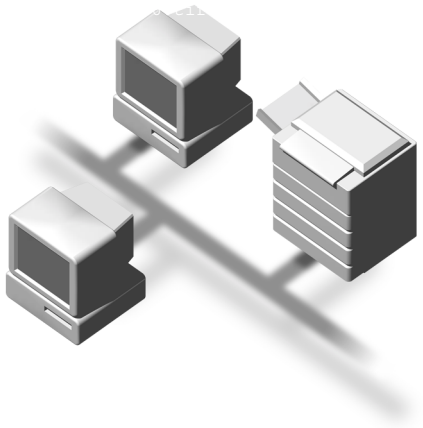
UNIX Supplement



Read this manual carefully before you use this product and keep it handy for future reference.
For safety, please follow the instructions in this manual.

Introduction

To get maximum versatility from this machine all operators should carefully read and follow the instructions in this manual. Please keep this manual in a handy place near the machine.

Please read the Safety Information in the Copy Reference before using this machine. It contains important information related to USER SAFETY and PREVENTING EQUIPMENT PROBLEMS.

Important

Parts of this manual are subject to change without prior notice. In no event will the company be liable for direct, indirect, special, incidental, or consequential damages as a result of handling or operating the machine.

Further Information

Please consult your authorized reseller concerning additional UNIX support.

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Manuals for This Machine

The following manuals describe the operational procedures and maintenance of this machine.

To enhance safe and efficient operation of this machine, all users should read and follow the instructions carefully.

❖ **Copy Reference**
Describes the procedures and functions for using this machine as a copier.

❖ **System Settings**
Describes the system settings of this machine.

❖ **Printer Unit Type 1045 Printer Reference 1**
Describes the system settings, procedures and functions for using this machine as a printer.

❖ **Printer Unit Type 1045 Printer Reference 2**
Describes the procedures and provides necessary information about using this machine as a printer. This manual is included as a PDF file on the CD-ROM labeled "Operating Instructions for Printer".

❖ **Network Printing Guide Operating Instructions**
Describes the procedures and provides necessary information about setting up and using the printer under the network environment. We recommend this manual as your first choice to read, and it is included as a PDF file on the CD-ROM labeled "Operating Instructions for Printer".

❖ **PostScript 3 Unit Type 1045 Operating Instructions Supplement**
Describes the menus and features you can set using the PostScript 3 printer driver. This manual is provided as a PDF file on the CD-ROM labeled "Operating Instructions for Printer".

❖ **UNIX Supplement**
Provides information about setting up and using the printer in a UNIX environment. This manual is included as a PDF file on the CD-ROM labeled "Operating Instructions for Printer" (this manual).

How to Read This Manual

Symbols

In this manual, the following symbols are used:

⚠ ***WARNING:***
This symbol indicates a potentially hazardous situation which, if instructions are not followed, could result in death or serious injury.

⚠ ***CAUTION:***
This symbol indicates a potentially hazardous situation which, if instructions are not followed, may result in minor or moderate injury or damage to property.

* The statements above are notes for your safety.

Important
If this instruction is not followed, paper might be misfeed, originals might be damaged, or data might be lost. Be sure to read this.

Preparation
This symbol indicates the prior knowledge or preparations required before operating.

Note
This symbol indicates precautions for operation, or actions to take after misoperation.

Limitation
This symbol indicates numerical limits, functions that cannot be used together, or conditions in which a particular function cannot be used.

Reference
This symbol indicates a reference.

[ ]
Keys that appear on the machine's panel display.

Keys and buttons that appear on the computer's display.

【 】
Keys built into the machine's control panel.

Keys on the computer's keyboard.

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1. UNIX Configuration

This section explains how to set up a network printer and check the print status using UNIX.

Limitation

❒ To print from a UNIX workstation, use the file that the printer supports.

Before Setup

Setting up can vary depending on the printing commands. Please make sure to make the settings accordingly.

Using the lp/lpr commands

1 Use the Installation Shell Script to register the printer host name and the IP address.

2 Start printing.

⇒ P.12 *"Printing Method"*

Using the rsh/rcp/ftp commands

1 Edit the host file to register the Printer host name and the IP address.

2 Start printing.

⇒ P.12 *"Printing Method"*

Reference

See P.7 *"After Executing Install Shell"* for host file editing.

Note

❒ If you cannot edit the host file, use the Install Shell Script to register the host name.

