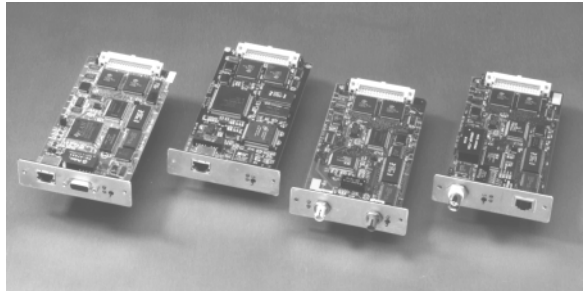


KYOCERA-PrintServer



User Manual

Trademarks

NetWare and Novell are registered trademarks of Novell Inc.

AIX, LAN-Server and OS/2 are registered trademarks of IBM GmbH

ULTRIX is a registered trademark of Digital Equipment Corporation

SCO is a registered trademark of Santa Cruz Operation, Inc.

UNIX is a registered trademark of UNIX System Laboratories Inc.

PostScript is a registered trademark of Adobe Systems Inc.

Microsoft, Windows 98 and 95, Windows NT, LAN Manager and MS-DOS are registered trademarks of Microsoft Corp.

EtherTalk, AppleTalk, Macintosh, LaserWriter and Apple are registered trademarks of Apple Computer Inc.

PRESCRIBE is a registered trademark of KYOCERA Corp.

IEEE is a registered trademark of Institute of Electrical and Electronics Engineers, Inc.

Imprint

KYOCERA has endeavoured to ensure that the information in this manual as well as in the Hardware Installation Guide and the Software Quick Installation is correct. If you detect any inaccuracies please inform us at the address indicated below. KYOCERA will not accept any liability for any error or omission. The information in this manual is subject to change without notification.

All rights are reserved. Copying, other reproduction or translation without the prior written consent from KYOCERA is prohibited.

User Manual release 5.0; date: 10.2.99; written by Anja Edelmann

© KYOCERA Electronics Europe GmbH
Mollsfeld 12
D-40670 Meerbusch

Contents

CHAPTER 1	Your Print Server Introduces Itself.....	1-1
1.1	What Does Your Print Server Offer?.....	1-2
1.2	Scope and Operating System	1-3
1.3	Which Documentation Applies to Your Print Server?	1-5
1.4	How Do I Use the User Manual?	1-7
1.5	Symbols and Conventions.....	1-8
 CHAPTER 2	 Network Know How.....	 2-1
2.1	Basic Terminology.....	2-2
2.1.1.	Hardware Address	2-2
2.1.2.	Print Server Name	2-3
2.1.3.	Logical Printers	2-3
2.2	Basic TCP/IP Terminology.....	2-6
2.2.1.	IP Address	2-6
2.2.2.	Methods of Saving the IP Address in the Print Server	2-7
2.2.3.	Host Name.....	2-14
2.2.4.	ARP Table.....	2-15
2.2.5.	TCP/IP Ports	2-16
2.2.6.	Gateway	2-17
2.2.7.	Subnet Mask.....	2-17
2.3	SNMP	2-19
 CHAPTER 3	 Installation in Novell Network Environments	 3-1
3.1	Basic Principles.....	3-3
3.2	Installing into Novell NetWare 4.x Network Environments in Print Server Mode	3-7



3.3	Installing into Novell NetWare 4.x Network Environments in Remote Printer Mode	3-10
3.3.1.	Installing a Print Server, a Printer, and a Print Queue	3-11
3.3.2.	Configuring the KYOCERA-PrintServer	3-12
3.3.3.	Starting PSERVER on the File Server.....	3-14
3.4	Installing into Novell NetWare 3.x Network Environments in Print Server Mode.....	3-15
3.4.1.	Installing the Print Server into the Novell File Server.....	3-16
3.4.2.	Installing a Print Queue	3-18
3.4.3.	Allocating the Print Server as a Queue Server	3-19
3.5	Installing into Novell NetWare 3.x Network Environments in Remote Printer Mode	3-21
3.5.1.	Installing a Print Queue	3-22
3.5.2.	Installing the Novell PSERVER	3-24
3.5.3.	Installing a Remote Printer	3-25
3.5.4.	Allocating the Print Queue	3-26
3.5.5.	Configuring the KYOCERA-PrintServer	3-28
3.5.6.	Starting PSERVER on the File Server.....	3-30
3.6	Tips and Tricks	3-31

CHAPTER 4 **Installation in Windows Network Environments.....4-1**

4.1	Basic Principles	4-2
4.2	Installing into Windows 98 and 95 Network Environments	4-3
4.2.1.	Installing the TCP/IP Protocol.....	4-5
4.2.2.	Saving the IP Address in the Print Server.....	4-7
4.2.3.	Setting Up the Printer	4-8
4.2.4.	Installing the KYOCERA Monitor	4-8
4.2.5.	Setting Up the KYOCERA Monitor	4-9
4.3	Installing into Windows NT 4.0 Network Environments.....	4-11
4.3.1.	Installing the TCP/IP Protocol.....	4-12
4.3.2.	Saving the IP Address in the Print Server.....	4-15
4.3.3.	Installing the Microsoft TCP/IP Print Services	4-15
4.3.4.	Setting Up the Printer and Configuring the LPR Port	4-17
4.4	Installing into Windows NT 3.51 Network Environments.....	4-22
4.4.1.	Installing the TCP/IP and FTP Services	4-23
4.4.2.	Saving the IP Address in the Print Server.....	4-27
4.4.3.	Setting Up the Printer and Configuring the LPR Port	4-27

CHAPTER 5	Installation in UNIX Network Environments	5-1
5.1 Basic Principles.....		5-2
5.2 Allocating the IP Address to the Host Name		5-4
5.3 Saving the IP Address in the Print Server.....		5-6
5.3.1. Saving the IP Address Using BOOTP		5-6
5.3.2. Saving the IP Address Using RARP		5-7
5.3.3. Saving the IP Address Using the 'arp' and 'ping' Commands		5-8
5.3.4. KYOCERA Printer Operating Panel.....		5-9
5.3.5. PRESCRIBE Commands for KYOCERA Printers.....		5-10
5.4 Printing Using the LPD Protocol		5-11
5.4.1. IBM AIX (Version 4.x).....		5-12
5.4.2. IBM AIX (Version 3.x).....		5-13
5.4.3. AIX Without SMIT		5-15
5.4.4. HP-UX (Version 10.20)		5-17
5.4.5. SunOS		5-19
5.4.6. SCO UNIX (Version 3.2).....		5-20
5.4.7. UNIXWare (Version 4.2 - 1.1.2)		5-21
5.4.8. System V (General).....		5-22
5.5 Printing Using TCP/IP Ports.....		5-24
5.5.1. SINIX SPOOL V4.x		5-24
5.6 Printing Using Shell Scripts.....		5-26
5.6.1. Creating the Print Server Directories		5-27
5.6.2. Integrating Shell Scripts into System V Systems.....		5-28
5.6.3. Integrating Shell Scripts into BSD Systems		5-32
5.6.4. Integrating Shell Scripts into AIX Systems		5-36
 CHAPTER 6	 Installation in Apple Network Environments.....	 6-1
6.1 Basic Principles.....		6-2
6.2 Installing the Print Server		6-3
 CHAPTER 7	 Software Update	 7-1
7.1 Basic Principles.....		7-2



7.2 Updating Software Using the KYOCON	7-3
7.3 Updating Software in Windows NT Network Environments Using TFTP	7-4
7.4 Updating Software in UNIX Network Environments Using TFTP	7-6
7.4.1. Activating the Download Mode in the Print Server	7-6
7.4.2. Configuring the Download Parameters.....	7-7
7.4.3. Transferring the Download File to the Print Server	7-8

CHAPTER 8 Installation in BS2000 Network Environments.....8-1

8.1 Basic Principles	8-2
8.2 Saving the IP Address in the Print Server	8-3
8.3 Installing a Print Server for TCP/IP	8-4
8.4 Entering the IP Address	8-5
8.5 Installing the Print Server into the RSO Spooler.....	8-6
8.6 Defining the TCP/IP Port	8-7

REFERENCE A Print Server Homepage..... A-1

A.1 Basic Principles	A-1
A.2 Calling the Print Server Homepage	A-2
A.3 Displaying the Status Information.....	A-4
A.3.1. General Status	A-4
A.3.2. TCP/IP Status.....	A-5
A.3.3. NetWare Status	A-5
A.3.4. Apple Status	A-6
A.4 Configuring the Print Server.....	A-7
A.4.1. General Configuration	A-7
A.4.2. Physical Printer Configuration.....	A-8
A.4.3. Logical Printer Configuration	A-8
A.4.4. TCP/IP Configuration	A-8
A.4.5. NetWare Parameter Configuration	A-9
A.4.6. Apple Parameter Configuration	A-9

A.4.7. SNMP Configuration	A-9
A.5 Restart and Reset.....	A-10
A.5.1. Restart Print Server	A-10
A.5.2. Default Print Server Settings.....	A-10

REFERENCE B KYOCON.....B-1

B.1 Basic Principles	B-1
B.2 Installing the KYOCON.....	B-2
B.3 User Interface	B-3
B.4 Toolbar	B-5
B.5 Menu Bar	B-7
B.5.1. The 'Print Server' Menu	B-7
B.5.2. The 'Status' Menu	B-8
B.5.3. The 'Config.' Menu	B-10
B.5.4. The 'Download' Menu	B-12
B.5.5. The 'Sort' Menu	B-13
B.5.6. The 'Options' Menu	B-14
B.5.7. The 'Help' Menu	B-14

REFERENCE C Technical Data C-1

C.1 Basic Principles	C-1
C.2 Technical Data.....	C-2
C.2.1. NB-4e	C-3
C.2.2. NB-5ef	C-4
C.2.3. NB-100	C-5
C.2.4. NB-6e	C-6
C.2.5. SB-4e	C-7
C.2.6. SB-5ef.....	C-8
C.2.7. SB-100.....	C-9
C.2.8. SB-6e	C-10
C.3 Controls	C-11
C.3.1. Function of LED.....	C-11



C.3.2. Function of Status Button.....	C-12
C.4 Connector Pin Assignment	C-14
C.4.1. Pin Assignment of the BNC Connector	C-14
C.4.2. Pin Assignment of the AUI Connector	C-14
C.4.3. Pin Assignment of the RJ-45 Connector	C-15
C.4.4. Pin Assignment of the 9-Pin D-Sub Connector	C-16
C.5 Network Specifications	C-18
C.5.1. 10Base2 Ethernet Networks	C-18
C.5.2. 10Base5 Ethernet Networks	C-19
C.5.3. 10BaseT Ethernet Networks	C-19
C.5.4. 100BaseTX Ethernet Networks.....	C-20
C.5.5. TokenRing Networks	C-20
C.6 EC Declaration of Conformity.....	C-22
C.7 FCC compliance.....	C-24
 REFERENCE D Print Server Parameters	 D-1
D.1 Basic Principles	D-1
D.2 Parameter Description	D-3
D.2.1. General Parameters	D-4
D.2.2. TokenRing Parameters.....	D-4
D.2.3. TCP/IP Parameters.....	D-4
D.2.4. Novell NetWare Parameters	D-5
D.2.5. SNMP Parameters.....	D-6
D.2.6. Apple Parameters	D-6
D.2.7. Logical Printers	D-7
D.2.8. Specific Parameters for KYOCERA-PrintServers.....	D-9
D.3 Configuring Parameters Using FTP.....	D-10
D.4 Configuring Parameters Using the KYOCERA Printer Operating Panel.....	D-11
D.4.1. Configuring KYOCERA Printers with KUIO Interfaces	D-12
D.4.2. Configuring KYOCERA Printers with OPTION Interfaces.....	D-16
D.5 Configuring Parameters Using PRESCRIBE Commands.....	D-19
D.6 Parameter Printout	D-20

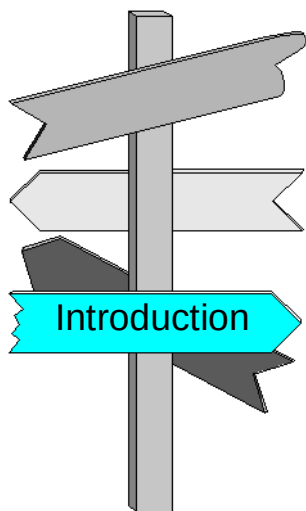
D.7 Parameter Reset.....	D-21
D.7.1. Parameter Reset Using the Homepage.....	D-21
D.7.2. Parameter Reset Using the KYOCON.....	D-22
D.7.3. Parameter Reset Using the Status Button.....	D-22
D.7.4. Parameter Reset Using FTP	D-22

REFERENCE E Shell Scripts E-1

E.1 Basic Principles	E-1
E.2 Function of Shell Scripts	E-2
E.3 Description of Variables.....	E-4



Your Print Server Introduces Itself



This chapter contains information concerning the following topics:

- What Does Your Print Server Offer?
- Scope and Operating System
- Which Documentation Applies to Your Print Server?
- How Do I Use the User Manual?
- Symbols and Conventions



1.1 What Does Your Print Server Offer?

Flexibility

The KYOCERA-PrintServer supports various protocols, such as TCP/IP or IPX, as well as the most widely used operating systems, such as Novell NetWare, Windows, UNIX, and Apple.

Simple Administration

You can call device and status information at any time using the print server homepage, the KYOCON, FTP, or SNMP. In addition, you can print out a status page containing configuration data by means of the status button.

Software Update

If necessary, a new software version can be loaded into the flash EPROM of the print server. You will thus profit from future updates, as well.

Year 2000, EC Conformity, and FCC

Because the print server does not process any dates, full functionality for the year 2000 is guaranteed. The KYOCERA-PrintServer conforms to EC and FCC standards. For the EC Declaration of Conformity, please refer to the "EC Declaration of Conformity" section on page C-22. For the FCC compliance, please refer to the "FCC compliance" section on page C-24.

1.2 Scope and Operating System

Intended Use

Print servers are network interfaces for printers in office environments and are designed for the direct integration of printers into networks. Depending on the type, print servers are installed into or connected to the printer. The print server may not be used in networks, operating systems, and printers which do not meet the requirements of this documentation. During hardware and software installation, the data in the documentation must be observed. Devices intended for installation within the printer may not be used externally. Pocket print servers may not be operated if the housing has been either removed or damaged. Modifications to the print server are not permitted.

Operating Systems

Your KYOCERA-PrintServer supports the following operating systems:

System	Version
Novell	Novell NetWare 4.x (NDS mode) Novell NetWare 3.x, 4.x (bindery mode)
Windows	Windows 98 Windows 95 Windows NT 4.0 Windows NT 3.51
UNIX	BSD systems (BSD 4.2, 4.3 SunOS Ultrix, and so on) System V systems (V.3, V.4, SCO, HP-UX, and so on) AIX 4.x and 3.x SINIX Spool 4.x BS2000 (RSO Spool V.2.3A, V.3.0A)
Apple	System 8 System 7

Protocols

Your KYOCERA-PrintServer supports the following protocols:

- TCP/IP, ICMP, and UDP
- IPX/SPX



- DHCP, BOOTP, RARP, and ARP boot protocols
- SNMP (MIB II and private MIB)
- EtherTalk and TokenTalk
- FTP and TFTP
- LPD
- HTML 3.x

Note

Before starting the hardware installation and initial operation procedure for your print server, please note the following safety instructions:

- Read the User Manual, and make sure that your system meets the requirements listed therein.
- Before installing the print server PCB, read and observe the "Safety Instructions" section in the Hardware Installation Guide.
- Read and observe the individual steps for the software installation of the print server listed in the User Manual.



1.3 Which Documentation Applies to Your Print Server?

Validity of Documentation



This documentation is valid for the KYOCERA-PrintServer described in the "Technical Data" chapter on page C-2.

Before installing the hardware and software of the print server, observe the data listed in this chapter.

The print server documentation consists of the following parts:

- Hardware Installation Guide
- Quick Software Installation Guide
- User Manual

All documents are included in delivery. The Hardware Installation Guide and the Quick Software Installation Guide have been enclosed in the product packaging as printed documents. The User Manual is stored on the CD-ROM as *.pdf file and can be printed if required.

Hardware Installation Guide

The Hardware Installation Guide contains all information needed for installing the KYOCERA-PrintServer into the printer and for connecting it to the network environment.

Quick Software Installation Guide

The Quick Software Installation Guide contains a brief description of the installation of the software under the supported operating systems. This guide contains almost no background information and is written for experienced network administrators. A more detailed software installation description can be found in the User Manual.



User Manual

The User Manual contains a detailed print server description, which is complete with the exception of the hardware installation that can be found in the Hardware Installation Guide.



1.4 How Do I Use the User Manual?

The User Manual is divided into two main sections: An application section and a reference section.

Application Section

The application section contains all descriptions needed to install the software and to configure the print server, as well as general information which you may need to understand the documentation. The relevant texts must be read and carried out according to the respective network environment and operating system.

Reference Section

The reference section contains descriptions of all configuration parameters, menu commands, technical terms, and so on. The reference section thus acts as a reference work in which you can easily look up all important information.

How to Use the Manual

For orientation purposes, the User Manual contains a table of contents at the beginning and a list of figures and an index at the end. These lists consist of cross-references. You can jump to the corresponding segment by clicking a cross-reference.

How Can I Print Out the User Manual

The layout of the User Manual layout is designed for screen use. Nevertheless, it is possible to print out the User Manual using the Acrobat Reader. A resolution of 600 dpi is recommended.



1.5 Symbols and Conventions

This document uses the following conventions:

'Name' Window

The names of menus, files, and windows are marked using single quotation marks.

"Name" Section

The names of chapters and sections are marked using double quotation marks. In the Acrobat Reader you can jump to the corresponding text chapters by clicking the cross-references.



Eye-catchers mark lists.



Hooks mark requirements that must be met before you can begin the actual installation.



An arrow informs you that various possibilities are available. You can jump to the corresponding text section by clicking the text immediately following the arrow.



A diamond informs you that several steps must be taken in succession. You can jump to the corresponding text section by clicking the text immediately following the arrow.

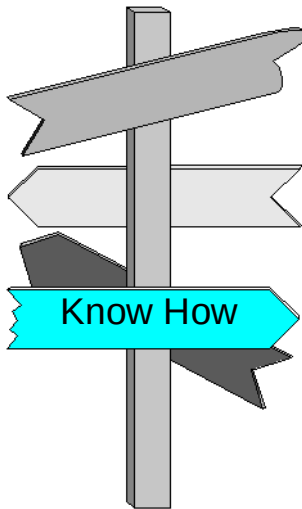


A notice contains information that should be heeded. The notice usually contains supplementary information or cross-references to other relevant sections in the manual.



A warning contains important information that must be heeded. Non-observance may lead to malfunctions.

Network Know How



This chapter contains information concerning the following topics:

- Basic Terminology
- Basic TCP/IP Terminology
- SNMP



2.1 Basic Terminology

In order to install your print server, you will need various data and parameters. This information will be explained in this section.

2.1.1. Hardware Address

Structure of Hardware Address

A print server is addressable by means of its world-wide unique hardware address. This address is commonly referred to as the MAC or Ethernet address. The manufacturer has defined this address in the hardware of the print server. The address consists of 12 hexadecimal numbers. The first six numbers represent the manufacturer, while the last six numbers represent the individual card.

Where Can I Find the Hardware Address?

The hardware address of your print server is on a label pasted onto the actual card and can be read easily. On the print server, you will find a hardware address of '00c0eb0001ff,' for example. Here, '00c0eb' identifies the manufacturer, while '0001ff' is the number of your print server. If your print server has already been installed, you can find the hardware address using either the print server homepage, the KYOCON, SNMP, or the status page.

Spelling of Hardware Address

You must enter the hardware address during the installation of the print server software. This entry varies depending on the operating system use:

Operating system	Representation	Example
Windows	Hyphens	00-c0-eb-00-01-ff
UNIX	Colons or periods	00:c0:eb:00:01:ff or 00.c0.eb.00.01.ff



2.1.2. Print Server Name

Name Structure

The print server name is made up of two letters 'NB' and the print server number. The print server number consists of the last six numbers of its hardware address.

Example: Hardware address: 00:c0:eb:00:01:ff
Print server name: NB0001FF

Where Do I Find the Name?

The print server name can also be found using either the print server homepage, the KYOCON, SNMP, or the status page.

Apple and Novell Name

In Novell and Apple network environments, the Novell or Apple name is used. Upon delivery, the print server name corresponds to the Novell or Apple name. The Novell or the Apple name may be changed using the print server homepage, the KYOCON, SNMP, or FTP parameter transfer.

2.1.3. Logical Printers

What Are Logical Printers?

Logical printers are so-called pre-installed print server filters. Print data is interpreted according to the set logical printer. The KYOCERA-PrintServer has eight available logical printers. Each logical printer has a different function.

Which Logical Printers Are Available?

The following pre-defined logical printers are available:

No.	Preset function
1	Default setting
2	Changes Line Feed (LF) to Carriage Return with Line Feed (LF+CR)



No.	Preset function
3	Converts ASCII files into PostScript files
4	Prints a banner page in Novell network environments or if the LPD protocol is used
5	Prints all data in hex dump mode. Hex dump mode is mainly used to search for faulty or missing print data. The data is printed as a byte in hexadecimal form instead of letters and numbers. Printer control commands are printed as hexadecimal values and do not influence the printing result in any way.
6	Not assigned
7	Not assigned
8	Supports the RSO Spooler (BS2000)

Logical Printer Configuration

You may change the function of every logical printer by changing the corresponding configuration parameter. This parameter can be changed using either the print server homepage, the KYOCON, SNMP, or FTP parameter transfer.

Addressing Logical Printers

Depending on your system, logical printers may be addressed in various ways.

Windows NT and UNIX

In Windows NT and UNIX network environments, the logical printers are addressed with 'lp1' through 'lp8.'

Windows 98 and 95

If the LPD protocol is not available, as is the case of Windows 98 network environments, you may use the TCP/IP ports corresponding to the logical printers instead. Refer to the "TCP/IP Ports" section on page 2-16.

Novell

In Novell network environments, the logical printers are addressed with '#1' through '#8.'

FTP

In the case of an FTP print data transfer, the logical printers are addressed with 'lp1' through 'lp8.'
Example: put <file name> lp1



Apple

No logical printers are available in Apple network environments.



2.2 Basic TCP/IP Terminology

In Windows and UNIX networks, TCP/IP is used for communication between the various participants. In order to install your print server into TCP/IP-based network environments, you must enter certain data and parameters. This information is described in the following section. If you are already familiar with TCP/IP, please read the "Installation in Windows Network Environments" chapter on page 4-1 or the "Installation in UNIX Network Environments" chapter on page 5-1.

2.2.1. IP Address

What Is the IP Address?

The IP address is the unique address of each node in a network; that is, an IP address may occur only once on a local network. The system administrator usually assigns the IP address. The address must be saved in the print server to make sure that it can be addressed within the network. In this user manual, IP address '192.168.0.123' is consistently used as an example.

IP Address Structure

IP addresses always consist of four address groups. Each group is separated from the next group by a period. Every IP address is divided up into the network ID and the user ID. This division is primarily determined by the network class.



The following network classes can be distinguished:

	1	2	3	8	16	24	32
Class A	0	Network			User		
Class B	1	0	Network			User	
Class C	1	1	0	Network			User

Fig. 2-1: TCP/IP network classes

All IP addresses assigned in a logical network must belong to the same class.

Example

You have applied for a Class C network ID and receive network ID '192.168.0.' Due to the fact that user IDs '0' and '255' are reserved for broadcast addresses, a valid IP address must lie somewhere between '192.168.0.1' and '192.168.0.254,' such as '192.168.0.123.'

2.2.2. Methods of Saving the IP Address in the Print Server

If you use TCP/IP as the network protocol, the IP address must first be saved in the print server, regardless of whether you are using a Windows or UNIX network.

In this manual, the printer operating panel is always used for saving the IP address. If your network uses boot protocols, they should preferably be used to save the IP address. This guarantees a network-wide, consistent IP address usage and eliminates a potential source of errors.



The following possibilities for saving the IP address are available:

- ◆ The DHCP Boot Protocol
- ◆ The BOOTP Boot Protocol
- ◆ The RARP Boot Protocol
- ◆ The 'arp' and 'ping' Commands
- ◆ KYOCON
- ◆ KYOCERA Printer Operating Panel
- ◆ PRESCRIBE Commands for KYOCERA Printers

2.2.2.2. The DHCP Boot Protocol

Network Structure Using DHCP

The dynamic administration of IP addresses by means of DHCP requires a system that administers the allocation of IP addresses to host names. This administration is taken over by DNS servers, which can be dynamically configured by the DHCP server. Most systems additionally use a WINS server, which answers name inquiries that the DNS server cannot handle. This constellation, which is common for Windows NT 4.0 networks, is described below.

Requirements

Make sure that:

- ✓ The 'DHCP' parameter has been activated (see status page).

What Happens When the Print Server Is Turned On?

After the print server has been turned on in a Windows NT 4.0 network, it sends a query to the DHCP server asking for the IP address, the host name, and the IP address of the WINS server. The answer from the DHCP server is sent as a data packet and saved in the print server. The print server now transmits a name



registration request to the WINS server, along with the IP address and host name allocation. The answer from the WINS server contains the period of validity of the name entry in the WINS database. Once this period has expired, the print server renews its registration with the WINS server so that its IP address and host name remain constantly valid.

What Happens When Printing?

During the installation of the print server, its host name is displayed on the monitor of the computer intended for printing. In order for you to be able to allocate the host name to the IP address, the computer asks the DNS server for the IP address of the print server. If the DNS server cannot answer this request, it forwards the request to the WINS server. Once the computer receives the answer, it sends the print data to the IP address of the print server.

You can also enter the IP address instead of the host name during print server installation. If you have done this, you may then send print data directly to the IP address.



If you wish to configure your print server on a DHCP server, please read the documentation for your specific operating system if necessary.

2.2.2.3. The BOOTP Boot Protocol

If your network uses the BOOTP boot protocol, the '/etc/bootptab' file must be supplemented. This file is located on the host running the BOOTP daemon. The '/etc/bootptab' file contains a permanent copy of the allocation of the host name and the IP address to the hardware address.

Requirements

Make sure that:



- ✓ The 'BOOTP' parameter has been activated (see status page).

What Happens When the Print Server Is Turned On?

