin 3.32 A new jcw 'ESPULNETPRTATTNMAX=n' has been added to give some
npnlmout 3.32 control over the issuing of the "Printer Needs Attention"
bootpd 2.3 console message. Set the jcw to the number of times you wish
to have the needs attention message sent to the console for a
particular printer alarm condition. If you set the jcw to 2,
the needs attention message will appear on the console two
times. You can set the jcw to zero to completely suppress
needs attention messages on the console. All needs attention
messages are still recorded in the log spoolfile.

Fixed bug in the bannering routines that caused the banner to sometimes be followed by a blank page instead of the first page of the user print job.

Added a new option on the OPTIONS line. This option ';PCL' will modify the way HP carriage control codes are expanded into PCL control codes. When ;PCL is present, the skip over perf escape sequence is sent to the printer in response to to the %2xx series cctl codes and the %100-103 and %400-403 codes. Without ;PCL, skip over perf sequence is not generated and skip over perf must be set on the printer or via an environment file.

Added a new option on the OPTIONS line. ';DUPLEX=n' adds the duplex escape sequence ESC%lnS to the end of any environment file processed. An environment file must be present in the spoolfile or explicitly specified with the ;E= or ;EK= option for ;DUPLEX=n to work. The 'n' value is the 0-2 and controls the type of duplexing performed (consult your PCL or LaserJet manual).

NetPrint now handles spoolfiles with device file id numbers up to 8 digits in length. The previous limit was 6 digit device file id numbers.

A new statement called ALIAS has been added. Used within the NETPRINT block, ALIAS assigns a name to the block. This name can then be used as the printer name parameter for NP92CNTL. Instead of using IP addresses to identify and control your printers, you can assign meaningful names. The ALIAS name is used in the log spoolfile and on console messages instead of the NODE value. ALIAS also controls the allocation of printer driver processes. This means that two NETPRINT blocks with the same NODE value (IP address) but with different ALIAS names, have two drivers and can be controlled independently.

NetPrint now supports device classing for network printers. A new statement 'CLASS name' used within the NETPRINT block assigns the block to the named class. If a NETPRINT block has a class name assigned, NetPrint checks the printer to see if it is busy before queueing a new print job for the printer. If the printer is not busy, the job is queued and printed by the printer. If the printer is busy, NetPrint searches the other NETPRINT blocks for a block with the same class name whose printer is not busy. If a not busy printer is found, the print job is queued to that printer. If no idle printers are found, the print job is skipped and will be reconsidered on the next scan of the spool queue. Using the CLASS statement allows for load balancing between printers.

The LINE statement used in a banner definition block will now accept the line definition data in quotes. Using quotes will preserve the case of the line data. Without quotes, the data on the LINE statement is upshifted. This allows escape sequences to be used on banner lines. LINE "my banner line"

A new command called UNLOCK is now available. UNLOCK will set PRT (print) state files to RDY (ready) state. This command is used to recover spoolfiles left in the PRT state if NetPrint terminates unexpectedly. Execute UNLOCK with the NP92CNTL command file.

Fixed a bug in the FORM=YES/NO/formid selection-criteria. FORM=NO tried to match a formid of "NO" instead of files without a form id assigned. Now works as documented.

This release includes version 3.32 of NPNLMIN and NPNLMOUT NLMs for NetWare servers. The NLMs have a new load switch '/ac' that causes the NLM screen to close automatically at shutdown instead of waiting for the console user to press a key. This is intended to facilitate the automated shutdown of these NLMs.

2.21 07-28-98 Added new substitution parameter for NP92CONF command lines
nplmin 3.4 and banners. !SPFFORMID will expand to the form ID of
nplmout 3.4 current spoolfile (assumes SETVAR command prior to use).
bootpd 2.3

New versions of NPNLMIN and NPNLMOUT.

NPNLMIN and NPNLMOUT now support the /ac load switch. This switch will automatically close the NLM screen when the NLM is unloaded externally, instead of waiting for the console user to press a key. This facilitates automated unloading of the NLMs.

NPNLMIN now supports a new option for automatically generating disk file names when printing to server disk files instead of server print queues. You can specify a disk file name ending in a period to have NPNLMIN autogenerate a file name with an extension of .000 to .999 depending on what disk files are already present in the target directory. This feature allows multiple disk files to have the same name but a different extension. An example would be:

```
;Q="SYSTEM\MYFILES\MYNAME."
```

The resulting file would be named SYSTEM\MYFILES.MYNAME.001

if SYSTEM\MYFILES\MYNAME.000 already existed.