Using the Installation Shell Script

The installation shell script helps with the setup process. The installation shell script automates some of the tasks in configuring /etc/hosts, /etc/printcap, and in creating the spool directory for BSD UNIX, and in running lpadmin command for System V UNIX.

Preparation

The installation shell script can be used on the following three kinds of workstations. This installation shell script cannot be used with other types of workstations.

- Solaris 2.5.1, 2.6, 7, 8
- HP-UX 8.x, 9.x, 10.x, 11.0
- Red Hat Linux 6.x, 7

When you use NIS (Network Information Service) or DNS, you should configure the server before running this installation shell script.

For more information about the configuration utility of your OS, see the manual that came with the utility.

Assigning the IP Address

Preparation

Configure the machine to use the TCP/IP protocol.

- Make sure that the TCP/IP protocol on the machine is set to active. (The default is active.)
- Assign an IP address to the machine and configure the other settings required for using the TCP/IP protocol.

Reference

For more information about how to make the above settings, see the System Settings that came with the printer option or printer/scanner option of this machine.

Checking the IP address configuration

Follow the procedure below to make sure that the IP address has been configured correctly.

- The following procedure uses the sample IP address: 192.168.15.16.

1 **Enter the following:**

```
# ping 192.168.15.16
```

If the address has been configured correctly, the following message appears.

```
192.168.15.16 is alive
```

If the address has been configured incorrectly, the following message appears.

```
no answer from 192.168.15.16
```

Note

❒ When you use NIS, the IP address and host name are written to /etc/hosts on the master server. When you use DNS, the information is written to a data file on the name server. After writing the host name and IP address to the file, make sure that the configuration is correct by pinging the host name.

```
# ping host_name
```

❒ If the host name is registered with an IP address, the server can access the printer using its host name instead of its IP address.

Executing the Installation Shell Script

After having configured the printer IP address, follow the procedure below to execute the installation shell script and set up the workstation printing environment.

Preparation

Before executing the installation shell script, the IP address, the host name and the printer name are required.

Following procedures use sample IP address: 192.168.15.16, sample host name: nphost and sample printer name: np.

Note

❒ Use ftp to get the installation shell script from the printer.

1 **Log on to the workstation as root account.**

Note

❒ If you do not log on as root, the installation shell script will not run.

2 Get the installation shell script from the printer.

❶ Move to the directory you want to copy the installation shell script to.

❷ Use ftp to connect to the printer with the IP address that you just configured.

```
# ftp 192.168.15.16
Connected to 192.168.15.16
220 printer FTP server ready.
name (192.168.15.16:root:)
```

❸ When a user name is requested, leave blank and press the 【RETURN】 key.

```
331 Password required for root.
Password:
```

❹ When a password is requested, leave blank and press the 【RETURN】 key.

```
230 User root logged in.
ftp>
```

❺ Type the following to get the installation shell script.

```
ftp> get install
```

❻ Close the ftp session.

```
ftp> bye
221 Goodbye.
#
```

3 Run the installation shell script.

```
# sh ./install
```

Note

❒ Insert a period and slash before the current directory.

4 Enter a number to select the workstation OS that you are using.

```
Network printer install shell
 Copyright RICOH CO.,LTD. 1994-2000
 Select your workstation OS type.
  1. SunOS 4.x.x
  2. Solaris 2.x, Solaris 7-8 (SunOS5.x)
  3. HP-UX 8.x,9.x,10.x,11.x
  4. UnixWare
  5. Linux
  6. other
Enter <1-6>:
2
```

Note

❒ SunOS and UnixWare appear on the screen, but they are not supported. Use Solaris, HP-UX or Linux.

❒ If you select "6", the installation shell script exits.

5 **Enter the IP address of the printer.**

```
Enter Printer host IP address <xxx.xxx.xxx.xxx> [re-
turn=skip]:
192.168.15.16
```

Note

❒ The IP address will be added to the /etc/hosts file.

❒ If the host name of the printer has already been configured, press the 【RETURN】 key. Nothing will be added to the /etc/hosts file.

6 **Enter the host name of the printer.**

```
Enter Printer host name : nphost
```

Note

❒ The host name will be added to the /etc/hosts file.

❒ If no IP address was entered in step **5**, nothing is added to the /etc/hosts file.

7 **Configure the printer name.**

```
Enter logical printer name [default nphost_prn]
```

If you want to use the default name, press the 【RETURN】 key. Enter a new name, if you want to use a different one.

Note

❒ The host name entered in step **6** followed by "_prn" appears in "default".