Once the print server has been turned on, it asks the BOOTP host for the IP address and the host name. The answer of the BOOTP host server, which contains the IP address, is sent as a data packet and saved in the print server.

What Happens When Printing?

During the installation of the print server, its host name is displayed on the monitor of the computer intended for printing. The computer finds the IP address of the print server by means of either the local 'etc/hosts' file or the DNS host. The print data can then be sent to this IP address.

You can also enter the IP address instead of the host name during print server installation. If you have done this, you may then send print data directly to the IP address.

2.2.2.4. The RARP Boot Protocol

If your network uses the RARP boot protocol, either the '/etc/ethers' file or the ' /etc/rarpd.cf' file must be supplemented.



The choice of which file to supplement depends on how the RARP network service was implemented on your UNIX system. Please read the section concerning 'rarpd' in your UNIX manual if necessary.

Both files are located on the host running the RARP daemon. The files contain a permanent copy of the allocation of the host names and the IP address to the hardware address.

Requirements

Make sure that:

- ✓ The 'RARP' parameter has been activated (see status page).

**What Happens
During Print Server
Installation?**

Once the print server has been turned on, it asks the RARP host for the IP address and the host name. The answer of the RARP host server, which contains the IP address, is sent as a data packet and saved in the print server.

**What Happens
When Printing?**

During the installation of the print server, its host name is displayed on the monitor of the computer intended for printing. The computer finds the IP address of the print server by means of either the local 'etc/hosts' file or the DNS host. The print data can then be sent to this IP address.

You can also enter the IP address instead of the host name during print server installation. If you have done this, you may then send print data directly to the IP address.

2.2.2.5. The 'arp' and 'ping' Commands

By means of the 'arp' and 'ping' commands, you can save an IP address to the print server in an easy, uncomplicated manner.



The 'arp' and 'ping' commands should be used for saving the IP address only if your network does not use a specific IP address and host name administration, such as DNS or WINS servers.

The 'arp' command is used for editing the ARP table. The 'ping' command sends a data packet with an IP address to the hardware address of the print server. If the data packet has been successfully sent and received, the print server permanently saves the IP address.



The implementation of the 'ping' command depends on the system used. Please read the relevant section in the user manual of your operating system if necessary.



Requirements

Make sure that:

- ✓ The 'IP autoconfig' parameter has been activated (see status page).

Procedure

Proceed as follows:

1. Edit the ARP table:
Syntax: `arp -s <IP address> <hardware address>`
Example: `arp -s 192.168.0.123 00-c0-eb-00-01-ff`
2. Allocate a new IP address to the print server:
Syntax: `ping <IP address>`
Example: `ping 192.168.0.123`

Trouble Shooting

The 'Addition failed' error occurs when you use the 'arp' command. This error informs you that the ARP table is empty and that the new entry cannot be added. This problem occurs in the case of certain operating systems, such as all Microsoft Windows versions with the exception of NT 4.0. The solution to the problem is to ping a station in the network before using the 'arp' command for the first time or use the KYOCON to enter the IP address.

2.2.2.6. KYOCON

You can easily type the IP address as well as other TCP/IP parameters and thus save them in the print server using the KYOCON.



The KYOCON is stored on the KYOCERA Printer Library CD-ROM and may be installed from there. Read the section "Installing the KYOCON" section on page B-2 if necessary.

Requirements

Make sure that:



- ✓ The IPX protocol is installed on any computer intended for printing.

Procedure

Proceed as follows:

1. Start the KYOCON.
2. Select the print server from the print server list.
3. Click 'Print Server Configuration.'
The 'Parameter for Print Server...' window appears.
4. Choose the 'TCP/IP' tab.
5. Enter the IP address in the 'Internet Address' box.
6. Click OK to acknowledge.

2.2.2.7. KYOCERA Printer Operating Panel

In the case of all KYOCERA printers with the exception of the FS-400 and FS-600 models, you can type the IP address directly into the printer operating panel and save it in the print server.



In addition to the IP address, you can also change other parameters using the printer operating panel.

The procedure varies depending on the printer model and the printer operating panel. Please read the "Configuring Parameters Using the KYOCERA Printer Operating Panel" section on page D-11 if necessary.



Operating panel settings will not be saved in the print server if a password has been assigned. For printers with an OPTION interface, the 'panel' parameter must be activated.



2.2.2.8. PRESCRIBE Commands for KYOCERA Printers

In the case of some KYOCERA printers, you can use PRESCRIBE commands to save the IP address in the print server. These printers all have a KUIO interface, such as the FS-600, FS-800, FS-1700+, FS-3700+, FS-7000, and FS-5800C models.



In addition to the IP address, you can also change other parameters using PRESCRIBE commands. Please read the "Configuring Parameters Using PRESCRIBE Commands" section on page D-19 if necessary.

Procedure

Proceed as follows:

1. Create an ASCII file and assign it an arbitrary name.
2. Insert the following entry into the file:
Syntax: !R!SIOP2,"IP:<IP address>";EXIT;
Example: !R!SIOP2,"IP:192.168.0.123";EXIT;
3. Transfer the file as a print file to the print server by means of the parallel, serial, or KUIO interface.



PRESCRIBE commands cannot be used if a password has been assigned to the print server.

2.2.3. Host Name

What Is the Host Name?

The host name is an alias for an IP address. We recommend that you always use a host name. If the IP address changes, only the file containing the allocation of the host name to the IP address must be changed. The host name used to address the print server in your local network may be chosen freely. The chosen name should



have some sort of connection to the corresponding card, such as 'NB0001FF,' or to the printer.

Allocating the Host Name

The host name must be allocated to the IP address. This is carried out either in the 'hosts' file or on the DNS or WINS server. In this manual, only the allocation of the host name to the IP address using the 'hosts' file is described. Please read the relevant section in the user manual of your operating system if necessary.

What Is the 'hosts' File?

The 'hosts' file is an internal system file in which the allocation of the host names to the IP addresses is stored.

Syntax: <IP address> <host name>

Example: 192.168.0.123 NB0001FF

The 'hosts' file is located in the 'Windows' directory in Windows networks and in the 'etc' directory in UNIX networks.

2.2.4. ARP Table

What Is the ARP Table?

The ARP table is an internal system file in which the allocation of IP addresses to hardware addresses is stored. This table is administered by the ARP protocol, whereby the entries expire after approximately 15 minutes and can therefore be forgotten. You can display and edit the ARP table using the 'arp' command.

The ARP table is needed for saving the IP addresses in a print server if no boot protocol is used (see the "The 'arp' and 'ping' Commands" section on page 2-11).



2.2.5. TCP/IP Ports

What Are TCP/IP Ports?

During the transfer of files between two computers, addressing with the IP address alone generally does not suffice. In addition to the IP address, the port number is used. This number defines a specific computer memory area reserved for a specific communications connection. The combination of an IP address and a port number is unique for every communications connection and is defined as a socket.

LPD Protocol and TCP/IP Ports

If the LPD protocol is used for transferring print data, the corresponding data packet automatically contains a port number of '515' and does not need to be specifically configured. The transferred print data is saved to the memory area corresponding to the port number and then processed.

TCP/IP Ports Without LPD Protocol

If the LPD protocol is not available, as in the case of Windows 95 networks, you must then configure the port number yourself. In order to do this, you must install a printer port and enter the port number. In this case, such a port may also be called a direct printer port.

TCP/IP Ports and Logical Printers

The port numbers correspond to the logical printers (see also the "Logical Printers" section on page 2-3). The following port numbers are preset in your print server:

Port number	Preset function	Logical printer
9100	Default setting	1
9101	Changes Line Feed (LF) to Carriage Return with Line Feed (LF+CR)	2
9102	Converts ASCII files into PostScript files	3
9103	Prints a banner page in Novell networks or when the LPD protocol is used	4



Port number	Preset function	Logical printer
9104	Prints all data in hex dump mode. Hex dump mode is mainly used to search for errors in print data. The data is printed as a byte in hexadecimal form instead of letters and numbers. Printer control commands are printed as hexadecimal values and do not influence the printing result in any way.	5
9105	Not assigned	6
9106	Not assigned	7
2900	Supports the RSO Spooler (BS2000)	8

2.2.6. Gateway

Using a gateway, you can address IP addresses from external networks. Your print server is configured not to use gateways by default. If your network does not use gateways, you do not need to take any further steps. If, however, you are using a gateway in your network, you should ask your system administrator for the IP address of the gateway. You can change this parameter using either the print server homepage, the KYOCON, SNMP, or FTP parameter transfer.

2.2.7. Subnet Mask

What Is the Subnet Mask?

With the help of the subnet mask, large networks can be split up into subnetworks. In this case, the user IDs of the IP addresses are allocated to the various subnetworks.

Example

If no subnetwork is used, the subnet mask of a Class C network is set to '255.255.255.0.' If two subnetworks are used, the subnet



mask may be set to '255.255.255.128,' for example. Valid IP addresses in this example are '192.168.0.1' to '192.168.0.127' in the first subnetwork and '192.168.0.129' to '192.168.0.254' in the second subnetwork.

Subnet Mask Configuration

Your print server is configured not to use subnetworks by default. If your network is not split into subnetworks, you do not need to take any further steps. If, however, you are using a subnetwork, you should ask your system administrator for the subnet mask. You can configure this parameter using either the print server homepage, the KYOCON, SNMP, or FTP parameter transfer.



2.3 SNMP

The SNMP protocol is used for providing and transferring management information within the network environment. The SNMP architecture is based on one or more management stations and several network elements with one or more implemented network management agents. The SNMP protocol is used for communication between the management stations and the agents. The management information is stored in so-called management information bases (MIB).

Private MIB of Print Server

As an agent, the KYOCERA-PrintServer provides the standard MIB-II and a private MIB. All print server parameters and status information are stored in the private MIB. Read the "Parameter Description" section on page D-3 if necessary. The private MIB is stored in the print server on delivery and can be installed immediately. On the KYOCERA Printer Library CD-ROM, you will find a formal description of the private MIB objects.

Function

The system administrator can query and configure the print server parameters from a management tool, such as OpenView or TransView, by means of the SNMP protocol. In case of an error, such as 'Paper empty,' the print server automatically sends an error message, the so-called trap, to pre-defined IP or IPX addresses. To this end, the IP and IPX addresses must be configured and the traps must be activated using the print server homepage, the KYOCON or the FTP parameter transfer.

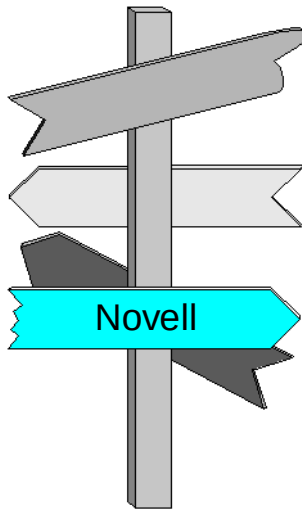
Requirements

When using SNMP, make sure that:

- ✓ The TCP/IP protocol or the IPX protocol is installed on any computer from which you want to print.
- ✓ The print server is connected, and the printer is turned on.
- ✓ The IP address is stored in the print server.



Installation in Novell Network Environments



This chapter contains information concerning the following topics:

- Basic Principles
- Installing into Novell NetWare 4.x Network Environments in Print Server Mode
- Installing into Novell NetWare 4.x Network Environments in Remote Printer Mode
- Installing into Novell NetWare 3.x Network Environments in Print Server Mode
- Installing into Novell NetWare 3.x Network Environments in Remote Printer Mode



➤ Tips and Tricks



3.1 Basic Principles

The KYOCERA-PrintServer can process print jobs from NetWare 3.x bindery servers and NetWare 4.x NDS servers while simultaneously functioning as a remote printer.

What Happens When Printing in Novell Networks?

The printing sequence in Novell networks has three steps:

- Print data rerouting
- Intermediate print data storage in a print queue
- Printout

Print data that is transferred from an application to a printer interface, such as LPT1, is redirected to the NetWare file server. The incoming print job is added to a print queue on the file server. The print job is then routed either to a print server connected to a printer or to a remote printer, where it is then printed out.

What Is PCONSOLE?

PCONSOLE is a standard menu-controlled program that is available in all Novell networks by default. You can use PCONSOLE to install print queues, administer print jobs, and set up your print server. In Novell NetWare 4.x networks, the GUI NWADMIN can be used instead of PCONSOLE. Please read the NWADMIN section in your Novell documentation if necessary.

Which Protocols Are Used?

The IPX protocol is used as the network protocol in all Novell networks. The IPX protocol must be installed on every workstation which is to provide printing services. If remote printing is selected, as well, the SPX protocol is then used as the network protocol between the file server and the KYOCERA-PrintServer.



Print Server, Network Printer, or Remote Printer?

Your print server can be installed into Novell networks in various modes. Print server mode is available under both Novell NetWare 4.x and 3.x. The print server can be installed as a network printer (NPRINTER) in Novell NetWare 4.x networks and as a remote printer (RPRINTER) in Novell NetWare 3.x networks. Each mode has certain advantages and disadvantages that will be described below.

Print Server Mode

In print server mode, the KYOCERA-PrintServer carries out an automatic recognition of the network structure. After activation, the KYOCERA-PrintServer transfers broadcast data packets having the 'IEEE_802.2,' 'IEEE_802.3,' 'ETHERNET_II,' and 'SNAP' Novell frame types to the network environment. This gives the print server a general overview of the existing bindery and NDS servers and the installed printer queues. The print server logs itself on and automatically recognizes network environment changes by searching the network environment every two minutes. This time period, the so-called refresh time, and the relevant frame types can be configured using either the print server homepage, the KYOCON, or FTP parameter transfer.

In print server mode, the KYOCERA-PrintServer queries whether any file servers have print jobs in their respective printer queues at regular intervals. If any print jobs exist, the KYOCERA-PrintServer collects the print data and sends it to the printer for processing. This time period, the so-called poll time, can be configured using either the print server homepage or the KYOCON.

Every print server in the print server mode requires a Novell NetWare user licence. The data throughput during print server mode is comparatively high. The KYOCERA-PrintServer can service 16 bindery servers and eight NDS servers. You can install and allocate up to a total of 16 print queues to a print server.



Remote Printer Mode and Network Printer Mode

In remote printer mode, a Novell print server must be started on the Novell file server. This Novell print server is the PSERVER.NLM module. In Novell NetWare 3.x network environments, a workstation or a computer can adopt all print functions. In order to activate this function, you must start the PSERVER.EXE module on the workstation or computer in question.

In remote printer mode, the print jobs are routed from the PSERVER to the KYOCERA-PrintServer. The KYOCERA-PrintServer adopts the function of NPRINT in NetWare 4.x network environments and of RPRINT in NetWare 3.x network environments. The print server routes status information, such as 'Paper empty,' to PSERVER. If PSERVER receives print jobs from the computers, these jobs are routed to the KYOCERA-PrintServer.

In remote printer mode, the print server does not need a user licence. The KYOCERA-PrintServer requires comparatively fewer resources and does not overload the network. PSERVER can administer a maximum of 256 print servers in Novell NetWare 4.x network environments and 16 print servers in Novell NetWare 3.x network environments.

What Is the Novell Name?

The Novell name can be used instead of the default print server name. You can use the Novell name whenever a print server needs a meaningful name, such as 'NBxxxxxx.' The Novell name can be assigned using either the print server homepage, the KYOCON or FTP parameter transfer.



Installation Procedures

Which procedures can be selected?

- Installing into Novell NetWare 4.x Network Environments in Print Server Mode
- Installing into Novell NetWare 4.x Network Environments in Remote Printer Mode
- Installing into Novell NetWare 3.x Network Environments in Print Server Mode
- Installing into Novell NetWare 3.x Network Environments in Remote Printer Mode



3.2 Installing into Novell NetWare 4.x Network Environments in Print Server Mode

In this section, the installation of your KYOCERA-PrintServer into Novell NetWare 4.x network environments in print server mode is described. Quick Setup in PCONSOLE enables easy, safe installation. In a single step, you can install a print server, a printer, and a print queue.



Before beginning the actual installation, you should have basic knowledge of Novell network environments. If this is not the case, please read the "Basic Principles" section on page 3-3.

The installation sequence requires the following data:

Box in PCONSOLE	User input	Example in text
Print Servers	<name of the KYOCERA-PrintServer> or Novell name	NB0001FF
Printers	<printer name> + #1to #8 for the logical printer	PRINTER#1
Print Queue	<arbitrary name>	MY_QUEUE

Please read the "Print Server Name" section on page 2-3 and the "Logical Printers" section on page 2-3 if necessary.

Requirements

Before installation, make sure that:

- ✓ The IPX protocol is installed on every computer intended for printing.
- ✓ The print server is connected, and the printer is turned on.



Procedure

Proceed as follows:

1. Log on as ADMIN.
2. Start PCONSOLE.

The following window appears:

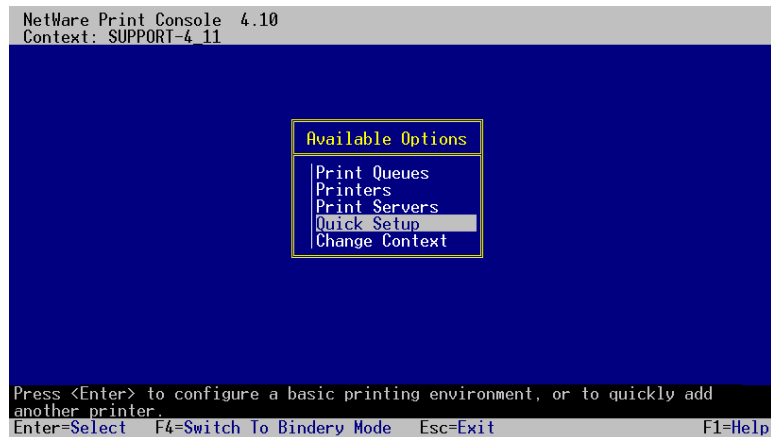


Fig. 3-1: Main menu of PCONSOLE

3. Select 'Quick Setup.'

The following window appears:

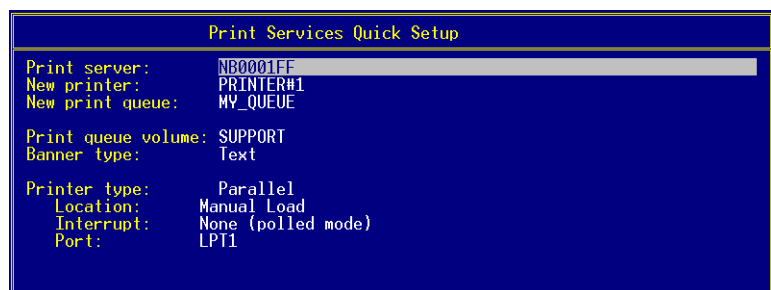


Fig. 3-2: 'Print Services Quick Setup' window



4. Type the print server name into the 'Print Server' box.
Syntax: NBxxxxxx
Example: NB0001FF
Here, you may also use the Novell name of the print server if you assign it using the print server homepage, the KYOCON, or FTP parameter transfer.
5. Type an arbitrary name and a logical printer into the 'New Printer' box.
Syntax: <printer name> + #1 - #8
Example: PRINTER#1
The logical printers are defined using extensions #1 to #8. If no logical printer is defined, all print data is automatically routed to logical printer no. 1.
6. Type an arbitrary name into the 'New Print Queue' box.
Example: MY_QUEUE
7. Press F10 to save all data.



3.3 Installing into Novell NetWare 4.x Network Environments in Remote Printer Mode

In this section, the installation of your KYOCERA-PrintServer into Novell NetWare 4.x network environments in remote printer mode is described.



Before beginning the actual installation, you should have basic knowledge of Novell network environments. If this is not the case, please read the "Basic Principles" section on page 3-3.

Data Required for Installation

The installation sequence requires the following data:

Box in PCONSOLE	User input	Example in text
Print Servers	<name of PSERVER.NLM> on file server	MY_PRINT_SERVER
Printers	<name of KYOCERA-Print-Server> or Novell name	NB0001FF
Print Queues	<arbitrary name>	MY_QUEUE

Please read the "Print Server Name" section on page 2-3 and the "Logical Printers" section on page 2-3 if necessary.

Requirements

Before installation, make sure that:

- ✓ The IPX protocol is installed on every computer intended for printing.
- ✓ The print server is connected, and the printer is turned on.

**Procedure**

Install the print server in the following steps:

- ◆ Installing a Print Server, a Printer, and a Print Queue
- ◆ Configuring the KYOCERA-PrintServer
- ◆ Starting PSERVER on the File Server

3.3.1. Installing a Print Server, a Printer, and a Print Queue

Quick Setup in PCONSOLE allows easy, safe installation. In a single step, you can install a print server, a printer, and a print queue.

Procedure

Proceed as follows:

1. Log on as ADMIN.
2. Start PCONSOLE.

The following window appears:

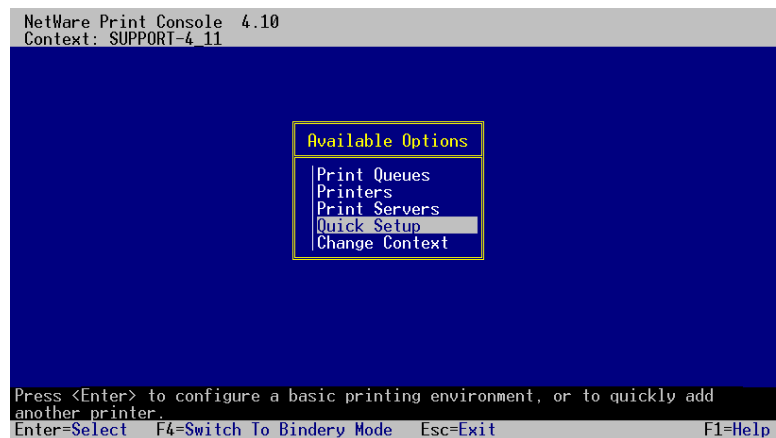


Fig. 3-3: Main menu of PCONSOLE



3. Select 'Quick Setup.'
The following window appears:

```
Print Services Quick Setup
Print server: MY_PRINT_SERVER
New printer:  NB0001FF
New print queue: MY_QUEUE
Print queue volume: SUPPORT
Banner type:   Text
Printer type:   Parallel
Location:       Manual Load
Interrupt:      None (polled mode)
Port:          LPT1
```

Fig. 3-4: 'Print Services Quick Setup' window

4. Type the PSERVER name into the 'Print Server' box.
Example: MY_PRINT_SERVER
5. Type the print server name in the 'New Printer' box.
Syntax: NBxxxxxxx
Example: NB0001FF
Here, you may also use the Novell name of the print server if you assign it using the print server homepage, the KYOCON or FTP parameter transfer.
6. Type an arbitrary name into the 'New Print Queue' box.
Example: MY_QUEUE
7. Press F10 to save all data.

3.3.2. Configuring the KYOCERA-PrintServer

The PSERVER name must be configured on the KYOCERA-PrintServer so that status messages can be sent from the print server to the file server. This can be done using the print server homepage, the KYOCON or FTP parameter transfer. In this section, configuration using the KYOCON is described. If you



wish to use an Internet browser, please read the "NetWare Parameter Configuration" section on page A-9. If you wish to use FTP parameter transfer, please read the "Configuring Parameters Using FTP" section on page D-10.

Procedure

Proceed as follows:

1. Start KYOCON.
2. Select the print server from the print server list.
3. Click 'Print Server Configuration.'
4. Select the 'NetWare' tab.

The following window appears:

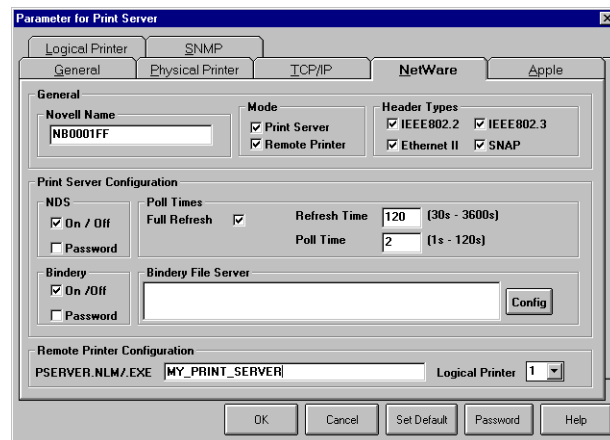


Fig. 3-5: 'NetWare' tab

5. Type the PSERVER name into the 'PSERVER.NLM/.EXE' box.
Example: MY_PRINT_SERVER
6. Select a logical printer from the 'Logical Printer' box if required.
7. Click OK to acknowledge.



3.3.3. Starting PSERVER on the File Server

In the last step, the Novell print server must be installed in the PSERVER of the file server so that the print data can be sent from PSERVER to the KYOCERA-PrintServer. To this end, the PSERVER module having the name of the PSERVER entered in PCONSOLE must be started.

Procedure

Proceed as follows:

1. Start PSERVER on the file server with the PSERVER name entered using PCONSOLE.

Syntax: `LOAD PSERVER <PSERVER Name>`

Example: `LOAD PSERVER MY_PRINT_SERVER`



3.4 Installing into Novell NetWare 3.x Network Environments in Print Server Mode

In this section, the installation of your KYOCERA-PrintServer into Novell NetWare 3.x network environments in print server mode is described. In Novell NetWare 3.x network environments, the print server is installed by means of the PCONSOLE program.



Data Required for Installation

Before beginning the actual installation, you should have basic knowledge of Novell network environments. If this is not the case, please read the "Basic Principles" section on page 3-3.

The installation sequence requires the following data:

Box in PCONSOLE	User input	Example in text
Print Server Name	<name of KYOCERA-Print-Server> or Novell name	NB0001FF
Print Queue Name	<arbitrary name>	MY_QUEUE

Please read the "Print Server Name" section on page 2-3 if necessary.

Requirements

Before installation, make sure that:

- ✓ The IPX protocol is installed on every computer intended for printing.
- ✓ The print server is connected, and the printer is turned on.



Procedure

Install the print server in the following steps:

- ◆ Installing the Print Server into the Novell File Server
- ◆ Installing a Print Queue
- ◆ Allocating the Print Server as a Queue Server

3.4.1. Installing the Print Server into the Novell File Server

The KYOCERA-PrintServer must be installed as a print server on the Novell file server.