This release is the Year 2000 Compliant version of NetPrint.

If you wish to perform Year 2000 testing with NetPrint on MPE 5.5 with PowerPatch 4, you will also need to have MPE patch MPEKX58 installed.

NetPrint relies on MPE's Native Language Subsystem for date editing and formatting. Native Languages are installed and maintained by the HP program LANGINST.PUB.SYS. The default language is NATIVE-3000.

NetPrint uses the 'Custom Date' format defined by the Native Language for editing and formatting dates. The default Custom Date format for NATIVE-3000 is MM/DD/YY. The year is determined by MPE's fixed date window (currently 50) when the custom date format year is less than 4 digits in length.

Year 2000 issues are covered by the NetPrint standard product warranty and limitation of liability.

NetPrint's Year 2000 Compliance has been established by our internal testing according to standards we have developed. NetPrint is not warranted to meet ANY Year 2000 performance specification that has been established by your organization. YOU are responsible to test and determine if NetPrint meets any Year 2000 performance standards in use by your organization.

2.22 01-25-99 Modified to support the printing of spoolfiles produced by
nplmin 3.4 the NetPrint FlexForm merge process with other 3rd party
nplmout 3.4 and HP network spooling products. Call Minisoft tech support
bootpd 2.3 for details.

When printing with FlexForm, the QUEUE statement did not work correctly, requiring the use of the ;Q="" option on the OPTIONS statement. This has been fixed and QUEUE statement works fine with FlexForm.

Internal modifications to shorten the code paths and reduce cpu consumption.

The code path to process a simple selection-criteria like:
NETPRINT D=MYDEV
has been shortened. If you can use simple selections like this, you will save CPU.

Added a new SCANMODE. You can now use SCANMODE=HIDEALL to reduce cpu consumption. Normally, Netprint remembers or "hides" all spoolfiles that it prints so if you don't purge them, it does not print them over and over. Files that are not selected for printing are not "hidden" and remain candidates for printing each time Netprint scans the spool queue. This allows you to alter non-candidate files at any time and if they now qualify for printing, they will be picked up on the next scan. The same holds true for using outfences in Netprint. Files below the outfence are not hidden and checked on each scan to see if they are now over the outfence. With SCANMODE=HIDEALL, all spoolfiles are hidden when scanned. So Netprint looks at a spoolfile one time and either selects it for printing or not, but hides it either way. The file will

not be considered for printing again while Netprint is running. This is useful for environments that keep large numbers of spoolfiles in the queue that are not Netprint candidates. Netprint will hide or block out the non-candidate files and ignore them. Using this option precludes altering files to make them candidates or changing the Netprint outfence, since any file that was not selected for printing when first seen, is ignored from then on. You can erase the hidden files list with the NP92CNTL REFRESH command, causing all files on the spool queue to be reconsidered. SCANMODE=HIDEALL cannot be used with SCANMODE=NOQUEUE and only applies when a full queue scan is performed. This option is intended for a special case of overhead problem, when large numbers of files are held in the queue and full scans are performed. In this case the cpu savings with HIDEALL are considerable. Please consult tech support if think HIDEALL might be appropriate for you.

Modified special forms dismount operator prompt to not split the dismount and reply messages into two prompts, which would allow the dismount message to be scrolled off the console and also not appear on a RECALL. Now, when you RECALL, the full dismount message will appear.

2.23 08-23-99 Expand the number of network printer processes to 1022.

npnlmin 3.42

npnlmout 3.42

bootpd 2.3

Include version 3.42 of NPNLMIN and NPNLMOUT. NPNLMOUT has modified to allow print queue names greater than 8 characters when using the LPD or DUMP export services. You may now load NPNLMIN with the /ow switch. When printing to a disk file instead of a print queue, NPNLMIN normally will not overwrite a disk file that already exists. The /ow load switch will overwrite an existing disk file with the new print file and no error is generated.

Corrected several problems related to environment files and banner processing when using the LPD or UNIX PTYPES. Certain combinations of environment files and or banners would cause the printer driver process to hang.

Corrected a bug introduced in the previous version that would cause the MPE variables SPFJOBTYPE and SPFJOBNUMBER (created by SETVAR statement) to contain incorrect values.

In spoolfiles with no carriage control (NOCCTL), lines with no user printable data would generate a single space with a LFCR pair. This does not follow the convention of issuing a CRLF pair for single space and has been changed to be CRLF.