8 **Set the print option.**

```
Enter remote printer name [default lp]:
```

- Press the 【RETURN】 key, print with PCL or PostScript is enabled.
- If you enter "text", text printing is enabled.
  If you enter "text", printing with PCL and PostScript is unavailable.

  ```
  Enter remote printer name [default lp]:text
  ```

Limitation

❒ You can enter up to 14 characters for HP-UX 11.0, 256 for Solaris 8, and 51 for Red Hat Linux 6.2.

❒ When printing with the lp command, use (_) instead of (=) and (;) instead of (,) for operating systems that cannot use (=) and (,) such as Solaris 2.5 or later.

After the setup with the installation shell script is complete, and if you enter the IP address in step **5**, the following message appears.

```
hosts file is modified
```

9 Perform a test print to make sure that the settings are correct.

```
# lpr -Pnp file_name
# lp -d np file_name
```

For more information about lpr and lp, see P.12 *"Printing Method"*.

Deleting the printer

To print using the lp or lpr command, the option specified when the installation shell script is executed is used. Change the option in accordance with the workstation you are using.

❖ BSD UNIX workstation, Linux

Delete the printer entry from /etc/printcap, then execute the installation shell script again. Select options during the setup process.
Or, search the printer entry from /etc/printcap, and change its rp capability to option setting.

❖ Solaris, HP-UX

Delete the printer entry, and then execute the installation shell script again. Select options during the setup process. To delete the printer entry, follow the procedure below.

① Stop the scheduler.

```
# /usr/sbin/lpshut
```

② Delete the printer.

```
# /usr/sbin/lpadmin -x printer_name
```

③ Restart the scheduler.

```
# /usr/lib/lpsched
```

After Executing Install Shell

The printing environment is set up automatically when the installation shell script is executed.

This section describes the set up contents when the installation shell script is executed under Red Hat Linux, Solaris and HP-UX.

Linux

❖ **Adding the IP address and host name to the /etc/hosts file**

The following line is added to the /etc/hosts file. The IP address and printer host name which you previously entered in the installation script will be used.

```
192.168.15.16 nphost # Network Printer
```

- **192.168.15.16** is the IP address, **nphost** is the host name, from # to the end of the line is a comment.

Note

❒ The /etc/hosts file contains a list of the IP addresses and host names of all of the hosts communicating on the network. Each entry is delimited with a space or a tab, and each line is separated with a return.

❒ If you do not use NIS or DNS, you must manually enter the IP address and host name of each workstation using the network printer in the /etc/hosts file.

❖ **Adding an entry to the /etc/printcap file**

The following entry is added to the /etc/printcap file, which is the configuration for printing with the lpr command. In order to use the lpr command to print, you need to edit the /etc/hosts file, add an entry for the network printer to the /etc/printcap file and create a spool directory.

```
##PRINTTOOL3## REMOTE
np|Network Printer:\
        :rm=nphost:\
        :rp=option:\
        :sd=/var/spool/lpd/npd:\
        :lf=/var/log/npd-errs:\
        :sh:\
        :mx#0:
```

Note

❒ The /etc/printcap file is used to register the name and attributes of a printer. You must make an entry for the network printer in the /etc/printcap file of all workstations using the network printer.

❒ Each entry is separated with colons into several fields. The syntax is to begin each entry with a colon, followed by the entry, and then end with a colon, a back slash, and then a return.

❒ The first line of the field is the name of the printer. You use this name when logging on to a network printer from a workstation. You can define several different names by separating each name with the "|" character.

❒ The second and following lines contain the printer's attributes. Attributes of the printer are represented by two character names referred to as capabilities. For more information about capabilities, see the following table.

Capability	Explanation	Value Required for the Network Printer.
rm	Host name of the printer	The host name that was registered with the /etc/hosts file.
sd	Path name of the spool directory.	Path name of the spool directory that is to be created.
lf	Path name of the log file.	Path name of the log file. For example /var/log/lpd-errs.
mx	Maximum file size which the directory can copy. When set to 0, the size is unlimited. If nothing is entered, the size is set to 1024 k.	None or something suitable.

❖ Making the spool directory

Create a spool directory under /var/spool/lpd. The name of the spool directory should be the name of the printer followed by a "d".

Note

❒ The spool directory is used to control the data used for a print job. For example, when a print job is created, a temporary copy of the file data used for printing is created in the spool directory. All workstations accessing the network printer need to have a spool directory for the network printer.

❒ A spool directory should be made for every network printer entry listed in the /etc/printcap file.