Procedure

Proceed as follows:

1. Log on as SUPERVISOR.
2. Start PCONSOLE.

The following window appears:

Main Menu of
PCONSOLE

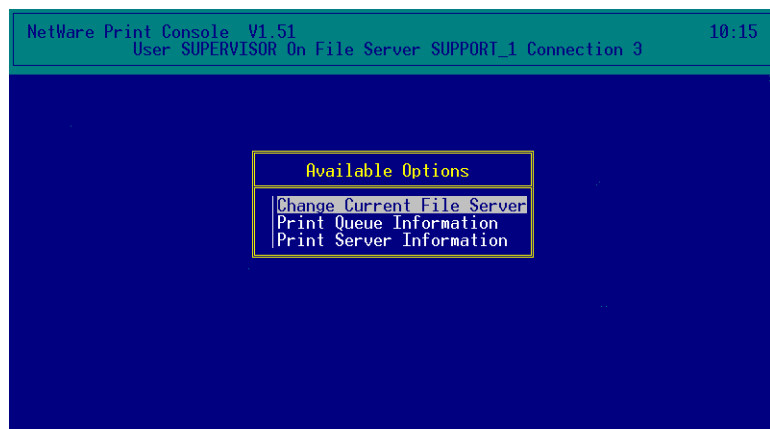


Fig. 3-6: Main menu of PCONSOLE



3. Select 'Print Server Information.'
The 'Print Servers' window appears.
4. Press INS.
The following window appears:

Enter Print Server

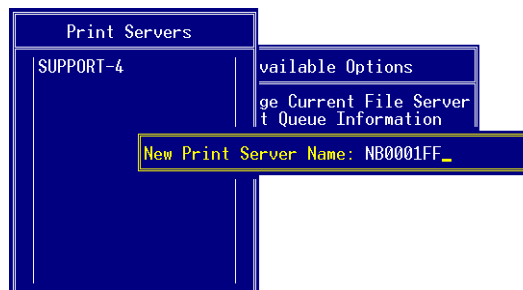


Fig. 3-7: 'New Print Server Name' window

5. Type the print server name into the 'New Print Server Name' window.
Syntax: <print server name>
Example: NB0001F
Here, you may also use the Novell name of the print server if you assign this name using the print server homepage, the KYOCON, or FTP parameter transfer.
6. Press ENTER to save the changes.
7. Press ESC to return to the main menu.



If you wish to use logical printers, you must install one or more additional print servers by repeating the steps above. Use the print server name and add extensions #1 to #8 to allocate it as a logical printer.

Syntax: <print server name> + #1 - #8
Example: NB0001FF#1



3.4.2. Installing a Print Queue

A print queue must be installed on the file server used for collecting print jobs and routing them to the print server.

Procedure

Proceed as follows:

1. Select 'Print Queue Information.'
The 'Print Queues' window appears.
2. Press INS.
The following window appears

Insert Print Queue

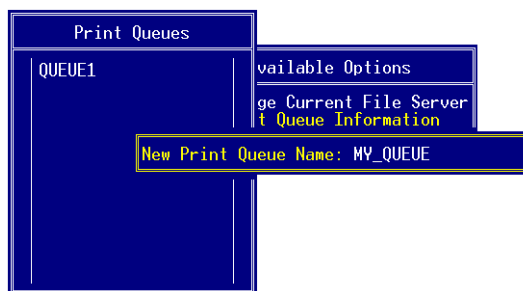


Fig. 3-8: 'New Print Queue Name' window

3. Type an arbitrary name into the 'New Print Queue Name:' window.
Example: MY_QUEUE
4. Press ENTER to save any changes.
5. Press ESC to return to the main menu.



3.4.3. Allocating the Print Server as a Queue Server

In the last step, the print server must be assigned to the print queue.

Procedure

Proceed as follows:

1. Select the new print queue.
2. Press ENTER.

The following window appears:

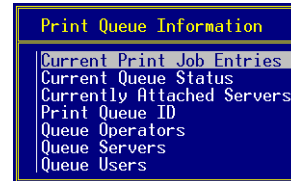


Fig. 3-9: 'Print Queue Information' window

3. Select 'Queue Servers.'
4. Press ENTER.
The 'Queue Servers' window appears.
5. Press INS.

The following window appears:

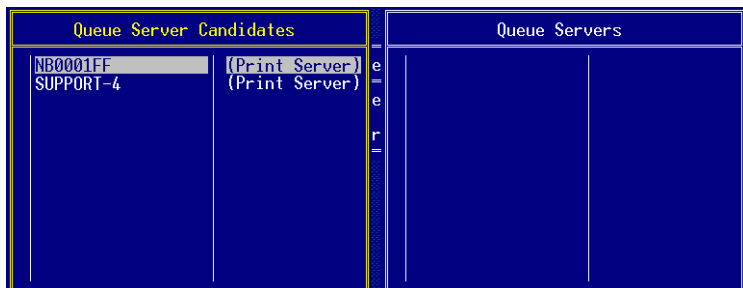


Fig. 3-10: 'Queue Server Candidates' window



6. Select the print server name and, if necessary, another print server.

7. Press ENTER.

The following window appears:

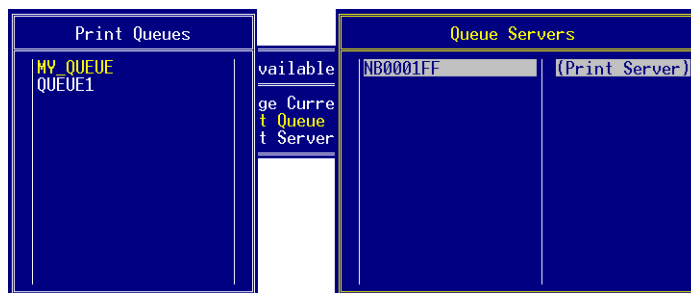


Fig. 3-11: 'Queue Servers' window

8. Press ESC repeatedly to close PCONSOLE.



3.5 Installing into Novell NetWare 3.x Network Environments in Remote Printer Mode

In this section, the installation of your KYOCERA-PrintServer into Novell NetWare 3.x network environments in remote printer mode is described. In Novell NetWare 3.x network environments, the print server is installed by means of the PCONSOLE program.



Data Required for Installation

Before beginning the actual installation, you should have basic knowledge of Novell network environments. If this is not the case, please read the "Basic Principles" section on page 3-3.

The installation sequence requires the following data:

Box in PCONSOLE	User input	Example in text
Print Server Name	<name of PSERVER.NLM> on the file server	MY_PRINT_SERVER
Printer Name	<name of the KYO- CERA-PrintServer> or Novell name	NB0001FF
Print Queue Name	<arbitrary name>	MY_QUEUE

Please read the "Print Server Name" section on page 2-3 if necessary.

Requirements

Before installation, make sure that:

- ✓ The IPX protocol is installed on every computer intended for printing.
- ✓ The print server is connected, and the printer is turned on.



Procedure

Install the print server in the following steps:

- ◆ Installing a Print Queue
- ◆ Installing the Novell PSERVER
- ◆ Installing a Remote Printer
- ◆ Allocating the Print Queue
- ◆ Configuring the KYOCERA-PrintServer
- ◆ Starting PSERVER on the File Server



It is of utmost importance that you follow the steps listed below in order that they appear!

3.5.1. Installing a Print Queue

In the first step, a print queue must be installed on the file server.

Procedure

Proceed as follows:

1. Log on as SUPERVISOR.
2. Start PCONSOLE.

The following window appears:



Main Menu of PCONSOLE

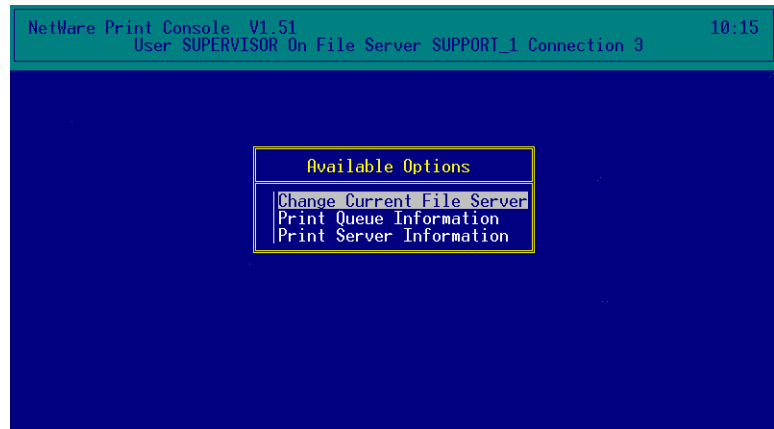


Fig. 3-12: Main menu of PCONSOLE

3. Select 'Print Queue Information.'
The 'Print Queues' window appears.
4. Press INS.
The following window appears:

Insert Print Queue

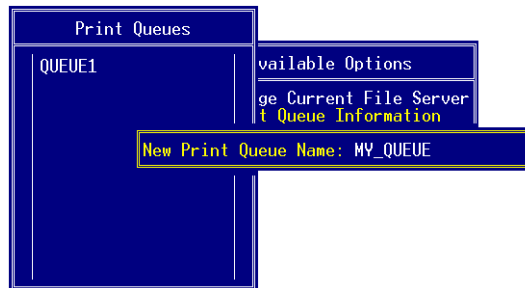


Fig. 3-13: 'New Print Queue Name:' window

5. Type an arbitrary name into the 'New Print Queue Name:' window.
Example: MY_QUEUE
6. Press ENTER to save the changes.



7. Press ESC to return to the main menu.

3.5.2. Installing the Novell PSERVER

In the next step, the Novell PSERVER must be installed on the file server.

Procedure

Proceed as follows:

1. Select 'Print Server Information.'
The 'Print Servers' window appears.
2. Press INS.
The following window appears:

Enter Print Server

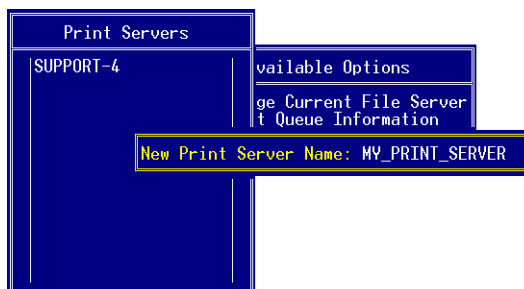


Fig. 3-14: 'New Print Server Name' window

3. Type a PSERVER name into the 'New Print Server Name' window.
Example: MY_PRINT_SERVER
4. Press ENTER to save the changes.



3.5.3. Installing a Remote Printer

A remote printer must then be installed into PSERVER. In this case, the remote printer corresponds to your KYOCERA-PrintServer.

Procedure

Proceed as follows:

1. Select the new print server.

The following window appears:

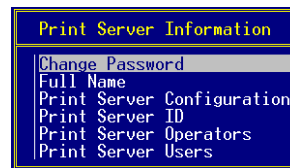


Fig. 3-15: 'Print Server Information' window

2. Select 'Print Server Configuration.'

The following window appears:

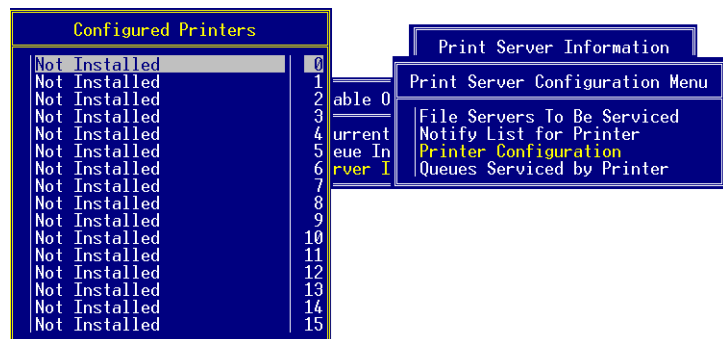


Fig. 3-16: 'Configured Printers' window

3. Press ENTER.

The following window appears:



Printer Configuration

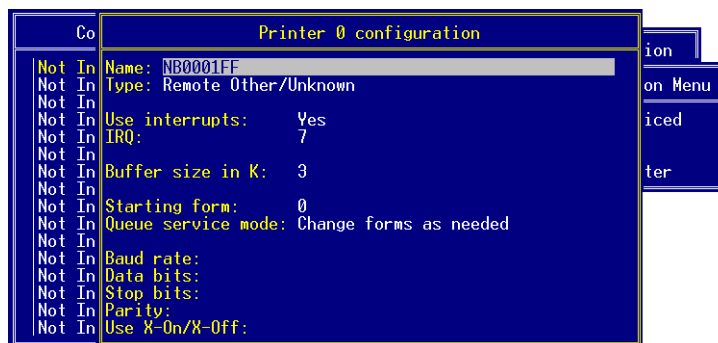


Fig. 3-17: 'Printer Configuration' window

4. Type the print server name into the 'Name:' box.
Syntax: NBxxxxxx
Example: NB0001FF
Here you may also use the Novell name of the print server if you assign this name using the print server homepage, the KYOCON, or FTP parameter transfer.
5. Type 'Remote Other/Unknown' into the 'Type' box.
6. Press ESC.
7. Acknowledge the security query.
8. Press ESC.

3.5.4. Allocating the Print Queue

The print queue must be allocated to a remote printer.

Procedure

Proceed as follows:

1. Select the new print server.
The following window appears:

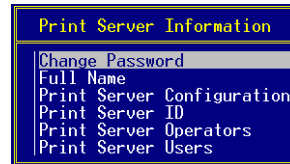


Fig. 3-18: 'Print Server Information' window

2. Select 'Print Server Configuration.'
- The following window appears:

Print Server
Configuration

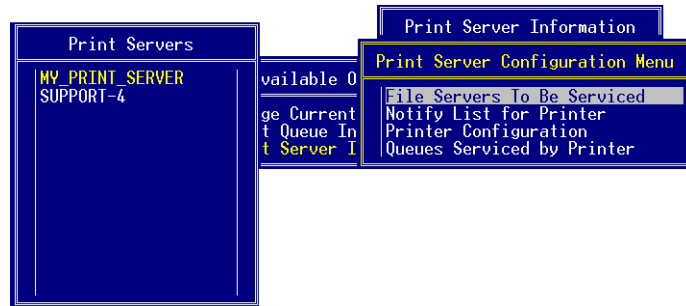


Fig. 3-19: 'Print Server Configuration Menu' window

3. Select 'Queues Served by Printer.'
- The following window appears:

Select Printer



Fig. 3-20: 'Defined Printers' window

4. Select the new remote printer.
 5. Press ENTER.
- The following window appears:



File Server	Queue	Priority

Fig. 3-21: 'File Server, Queue, and Priority' window

6. Press INS.
The following window appears

Select Print Queue

Available Queues
MY QUEUE
QUEUE1

Fig. 3-22: 'Available Queues' window

7. Select a new print queue.
8. Type the priority of the print queue.
9. Press ESC repeatedly to close PCONSOLE.

3.5.5. Configuring the KYOCERA-PrintServer

The PSERVER name, which you can enter using PCONSOLE, must be configured on your KYOCERA-PrintServer so that status messages can be sent from the print server to the file server. This can be done using the print server homepage, the KYOCON, or



FTP parameter transfer. In this section, configuration using the KYOCON is described. If you wish to use the print server homepage, please read the "NetWare Parameter Configuration" section on page A-9. If you wish to use FTP parameter transfer, please read "Configuring Parameters Using FTP" section on page D-10.

Procedure

Proceed as follows:

1. Start the KYOCON.
2. Select the print server from the print server list.
3. Click 'Printserver Configuration.'
4. Select the 'NetWare' tab.

The following window appears:

Enter PSERVER
Name

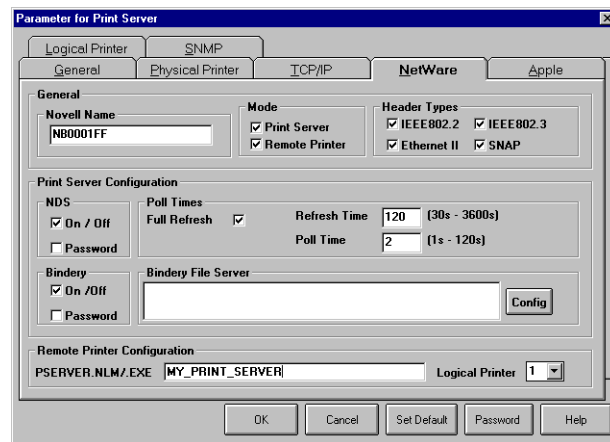


Fig. 3-23: 'NetWare' tab

5. Type the PSERVER name into the 'PSERVER.NLM/.EXE' box.
Example: MY_PRINT_SERVER
6. Select a logical printer from the 'Logical Printer' box if necessary.



7. Click OK to acknowledge.

3.5.6. Starting PSERVER on the File Server

In the last step, the Novell print server must still be installed into the PSERVER module of the file server so that the print data can be sent from PSERVER to the KYOCERA-PrintServer. To this end, the PSERVER module with the PSERVER name entered in PCONSOLE must be started.

Procedure

Proceed as follows:

1. Start PSERVER on the file server with the PSERVER name entered using PCONSOLE.

Syntax: `LOAD PSERVER <PSERVER name>`

Example: `LOAD PSERVER MY_PRINT_SERVER`



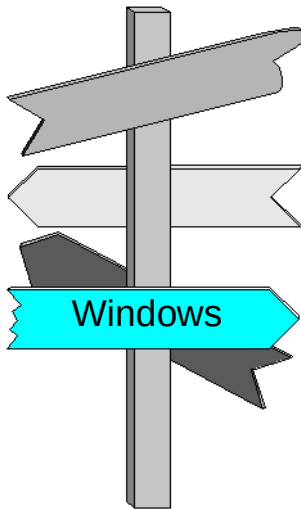
3.6 Tips and Tricks

The print server services up to a total of 16 print queues. For every extra print queue, the steps listed above must be repeated.

If the print server in Novell NetWare 4.x network environments also services print queues installed on other volumes in the network environment, PCONSOLE can be used to select a different volume, and the installation can be repeated accordingly. This is not possible in Novell NetWare 3.x network environments.



Installation in Windows Network Environments



This chapter contains information concerning the following topics:

- Basic Principles
- Installing into Windows 98 and 95 Network Environments
- Installing into Windows NT 4.0 Network Environments
- Installing into Windows NT 3.51 Network Environments



4.1 Basic Principles

In all Windows network environments, the TCP/IP protocol is used as the network protocol. Every computer used for printing should have TCP/IP installed. The first step is to install the printer into the computer or NT server as a local printer.

The LPD protocol is used for printing in Windows NT 4.0 and NT 3.51 networks. The LPD protocol is a special protocol used for print data.

In Windows 98 and 95 networks, the LPD protocol is not available. For this reason, printing is carried out by means of direct TCP/IP ports. You can install and address these ports using the KYOCERA Monitor.

Procedure

Which procedures can be selected?

- Installing into Windows 98 and 95 Network Environments
- Installing into Windows NT 4.0 Network Environments
- Installing into Windows NT 3.51 Network Environments



4.2 Installing into Windows 98 and 95 Network Environments

In this section, the installation of your KYOCERA-PrintServer into Windows 98 and 95 network environments is described. The installation is identical for both systems, although the outer appearance of the windows may differ slightly.



Function of Print Server

Before beginning the actual installation, you should have basic knowledge of TCP/IP. Please read the "Basic TCP/IP Terminology" section on page 2-6 if necessary.

Windows 98 and 95 networks are so-called peer-to-peer network environments. All computers have equal rights and may share their resources with other computers. A print server in a peer-to-peer network acts as a network connection for a printer independent of the computer. The print data is transferred from the individual computer to the network using the KYOCERA Monitor. The print server receives the print data and routes it to the printer.



Peer-to-Peer Network

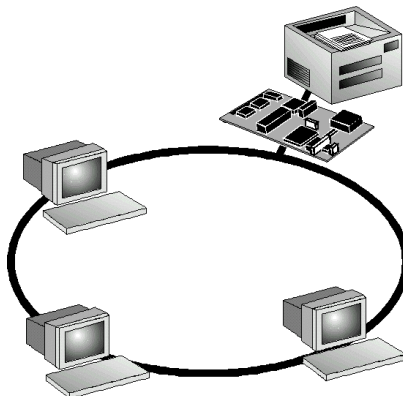


Fig. 4-1: Peer-to-peer network with print server

What Is the KYOCERA Monitor?

The KYOCERA Monitor constitutes the connecting piece between the computer and the print server in Windows 98 and 95 networks. It enables the transfer of print data from the computer to the print server by means of direct TCP/IP ports. The KYOCERA Monitor must be installed and configured on every computer intended for printing.

Procedure

Install the print server in the following steps:

- ◆ Installing the TCP/IP Protocol
- ◆ Saving the IP Address in the Print Server
- ◆ Setting Up the Printer
- ◆ Installing the KYOCERA Monitor
- ◆ Setting Up the KYOCERA Monitor



4.2.1. Installing the TCP/IP Protocol

In order to be able to use your print server in a Windows 98 or 95 network, you must first install the TCP/IP protocol into the computer intended for printing. If TCP/IP is already installed, you may skip to with the "Saving the IP Address in the Print Server" section on page 4-7.

Procedure

Proceed as follows:

1. Select 'Control Panel' on the 'Start' menu.
2. Double click 'Network.'
3. Select the 'Configuration' tab.

The following window appears:

'Configuration' Tab

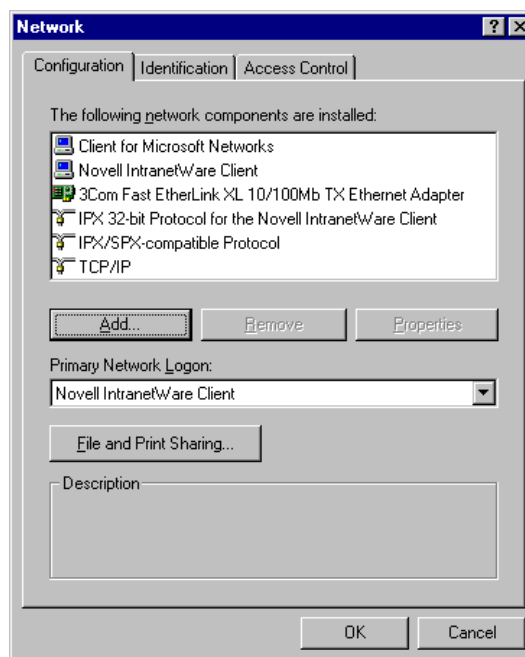


Fig. 4-2: 'Configuration' tab



4. Click 'Add...'
 5. Select 'Protocols.'
 6. Click 'Add...'
- The following window appears:

Select Network Protocol

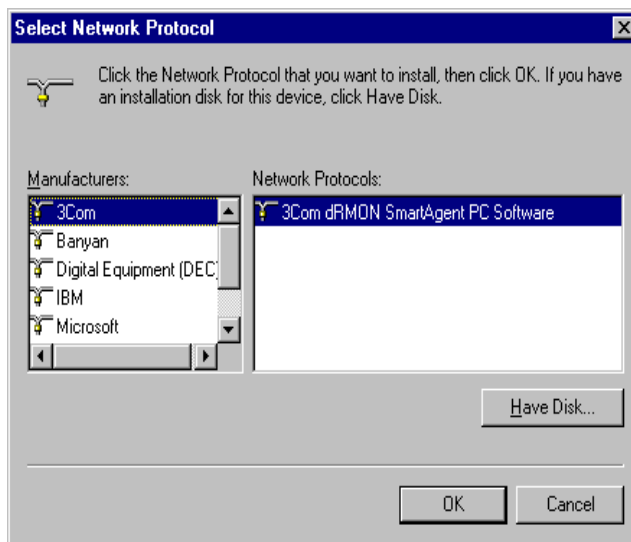


Fig. 4-3: 'Select Network Protocol' window

7. Select 'Microsoft' from the 'Manufacturers' box.
8. Select 'TCP/IP' from the 'Network Protocols' box.
9. Click OK to acknowledge.
The 'Configuration' tab appears.
10. Select 'TCP/IP' from the box containing the list of installed network components.
11. Click 'Properties.'
The following window appears:



Enter IP Address

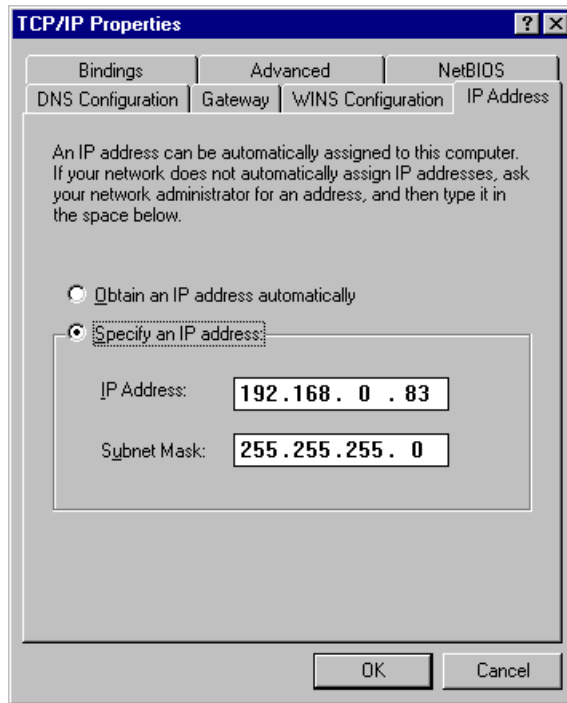


Fig. 4-4: 'TCP/IP Properties' window

12. Type the IP address of your computer.
13. Click OK to acknowledge.

4.2.2. Saving the IP Address in the Print Server

In the case of all KYOCERA printers with the exception of the FS-400 and FS-600 models, you can type the IP address directly into the printer operating panel and save it in the print server.



The procedure varies depending on the printer model and the operating panel. Read the "Configuring Parameters Using the KYOCERA Printer Operating Panel" section on page D-11 if necessary.



Operating panel settings will not be saved in the print server if a password has been assigned.

4.2.3. Setting Up the Printer

Set up your printer as a local printer under Windows 98 or 95. Select LPT1 as the printer port.



Please read the printer installation instructions in your Windows or printer user manual if necessary.

4.2.4. Installing the KYOCERA Monitor

The KYOCERA Monitor can be found on the KYOCERA Printer Library CD-ROM enclosed in the product packaging of your print server.

Procedure

Proceed as follows:

1. Insert the KYOCERA Printer Library CD-ROM into your CD-ROM drive.
The CD-ROM will start automatically.
2. Install the KYOCERA Monitor.