2.24 10-21-99 Fix the NP92JOB deadlock problem.

npnlmin 3.42

npnlmout 3.42

bootpd 2.3

Netprint/92 makes extensive use of the MPE Mail Intrinsic for inter-process communication. There is a known bug in the MPE Mail Intrinsic that can result in deadlocks between processes using these intrinsics. HP has made no progress in fixing this bug, so MiniSoft has created a replacement Mail Intrinsic library for Netprint. Using this replacement library of intrinsics instead of the MPE Mail Intrinsic eliminates the dead lock problem.

2.25 04-17-00 Fix bug in release 2.24

npnlmin 3.42

npnlmout 3.42

bootpd 2.3

The conversion of Netprint to the replacement MAIL Intrinsic library had a bug that would cause the NP92CNTL printer RESUME command to be ignored in some cases. This has been fixed.

Add support for eFORMz electronic forms product. Invoke eFORMz by using option ;EFORMZ=filename on the OPTIONS statement. This will execute an eFORMz merge of the source spoolfile and the electronic form and print the formatted result.

Corrected problems with failure to print FlexForm files when the number of spool files on the system was greater than 2048. NetPrint now correctly processes spool files up to a maximum of 6144 files in the spool queue.

2.26 07-21-00 Fix problems with FlexForm and eFORMz merging
nplmin 3.42 When printing with FlexForm or eFORMz, if you specified an
nplmout 3.42 invalid environment file name, the merge process would fail and
bootpd 2.3 the source spoolfile might be purged. The error message issued
when this happened was not very clear. Now, if you use an in-
valid environment file name, the spoolfile is not printed and
is NOT purged and a clear error message is written in the log.

When printing with FlexForm or eFORMz, if you used an OUTFENCE statement in the Netprint block and set the outfence above 1, the merged FlexForm/eFORMz spoolfile would not print. This has been fixed so that OUTFENCE and FF/EF work together correctly.

The NETPRINT statement selection-criteria J<relop>'jobnum/name did not work correctly. It now works as documented.

2.27 03-02-01 Modify to allow printing of Private Spoolfiles
nplmin 3.42 Private spoolfiles are normally excluded from processing to
nplmout 3.42 honor MPE security requirements. You can override this restric-
bootpd 2.3 tion by adding the selection-criteria keyword STATE=PRIVATE to
the NETPRINT statement. You must also assign the SM capability
to MGR.MINISOFT or whatever user name that the NP92JOB uses to
logon.

Modify to allow retention of the FlexForm/eFORMz merge file
You can now use the ;SAVEMERGE option to keep the merged spool
file created by the FlexForm or eFORMz merge process after it
is printed. The merged file is normally treated as a temp file
and purged after printing is completed. With the ;SAVEMERGE
option, after printing is completed, the merge file will remain
in the spool queue as a deferred file with the same file name
as the source spoolfile.

Netprint now supports the use of HP's network printer setup files (NPCONFIG) on the ;E= and ;EK= options. HP's files are just flat files with escape sequences. These files have a file code of zero. File code zero used to be reserved for HP2608 VFC files and Netprint detected that the setup files were not the correct format for HP2608s and generated an error. This is now fixed to handle HP setup files and HP2608 files, any file with file code zero as a flat file, whose contents are prepended to the spoolfile being printed.

2.28 05-07-01 Modify to support the eFORMz Listener
nplmin 3.43 The eFORMz Listener is a new interface to eFORMz on the HP3000
nplmout 3.43 that provides a significant improvement in print job throughput
bootpd 2.3 on the HP3000. The eFORMz Listener starts the Java Run Time for
the eFORMz print engine one time and keeps the JVM and print
engine waiting in the background. Netprint now sends print jobs
to the Listener where the eFORMz print engine is waiting, to be
processed. By keeping the eFORMz engine and JVM alive between

print jobs, the overhead of starting the JVM and launching the print engine for each print job is eliminated.

The eFORMz Listener runs as a background program under the Netprint job. The Listener is executed with a RUNBKG statement in the NP92CONF file. A special MPE variable is defined in the NP92JOB file to turn on the connection between Netprint and the eFORMz Listener for delivery of print jobs. Several other file equations and variable definitions have been added to NP92JOB to support the eFORMz listener.

Please view the sample NP92CONF and the updated NP92JOB file to see the changes needed to use the eFORMz Listener. The latest update for eFORMz will need to be installed. Consult the eFORMz documentation for more information.