❒ The spool directory should normally be made under /var/spool/lpd and the name should match that listed under the sd capability in /etc/printcap. Change the owner and group of the directory to root and lp. The following examples show how to make a /var/spool/lpd/npd spool directory.

```
# cd /var/spool/lpd
# mkdir npd
# chown root npd
# chgrp lp npd
```

❖ Making the log file

Error messages are logged to a file created in the /var/log directory. The log file name is the printer name followed by "d-errs".

Note

❒ The log file is used for logging some errors or warning messages by the UNIX workstation.

❒ The log file should be made for every network printer entry listed in the /etc/printcap file.

❒ The log file should normally be made under /var/log directory and the name should match that listed under the lf capability in /etc/printcap. Change the owner and group of the log file to root and lp.The following examples show how to make a /var/log/npd-errs file.

```
# cd /var/log
# touch npd-errs
# chown root npd-errs
# chgrp lp npd-errs
```

Solaris

❖ Adding the IP address and host name to the /etc/hosts file

The following line is added to the /etc/hosts file.The IP address and printer host name which you previously entered in the installation script will be used.

```
192.168.15.16 nphost # Network Printer
```

- **192.168.15.16** is the IP address, **nphost** is the host name, from # to the end of the line is a comment.

Note

❒ The /etc/hosts file contains a list of the IP addresses and their host names of all of the hosts communicating on the network. Each entry is delimited with a space or a tab, and each line is separated with a return.

❒ If you do not use NIS or DNS, you must manually enter the IP address and host name of each workstation using the network printer in the /etc/hosts file.

❖ Registering the printer

The installation shell script registers the printer as a remote printer.

① If your workstation is Solaris 2.5.1, register the print server and print client to the print service.

```
# lpsystem -t bsd -R 0 -y "Network Printer" nphost
```

② Register the printer as a remote printer.

```
# lpadmin -p np -s nphost!"option" -T dump -I any
```

- **np** is the printer name, **nphost** is the host name.
  "lp" will be assigned, if the device option is not used.
  When printing with the lp command, use (_) instead of (=) and (;) instead of (,) for operating systems that cannot use (=) and (,) such as Solaris 2.5 or later.

③ If your workstation is Solaris 2.5.1, set the print job to active so that it can be accepted by the print queue.

```
/usr/lib/accept np
```

④ If your workstation is Solaris 2.5.1, set the print job to active to print.

```
/usr/lib/enable np
```

HP-UX

❖ Adding the IP address and host name to the /etc/hosts file

The following line is added to the /etc/hosts file. The IP address and printer host name which you previously entered in the installation script will be used.

```
192.168.15.16 np # Network Printer
```

- **192.168.15.16** is the IP address, **np** is the host name, from # to the end of the line is a comment.

Note

❒ The /etc/hosts file contains a list of the IP addresses and their host names of all of the hosts communicating on the network. Each entry is delimited with a space or a tab, and each line is separated with a return.

❒ If you do not use NIS or DNS, you must manually enter the IP address and host name of each workstation using the network printer in the /etc/hosts file.

❖ Registering the printer

The installation shell script registers the printer as a remote printer following the procedure below.

① Stop the scheduler.

```
/usr/lib/lpshut
```

② Register the printer.

```
/usr/lib/lpadmin -Pnp -v/dev/null -mrmodel
 -ormnphost -orp"option" -ob3
```

- **np** is the printer name, **nphost** is the host name.
  "lp" will be assigned, if the Device option is not used.

③ Set the printer so that the print job is listed in the print queue.

```
/usr/lib/accept np
```

④ Set the printer to perform the print job.

```
/usr/lib/enable np
```

⑤ Restart the scheduler.

```
/usr/lib/lpsched
```

Printing Method

Printing with lpr, lp

Execute one of the following commands according to the type of workstation being used:

❖ **BSD UNIX workstation, Linux**

```
% lpr -Pprinter_name file_name [file_name...]
```

For example:
printer name is np, file names are file1 and file2

```
% lpr -Pnp file1 file2
```

❖ **Solaris, HP-UX**

```
% lp -d printer_name file_name [file_name...]
```

For example:
printer name is np, file names are file1 and file2

```
% lp -d np file1 file2
```

Note

❒ "**printer_name**" is the name that was entered when executing the installation shell script.

❒ You can use wild cards (* or ?) for the file name.

Printing with rsh, rcp, ftp

You can also print using the rsh, rcp and ftp commands.