4.2.5. Setting Up the KYOCERA Monitor

The KYOCERA Monitor is set up by adding a printer port. The host name of the print server or the IP address and the TCP/IP port number must be entered. The different logical printers are addressed using the port number. TCP/IP port 9100 is the default setting and corresponds to the logical printer lp1 setting. Please read the "TCP/IP Ports" section on page 2-16 if necessary.



Procedure

If you use a host name, please make sure that this host name has been assigned beforehand. Please read the "Host Name" section on page 2-14 if necessary.

Proceed as follows:

1. Select 'Properties' on the printer shortcut menu.
2. Select the 'Details' tab.
3. Select 'Add Port...'

The following window appears:

Add Port

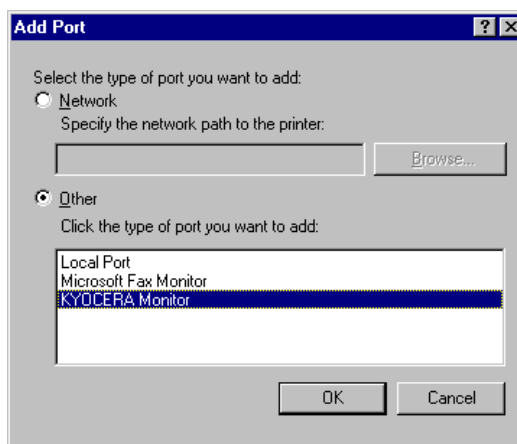


Fig. 4-5: 'Add Port' window



4. Select 'Other.'
5. Select 'KYOCERA Monitor' from the list.
6. Click OK to acknowledge.
The following window appears:

Enter IP Address

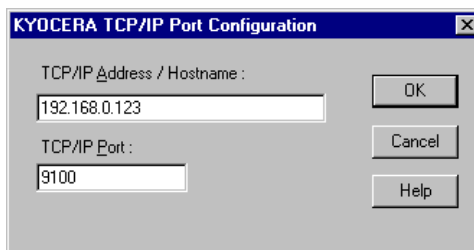


Fig. 4-6: TCP/IP Port Configuration for KYOCERA Monitor

7. Type the IP address or the host name of the print server into the 'TCP/IP Address / Hostname' box.
8. Type the TCP/IP port number (9100 - 2900) into the 'TCP/IP Port' box. If no number has been entered, all print data is automatically routed to the printer by means of TCP/IP port 9100.
9. Click OK to acknowledge.



4.3 Installing into Windows NT 4.0 Network Environments

In this section, the installation of you KYOCERA-PrintServer into Windows NT 4.0 networks is described.



Function of Print Server

Before beginning the actual installation, you should have basic knowledge of TCP/IP. Please read the "Basic TCP/IP Terminology" section on page 2-6 if necessary.

Windows NT 4.0 networks are so-called server-based network environments. A server provides workstations located in the network with certain services. Services include, among other things, the administration of jointly used data sources and print services, all of which enable the joint usage of printers in the network.

While printing is being carried out in Windows NT 4.0 networks, the print data is loaded into the network as an LPD protocol by means of the LPR port and sent to the IP address of the print server. The print server receives the print data and routes it to the printer.



Server-Based Network

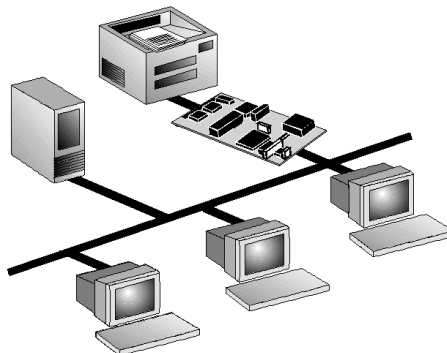


Fig. 4-7: Server-based network with print server

What Happens During Installation?

In order to install the KYOCERA-PrintServer into Windows NT 4.0 networks, you must first install the TCP/IP protocol and the TCP/IP print services.

Due to the configuration of the LPR ports, the LPD protocol will automatically be used for printing.

Procedure

Install the print server in following steps:

- ◆ Installing the TCP/IP Protocol
- ◆ Saving the IP Address in the Print Server
- ◆ Installing the Microsoft TCP/IP Print Services
- ◆ Setting Up the Printer and Configuring the LPR Port

4.3.1. Installing the TCP/IP Protocol

In order to be able to use your print server in a Windows NT 4.0 network, you must first install the TCP/IP protocol into the NT



server. If TCP/IP has already been installed, you may skip to the "Saving the IP Address in the Print Server" section on page 4-15.

Procedure

Please proceed as follows:

1. Select 'Control Panel' on the 'Start' menu.
2. Double click 'Network.'
3. Select the 'Protocols' tab.
4. Click 'Add...'

The following window appears:

Select Network
Protocol

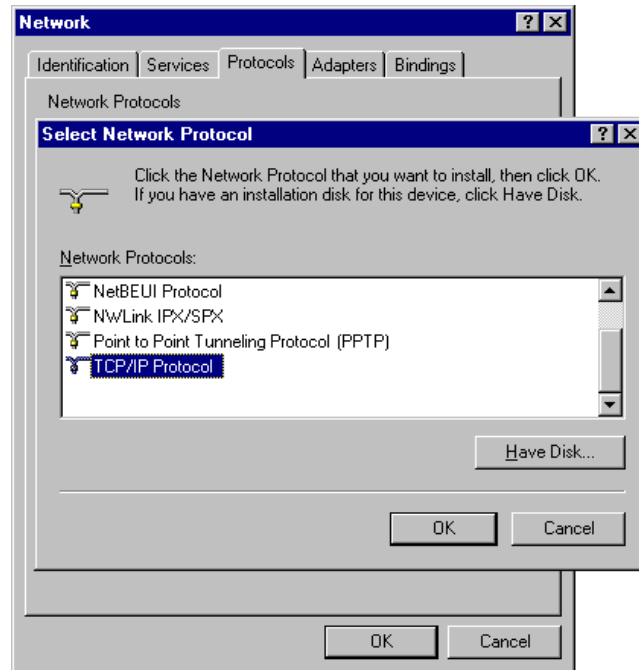


Fig. 4-8: 'Select Network Protocol' window

5. Select 'TCP/IP Protocol' from the list.
6. Click OK to acknowledge.



Installation Routine

7. Follow the instructions of the installation routine.
The 'Protocols' tab appears after the installation routine has been completed.
8. Click 'Close.'
The following window appears:

Enter IP Address

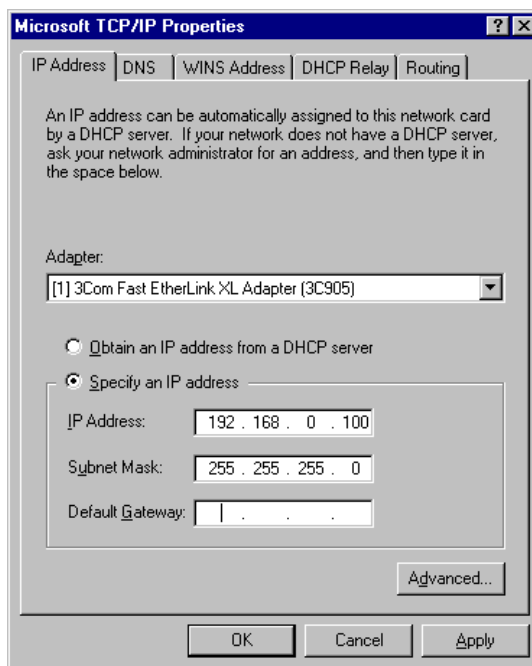


Fig. 4-9: 'Microsoft TCP/IP Properties' window

9. Type the IP address of the computer into the 'IP Address' box.
10. Type the subnet mask into the 'Subnet Mask' box if required.
11. Type the IP address of the gateway into the 'Default Gateway' box if required.
12. Click OK to acknowledge.



4.3.2. Saving the IP Address in the Print Server

In the case of all KYOCERA printers with the exception of the FS-400 and FS-600 models, you can type the IP address directly into the printer operating panel and save it in the print server.

The procedure varies depending on the printer model and the operating panel. Read the "Configuring Parameters Using the KYOCERA Printer Operating Panel" section on page D-11 if necessary.



Operating panel settings will not be saved in the print server if a password has been assigned.

4.3.3. Installing the Microsoft TCP/IP Print Services

In order to be able to print using TCP/IP, you must install the Microsoft TCP/IP print services. If the Microsoft TCP/IP print services have already been installed, you may skip to the "Setting Up the Printer and Configuring the LPR Port" section on page 4-17.

Procedure

Proceed as follows:

1. Select 'Control Panel' on the 'Start' menu.
2. Double click 'Network.'
3. Select the 'Services' tab.

The following window appears:



'Services' Tab

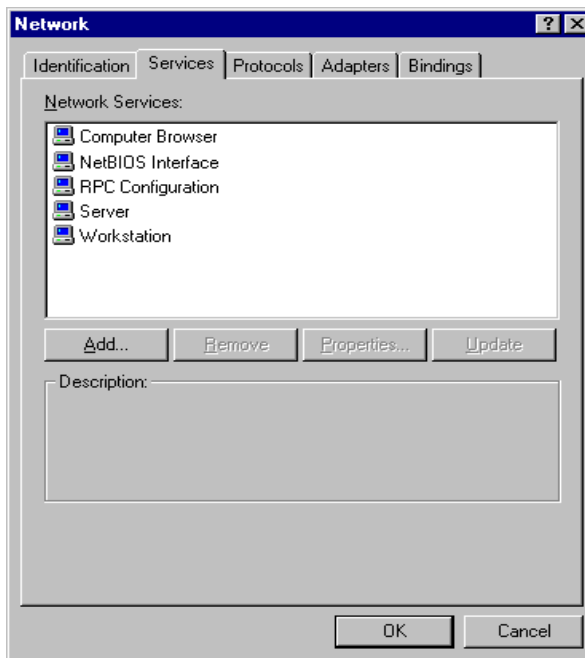


Fig. 4-10: 'Services' tab

4. Click 'Add...'
The following window appears:



Select Network Service

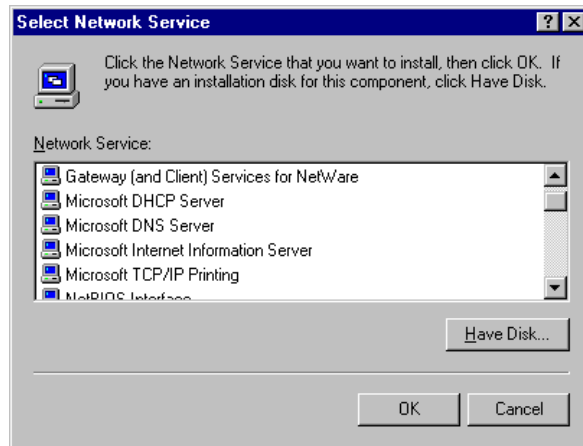


Fig. 4-11: 'Select Network Service' window

5. Select 'Microsoft TCP/IP Printing'.
6. Click OK to acknowledge.
7. Follow the instructions of the installation routine.
The 'Services' tab appears after the installation routine has been completed.
8. Click 'Close.'

4.3.4. Setting Up the Printer and Configuring the LPR Port

You must set up your printer as a printer managed by your computer under and not as a network printer server. Select the LPR port as the printer port. The different logical printers (lp1 - lp8) can be addressed with the LPR port. Please read the "Logical Printers" section on page 2-3 if necessary.



Please read the printer installation instructions in your Windows or printer user manual if necessary.



If you use a host name, please make sure that this host name has been assigned beforehand. Please read the "Host Name" section on page 2-14 if necessary.

If you have already set up your printer, you must only configure the LPR port. Call the property sheet of the printer and select the 'Ports' tab. Continue with step 4 on page 4-19 described in the following.

Procedure

Proceed as follows:

1. Select 'Printers' on the 'Start' menu.
2. Double click 'Add Printer.'

The following window appears:

Select 'My Computer'

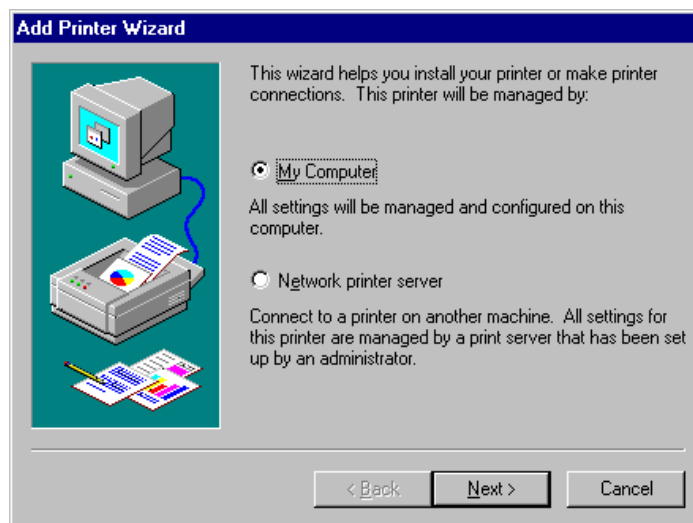


Fig. 4-12: Add Computer Wizard: 'My Computer'



Do not select 'Network Printer Server' under any circumstances because your print server may no longer be properly installed as a result.

3. Click 'Next >.'

The following window appears:

Add Port

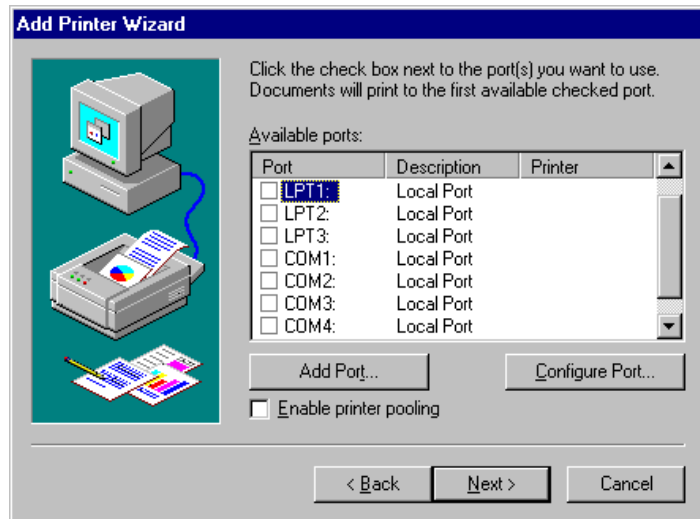


Fig. 4-13: Add Printer Wizard: Available Ports

4. Click 'Add Port...'

The following window appears:



Select LPR Port

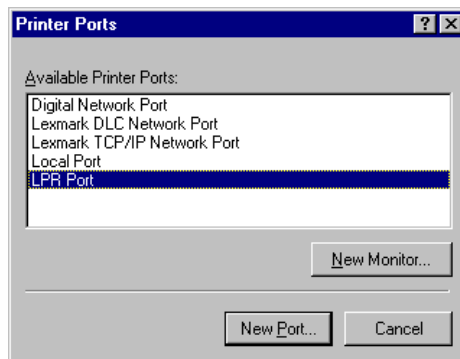


Fig. 4-14: 'Printer Ports' window



If the 'LPR Port' entry is invisible, install the TCP/IP print services first. Read the "Installing the Microsoft TCP/IP Print Services" section on page 4-15 if necessary.

5. Select 'LPR Port.'
6. Click 'New Port...'

The following window appears:

Enter IP Address

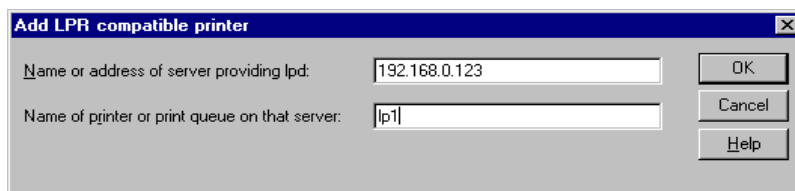


Fig. 4-15: 'Add LPR Compatible Printer' window

7. Type the IP address or host name of the print server into the 'Name or address of server providing lpd' box.
8. Type the name of the logical printer (lp1 - lp8) into the 'Name of printer or print queue on that Server' box. If no name or an incorrect name has been entered, the print data is automatically routed to the printer through logical printer no. 1.



9. Click OK to acknowledge.
10. Follow the instructions of the installation routine to set up your printer.



4.4 Installing into Windows NT 3.51 Network Environments

In this section, the installation of your KYOCERA-PrintServer into Windows NT 3.51 networks is described.



Function of Print Server

Before beginning the actual installation, you should have basic knowledge of TCP/IP. Please read the "Basic TCP/IP Terminology" section on page 2-6 if necessary.

Windows NT 3.51 networks are so-called server-based network environments. A server provides workstations located in the network with certain services. Services include, among other things, the administration of jointly used data sources and print services, all of which enable the joint usage of printers in the network.

While printing is being carried out in Windows NT 3.51 networks, the print data is loaded into the network as an LPD protocol by means of the LPR port and sent to the IP address of the print server. The print server receives the print data and routes it to the printer.



Server-Based Network

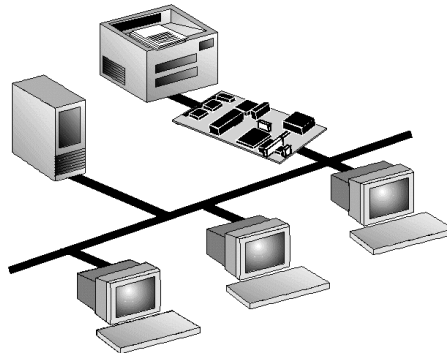


Fig. 4-16: Server-based network with print server

What Happens During Installation?

In order to install the print server into Windows NT 3.51 networks, you must first install the TCP/IP protocol and the TCP/IP print services. Only then can TCP/IP be used. It is also useful to install FTP services. This allows you to open an FTP connection to transfer print data and change parameters.

Due to the configuration of the LPR ports, the LPD protocol can automatically be used for printing.

Procedure

Install the print server in following steps:

- ◆ Installing the TCP/IP and FTP Services
- ◆ Saving the IP Address in the Print Server
- ◆ Setting Up the Printer and Configuring the LPR Port

4.4.1. Installing the TCP/IP and FTP Services

In order to be able to use your print server in an Windows NT 3.51 network, you must first install the TCP/IP and FTP services into



the NT server. If the TCP/IP and FTP services have already been installed, you may skip to the "Saving the IP Address in the Print Server" section on page 4-27.

Procedure

Proceed as follows:

1. Select 'Control Panel' on the main menu.
2. Double click 'Network.'

The following window appears:

Change Network Settings

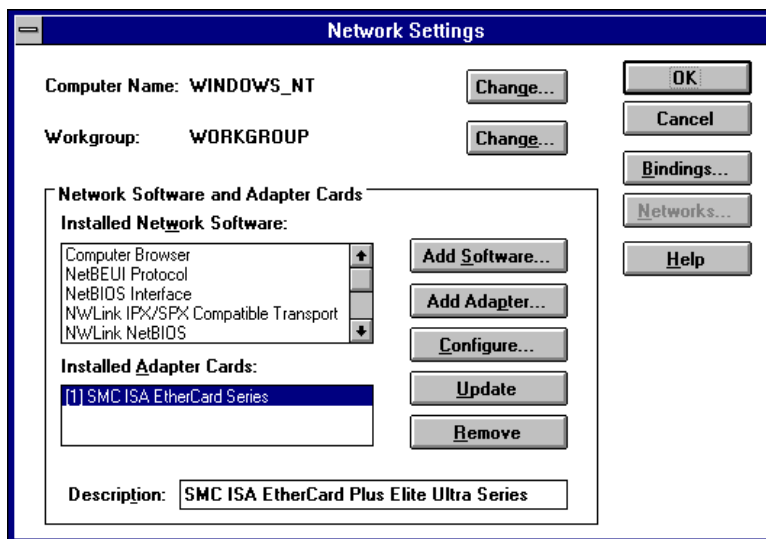


Fig. 4-17: 'Network Settings' window

3. Click 'Add Software...'
- The following window appears:



Add TCP/IP Protocol

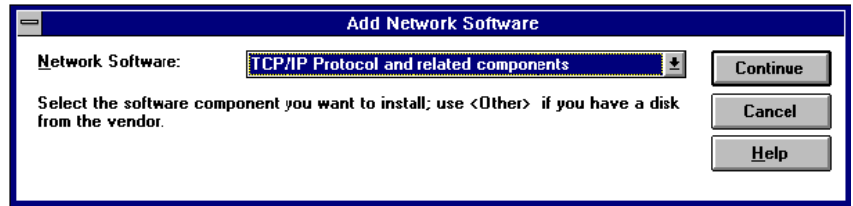


Fig. 4-18: 'Add Network Software' window

4. Select 'TCP/IP Protocol and related components' in the 'Network Software' box.
 5. Click 'Continue'.
- The following window appears:

Select TCP/IP Network Printing Support

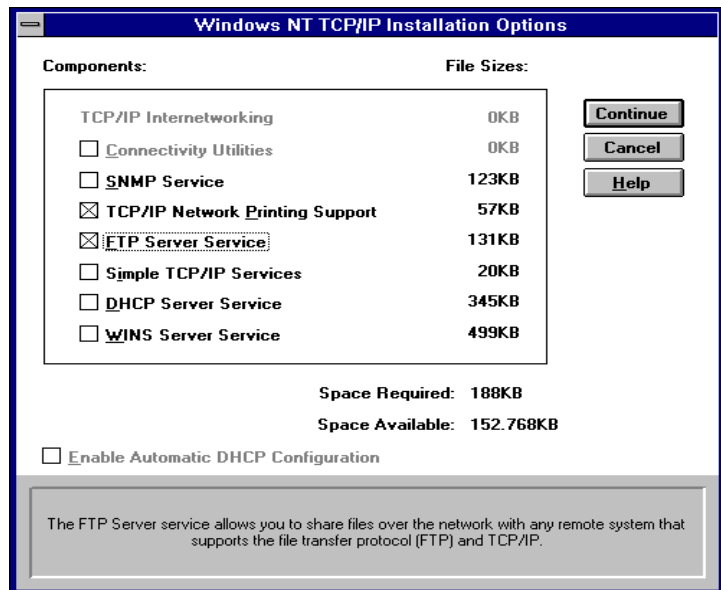


Fig. 4-19: 'Windows NT TCP/IP Installation Options' window

6. Select the 'TCP/IP Network Printing Support' check box.
7. Select the 'FTP Server Service' check box.



8. Click 'Continue.'

Installation Routine

9. Follow the instructions of the installation routine.
The 'Network Configuration' window appears after the installation routine has been completed.

10. Click OK to acknowledge.
The following window appears:

Enter IP Address

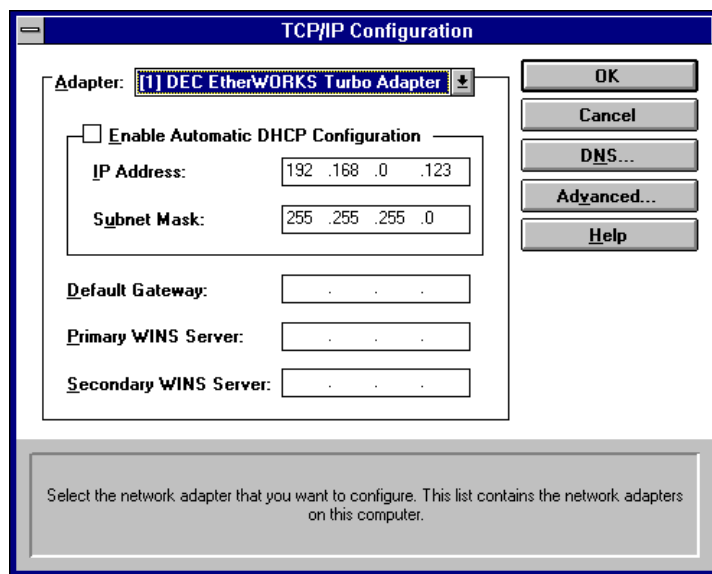


Fig. 4-20: 'TCP/IP Configuration' window

11. Type the IP address of the computer into the 'IP Address' box.
12. Type the subnet mask into the 'Subnet Mask' box if required.
13. Type the IP address of the gateway into the 'Default Gateway' box if required.
14. Click OK to acknowledge.



4.4.2. Saving the IP Address in the Print Server

In the case of all KYOCERA printers with the exception of the FS-400 and FS-600 models, you can type the IP address directly into the printer operating panel and save it in the print server.

The procedure varies depending on the printer model and the operating panel. Read the "Configuring Parameters Using the KYOCERA Printer Operating Panel" section on page D-11 if necessary.



Operating panel settings will not be saved in the print server if a password has been assigned.

4.4.3. Setting Up the Printer and Configuring the LPR Port

You must set up your printer as a local printer under Windows NT 3.51. Select the LPR port as the printer port. The different logical printers (lp1 - lp8) can be addressed by means of the LPR port. Please read the "Logical Printers" section on page 2-3 if necessary.



Please read the printer installation instructions in your Windows or printer user manual if necessary.



If you use a host name, make sure that this host name has been assigned correctly. Please read the "Host Name" section on page 2-14 if necessary.



If you have already set up your printer, you must only configure the LPR port. Call the property sheet of the printer and select the 'Ports' tab. Continue with step 4 on page 4-28 described in the following.