Modified Netprint to support MPE variable expansion on the RUN and RUNBKG statements.

Modified to Netprint to support single or double quotes around the MPE command executed by an MPE statement in the NP92CONF. This allows case to be preserved on MPE commands.

NPNLMIN and NPNLMOUT have been modified to handle thread aborts without operator intervention. Previously, if a thread aborted, a console popup window was displayed with the error and this window had to be cleared by user interaction before NLM execution could continue. Now thread aborts are logged to the NLM log window and no popup window is displayed. This means the thread can abort cleanly and NLM execution continues without interruption or operator intervention.

3.0 11-01-01
nplmin 3.45
nplmout 3.45
bootpd 2.3

Modify to support the eFORMz Listener
Fix a bug in processing of the EFORMZOPT option. The option string on EFORMZOPT would be truncated.

Modify to support eFORMz faxing and emailing features.

Add new printer type, PTYPE=SMTP. This will send print jobs as email messages with the spoolfile included as an attachment. The NODE= option specifies the IP address of the SMTP mail server. The RECIP="string" option specifies the mail recipient address.

Add new queue scanning option. It is now possible for NetPrint to detect calls to the MPE FCLOSE Intrinsic and determine when new spoolfiles are created and process them without scanning the spool queue. Detection of files when they are created means NetPrint does not need to scan the queue. To use this new file detection method, set the INTERVAL to a long period of time. Do not set any special SCANMODE. The idea is to have NetPrint still do a full queue scan but only once in a while. The rest of the time, NetPrint will sleep and rely on the FCLOSE trap to wake NetPrint if a new spoolfile is created.

To enable FCLOSE trapping, run ARMPE.PUB.MINISOFT in a job or session before any programs are run. This will set the FCLOSE trap for the job or session and any programs run in it. You can disable the trap by running DISARMPE.PUB.MINISOFT. The trap is automatically removed at logoff.

Note that the FCLOSE trap is not able to detect the closing of

the \$STDLIST of jobs. The FCLOSE trap is not able to detect a change in the priority, copies or device of an existing spoolfile. You can either let the regular scan pick such files or issue the NP92CNTL.PUB.MINISOFT SCAN command to trigger an immediate scan of the queue, after changing a spoolfile.

In order to update NetPrint, all jobs and sessions with traps must be logged off. It is recommended that traps not be enabled for MANAGER.SYS.

NPMLMIN and NPNLMOUT updated to version 3.45 to fix several minors bugs.

NOTE: NPNLMIN and NPNLMOUT are no longer supported on NetWare 3.xx servers.

3.01 11-16-01 Remove trace statments
nplmin 3.45 Remove debug trace statements that caused extraneous output
nplmout 3.45 to be written to the NP92JOB \$STDLIST.
bootpd 2.3

3.02 12-05-01 Fix problem with Java 1.3
nplmin 3.45 Compatibility problems between NetPrint and the Java 1.3 JVM
nplmout 3.45 would cause system abort 1495. Fixed per HP reccomendation
bootpd 2.3 to work around the problem.

Fixed bug in 3.0 release what would cause printing problems when spoolfiles were not able to be printed on the first attempt. On the retry, the spoolfile contents would be sent to the internal log files instead of to the printer.

3.03 07-02-02 Fix problem with SMTP PTYPE and eFORMz
nplmin 3.45 When printing with PTYPE=SMTP and using eFORMz, the emailing
nplmout 3.45 process would fail with SMTP error 553. This was caused by the
bootpd 2.3 incorrect parsing of the RECIP option on the OPTIONS line.

Fixed additional bugs in the PTYPE=SMTP feature that caused any files passed through eFORMz and then emailed to be formatted incorrectly.

Fixed problem in PTYPE=SMTP implementation that caused failures when specifying multiple mail recipients. You may now use more than one recipient as ;RECIP="name@domain,name1@domain" without problems.

3.04 12-20-02 Fix problem with default banner
nplmin 3.45 When printing with ;BANNER option, a bug introduced in 3.03
nplmout 3.45 would cause the banner to have an incorrect environment file
bootpd 2.3 name and in some cases would cause the printer driver program
(NP92DRV) to abort.

3.05 08-11-03 Modify to support 5-digit PIN numbers.
nplmin 3.45 Fix several bugs in PTYPE=SMTP emailing of spoolfiles.
nplmout 3.45
bootpd 2.3