Note

❒ Print using the format that the printer can support.

❒ The message "print session full" appears when the maximum number of print requests has been reached (max. 5 session) . You should try to print again when the number of requests is less than five. You can check the number of print requests using telnet. For more information about using telnet, see the Network Printing Guide Operating Instructions provided as a PDF file on the CD-ROM labeled "Operating Instructions for Printer".

rsh

```
% rsh host_name print < file_name
```

For example:

host name is nphost, file name is file1

```
% rsh nphost print < file1
```

Note

❒ "**host_name**" is the name entered when executing the installation shell script.

❒ If you use a HP-UX, use the remsh command instead of rsh.

rcp

❖ **To specify and print the file**

```
% rcp file_name [file_name...] host_name:
```

For example:

host name is nphost, file names are file1 and file2

```
% rcp file1 file2 nphost:
```

❖ **To print all of the files in a directory**

```
% rcp -r directory_name host_name:
```

For example:

host name is nphost, directory name is directory1

```
% rcp -r directory1 nphost:
```

Note

❒ "**host_name**" is the name entered when executing the installation shell script.

❒ You can use wild cards (* or ?) for the file name.

ftp

Depending on the number of files to be printed, use the put or mput commands.

Limitation

❒ File names cannot contain "=" or ",".

❖ **To print one file**

```
ftp> put file_name
```

❖ **To print several files**

```
ftp> mput file_name [file_name...]
```

Note

❒ You can use wild cards (* or ?) for the file name with the mput command.

The following procedure shows an example of how to print a file using ftp.

1 **Start ftp using the IP address or host name of the printer.**

```
% ftp IP_address
```


Note

❒ "**host_name**" is the name entered when executing the installation shell script.

2 **Enter the user name. Skip the password, and then press the【RETURN】key.**

```
Name:
Password:
```

3 **Set the file transfer mode to binary.**

```
ftp> bin
```

Note

❒ If the file transfer mode is not set to binary, the image might not be printed correctly.

4 **Print the file.**

Note

❒ For example, to print one file named file1:

```
ftp> put file1
```

❒ For example, to print two files named file1 and file2:

```
ftp> mput file1 file2
```

5 **Exit ftp.**

```
ftp> bye
```

Printer Status

You can use the following commands to have information and the printer status displayed or copied to a file.

Use the lpq or lpstat command to display the status of the printer or information about print jobs.

Use the rsh, rcp or ftp commands to get more detailed information from the printer.

Viewing the Print Job Status with lpq and lpstat

❖ **BSD UNIX workstation, Linux**

```
% lpq -Pprinter_name
```

For example: Printer name is np

```
% lpq -Pnp
```

❖ **System V UNIX, Solaris, HP-UX**

```
% lpstat -o printer_name
```

For example: Printer name is np

```
% lpstat -o np
```

Note

❒ In case of HP-UX, do not put a space between "-o" and "printer name".

Viewing the Printer Status with rsh and ftp

Use the rsh or ftp command to display the status of the printer or information about print jobs using specified parameters.

You can use these commands for BSD and System V UNIX.

Note

❒ If your workstation is HP-UX, use the remsh command instead of the rsh.

```
% rsh host_name parameter
```

```
% ftp host_name
User user_name
password:
ftp> get parameter -
```

Note

❒ Leave the user name and password blank, and then press the 【RETURN】 key.

❒ " - " indicates the standard output. It will be displayed on screen if the standard output has not been specified.

Parameters that can be used with rsh, rcp and ftp:

Parameter	Information returned	Reference
stat	Status of the printer. Information about print jobs.	Network Printing Guide Operating Instructions provided as a PDF file on the CD-ROM labeled "Operating Instructions for Printer".
info	Information about the paper tray, output tray and printer language.	System Settings provided as a PDF file on the CD-ROM labeled "Operating Instructions for Printer".
prnlog	Record of the last 16 jobs printed.	Network Printing Guide Operating Instructions provided as a PDF file on the CD-ROM labeled "Operating Instructions for Printer".
syslog	Record of messages about the Network Interface Board.	

Copying Information to a File

Use the rcp or ftp command to copy information about the specified parameters to a file.

You can use these commands for BSD and System V UNIX.

Note

❒ The same parameters are used as those above.

```
% rcp host_name:parameter file_name
```

```
% ftp host_name
User: user_name
password:
ftp> get parameter file_name
```

Note

❒ Leave the user name and password blank, and then press the 【RETURN】 key.

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UE (USA) B362-8667