Procedure

Proceed as follows:

1. Click 'Print Manager' on the main menu.
2. Select 'Setup New Printer' on the 'Printer' menu.
The 'Setup New Printer' window appears.
3. Type a printer name, a driver, and a description.
4. Select 'Other...' in the 'Print to' box.
The following window appears:

Select Print Destination

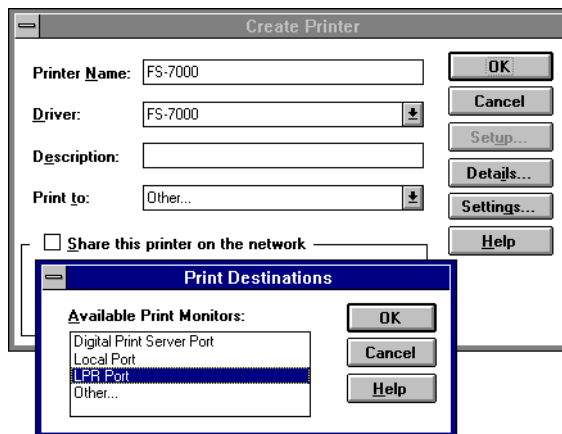


Fig. 4-21: 'Print Destinations' window

5. Select 'LPR Port.'
6. Click OK to acknowledge.
The following window appears:



Enter IP Address

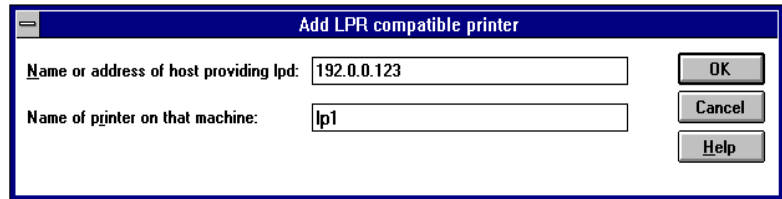
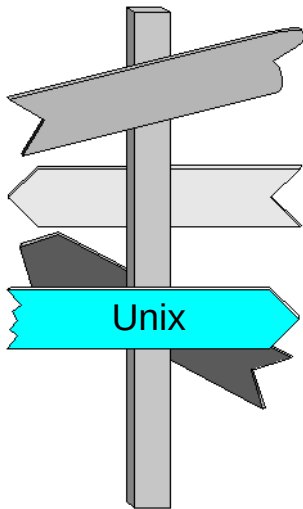


Fig. 4-22: 'Add LPR Compatible Printer' window

7. Type the IP address or host name of the print server in the 'Name or address of host providing lpd' box.
8. Type the name of the logical printer (lp1 - lp8) in the 'Name of printer on that machine' box. If no name or an incorrect name has been entered, the print data is automatically routed to the printer through logical printer no. 1.
9. Click OK to acknowledge.



Installation in UNIX Network Environments



This chapter contains information concerning the following topics:

- Basic Principles
- Allocating the IP Address to the Host Name
- Saving the IP Address in the Print Server
- Printing Using the LPD Protocol
- Printing Using TCP/IP Ports
- Printing Using Shell Scripts

5.1 Basic Principles

Printing in UNIX network environments varies depending on the UNIX system version used. The two most commonly used printing methods are remote printing using the LPD protocol and direct printing using TCP/IP ports. If both methods are not available, you can then print using shell scripts.

Printing Using the LPD Protocol

Several UNIX systems support the linkage of network printers to the LPD protocol. In the case of this method, the KYOCERA-PrintServer is integrated into the spooler as a remote printer. The user host transfers the print data to the printer by means of the print server.

Printing Using TCP/IP Ports

Several UNIX systems support the linkage of network printers by means of direct TCP/IP connection. Print data can be transferred from the spooler to the print server using TCP/IP ports.

Printing Using Shell Scripts

When printing using shell scripts, a printer, which the UNIX spooler considers to be local, is installed. The printer is then entered into the UNIX spooler system. The shell scripts route the print data to the print server by means of FTP. The *.sh shell scripts are sample scripts for the default printer interfaces of the 'lpsched,' 'lpd,' and 'qdaemon' spoolers supported by the print server.

The following shell scripts are available:

- aix.sh (for AIX systems)
- BSD.sh (for BSD systems)
- sys5.sh (for System V)

Printing Without a Spooler

You can also send print data directly to the print server by means of FTP while bypassing the spooler. This method of network

printing is mainly used for testing the print server after installation.

Supported Spoolers

The print server supports the 'lpsched' (System V), 'lpd' (BSD), and 'qdaemon' (AIX) spoolers. Please consult your system administrator or your system manual to find out which UNIX version or spooler is installed on your computer. If your system has the '/usr/lib/lpsched' file, you most probably have System V; if your system has the '/usr/lib/lpd' and '/etc/printcap' files, you have BSD.

Procedure

Carry out the installation in the following steps:

- ◆ Allocating the IP Address to the Host Name
- ◆ Saving the IP Address in the Print Server
- ◆ Printing Using the LPD Protocol
- ◆ Printing Using TCP/IP Ports
- ◆ Printing Using Shell Scripts

5.2 Allocating the IP Address to the Host Name

As a rule, hosts can be addressed at the user command level ('ping,' 'ftp,' and 'tftp,' for example), with their host names, or directly with their IP addresses. The host name is most commonly used.

In this case, the host name must be allocated to the IP address. This is carried out either in the local 'etc/hosts' file or on a DNS server. The following section will describe the allocation of the host name to the IP address using the 'hosts' file. Please read the description in the user manual of your operating system if necessary.

Allocation Files

The allocation of the host names to the IP addresses and the IP addresses to the hardware addresses is stored in the following files:

File	Allocation
/etc/hosts	Allocation of host names to IP addresses
/etc/bootptab	Allocation of IP addresses to hardware addresses if the BOOTP boot protocol is used
/etc/rarpd.cf	Allocation of IP addresses to hardware addresses if the RARP boot protocol is used
/etc/ethers	Allocation of IP addresses to hardware addresses if the RARP boot protocol is used

The '/etc/hosts' file exists on every computer in the network environment, whereas the other files usually only exist if the listed network services are implemented. Depending on the UNIX system used, the files may also be located in different directories.



Procedure

The computer from which this installation is carried out must be in the same (sub) network as the print server. Later, the printer may be located anywhere in the network.

Proceed as follows:

1. Log on as root.
2. Add the following entry into the '/etc/hosts' file:
Syntax: <IP address> <host name>
Example: 192.168.0.123 NB0001FF

5.3 Saving the IP Address in the Print Server

There are several methods available for saving the IP address in the print server.



Please read the "Methods of Saving the IP Address in the Print Server" section on page 2-7 if necessary.

Select one of the following methods:

- Saving the IP Address Using BOOTP
- Saving the IP Address Using RARP
- Saving the IP Address Using the 'arp' and 'ping' Commands
- KYOCERA Printer Operating Panel
- PRESCRIBE Commands for KYOCERA Printers

5.3.1. Saving the IP Address Using BOOTP

If the BOOTP boot protocol has been installed into your network, you must edit the '/etc/bootptab' file. The procedure is somewhat different for ULTRIX systems. If you use an ULTRIX system, please read the "Procedure for ULTRIX" section on page 5-7.



Please note that (optional) periods separate the address groups of the hardware addresses in this file, whereas colons separate fields from each other in an individual entry. In ULTRIX and some other UNIX systems, the individual fields of an entry are separated from each other using the tab character.

Procedure

Proceed as follows:

1. Add the following entry to the '/etc/bootptab' file:
Syntax for Ethernet: <host name>:ht=ether:ha=<hardware address>:ip=<IP address>
Example for Ethernet:
NB0001FF:ht=ether:ha=00.c0.eb.00.01.ff:ip=192.168.0.123
Syntax for TokenRing: <host name>:ht=tr:ha=<hardware address>:ip=<IP address>
Example for TokenRing:
NB0001FF:ht=tr:ha=00.c0.eb.00.01.ff:ip=192.168.0.123
2. Please make sure that the 'bootp' print daemon rereads the configuration file.

**Procedure for
ULTRIX**

Proceed as follows:

1. Add the following entry to the '/etc/bootptab' file:
Syntax for Ethernet:
<host name> 1 <hardware address> <IP address>
Example for Ethernet:
NB0001FF 1 00:c0:eb:00:01:ff 192.168.0.123
Syntax for TokenRing:
<host name> 6 <hardware address> <IP address>
Example for TokenRing:
NB0001FF 6 00:c0:eb:00:01:ff 192.168.0.123
2. Please make sure that the 'bootp' print daemon rereads the configuration file.

5.3.2. Saving the IP Address Using RARP

If the RARP boot protocol has been installed into your network you must edit either the '/etc/ethers' or '/etc/rarpd.cf' file.



The file to be edited depends on the implementation of the RARP network service on your UNIX system. Please read the description of 'rarpd' in your UNIX user manual if necessary.

Procedure for 'rarpd.cf'

Proceed as follows:

1. Add the following entry to the '/etc/rarpd.cf' file:
Syntax: <IP address> <hardware address>
Example: 192.168.0.123 00:c0:eb:00:01:ff

Procedure for 'ethers'

Proceed as follows:

1. Add the following entry to the '/etc/ethers' file:
Syntax: <hardware address> <host name>
Example: 00:c0:eb:00:01:ff NB0001FF

5.3.3. Saving the IP Address Using the 'arp' and 'ping' Commands

If the DHCP, BOOTP, and RARP boot protocols are not implemented in your system, you can use the 'arp' and 'ping' commands to save the IP address. The 'arp' command is used for editing the ARP table. The 'ping' command transfers a data packet with the IP address to the hardware address of the print server. Once the data packet has been successfully received, the print server permanently saves the IP address.

Procedure

Proceed as follows:

1. Change the ARP table:
Ethernet: arp -s <host name> <hardware address>
TokenRing: arp -s 802.5 <host name> <hardware address>
AIX: arp -s ether <host name> <hardware address>
Example: arp -s NB0001FF 00:c0:eb:00:01:ff

This permanently saves the entry in the ARP table; in other words, the entry does not expire and remains valid until the next time you turn on the UNIX computer.

2. Turn the printer off and back on.
3. Check whether the print server is available by means of TCP/IP:

Syntax: ping <host name>

Example: ping NB0001FF

5.3.4. KYOCERA Printer Operating Panel

In the case of all KYOCERA printers with the exception of the FS-400 and FS-600 models, you can type the IP address directly into the printer operating panel and save it in the print server.



In addition to the IP address, you can also change other parameters using the printer operating panel.

The procedure varies depending on the printer model and the control panel. Please read the "Configuring Parameters Using the KYOCERA Printer Operating Panel" section on page D-11 if necessary.



Operating panel settings will not be saved in the print server if a password has been assigned.

5.3.5. PRESCRIBE Commands for KYOCERA Printers

In the case of some KYOCERA printers, you can use PRESCRIBE commands to save the IP address in the print server. These printers all have a KUIO interface, such as the FS-600, FS-800, FS-1700+, FS-3700+, FS-7000, and FS-5800C models.



In addition to the IP address, you can also change other parameters using PRESCRIBE commands. Please read the "Configuring Parameters Using PRESCRIBE Commands" section on page D-19 if necessary.

Procedure

Proceed as follows:

1. Create an ASCII file and assign it an arbitrary name.
2. Insert the following entry into the file:
Syntax: `!R!SIOP2,"IP:<IP address>";EXIT;`
Example: `!R!SIOP2,"IP:192.168.0.123";EXIT;`
3. Transfer the file to the print server as a print file by means of the parallel, serial, or KUIO interface.



PRESCRIBE commands cannot be used if a password has been assigned to the print server.

5.4 Printing Using the LPD Protocol

Most UNIX systems use the LPD protocol to print in network environments. In this case, the KYOCERA-PrintServer must be installed as a remote printer. Print options, such as a banner page, may be implemented only when printing is carried out by a logical printer. Read the "Logical Printers" section on page 2-3 if necessary.



The installation to your system may deviate from the descriptions below. Please read the description in your UNIX user manual if necessary.

Select your system from the following list:

- ◆ IBM AIX (Version 4.x)
- ◆ IBM AIX (Version 3.x)
- ◆ AIX Without SMIT
- ◆ HP-UX (Version 10.20)
- ◆ SunOS
- ◆ SCO UNIX (Version 3.2)
- ◆ UNIXWare (Version 4.2 - 1.1.2)
- ◆ System V (General)

5.4.1. IBM AIX (Version 4.x)

When installing the print server into the spooler of an AIX system as a remote printer, you must type a print queue, a host name, and a logical printer into the '/etc/qconfig' file. In this section, installation by means of the SMIT Administration Tool is described.

The installation sequence requires the following data:

Box in SMIT	User input	Example in text
Name of QUEUE to add	<arbitrary name> of print queue	MY_QUEUE
HOSTNAME of remote server	<host name or IP address> of print server	NB0001FF
Name of QUEUE of remote server	lp1 to lp8 for the logical printer	lp1

Requirements

Before installation, make sure that:

- ✓ The IP address has been saved in the print server.
- ✓ The host name has been allocated to the IP address.
- ✓ The print server is connected, and the printer is turned on.

Procedure

Proceed as follows:

1. Log on as root.
2. Start SMIT.
3. Select the following menu commands in the order shown below:
 - 'Devices'
 - 'Printer/Plotter'
 - 'Print Spooling'
 - 'Add a Print Queue'
 - 'Other'

4. Type the following parameters into the screen mask:
 [TOP]

*Name of QUEUE to add	[MY_QUEUE]
*Name of QUEUE DEVICE to add	[MY_QUEUE]
*BACKEND PROGRAM pathname	[/usr/lpd/rembak]
ACTIVATE the queue?	yes
Should this become the Default queue?	no
Queuing DISCIPLINE	first come first serve
ACCOUNTING FILE pathname	[]
HOSTNAME of remote server	[NB0001FF]
Name of QUEUE of remote server	[lp1]
5. Press ENTER to acknowledge.
6. Check whether the following entry has been added to the '/etc/qconfig' file:
 Example: MY_QUEUE:
 device=MY_QUEUE
 up=true
 host=NB0001FF
 rq=lp1
 MY_QUEUE:
 backend=usr/lpd/rembak
7. Change to the 'etc' directory.
8. Test the print server:
 Syntax: lp -d <host name of print server> <file name>
 Example: lp -d NB0001FF hosts

5.4.2. IBM AIX (Version 3.x)

When installing the print server into the spooler of an AIX system as a remote printer, you must type a print queue, a host name, and a logical printer into the '/etc/qconfig' file. In this section,

installation by means of the SMIT Administration Tool is described.

The installation sequence requires the following data:

Box in SMIT	User input	Example in text
Name of QUEUE	<arbitrary name> of print queue	MY_QUEUE
Destination HOST	<host name or IP address> of the print server	NB0001FF
Name of QUEUE for remote printer	lp1 to lp8 for the logical printer	lp1

Requirements

Before installation, make sure that:

- ✓ The IP address has been saved in the print server.
- ✓ The host name has been allocated to the IP address.
- ✓ The print server is connected, and the printer is turned on.

Procedure

Proceed as follows:

1. Log on as root.
2. Start SMIT.
3. Select the following menu commands in the order shown below:
 - 'Devices'
 - 'Printer/Plotter'
 - 'Manage Remote Printer Subsystem'
 - 'Client Services'
 - 'Remote Printer Queues'
 - 'Add Remote Queue'
4. Type the following parameters into the screen mask:
Example: Name of QUEUE [MY_QUEUE]
 Queuing DISCIPLINE [first come first serve]
 ACTIVATE the queue? [yes]
 Destination HOST [NB0001FF]

Pathname SHORT FILTER []
 Pathname LONG FILTER []
 Name of QUEUE for remote printer [lp1]

5. Compare the entries in the queue:
 'Remote Printer Queue Devices'
6. In some cases, the queue must be restarted:
 'Manage Local Printer Subsystem'
 'Local Printer Queues'
7. Check whether the '/etc/qconfig' file contains the following entry:
 Example: MY_QUEUE:
 device=drp0
 up=true
 host=NB0001FF
 rq=lp1
 drp0:
 backend=usr/lpd/rembak

5.4.3. AIX Without SMIT

When installing the print server into the spooler of an AIX system as a remote printer, you must type a print queue, a host name, and a logical printer into the '/etc/qconfig' file. In this section, manual installation without using the SMIT Administration Tool is described.

The installation sequence requires the following data:

Box in qconfig	User input	Example in text
-	<arbitrary name> for print queue	MY_QUEUE

Box in qconfig	User input	Example in text
host	<host name or IP address> of print server>	NB0001FF
rq	lp1to lp8 for the logical printer	lp1

Requirements

Before installing, make sure that:

- ✓ The IP address has been saved in the print server.
- ✓ The host name has been allocated to the IP address.
- ✓ The print server is connected, and the printer has been turned on.

Procedure

Proceed as follows:

1. Stop the print daemon:
enq -G
2. Type the print server into the '/etc/qconfig' file:
Syntax: <name of print queue>:
host = <host name of print server>
rq = <logical printer>
device = drp0
drp0: backend = /usr/lpd/rembak
Example: MY_QUEUE:
host = NB0001FF
rq = lp1
device = drp0
drp0: backend = /usr/lpd/rembak
3. Start the print daemon:
enq -U -P MY_QUEUE

5.4.4. HP-UX (Version 10.20)

The print server is installed into an HP-UX UNIX system as a remote printer using either the system administration manager (SAM) or directly using the common desktop environment (CDE) or, in older versions, the visual user environment (HP VUE). Both methods differ from each other.

Requirements

Before installation, make sure that:

- ✓ The IP address has been saved in the print server.
- ✓ The host name has been allocated to the IP address.
- ✓ The print server is connected, and the printer is turned on.

Procedure for SAM

Proceed as follows:

1. Start the SAM Administration Tool.
2. Click 'Printers and Plotters.'
3. Click 'LP Spooler.'
4. Click 'Printers and Plotters.'
5. Select the 'Add Remote Printer/Plotter...' submenu on the 'Actions' menu.

The following window appears:

Add Remote Printer

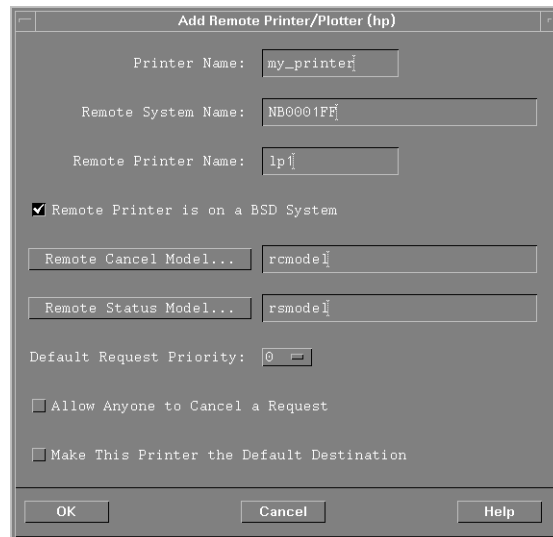


Fig. 5-1: 'Add Remote Printer/Plotter' window

6. Type an arbitrary printer name into the 'Printer Name' box:
Example: my_printer
7. Type the host name of the print server into the 'Remote System Name' box:
Example: NB0001FF
8. Type a logical printer (lp1 - lp8) into the 'Remote Printer Name' box:
Example: lp1
9. Select the 'Remote Printer is on a BSD System' check box:
Example: [✓] Remote Printer is on a BSD System.
10. Click OK to acknowledge.

Procedure for HP VUE

Proceed as follows:

1. Start HP VUE.
2. Start the Printer/Plotter Manager.
3. Select 'Printers/Plotters' on the 'List' menu.

4. Select 'Add Remote Printer/Plotter...' on the 'Actions' menu.
5. Type an arbitrary printer name into the 'Printer Name' box:
Example: my_printer
6. Type the host name of the print server into the 'Remote System Name' box:
Example: NB0001FF
7. Type a logical printer (lp1 - lp8) into the 'Remote Printer Name' box:
Example: lp1
8. Select the 'Remote Printer is on a BSD System' check box:
Example: ☒ Remote Printer is on a BSD System.



The print server status can be viewed using the Printer/Plotter Manager or the 'lpstat' shell program.

5.4.5. SunOS

When installing the KYOCERA-PrintServer into SunOS systems, you must type the print server into the '/etc/printcap' file.

Requirements

Before installation, make sure that:

- ✓ The IP address has been saved in the print server.
- ✓ The host name has been allocated to the IP address.
- ✓ The print server is connected, and the printer is turned on.

Procedure

Proceed as follows:

1. Add the following entry to the '/etc/printcap' file:
Syntax: <printer name>:\n :lp=:rm=<host name>:rp<logical printer>:
Example: my_printer:\n :lp=:rm=NB0001FF:rp=lp1:

2. Enable the printer:
Syntax: lpc\n lpc> enable <printer name>\n lpc> start <printer name>\n lpc> quit
Example: lpc\n lpc> enable my_printer\n lpc> start my_printer\n lpc> quit

5.4.6. SCO UNIX (Version 3.2)

In SCO 3.2 systems, remote line printing (RLP) is used. When installing the print server, you must first install RLP into the SCO server and then install the print server as a remote printer.

Requirements

Before installation, make sure that:

- ✓ The IP address has been saved in the print server.
- ✓ The host name has been allocated to the IP address.
- ✓ The print server is connected, and the printer is turned on.

Procedure

Proceed as follows:

1. Log on as root.

2. Install RLP:


```
mkdev rlp
Do you want to install or remove remote printing? (i/r/q)i
Do you wish to change the printer description file
/etc/printcap? (y/n)y
```
3. Type the following parameters:


```
Please enter the printer name (q to quit):      my_printer
Is my_printer a remote printer or local printer (r/l)?  r
Please enter name of the remote host that my_printer is
attached to:      NB0001FF
Printer my_printer is connected to host NB0001FF
Is this correct? (y/n)      y
Do you want to start remote daemon now? (y/n)      y
```
4. Change the 'rp' entry in the '/etc/printcap' file:


```
Starting line in /etc/printcap:
:lp=:rm=NB0001FF:rp=my_printer:sd=/usr/spool/lpd/my_printer
Change in:
:lp=:rm=NB0001FF:rp=lp1:sd=/usr/spool/lpd/my_printer
```
5. Restart your system.
6. Test the new printer:


```
lpstat -t my_printer
```

5.4.7. UNIXWare (Version 4.2 - 1.1.2)

When installing the print server into UNIXWare systems, you must install the print server as a remote printer and then enable it.

Requirements

Before installation, make sure that:

- ✓ The IP address has been saved in the print server.
- ✓ The host name has been allocated to the IP address.

- ✓ The print server is connected, and the printer has been turned on.

Procedure

Proceed as follows:

1. Type the print server into the spooler as a remote printer:
Syntax: `lpsystem -t bsd <host name>`
Example `lpsystem -t bsd NB0001FF`
2. Install a remote printer:
Syntax: `lpadmin -p <printer name> -s <host name>!
<logical printer>`
Example: `lpadmin -p my_printer -s NB0001FF!lp1 -I pcl`



The `-I pcl` parameter indicates that LF (line feed) is converted into CR+LF (carriage return + line feed). The `-I " "` parameter indicates that binary data is not changed.

3. Enable the printer:
Syntax: `accept <printer name>`
`enable <printer name>`
Example: `accept my_printer`
`enable my_printer`

5.4.8. System V (General)

When installing the print server into System V systems, you must install the print server as a remote printer and then enable it.

Requirements

Before installation, make sure that:

- ✓ The IP address has been saved in the print server.
- ✓ The host name has been allocated to the IP address.
- ✓ The print server is connected, and the printer is turned on.

Procedure

Proceed as follows:

1. Log on as root.
2. Type the print server into the spooler as a remote printer:
Syntax: `lpssystem -t bsd <host name>`
Example: `lpssystem -t bsd NB0001FF`
3. Install a remote printer:
Syntax: `lpadmin -p <printer name> -s <host name>!<logical printer>`
Example: `lpadmin -p my_printer -s NB0001FF!lp1`
4. Enable the printer:
Syntax: `accept <printer name>`
`enable <printer name>`
Example: `accept my_printer`
`enable my_printer`

5.5 Printing Using TCP/IP Ports

If the LPD protocol is not available, such as in SINIX SPOOL networks, you can use direct TCP/IP ports for printing. If this is the case, you must configure the port number. To enable this function, install a printer port and enter the port number.



Please read the "TCP/IP Ports" section on page 2-16 if necessary.

5.5.1. SINIX SPOOL V4.x

When installing the print server into SINIX SPOOL V4.x systems, you must install a server, a supervisor, and a printer.

Requirements

Before installation, make sure that:

- ✓ The IP address has been saved in the print server.
- ✓ The host name has been allocated to the IP address.
- ✓ The print server is connected, and the printer is turned on.

Procedure

Proceed as follows:

1. Install a new server into the spooler:
Syntax: `xpadd -srv <server name> -sp <time control>`
Example: `xpadd -srv server1 -sp PRIORITY`
2. Install a new supervisor into the spooler:
Syntax: `xpadd -spv <supervisor> -se <server name>`
Example: `xpadd -spv admin -se server1`

3. Add a new printer:

Syntax: `xpadd -dev <printer name>`
`-da <host name> <TCP/IP port>`
`-su <supervisor> -co <connection>`
`-aa -pc <printer control language>`

Example: `xpadd -dev my_printer`
`-da NB0001FF 9100`
`-su admin -co LAN`
`-aa -pc HP-LASERJET`

4. Activate the printer:

Syntax: `xpchange -dev <printer name> -st <status>`
`-si <job acceptance> -so <job processing>`

Example: `xpchange -dev my_printer -st ACTIVE`
`-si ON -so ON`

5. Test the printer:

Syntax: `xpadd -job -dr <file name> -de <printer name>`

Example: `xpadd -job -dr /etc/hosts -de my_printer`

5.6 Printing Using Shell Scripts

You should print by means of shell scripts only if you are not able to print by means of LPD protocols or direct TCP/IP ports.

The following shell scripts are available:

- `aix.sh` (for AIX systems with 'qdaemon' spooler)
- `bsd.sh` (for BSD systems with 'lpd' spooler)
- `sys5.sh` (for System V with 'lpsched' spooler)

If you wish to print using shell scripts, they must first be transferred from the print server and then adapted to the respective UNIX network.

Log Files in Case of Error

The complete print job process is stored in a log file named after the printer and with the extension '.last' located in the '/tmp' directory. This file contains the starting time of the print job, the parameters with which the printer interface was activated, all FTP command outputs, and so on. In case of error, this information may indicate the cause of the error.



The following instructions describe only the most fundamental procedures for the corresponding shell scripts. Depending on your UNIX system, the individual commands may deviate from the description. Please read the description in your UNIX user manual if necessary.

Requirements

Before installation, make sure that:

- ✓ The IP address has been saved in the print server.
- ✓ The host name has been allocated to the IP address.
- ✓ The print server is connected, and the printer is turned on.

Procedure

Carry out the installation in the following steps:

- ◆ Creating the Print Server Directories
- ◆ Integrating Shell Scripts into System V Systems
- ◆ Integrating Shell Scripts into BSD Systems
- ◆ Integrating Shell Scripts into AIX Systems

5.6.1. Creating the Print Server Directories

All files that the print server specifically requires should be placed in the '/etc/printserver' directory. In order to print using shell scripts, the shell scripts must be transferred from the print server to the '/etc/printserver' directory by means of FTP.

Procedure

Proceed as follows:

1. Log on as root.
2. Create the '/etc/printserver/interfaces' directory:

```
cd /etc
mkdir printserver
cd printserver
mkdir interfaces
```
3. Open an FTP connection to the print server:
Syntax: `ftp <IP Address>`
Example: `ftp 192.168.0.123`
4. Download the shell scripts from the print server to the '/etc/printserver' directory:
Example: `mget *.sh`

5.6.2. Integrating Shell Scripts into System V Systems

If the shell scripts are located in the '/etc/printserver' directory, you must adapt them and integrate them into the spooler.

Data

The installation sequence requires the following data:

User input	Example in text
Name of the adapted shell script	my_script
Name of the zero device	my_device
Name of the printer (visible to the user after installation)	my_printer



All three names may be assigned arbitrarily. You may also use one name for all three entries. Every name assigned, however, must be used continuously throughout the installation sequence.

Procedure

Carry out the installation in the following steps:

- ◆ Adapting the Shell Scripts
- ◆ Creating the Printer Device
- ◆ Entering the Printer into the Spooler System
- ◆ Enabling the Printer

5.6.2.1. Adapting the Shell Scripts

The shell script must be adapted to your network environment. A copy of the shell script is therefore created and saved in the '/etc/printserver/interfaces' directory. After that, the shell script is adapted to your system. This basically means that the host name of

the print server, the logical printer, and the FTP path must be edited.



Please read the "Description of Variables" section on page E-4 if necessary.

Procedure

Proceed as follows:

1. Copy the '/etc/printserver/sys5.sh' file into the '/etc/printserver/interfaces' subdirectory and assign the copy an arbitrary name:
Syntax: `cd /etc/printserver`
`cp sys5.sh interfaces/<shell script name>`
Example: `cd /etc/printserver`
`cp sys5.sh interfaces/my_script`
2. Change to the '/etc/printserver/interfaces' subdirectory.



Depending on the current spooler implementation, you may need to change the access rights for the shell script. Please read the description of 'lpadmin' in your UNIX user manual.

3. Change the default values of the HOST, PORTS, and FTP variables in the new shell script.

5.6.2.2. Creating the Printer Device

The print spooler requires a printer device. Due to the fact that the print server does not need a physical device, a link is made to a zero device.

Procedure

Proceed as follows:

1. Type the following command:
Syntax: `ln -f /dev/null /dev/<zero device name>`
Example: `ln -f /dev/null /dev/my_device`

5.6.2.3. Entering the Printer into the Spooler System

In order to enter the printer into the spooler system, the print spooler must be stopped. The new printer, the zero device, and the shell script are then entered, and the print spooler is restarted.



Certain UNIX implementations allow a new printer to be entered without stopping the print spooler. Please read the description in your UNIX user manual if necessary.



The spooler is administered using the 'lpadmin' command. You may have to type the complete path ('/usr/lib/lpadmin,' for example) if the 'lpadmin' command is used. The '-F beginning' option determines that the print jobs are restarted whenever an error occurs. The '-o nobanner' option allows you to deactivate the banner page during print job transmission. These options are not available in all 'lpadmin' command implementations. These commands are not available for HP-UX and BULL OS, for example. Please note that no space is allowed between a flag and its value.

Procedure

Proceed as follows:

1. Type the following command:
Syntax: `lpshut`
`lpadmin -p <printer name> \`
`-v /dev/<zero device name> \`
`-i /etc/printserver/interfaces/<script name>\`

```
-F beginning -o nobanner
/usr/lib/lpsched
Example: lpadmin -p my_printer \
-v /dev/my_device \
-i /etc/printserver/interfaces/my_script \
-F beginning -o nobanner
/usr/lib/lpsched
```



Several Unix systems show a warning indicating that other users are permitted to access the zero device. You may ignore this warning.

5.6.2.4. Enabling the Printer

Once the printer has been typed into the spooler system, you must enable the printer so that print jobs can be accepted.

Procedure

Proceed as follows:

1. Type the following command:
Syntax: accept <printer name>
 enable <printer name>
Example: accept my_printer
 enable my_printer
2. Test the new printer:
Syntax: lp -d<printer name> /etc/printserver/<file>
Example: lp -dmy_printer /etc/printserver/sys5.sh

5.6.3. Integrating Shell Scripts into BSD Systems

If the shell scripts are located in the '/etc/printserver' directory, you must adapt them and integrate them into the spooler.

Entries

The installation sequence requires the following data:

User input	Example in text
Name of the adapted shell script	my_script
Name of the zero device	my_device
Name of the spool directory	my_spool
Name of the printer (visible to users after installation)	my_printer



All four names may be assigned arbitrarily. You may also use one name for all four entries. Every name assigned, however, must be used continuously throughout the installation sequence.

Procedure

Carry out the installation in the following steps:

- ◆ Adapting the Shell Script
- ◆ Creating the Printer Device
- ◆ Creating the Spool Directory
- ◆ Entering the Spooler into the Printer System
- ◆ Enabling the Printer

5.6.3.1. Adapting the Shell Script

The shell script must be adapted to your network environment. A copy of the shell script is therefore created and saved in the '/etc/printserver/interfaces' directory. After that, the shell script is

adapted to your system. This basically means that the host name of the print server, the logical printer, and the FTP path must be edited.



Please read the "Description of Variables" section on page E-4 if necessary.

Procedure

Proceed as follows:

1. Copy the '/etc/printserver/bsd.sh' file into the '/etc/printserver/interfaces' subdirectory and assign the copy an arbitrary name:
Syntax: `cd /etc/printserver`
`cp bsd.sh interfaces/<shell script name>`
Example: `cd /etc/printserver`
`cp bsd.sh interfaces/my_script`
2. Change to the '/etc/printserver/interfaces' subdirectory.
3. Change the access rights of the created file:
Syntax: `chmod 755 <shell script name>`
Example: `chmod 755 my_script`
4. Change the default values of the HOST, PORTS, and FTP variables in the new shell script.

5.6.3.2. Creating the Printer Device

The print spooler requires a printer device. Due to the fact that the print server does not need a physical device, a link is made to a zero device.

Procedure

Proceed as follows:

1. Type the following command:
Syntax: `ln -f /dev/null /dev/<zero device name>`
Example: `ln -f /dev/null /dev/my_device`

5.6.3.3. Creating the Spool Directory

You must now create a spool directory with access rights for the print server.

Procedure

Proceed as follows:

1. Type the following command:
Syntax: `mkdir /usr/spool/<spool dir. name>`
`chmod 770 /usr/spool/<spool dir. name>`
`chown daemon /usr/spool/<spool dir. name>`
`chgrp daemon /usr/spool/<spool dir. name>`
Example: `mkdir /usr/spool/my_spool`
`chmod 770 /usr/spool/my_spool`
`chown daemon /usr/spool/my_spool`
`chgrp daemon /usr/spool/my_spool`

5.6.3.4. Entering the Spooler into the Printer System

In order to enter the printer into the spooler system, a new entry must be made into the '/etc/printcap' file.



The first line of this entry must start at the beginning of the line, the following entries are introduced by a tab character. All lines belonging to one entry must have a backslash (\) character at the end of a line. No other character is allowed between the last

character in a line and the backslash. The backslash character itself must be the last character in a line.

Procedure

Proceed as follows:

1. Add the following entry to the '/etc/printcap' file:

```
Syntax:  <printer name>:\
         :lp=/dev/<zero device name>:\
         :of=/etc/printserver/interfaces/<script name>:\
         :sd=/usr/spool/<spool dir. name>:
```

```
Example: my_printer:\
         :lp=/dev/my_device:\
         :of=/etc/printserver/interfaces/my_script:\
         :sd=/usr/spool/my_spool:
```



In order to printout PostScript files, the entry in '/etc/printcap' must contain the 'sh' (suppress header) flag. In this case, the entry appears as follows:

```
<printer name>:\
:lp=/dev/<zero device name>:\
:of=/etc/printserver/interfaces/<shell script name>:\
:sd=/usr/spool/<spool dir. name>:sh:
```

5.6.3.5. Enabling the Printer

Once the printer has been typed into the spooler system, you must enable the printer so that print jobs can be accepted.

Procedure

Proceed as follows:

1. Type the following command:

```
Syntax:  lpc
         lpc> enable <printer name>
         lpc> start <printer name>
```

```

Example: lpc
        lpc> quit
        lpc> enable my_printer
        lpc> start my_printer
        lpc> quit

```

2. Test the new printer:

Syntax: `lpr -P<printer name> /etc/printserver/<file>`

Example: `lpr -Pmy_printer /etc/printserver/bsd.sh`

5.6.4. Integrating Shell Scripts into AIX Systems

If the shell scripts are located in the '/etc/printserver' directory, you must adapt them and integrate them into the spooler.

Data

The installation sequence requires the following data:

User input	Example in text
Name of the adapted shell script	my_script
Name of the zero devices	my_device
Name of the printer (visible to the user after installation)	my_printer



All three names may be assigned arbitrarily. You may also use one name for all three entries. Every name assigned, however, must be used continuously throughout the installation sequence.

Procedure

Carry out the installation in the following steps:

- ◆ Adapting the Shell Script
- ◆ Creating the Printer Device
- ◆ Entering the Printer into the Spooler System
- ◆ Enabling the Printer

5.6.4.1. Adapting the Shell Script

The shell script must be adapted to your network environment. A copy of the shell script is therefore created and saved in the '/etc/printserver/interfaces' directory. After that, the shell script is adapted to your system. This basically means that the host name of the print server, the logical printer, and the FTP path must be edited.



Please read the "Description of Variables" section on page E-4 if necessary.

Procedure

Proceed as follows:

1. Copy the '/etc/printserver/aix.sh' file into the '/etc/printserver/interfaces' subdirectory and assign the copy an arbitrary name:
Syntax: `cd /etc/printserver`
`cp aix.sh interfaces/<shell script name>`
Example: `cd /etc/printserver`
`cp aix.sh interfaces/my_script`
2. Change to the '/etc/printserver/interfaces' subdirectory.

3. Change the default values of the HOST, PORTS, and FTP variables in the new shell script.
4. Change the access rights of this file:
Syntax:
`chmod 2555 /etc/printserver/interfaces/<script name>`
`chown bin /etc/printserver/interfaces/<script name>`
`chgrp printq /etc/printserver/interfaces/<script name>`
Example:
`chmod 2555 /etc/printserver/interfaces/my_script`
`chown bin /etc/printserver/interfaces/my_script`
`chgrp printq /etc/printserver/interfaces/my_script`

5.6.4.2. Creating the Printer Device

The print spooler requires a printer device. Due to the fact that the print server does not need a physical device, a link is made to a zero device.

Procedure

Proceed as follows:

1. Type the following command:
Syntax: `ln -sf /dev/null /dev/<zero device name>`
Example: `ln -sf /dev/null /dev/my_device`

5.6.4.3. Entering the Printer into the Spooler System

The AIX print spooler is administered by means of the 'mkque' command.

Procedure

Proceed as follows:

1. Type the following command:

```
Syntax:  mkque -q<printer name> -a"up = ''TRUE' &&
         mkquedev \
         -q<printer name> -d<printer name> \
         -a"file = /dev/<zero device name>" \
         -a"backend = /etc/printserver/interfaces/<script
name>"
Example: mkque -qmy_printer -a"up = ''TRUE' &&
         mkquedev \
         -qmy_printer -dmy_printer \
         -a"file = /dev/my_device" \
         -a"backend = /etc/printserver/interfaces/my_script"
```

You may have to type the full path ('/usr/lib/mkque,' for example) when using the 'mkque' command.

5.6.4.4. Enabling the Printer

Once the printer has been typed into the spooler system, you must enable the printer so that print jobs can be accepted.

Procedure

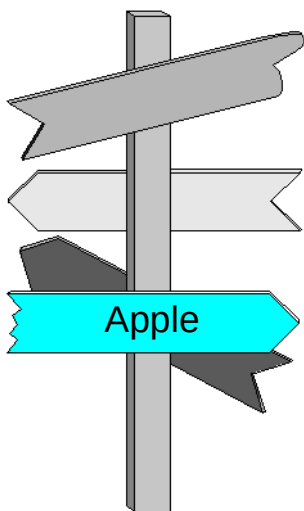
Proceed as follows:

1. Type the following command:

```
Syntax:  enq -U -P<printer name>
Example: enq -U -Pmy_printer
```



Installation in Apple Network Environments



This chapter contains information concerning the following topics:

- Basic Principles
- Installing the Print Server



6.1 Basic Principles

For the most part, the KYOCERA-PrintServer is installed into Apple networks automatically.

Which Protocols Are Used?

The print server works in AppleTalk networks. According to the type of network used, EtherTalk and TokenTalk are supported. LocalTalk is supported if the printer supports LocalTalk as well.

What Happens During Installation in Apple Networks?

After the KYOCERA-PrintServer is turned on, it initializes. In the process, the print server determines its AppleTalk address. If the print server has already been in use, it uses the last address. If zones are used in your network, the print server will allocate the default zone. If required, the print server can also register other zones. In a last step, the system will check whether the print server name already exists in the network. If this is the case, the name will be automatically extended (Apple -> Apple_0 through Apple_999, for example).

Changing of Name and Zone

You can change the print server name and the zone used by means of any namer tool.



6.2 Installing the Print Server

For the most part, the KYOCERA-PrintServer is installed automatically. Only the printer driver must be selected so that the print server can be assigned.

Procedure

Proceed as follows:

1. Select 'Chooser' on the Apple menu.
The following window appears:

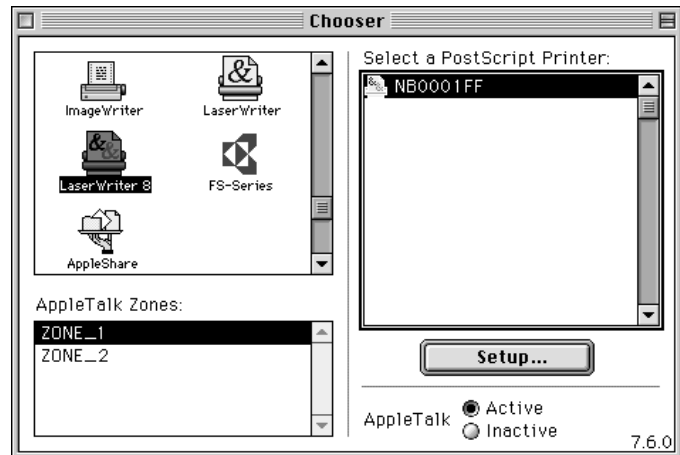


Fig. 6-1: 'Chooser' window

2. Select the desired printer driver.
3. Select the corresponding zone if required.
4. Select the print server from the 'Select a PostScript Printer' box.



Software Update



This chapter contains information concerning the following topics:

- Basic Principles
- Updating Software Using the KYOCON
- Updating Software in Windows NT Network Environments Using TFTP
- Updating Software in UNIX Network Environments Using TFTP



7.1 Basic Principles

When Is a Software Update Necessary?

The software is pre-installed on your print server upon purchase so that it is fully functional. For this reason, a software update is generally not required and should be undertaken only if KYOCERA has released a new software version with new functions or bug fixes.

What Happens During a Software Update?

During a software update, the new firmware is saved in the flash EPROM of the print server as a download file, overwriting the old firmware in the process. All configuration parameters retain their original settings.

Where Can I Find Software Updates?

The download files for the software update can be found on the KYOCERA Printer Library CD-ROM.

Procedure

Which procedures can be selected?

- Updating Software Using the KYOCON
- Updating Software in Windows NT Network Environments Using TFTP
- Updating Software in UNIX Network Environments Using TFTP



7.2 Updating Software Using the KYOCON

The KYOCON offers a safe, easy method of updating the software of your print server.

Requirements

Make sure that:

- ✓ The print server is turned on and visible in the network.
- ✓ All print jobs are finished.

Procedure

Proceeds as follows:

1. Start the KYOCON.
2. Select the print server for the software update.
3. Select 'Firmware Download' on the 'Download' menu.

The following window appears:

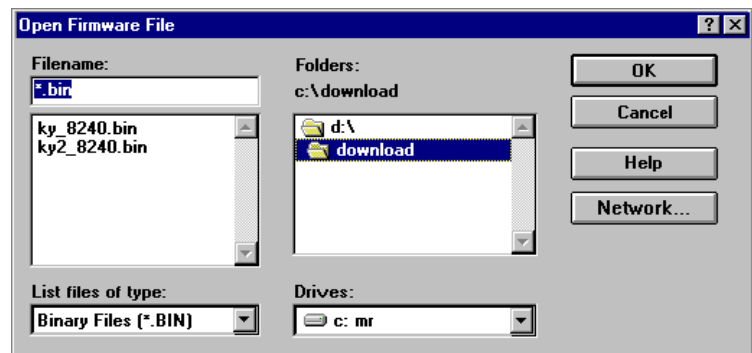


Fig. 7-1: 'Open Firmware File' window

4. Select the download file.
5. Click OK to acknowledge.
6. Acknowledge the security query.
The software update will be carried out.



7.3 Updating Software in Windows NT Network Environments Using TFTP

In Windows NT networks, the download file can be transferred to the print server not only by means of the KYOCON, but also by means of a TFTP connection.

Requirements

Make sure that:

- ✓ The print server is turned on and is visible in the network.
- ✓ All print jobs are finished.

Procedure

Proceeds as follows:

1. Change to the directory where the download file is located.
2. Open an FTP connection to the print server:
Syntax: `ftp <IP address>`
Example: `ftp 192.0.0.123`
3. Type an arbitrary user name.
4. Type either the password of the print server or press ENTER if no password has been assigned.
5. Switch the print server to download mode:
`ftp> quote SITE LOAD ON`
The print server no longer accepts incoming print jobs.
6. Close the FTP connection:
`ftp> quit`
7. Transfer the download file to the print server by means of TFTP:
Syntax: `tftp -i <IP address> PUT <download file>`
Example: `tftp -i 192.168.0.123 PUT ky2_8240.bin`



Trouble Shooting

If you wish to re-enable the printing functions before the software update, proceed as follows:

1. Switch the print server back into print mode:
ftp> quote SITE LOAD OFF



7.4 Updating Software in UNIX Network Environments Using TFTP

In UNIX networks, you can use the TFTP protocol to update software.

Requirements

Make sure that:

- ✓ The print server is turned on and is visible in the network.
- ✓ All print jobs are finished.

Procedure

Under UNIX, the software update is carried out in the following steps:

- ◆ Activating the Download Mode in the Print Server
- ◆ Configuring the Download Parameters
- ◆ Transferring the Download File to the Print Server

7.4.1. Activating the Download Mode in the Print Server

The download mode must be activated in the print server before a file transfer can take place.

Procedure

Proceeds as follows:

1. Change to the directory where the download file is located.
2. Open an FTP connection to the print server:
Syntax: `ftp <IP Address>`
Example: `ftp 192.168.0.123`
3. Type an arbitrary user name.



4. Type either the password of the print server or press ENTER if no password has been assigned.
5. Switch the print server into download mode:
ftp> quote SITE LOAD ON
The print server no longer accepts incoming print jobs.

Trouble Shooting

If you wish to re-enable the printing functions before the software update is started, proceed as follows:

1. Switch the print server back into print mode:
ftp> quote SITE LOAD OFF

7.4.2. Configuring the Download Parameters

In order to carry out a file transfer by means of TFTP, you must define the download parameters.

Procedure

Proceeds as follows:

1. Open a TFTP connection to the print server:
Syntax: tftp <IP address>
Example: tftp 192.168.0.123
2. Configure the parameters as listed below:
Transfer mode to binary
Timeout for package repetition up to 30 seconds
Total timeout for transfer up to 15 minutes
tftp> binary
tftp> rexmt 30
tftp> timeout 900



7.4.3. Transferring the Download File to the Print Server

During the transfer of the download file, the contents of the flash EPROM are deleted, and then the data blocks are transferred to it.

Procedure

Proceeds as follows:

1. Transfer the download file to the print server:

Syntax: `tftp> put <download file name>`

Example: `tftp> put ky_8240.bin`

The red LED on the print server is permanently lit. As soon as TFTP indicates that the transfer has been completed, the download is finished.

2. Close the TFTP connection:

`tftp> quit`

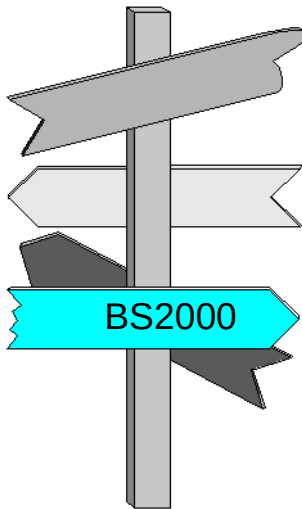
Trouble Shooting

If the network connection is interrupted during the download, the print server waits for the next data block until the connection is re-established. If the TFTP timeout is up before the connection is re-established, the file transfer ends.

In this case, the following steps should be taken:

1. Turn the print server off and back on.
The red LED blinks rapidly.
2. Start the TFTP protocol.
3. Repeat the steps listed above.

Installation in BS2000 Network Environments



This chapter contains information concerning the following topics:

- Basic Principles
- Saving the IP Address in the Print Server
- Installing a Print Server for TCP/IP
- Entering the IP Address
- Installing the Print Server into the RSO Spooler
- Defining the TCP/IP Port

8.1 Basic Principles

Network printers are integrated into BS2000 networks by means of a direct TCP/IP connection. By means of TCP/IP ports, the print data can be transferred from the spooler to the KYOCERA-PrintServer. For this purpose, you must configure the port number. In the process, you also set up a port and enter the port number. In the case of BS2000 systems, TCP/IP port 2900 is used to implement a bidirectional socket connection.



Please read the "TCP/IP Ports" section on page 2-16 if necessary.

Procedure

Install the print server in the following steps:

- ◆ Saving the IP Address in the Print Server
- ◆ Installing a Print Server for TCP/IP
- ◆ Entering the IP Address
- ◆ Installing the Print Server into the RSO Spooler
- ◆ Defining the TCP/IP Port

8.2 Saving the IP Address in the Print Server

In the case of all KYOCERA printers with the exception of the FS-400 and FS-600 models, you can type the IP address directly into the printer operating panel and save it in the print server.

The procedure varies depending on the printer model and the operating panel. Please read the "Configuring Parameters Using the KYOCERA Printer Operating Panel" section on page D-11 if necessary.



Operating panel settings will not be saved in the print server if a password has been assigned.

8.3 Installing a Print Server for TCP/IP

Install a print server for TCP/IP. In the process, follow the instructions in the documentation of your BS2000 system.

8.4 Entering the IP Address

Procedure

Proceed as follows:

1. Enter the IP address by means of a DCAM command.
Syntax: /BCIN <name of processor>,<IP address>
Example: BCIN my_system,192.168.0.123

8.5 Installing the Print Server into the RSO Spooler

The IP address of the KYOCERA-PrintServer and TCP/IP port 2900 must be entered into the RSO spooler. The SPSEERVE utility program is available for this purpose.

Procedure

Proceed as follows:

1. Call the SPSEERVE utility program.
2. Type the IP address and TCP/IP port 2900 into the RSO spooler as the printer.
3. Type '9000-PCL' as the printer type, for example.

8.6 Defining the TCP/IP Port

Procedure

Proceed as follows:

1. Define the TCP/IP port:
Syntax: /BCMAP <printer>,<processor>,Port=2900
Example: /BCMAP my_printer,my_system,Port=2900

Print Server Homepage

A.1 Basic Principles

The print server homepage is used for configuring and administering your print server.

The following topics are described:

- Calling the Print Server Homepage
- Displaying the Status Information
- Configuring the Print Server
- Restart and Reset



A.2 Calling the Print Server Homepage

The print server homepage is stored in your KYOCERA-PrintServer and can be called by means of a 3.x-compatible Internet browser.

Requirements

Make sure that:

- ✓ The print server is connected, and the printer is turned on.
- ✓ The IP address is saved in the print server.

Procedure

Proceed as follows:

1. Open your Internet browser.
2. Enter the IP address of the print server as the URL.

After the print server homepage starts, the following page appears:

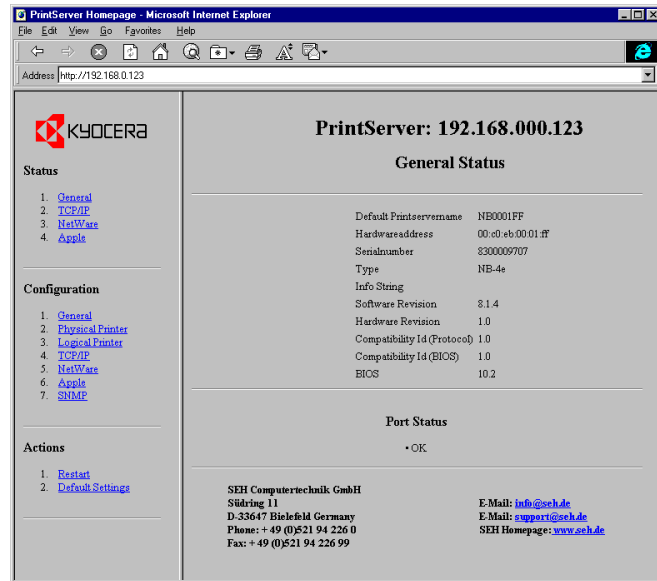


Fig. A-1: Print server homepage

A selection bar with the available topics is located on the left of the screen, while an information window with general status information is located on the right.



A.3 Displaying the Status Information

By means of the 'Status' selection bar on the left of the screen, you can call pages which display status information for TCP/IP, Novell NetWare, and Apple.

The following topics are described:

- General Status
- TCP/IP Status
- NetWare Status
- Apple Status

A.3.1. General Status

The 'General Status' page displays general status information, such as the name of the print server, the hardware address, and the serial and version numbers.

If you have typed the info string or the group name into 'Configuration - General' tab, it will be displayed under 'Info/Group.' The info string can be used to gain an overview of the print servers and printers in the system. Here, for example, you can type the location of the printer.

The following printer status messages are displayed:

Abbrev.	Type	Description
CO	Error	Cover open



Abbrev.	Type	Description
CR	Error	Cassette not ready
EE	Error	Other engine error
OL	Error	Offline
PE	Error	Paper empty
PJ	Error	Paper jam
SP	Error	Call service personnel
TE	Error	Toner empty
TL	Warning	Toner low
WU	Warning	Warming up

A.3.2. TCP/IP Status

The 'TCP/IP Status' page displays TCP/IP status information. Under 'TCP/IP Slots,' the number of and the existing TCP/IP connections to the print server is displayed. Under 'ARP Cache,' the ARP table of the print server is displayed.

A.3.3. NetWare Status

The 'NetWare Status' page displays NetWare information, such as the Novell name, print server, or remote printer mode, or the frame type used.



A.3.4. Apple Status

The 'Apple Status' page indicates whether AppleTalk is switched on or off.



A.4 Configuring the Print Server

By means of the 'Configuration' selection bar on the left of the screen, you can call pages by means of which you can configure the TCP/IP or Novell NetWare parameters.

The following topics will be described:

- General Configuration
- Physical Printer Configuration
- Logical Printer Configuration
- TCP/IP Configuration
- NetWare Parameter Configuration
- Apple Parameter Configuration
- SNMP Configuration

A.4.1. General Configuration

You can type the info string or the group name and the password into the 'General Configuration' page.

The info string or the group name can be used to gain an overview of the print servers and printers in the system. Here, for example, you can type the location of the printer.

The password can be used to find unauthorized print server parameter changes.



A.4.2. Physical Printer Configuration

In the case of print servers for KYOCERA printers having an OPTION interface, the configuration can be switched on or off by means of the printer operating panel. If 'Printer Panel' is activated, you can type configuration parameters into the operating panel (See also the "Configuring Parameters Using the KYOCERA Printer Operating Panel" section on page D-11). In the case of print servers for KYOCERA printers with KUIO interfaces, this tab is empty.

A.4.3. Logical Printer Configuration

If you wish to change the preset functions of the logical printer, you can use the 'Logical Printer Configuration' page for configuring the logical printer.

Please read the "Logical Printers" section on page 2-3 if necessary.

A.4.4. TCP/IP Configuration

You can use the 'TCP/IP Configuration' page for configuring the TCP/IP parameters, such as the IP address, the subnet mask, and the gateway address. The saving of the IP address using boot protocols can be turned on or off by means of the 'DHCP,' 'BOOTP,' and 'RARP' check boxes. The saving of the IP address by means of the 'arp' and 'ping' commands is turned on or off by means of the 'IP Autoconfig' check box.



A.4.5. NetWare Parameter Configuration

You can use the 'Netware Parameter Configuration' page for configuring various Novell NetWare parameters, such as the Novell name, the frame type, and the settings for the print server or remote printer mode.

A.4.6. Apple Parameter Configuration

You can use the 'Apple Parameter Configuration' page for configuring the Apple parameters, such as the Apple name, zone, and printer driver.

A.4.7. SNMP Configuration

You can use the 'SNMP Configuration' page for configuring the SNMP parameters, such as the trap community and the IP and IPX addresses to which the print server sends SNMP traps.



A.5 Restart and Reset

By means of the 'Actions' selection bar on the left of the screen, you can call pages by means of which you can restart the print server or reset the parameters.

The following topics will be described:

- Restart Print Server
- Default Print Server Settings

A.5.1. Restart Print Server

You can use the 'Restart Print Server' page for the manual restart of the print server.

Procedure

Proceed as follows:

1. Click 'Restart Print Server.'
The print server will be restarted.

A.5.2. Default Print Server Settings

You can use the 'Default Print Server Settings' page for resetting the print server parameters. This is necessary, for example, if you wish to use the printer in another network by changing the location of the printer. Before this change, reset the parameters to their default settings, and then reinstall them in another network.



Procedure

Proceed as follows:

1. Click 'Default Settings.'
The parameters are reset.



Restart and Reset

B.1 Basic Principles

The KYOCON is used for configuring and administering your print server.

The following topics will be described:

- ▶ Installing the KYOCON
- ▶ User Interface
- ▶ Toolbar
- ▶ Menu Bar



B.2 Installing the KYOCON

The KYOCON is stored on the KYOCERA Printer Library CD-ROM and can be installed from there.



You may use the KYOCON only if the IPX protocol has been installed.

Procedure

Proceed as follows:

1. Insert the KYOCERA Printer Library CD-ROM into your CD-ROM drive.
The CD-ROM will start automatically.
2. Select the desired language.
3. Install KYOCON.



B.3 User Interface

After the KYOCON has been started, the user interface appears in the main window along with the menu bar, the toolbar, and the list of active print servers:

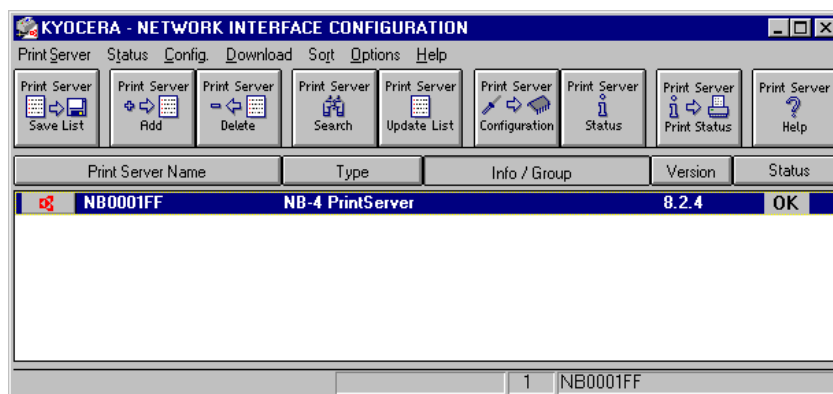


Fig. B-2: User interface of KYOCON

The print servers will appear in the so-called print server list in the main window. Print servers which are not available in the network because, for example, the corresponding printer is switched off appear dimmed. The name and type of the print server and the version number of the firmware are always shown in the print server list. The print server list can be sorted using either the buttons above or the menu 'Sort'.

If you have typed the info string or the group name into the 'General' tab, it will be displayed under 'Info/Group.' In addition, select the 'Print Server' command on the 'Config.' menu. The info string can be used to gain an overview of the print servers and printers in the system. Here, for example, you can type the location of the printer.



The printer status is displayed only if the SNMP parameters (IPX address trap) have been activated.

The following printer status messages are displayed:

Abbrev.	Type	Description
CO	Error	Cover open
CR	Error	Cassette not ready
EE	Error	Other engine error
OL	Error	Offline
PE	Error	Paper empty
PJ	Error	Paper jam
SP	Error	Call service personnel
TE	Error	Toner empty
TL	Warning	Toner low
WU	Warning	Warming up



B.4 Toolbar

The toolbar of the KYOCON contains the most important commands required for the operation of the print server:

Icon	Description
	Saves all print servers in the list of active print servers in the 'server.lst' file. If the KYOCON is restarted, all print servers are sought and displayed by means of the 'server.lst' file. A prerequisite for this is that the 'Use Print Server List' command in the 'Options' menu has been activated. Any print servers not present in the network appear dimmed.
	Adds any print server existing in the network to the list of active print servers. After this button has been clicked, the 'Add Print Server' window appears. Type the name of a print server existing in the network.
	Deletes a print server from the list of active print servers.
	Looks for new print servers in the network. In the process, the search method depends on the settings in the 'Options' menu. If the 'Broadcast' command has been activated, a broadcast query will be sent. The disadvantage of this procedure is that broadcast queries take a long time and are possible only within a single segment. If the 'Server' command has been activated, the next file server will be sought. By means of the list of print servers which this file server sends back, the print servers will be sought. The disadvantage of this procedure is that print servers which are not active will not be displayed.
	Reads in the list of active print servers and their parameters again.



Icon	Description
	Calls the 'Parameter' tab of the selected print server. Here, you can set the configuration parameters.
	Calls the 'Status' tab of the selected print server. Here, you can look up status information such as the hardware address, Novell NetWare ports and file servers, or the Apple network zones, for example.
	Prints the status page of the selected print server.
	Calls the Help system of the KYOCON. Here, you can obtain information concerning the operation of the KYOCON.



B.5 Menu Bar

The following topics will be described:

- The 'Print Server' Menu
- The 'Status' Menu
- The 'Config.' Menu
- The 'Download' Menu
- The 'Sort' Menu
- The 'Options' Menu
- The 'Help' Menu

B.5.1. The 'Print Server' Menu

You can use the 'Print Server' menu for updating and processing the print server list. Here, you can save the print server list or add or delete print servers.

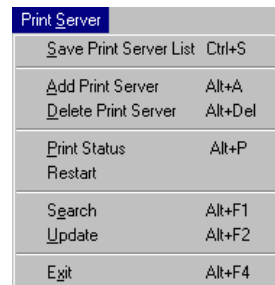


Fig. B-3: 'Print Server' Menu



Command	Description
Save Print Server List	Saves all print servers from the list of active print servers in the 'server.lst' file. If the KYOCON is restarted, all print servers are sought and displayed by means of the 'server.lst' file. A prerequisite for this is that the 'Use Print Server List' command in the 'Options' menu has been activated. Any print servers not present in the network appear dimmed.
Add Print Server	Adds any print server existing in the network to the list of active print servers. After this button has been clicked, the 'Add Print Server' window appears. Type the name of a print server existing in the network.
Delete Print Server	Deletes a print server from the list of active print servers.
Print Status	Prints the status page of the selected print server.
Restart	Restarts the selected print server.
Search	Looks for new print servers in the network. In the process, the search method depends on the settings in the 'Options' menu. If the 'Broadcast' command has been activated, a broadcast query will be sent. The disadvantage of this procedure is that broadcast queries take a long time and are possible only within a single segment. If the 'Server' command has been activated, the next file server will be sought. By means of the list of print servers which this file server sends back, the print servers will be sought. The disadvantage of this procedure is that print servers which are not active will not be displayed.
Update	Reads in the list of active print servers and their parameters.
Exit	Ends the KYOCON.

B.5.2. The 'Status' Menu

You can use the 'Status' menu for displaying the status information of the print server, the Novell or Apple network, and the printer.

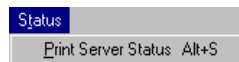


Fig. B-4: 'Status' menu



When the 'Print Server Status' command is selected, the print server 'Status' tabs appear:

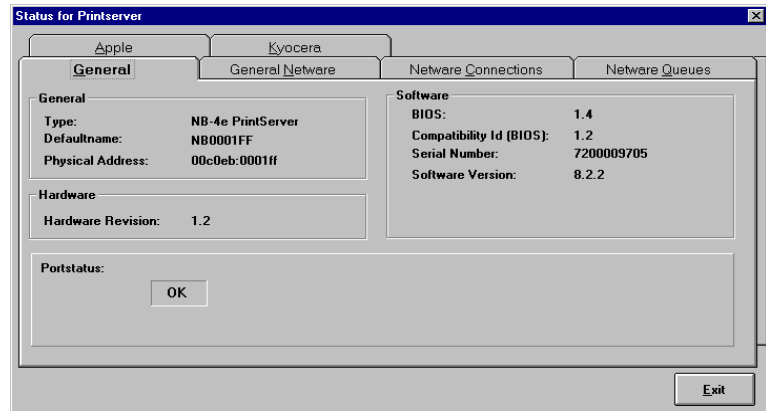


Fig. B-5: 'Status' tabs

Tab	Description
General	Displays general information such as the type of the print server, the name of the print server, the hardware address, the hardware and software versions, and the port status.
General NetWare	Displays general NDS status information.
NetWare Connections	Displays information concerning the installed Novell servers.
NetWare Queues	Displays information concerning the printer queues. The last error during the connection set-up is logged.
Apple	Displays the name, the zone, and the entity type.
KYOCERA	Displays the printer model, the memory size, the firmware version, and the number of printed pages. The display of the operating panel of the printer is shown on the right half.



B.5.3. The 'Config.' Menu

You can use the 'Config.' menu for configuring the print server parameters, such as, for example, the IP address or the Apple name.



Fig. B-6: 'Config.' Menu

When the 'Print Server' command is selected, the 'Parameter' tabs of the print server appear:

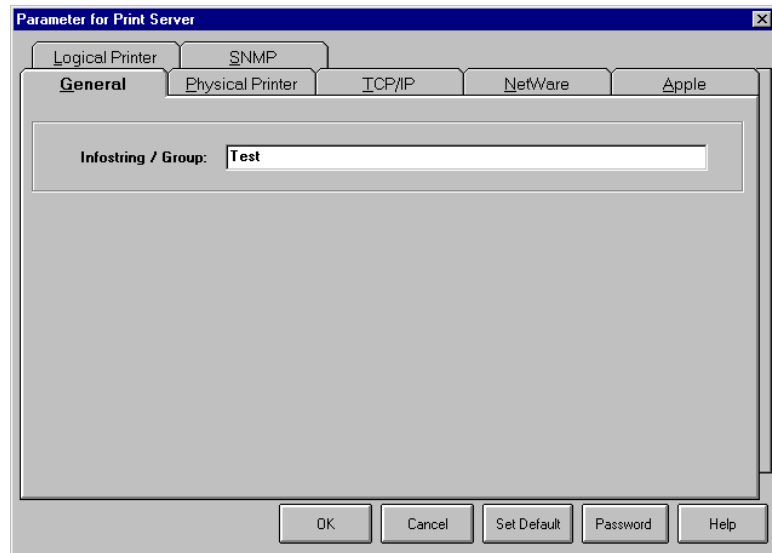


Fig. B-7: 'Parameter' tabs



Tab	Description
General	By means of the info string or a group name, additional information concerning the print server can be displayed. Here, for example, you can type the location of the printer or the printer itself. The entered name is displayed in the printer server list after the KYOCERA is started.
Physical Printer	In the case of print servers for KYOCERA printers having an OPTION interface, the configuration can be turned on or off by means of the printer operating panel. If 'Printer Panel' has been activated, you can enter configuration parameters by means of the operating panel (see also the "Configuring Parameters Using the KYOCERA Printer Operating Panel" section on page D-11). In the case of print servers for KYOCERA printers having a KUIO interface, this tab is empty. Here, in the case of
TCP/IP	Defines the TCP/IP parameters, such as, for example, the IP address, the subnet mask, and the IP address of the gateway. The saving of the IP address by means of the 'arp' and 'ping' commands is deactivated by selecting the 'Autoconfiguration' check box. The saving of the IP address by means of boot protocols is activated or deactivated by selecting the 'DHCP,' 'BOOTP,' and 'RARP' check boxes (see also the "Basic TCP/IP Terminology" section on page 2-6).
NetWare	Defines the Novell NetWare parameters. At the top of the tab, the general parameters, such as the Novell name and the print server or the remote printer mode and the frame header are configured. In print server mode, the NDS or the binary mode are configured by parameters, such as, for example, the NDS tree used or the polling and refreshing times. In remote printer mode, you can configure the name of the PSERVER and a logical printer.
Apple	Defines the Apple parameters, such as, for example, the Apple name and the zone. By means of the 'AppleTalk' check box, AppleTalk can be activated or deactivated.
Logical Printer	Defines the settings of the logical printer. By means of the check box, various functions can be activated and deactivated. By means of the 'String' command button, you can determine the start and end sequences (see also "Logical Printers" section on page 2-3).
SNMP	Defines the SNMP parameters, such as, for example, the trap IP and IPX addresses.

If you have changed any parameters in the individual tabs, click OK. Acknowledge the query as to whether you should save the



parameters by clicking YES. After that, the parameters will be downloaded.

B.5.4. The 'Download' Menu

You can use the 'Download' menu for loading new firmware onto the print server.



Fig. B-8: 'Download' menu

When the 'Firmware Download' command is selected, the 'Open Firmware File' window appears:

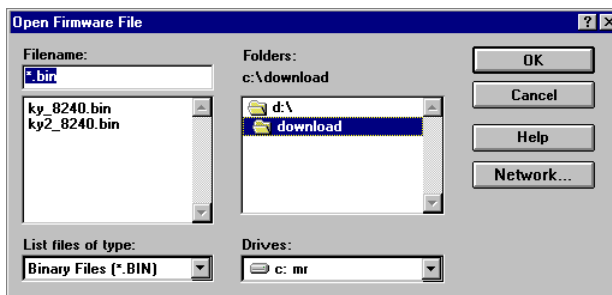


Fig. B-9: 'Open Firmware File' window

Select the corresponding directory and the download file. Click OK to acknowledge.

The file to be loaded onto the print server will be checked by the print server before the download sequence. If the file is not a download file, the software update will be interrupted by an error



message. In this way, errors during the download of a new software version are avoided.



You can update the software update in several ways. Please read the "Software Update" chapter for more information.

B.5.5. The 'Sort' Menu

You can use the 'Sort' menu for sorting the print server list in the main window of the KYOCON. In the process, various sorting possibilities are available. Instead of the menu you can also use the buttons above the print server list.

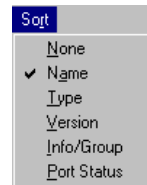


Fig. B-10: 'Sort' menu

Command	Description
None	No sorting method in print server list.
Name	Sorts the print server list according to name.
Type	Sorts the print server list according to type.
Version	Sorts the print server list according to software version.
Info/Group	Sorts the print server list according to the info string or group name. This can be entered under the 'General' tab. In addition, select the 'Print Server' command on the 'Config.' menu.
Port Status	Sorts the print server list according to the printer status.



B.5.6. The 'Options' Menu

You can use the 'Options' menu for setting options, such as how the print server is sought in the network, whether the previously saved print server list is to be used, and whether the tool bar is to be displayed.

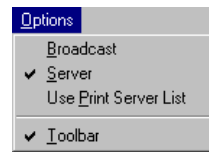


Fig. B-11: 'Options' menu

Command	Description
Broadcast	Looks for printer servers in the network via broadcast.
Server	Novell file servers are used for finding other print servers in the network.
Use Print Server List	Displays only print servers from the 'server.lst' file in the print server list.
Toolbar	Opens or closes the toolbar.

B.5.7. The 'Help' Menu

You can use the 'Help' menu for calling the Help system and for displaying the product information of the print server.



Fig. B-12: 'Help' menu

Command	Description
Help Topics	Calls the Help system of the KYOCON.
Using Help	Calls a description which explains how the Help system is used.
About KYOCON...	Displays information concerning the software version and the product.



Technical Data

C.1 Basic Principles

The following topics will be described:

- Technical Data
- Controls
- Connector Pin Assignment
- Network Specifications
- EC Declaration of Conformity
- FCC compliance



C.2 Technical Data

Select your print server from the following list:

- NB-4e
- NB-5ef
- NB-100
- NB-6e
- SB-4e
- SB-5ef
- SB-100
- SB-6e

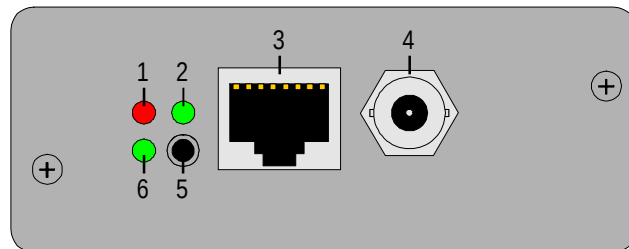


C.2.1. NB-4e

Data

Data	Values
Length, width, height	190 x 80 x 15 mm
Weight	150 g
Network connector	10Base2 with a BNC connector and 10BaseT with a RJ-45 connector
Printer types	FS-400, FS-850, FS-1500, FS-1550/+, FS-1600/+, FS-1700, FS-3400/+, FS-3500, FS-3600/+FS-3700, FS-5500, FS-6500/+ FS-7000
Printer port	Internal KYOCERA OPTION interface
Temperature	5 - 40° Celcius
Relative humidity	20 - 80%
Inspections	EC conformity class B; FCC class A

Front Panel



- 1 Red LED receive data and error indicator
- 2 Green LED link control indicator
- 3 RJ-45 connector for 10BaseT
- 4 BNC connector for 10Base2
- 5 Status button
- 6 Green LED ready mode indicator

Fig. C-13: Front panel of NB-4e

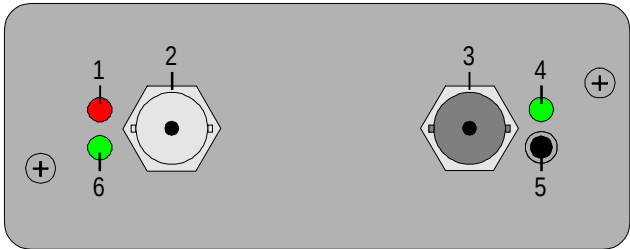


C.2.2. NB-5ef

Data

Data	Values
Length, width, height	190 x 80 x 15 mm
Weight	145 g
Network connector	10BaseFL with a ST connector
Glass fiber types	50/125μm, 62,5/125μm, 100/140μm
Printer types	FS-400, FS-850, FS-1500, FS-1550/+, FS-1600/+, FS-1700, FS-3400/+, FS-3500, FS-3600/+FS-3700, FS-5500, FS-6500/+FS-7000
Printer port	Internal KYOCERA OPTION interface
Temperature	5 - 40° Celcius
Relative humidity	20 - 80%
Inspections	EC conformity class B; FCC class A

Front Panel



- 1 Red LED receive data and error indicator
- 2 TX
- 3 RX
- 4 Green LED link control indicator
- 5 Status button
- 6 Green LED ready mode indicator

Fig. C-14: Front panel of NB-5ef

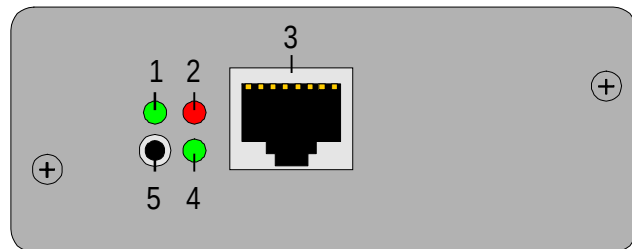


C.2.3. NB-100

Data

Data	Values
Length, width, height	190 x 80 x 15 mm
Weight	146 g
Network connector	100BaseTX with a RJ-45 connector, 10BaseT with a RJ-45 connector
Printer types	FS-400, FS-850, FS-1500, FS-1550/+, FS-1600/+, FS-1700, FS-3400/+, FS-3500, FS-3600/+FS-3700, FS-5500, FS-6500/+ FS-7000
Printer port	Internal KYOCERA OPTION interface
Temperature	5 - 40° Celcius
Relative humidity	20 - 80%
Inspections	EC conformity class B; FCC class A

Front Panel



- 1 Green LED link control
- 2 Red LED receive data and error indicator
- 3 RJ-45 connector for 100BaseTX or 10BaseT
- 4 Green LED ready mode indicator
- 5 Status button

Fig. C-15: Front panel of NB-100

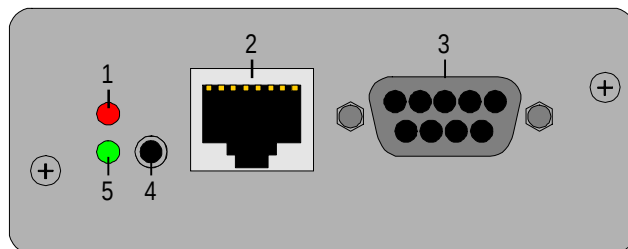


C.2.4. NB-6e

Data

Data	Values
Length, width, height	190 x 80 x 15 mm
Weight	145 g
Network connector	UTP with a RJ-45 connector STP with a 9-pin D-Sub connector
Printer types	FS-400, FS-850, FS-1500, FS-1550/+, FS-1600/+, FS-1700, FS-3400/+, FS-3500, FS-3600/+FS-3700, FS-5500, FS-6500/+, FS-7000
Printer port	Internal KYOCERA OPTION interface
Temperature	5 - 40° Celcius
Relative humidity	20 - 80%
Inspections	EC conformity class B; FCC class A

Front Panel



- 1 Red LED receive data indicator
- 2 RJ-45 connector for UTP
- 3 D-Sub connector for STP
- 4 Status button
- 5 Green LED ready mode indicator

Fig. C-16: Front panel of NB-6e

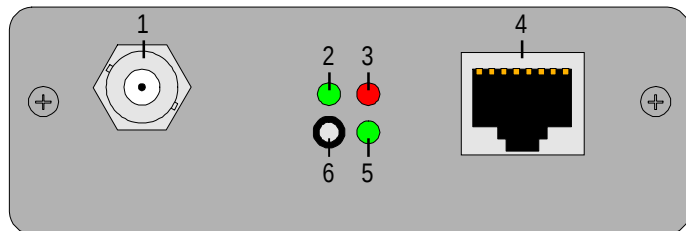


C.2.5. SB-4e

Data

Data	Values
Length, width, height	174 x 95 x 30 mm
Weight	135 g
Network connector	10Base2 with a BNC connector and 10BaseT with a RJ-45 connector
Printer types	FS-600, FS-680, FS-800, FS-1700+, FS-3700+, FS-6700, FS-5800C, FS-5900C, FS-7000+, FS-8000, FS-9000
Printer port	Internal KYOCERA KUIO interface
Temperature	5 - 40° Celcius
Relative humidity	20 - 80%
Test	EC conformity class B; FCC class A

Front Panel



- 1 BNC connector for 10Base2
- 2 Green LED link control indicator
- 3 Red LED receive data indicator
- 4 RJ-45 connector for 10BaseT
- 5 Green LED ready mode indicator
- 6 Status button

Fig. C-17: Front panel of SB-4e

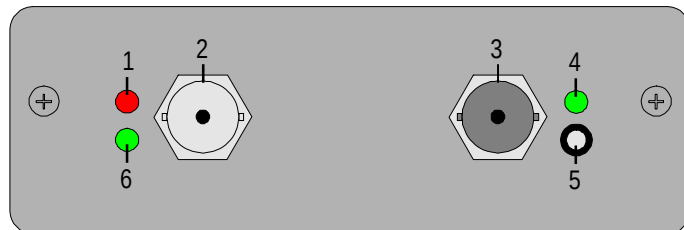


C.2.6. SB-5ef

Data

Data	Values
Length, width, height	175 x 95x 30 mm
Weight	110 g
Network connector	10Base FL with a ST connector
Glass fiber types	50/125μm, 62,5/125μm, 100/140μm
Printer types	FS-600, FS-680, FS-800, FS-1700+, FS-3700+, FS-6700, FS-5800C, FS-5900C, FS-7000+, FS-8000, FS-9000
Printer port	Internal KYOCERA KUIO interface
Temperature	5 - 40° Celcius
Relative humidity	20 - 80%
Inspections	EC conformity class B; FCC class A

Front Panel



- 1 Red LED receive data indicator
- 2 TX
- 3 RX
- 4 Green LED link control indicator
- 5 Status button
- 6 Green LED ready mode indicator

Fig. C-18: Front panel of SB-5ef

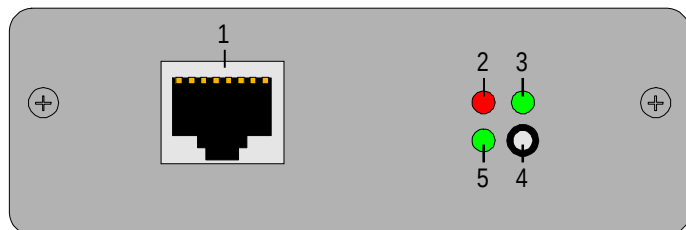


C.2.7. SB-100

Data

Data	Values
Length, width, height	160 x 95 x 30 mm
Weight	120 g
Network connector	100BaseTX with a RJ-45 connector, 10BaseT with a RJ-45 connector
Printer types	FS-600, FS-680, FS-800, FS-1700+, FS-3700+, FS-6700, FS-5800C, FS-5900C, FS-7000+, FS-8000, FS-9000
Printer port	Internal KYOCERA KUIO interface
Temperature	5 - 40° Celcius
Relative humidity	20 - 80%
Inspections	EC conformity class B; FCC class A

Front Panel



- 1 RJ-45 connector for 100BaseTX or 10BaseT
- 2 Red LED receive data and error indicator
- 3 Green LED link control indicator
- 4 Status button
- 5 Green LED ready mode indicator

Fig. C-19: Front panel of SB-100

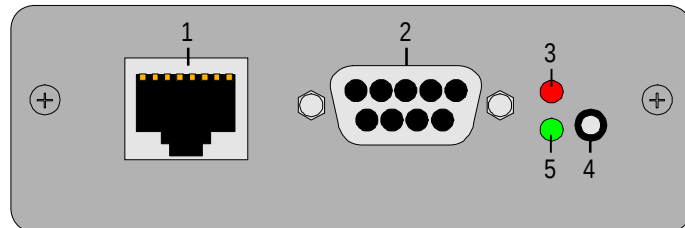


C.2.8. SB-6e

Data

Data	Values
Length, width, height	160 x 95 x 30 mm
Weight	128 g
Network connector	UTP with a RJ-45 connector STP with a 9-pin D-Sub connector
Printer types	FS-600, FS-680, FS-800, FS-1700+, FS-3700+, FS-6700, FS-5800C, FS-5900C, FS-7000+, FS-8000, FS-9000
Printer port	Internal KYOCERA KUIO interface
Temperature	5 - 40° Celcius
Relative humidity	20 - 80%
Inspections	EC conformity class B; FCC class A

Front Panel



- 1 RJ-45 connector UTP
- 2 D-Sub connector for STP
- 3 Red LED receive data and error indicator
- 4 Status button
- 5 Green LED ready mode indicator

Fig. C-20: Front panel of SB-6e



C.3 Controls

On the front panel of every print server, you will find the network connectors, several LEDs, the status button and an additional power supply connector if applicable. In this section, the function of the LEDs and the status button will be described. For information concerning the connectors, please read the "Connector Pin Assignment" section on page C-14 if necessary.

C.3.1. Function of LED

Every print server has a red and a green LED. The green LED signals that the print server is operational. The red LED lights up whenever data packages are received.



All Ethernet print servers have a second green LED positioned above the status button. This LED signals whether a data connection has been established or not.

Meaning of LEDs

LED display	Explanation	State
Both LEDs light up for a short time.	After the print server is turned on both LEDs light up for a short time and then extinguish again. Internal tests are undertaken and the network connection is detected while both LEDs are dark.	Activation procedure
The red LED is lit.	The internal tests after print server activation were carried out successfully. The red LED lights up until the printer recognises the print server.	Activation procedure
The green LED is blinking.	The internal tests after print server activation and printer recognition occurred without error. The print server is now looking for the network configuration, the print queues, and so on.	Activation procedure



LED display	Explanation	State
The red LED blinks consistently.	An error occurred during the internal tests after print server activation. This can occur if a software update was, for example, canceled. In this case repeat the software update.	Error during the activation procedure
The green LED is permanently lit.	The print server is operational.	Normal operating state
The red LED is blinking.	A data package is received.	Normal operating state
The red LED is permanently lit.	The print server receives its IP address and saves it. A configuration parameter download is executed.	Print server installation or configuration
The red LED is blinking rhythmically.	An internal error has occurred. Turn the print server off and back on. If the error persists, please note the blink cycle and write to or call the hotline.	Error in the print server

C.3.2. Function of Status Button

The status button can be used for the following purposes:

- Printing the status page with or without the list of parameters
- Resetting the configuration parameters

Printing the Status Page

By means of the status button, you can print out either a normal status page or a status page containing a list of the configuration parameters..

Procedure

Proceed as follows:

1. Press the status button once to print out a normal status page. Press and keep the status button pressed for 5 seconds to print out a status page containing a list of parameters.



For NB-100 and SB-100, press the status button twice in three seconds to print out a status page containing a list of parameters.



Resetting the Parameters

By means of the status button, you can reset all parameters to their default factory settings. In the process, all parameters, including the IP address, for example, are deleted. Resetting the parameters results in the red LED of the print server starting to blink and requires you to turn the printer on and off again.

Procedure

Proceed as follows:

1. Keep the status button pressed.
2. Turn the printer on.
Both LEDs are blinking rapidly.
3. Release the status button within 5 seconds.
Both LEDs are blinking alternatively.
4. Press the status button once more.
The parameters are reset and both LEDs blink three times.
After that, the red LED blinks rhythmically.
5. Turn the printer off and back on, .
6. Save the IP address in the print server.

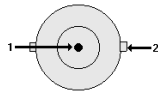


C.4 Connector Pin Assignment

Select your connector from the following list:

- Pin Assignment of the BNC Connector
- Pin Assignment of the AUI Connector
- Pin Assignment of the RJ-45 Connector
- Pin Assignment of the 9-Pin D-Sub Connector

C.4.1. Pin Assignment of the BNC Connector



Pin	Assignment	Input or output
1	Signal	Bidirectional
2	Return	-

C.4.2. Pin Assignment of the AUI Connector



Pin	Assignment	Input or output
1	-	-

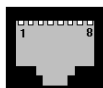


Pin	Assignment	Input or output
2	CD+ (Carrier Detect)	IN
3	TX+ (Transmit)	OUT
4	-	-
5	RX+ (Receive)	IN
6	GND (Grounding)	-
7	-	-
8	-	-
9	CD- (Carrier Detect)	IN
10	TX- (Transmit)	OUT
11	-	-
12	RX- (Receive)	IN
13	+12 V (max. = 0.5 A)	OUT
14	-	-
15	-	-

C.4.3. Pin Assignment of the RJ-45 Connector



Do not connect a telephone cable to the RJ-45 connector. RJ-45 connectors may only be connected to SEL V voltages according to EN60950:1990.



Ethernet

Pin	Assignment	Input or output
1	RX+ (Receive)	IN
2	RX- (Receive)	IN
3	TX+ (Transmit)	OUT

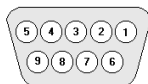


Pin	Assignment	Input or output
4	-	-
5	-	-
6	TX- (Transmit)	OUT
7	-	-
8	-	-

TokenRing

Pin	Assignment	Input or output
1	-	-
2	-	-
3	TX (Transmit)	OUT
4	RX+ (Receive)	IN
5	RX- (Receive)	IN
6	TX (Transmit)	OUT
7	-	-
8	-	-

C.4.4. Pin Assignment of the 9-Pin D-Sub Connector



Pin	Assignment	Input or output
1	RXR (Receive)	IN
2	-	-
3	-	-
4	-	-
5	TXB (Transmit)	OUT
6	RXG (Receive)	IN



Pin	Assignment	Input or output
7	-	-
8	-	-
9	TX0 (Transmit)	OUT



C.5 Network Specifications

Select your network from the following list:

- 10Base2 Ethernet Networks
- 10Base5 Ethernet Networks
- 10BaseT Ethernet Networks
- 100BaseTX Ethernet Networks
- TokenRing Networks

C.5.1. 10Base2 Ethernet Networks

For the cabling of the 10Base2 network of the print server, all specifications of the ISO/IEC 8802-3 standard apply. The most important data is listed in the following table:

Data	Values
Max. network length	925 m
Max. cable segment length	185 m
Max. no. of cable segments	5
Max. no. of connectors per segment	30
Min. cable length of a connection	0.5 m
Cable type	RG-58A/U or C/U
Impedance	50 Ohm
Connector type	BNC



C.5.2. 10Base5 Ethernet Networks

For the cabling of the 10Base5 network of the print server, all specifications of the ISO/IEC 8802-3 standard apply. The most important data is listed in the following table:

Daten	Werte
Max. network length	1500 m
Max. cable segment length	500 m
Max. no. of cable segments	3
Max. no. of connectors per segment	100
Min. cable length of a connection	2.5 m
Cable type (connection transceiver - print server)	Transceiver cable 8 pins
Impedance	78 Ohm
Connector type	AUI

C.5.3. 10BaseT Ethernet Networks

For the cabling of the 10BaseT network of the print server, all specifications of the ISO/IEC 8802-3 standard apply. The most important data is listed in the following table:

Data	Values
Max. cable length	100 m
Cable type	S/UTP Type 'category 5'
Impedance	100 Ohm
Connector type	RJ-45



In 10BaseT networks, a shielded, twisted-pair cable of the Category 5 should be used for print server cabling. This guarantees proper EMC behavior (electromagnetic compatibility).



C.5.4. 100BaseTX Ethernet Networks

For the cabling of the 100BaseTX network of the print server, all specifications of the ISO/IEC 8802-3u standard apply. The most important data is listed in the following table:

Data	Values
Max. cable length	100 m
Cable type	S/UTP Type 'category 5'
Impedance	100 Ohm
Connector type	RJ-45



A shielded, twisted-pair cable of the Category 5 should be used for print server cabling. This guarantees proper EMC behavior (electromagnetic compatibility).

C.5.5. TokenRing Networks

For the network cabling of the print server, all specifications of the ISO/IEC 8802-5 standard apply. The most important data is listed in the following table:

Daten	UTP	STP
Max. cable segment length	100 m	100 m
Cable type	S/UTP Type 'category 5'	STP (IBM PN 38H7046, for example)
Impedance	100 Ohm	150 Ohm
Connector type	RJ-45	9-pin D-Sub connector



A shielded, twisted-pair cable of the Category 5 should be used for cabling print servers with a UTP network connector. For the STP network connector, a shielded cable should be used. Using shielded cables guarantees proper EMC behavior (electromagnetic compatibility).



C.6 EC Declaration of Conformity

It is hereby confirmed that the following products fulfill the essential requirements stipulated in the Directive of the Council on the approximation of the laws of the Member States relating to electromagnetic compatibility (89/336/EEC):

- NB-4e Multiprotocol PrintServer
- NB-5ef Multiprotocol PrintServer
- NB-6e Multiprotocol PrintServer
- NB-100 Multiprotocol PrintServer
- SB-4e Multiprotocol PrintServer
- SB-5ef Multiprotocol PrintServer
- SB-6e Multiprotocol PrintServer
- SB-100 Multiprotocol PrintServer

This declaration applies to all products manufactured according to the currently valid construction documents (circuit diagrams and technical drawings) of the manufacturer. Furthermore, the instructions laid down in the user documentation must be observed.

The following standards were used for the assessment of the products in regard to electromagnetic compatibility:

EN (European Standard) 55022: Class B

EN 50082-1: 1992



This declaration is made by T. Okada, Managing Director, on behalf of the manufacturer, KYOCERA Electronics Europa GmbH, Meerbusch, Germany, in December 1997.



C.7 FCC compliance

The print server generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the documentation, may cause interference to radio communications. It has been tested and found to comply with the limits for a class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Print Server Parameters

D.1 Basic Principles

The print server parameters are stored in the 'params' configuration file, which is located on your print server. You can edit the parameters directly by transferring the configuration file to your computer by means of FTP. The operating panel or PRESCRIBE commands are also at your disposal so that you can change the configuration parameters of KYOCERA printers. All parameters may also be configured using the print server homepage, the KYOCON or SNMP.



The following topics are described:

- Parameter Description
- Configuring Parameters Using FTP
- Configuring Parameters Using the KYOCERA Printer Operating Panel
- Configuring Parameters Using PRESCRIBE Commands
- Parameter Printout
- Parameter Reset



D.2 Parameter Description

The following parameters are described:

- General Parameters
- TokenRing Parameters
- TCP/IP Parameters
- Novell NetWare Parameters
- SNMP Parameters
- Apple Parameters
- Logical Printers
- Specific Parameters for KYOCERA-PrintServers



D.2.1. General Parameters

Parameter	Default	Description
info	empty	Information string on the status page
password	empty	Configuration password Password for SNMP write community

D.2.2. TokenRing Parameters

Parameter	Default	Description
tr_speed	16 MBit/s	Sets the transmission rate of the TokenRing network to 16 MBit/s or 4 MBit/s. This parameter may be configured only by means of a jumper on the print server PCB (see the Hardware Installation Guide).
tr_etr	off	Early Token Release
tr_sri	off	Source routing
tr_laa	00:00:00:00:00:00	Hardware address

D.2.3. TCP/IP Parameters

Parameter	Default	Description
ip_address	000.000.000.000	IP address
ip_net_mask	000.000.000.000	Subnet mask
ip_gateway	000.000.000.000	Gateway address
ip_dhcp	on	Activates the DHCP protocol
ip_bootp	on	Activates the BOOTP protocol
ip_rarp	on	Activates the RARP protocol
ip_autoconf	on	Accepts the new IP address using ARP



D.2.4. Novell NetWare Parameters

Parameter	Default	Description
nw_name	NBxxxxxx	Novell NetWare Name
nw_pserver	on	Activates print server mode
nw_rprinter	on	Activates remote printer mode
nw_psname	empty	Name of PSERVER on the file server
nw_lspix	1	Logical printer in the remote printer mode
nw_nds	on	Turns on NDS
nw_bindery	on	Turns on Bindery
nw_802_2	on	Activates the IEEE802.2 frame type
nw_802_3	on	Activates the IEEE802.3 frame type
nw_802_5	on	Activates the IEEE802.5 frame type
nw_eth2	on	Activates the Ethernet II frame type
nw_snap	on	Activates the SNAP frame type
nw_full_update	on	Activates automatic network recognition
nw_update_time	120	Time period for automatic network recognition
nw_poll_time	2	Poll time for print queues
nw_server1	empty	Novell file server
nw_server2	empty	Novell file server
nw_server3	empty	Novell file server
nw_server4	empty	Novell file server
nw_tree	empty	Indicates the NDS tree. During the installation of the print server, an automatic network recognition is carried out. In large network environments, the print server may thus receive too much data, and software installation may not succeed. By means of this parameter, you can restrict network recognition to a single tree in the network.



D.2.5. SNMP Parameters

Parameter	Default	Description
snmp_ip_trap1	000.000.000.000	IP address no.1, to which traps will be sent in case of a malfunction
snmp_ip_trap2	000.000.000.000	IP address no.2, to which traps will be sent in case of a malfunction
snmp_ipx_trap1	00:00:00:00:00:00:00:00	IPX address no.1 (network number and hardware address*), to which traps will be sent in case of a malfunction
snmp_ipx_trap2	00:00:00:00:00:00:00:00	IPX address no.2 (network number and hardware address*), to which traps will be sent in case of a malfunction
snmp_trap_com	public	Trap community
snmp_trap_aut	on	Trap authentication
snmp_trap_pr	on	Turns on the sending of traps in case of malfunction

*Example: snmp_ipx_trap1 = 10:00:00:00:08:00:09:c0:d4:4a
10:00:00:00 corresponds to the Novell network number and 08:00:09:c0:d4:4a to the hardware address of the computer.

D.2.6. Apple Parameters

Parameter	Default	Description
appletalk	on	Activates the EtherTalk protocol
apple_name	NBxxxxxx	Apple name or printer name
apple_zone	*	AppleTalk zone
apple_ptype	LaserWriter	Apple printer type in the 'Chooser' menu



D.2.7. Logical Printers

Parameter	Default	Description
lp1_rso_spool	off	Logical printer no. 1 for RSO spoolers
lp2_rso_spool	off	Logical printer no. 2 for RSO spoolers
lp3_rso_spool	off	Logical printer no. 3 for RSO spoolers
lp4_rso_spool	off	Logical printer no. 4 for RSO spoolers
lp5_rso_spool	off	Logical printer no. 5 for RSO spoolers
lp6_rso_spool	off	Logical printer no. 6 for RSO spoolers
lp7_rso_spool	off	Logical printer no. 7 for RSO spoolers
lp8_rso_spool	on	Logical printer no. 8 for RSO spoolers
lp1_tcp_port	9100	TCP/IP Port corresponds to logical printer no. 1
lp2_tcp_port	9101	TCP/IP port corresponds to logical printer no. 2
lp3_tcp_port	9102	TCP/IP port corresponds to logical printer no. 3
lp4_tcp_port	9103	TCP/IP port corresponds to logical printer no. 4
lp5_tcp_port	9104	TCP/IP port corresponds to logical printer no. 5
lp6_tcp_port	9105	TCP/IP port corresponds to logical printer no. 6
lp7_tcp_port	9106	TCP/IP port corresponds to logical printer no. 7
lp8_tcp_port	2900	TCP/IP port corresponds to logical printer no. 8
lp1_job_start	empty	Start sequence for logical printer no. 1
lp2_job_start	empty	Start sequence for logical printer no. 2
lp3_job_start	empty	Start sequence for logical printer no. 3
lp4_job_start	empty	Start sequence for logical printer no. 4
lp5_job_start	empty	Start sequence for logical printer no. 5
lp6_job_start	empty	Start sequence for logical printer no. 6
lp7_job_start	empty	Start sequence for logical printer no. 7
lp8_job_start	empty	Start sequence for logical printer no. 8
lp1_job_end	empty	End sequence for logical printer no. 1
lp2_job_end	empty	End sequence for logical printer no. 2
lp3_job_end	empty	End sequence for logical printer no. 3
lp4_job_end	empty	End sequence for logical printer no. 4
lp5_job_end	empty	End sequence for logical printer no. 5
lp6_job_end	empty	End sequence for logical printer no. 6
lp7_job_end	empty	End sequence for logical printer no. 7



Parameter	Default	Description
lp8_job_end	empty	End sequence for logical printer no. 8
lp1_crlf	off	Converts LF to CR+LF
lp2_crlf	on	Converts LF to CR+LF
lp3_crlf	off	Converts LF to CR+LF
lp4_crlf	off	Converts LF to CR+LF
lp5_crlf	off	Converts LF to CR+LF
lp6_crlf	off	Converts LF to CR+LF
lp7_crlf	off	Converts LF to CR+LF
lp8_crlf	off	Converts LF to CR+LF
lp1_banner	off	Prints a banner page in Novell networks or when the LPD protocol is used
lp2_banner	off	Prints a banner page in Novell networks or when the LPD protocol is used
lp3_banner	off	Prints a banner page in Novell networks or when the LPD protocol is used
lp4_banner	on	Prints a banner page in Novell networks or when the LPD protocol is used
lp5_banner	off	Prints a banner page in Novell networks or when the LPD protocol is used
lp6_banner	off	Prints a banner page in Novell networks or when the LPD protocol is used
lp7_banner	off	Prints a banner page in Novell networks or when the LPD protocol is used
lp8_banner	off	Prints a banner page in Novell networks or when the LPD protocol is used
lp1_ascii_ps	off	Converts ASCII to PostScript
lp2_ascii_ps	off	Converts ASCII to PostScript
lp3_ascii_ps	on	Converts ASCII to PostScript
lp4_ascii_ps	off	Converts ASCII to PostScript
lp5_ascii_ps	off	Converts ASCII to PostScript
lp6_ascii_ps	off	Converts ASCII to PostScript
lp7_ascii_ps	off	Converts ASCII to PostScript
lp8_ascii_ps	off	Converts ASCII to PostScript
lp1_hexdump	off	Prints in hex dump mode
lp2_hexdump	off	Prints in hex dump mode



Parameter	Default	Description
lp3_hexdump	off	Prints in hex dump mode
lp4_hexdump	off	Prints in hex dump mode
lp5_hexdump	on	Prints in hex dump mode
lp6_hexdump	off	Prints in hex dump mode
lp7_hexdump	off	Prints in hex dump mode
lp8_hexdump	off	Prints in hex dump mode

D.2.8. Specific Parameters for KYOCERA-PrintServers

Parameter	Default	Description
pp1_panel	on	Activates the printer operating panel for printers with OPTION interface

The 'pp1_panel' parameter is available only for printers with OPTION interface, such as the FS-400, FS-850, FS-1500, FS-1550/+, FS-1600/+, FS-1700, FS-3400/+, FS-3500, FS-3600/+, FS-3700, FS-5500, FS-6500/+, and FS-7000 models.



D.3 Configuring Parameters Using FTP

All print server parameters can be configured by means of FTP. To this purpose, you must transfer the 'params' configuration file by means of FTP and then edit it.

Procedure

Proceed as follows:

1. Change to the directory in which you wish to save the configuration file.
2. Open an FTP connection to the print server:
Syntax: `ftp <IP address>`
Example: `ftp 192.168.0.123`
3. Type the print server password if any exists press ENTER.
4. Transfer the 'params' configuration file from the print server:
`get params`
5. Edit the configuration file using a text editor of choice.
6. Transfer the configuration file back to the print server:
`put params`
7. Close the FTP connection:
`quit`



D.4 Configuring Parameters Using the KYOCERA Printer Operating Panel

The operating panels of KYOCERA printers usually consist of a touchpad, a display, and various indicators. The most important elements required for configuring the print server are described in this section.



Please read the description of the operating panel in the user manual of your printer if necessary.



For printers having a KUIO interface, the operating panel cannot be used for the configuration of the print server parameters if a password has been assigned to the print server. For printers having an OPTION interface, the 'pp1_panel' parameter must be activated.

The following table contains the most important operating steps:

Action	Button	Display
Switching from ready mode to configuration mode	'Mode' button	Changes from 'Ready' to one of the menus
Switching from configuration mode to ready mode	'Mode' button	Changes from one of the menus to 'Ready'
Paging up and down between the menus of a level	'+' or '-' button	The currently active menu is shown in the first line of the display. If an arrow (>) appears in the top right corner of the display, this menu contains submenus.
Switching to a submenu	'Form Feed' button	The submenu is shown in the first line of the display. The number of arrows (>) in the top left corner of the display indicates which level the submenu is in.



Action	Button	Display
Switching to superordinate menus	'Cancel' button	The number of arrows (>) in the top left corner of the display indicate which level the superordinate menu is in.
Changing the default menu and submenu settings	1. 'ENTER' button 2. '+' or '-' button 3. 'ENTER' button	The currently active settings appear in the second line of the display.
Entering numeric values	'+' or '-' button	The numeric value displayed in the second line of the display is incremented or decremented by 1
Moving the cursor for multi-digit numeric groups, such as the IP address	'Form Feed' or 'Cancel' button	The cursor moves to the next or the preceding digit of the multidigit numeric group.

D.4.1. Configuring KYOCERA Printers with KUJO Interfaces

The operating panel of KYOCERA printer models FS-1700+ and FS-3700+ is shown in the following illustration:

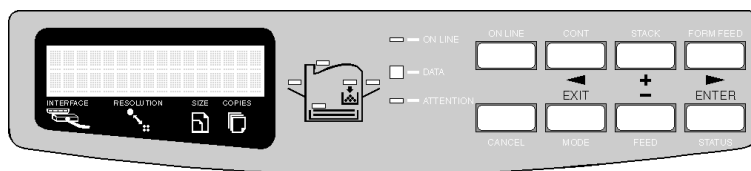


Fig. D-21: Operating panel of the FS-1700+ and FS-3700+ KYOCERA printers



The operating panel of the FS-800 KYOCERA printer is shown in the following illustration:



Fig. D-22: Operating panel of the FS-800 KYOCERA printer

The operating panel of the FS-7000 KYOCERA printer is shown in the following illustration:

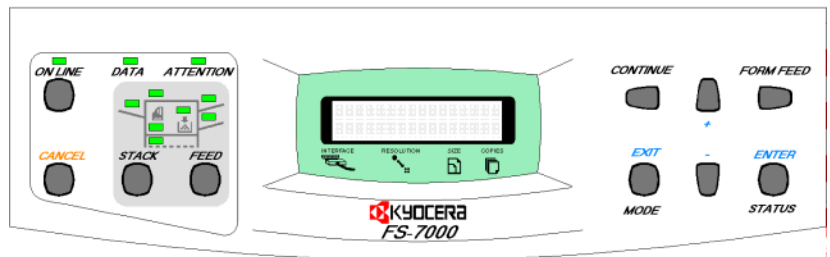


Fig. D-23: Operating panel of the FS-7000 KYOCERA printer



The operating panel of the FS-5800C KYOCERA printer is shown in the following illustration:

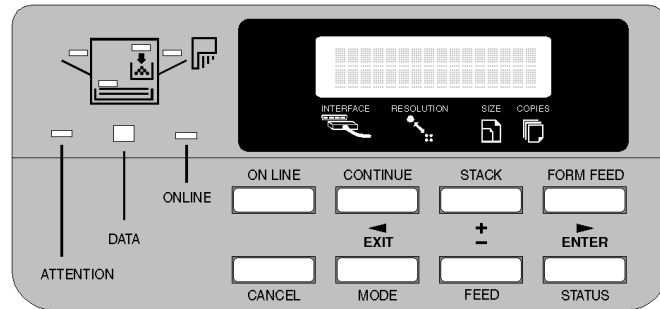


Fig. D-24: Operating panel of the FS-5800C KYOCERA printer

The configuration parameters of the print server are configured in the 'Interface' menu. The following parameters can be configured by means of the operating panel:

Print server menus	Submenu	Setting
NetWare (Novell)	- NetWare Frame	On or Off AUTO, 802.2, 802.3 SNAP or Ethernet II
TCP/IP (Windows, UNIX)	- DHCP IP address Subnet maske Gateway	On or Off (for Off, all boot protocols are deacticated) On or Off Example: 192.168.000.123 Example: 255.255.255.000 Example: 000.000.000.000
EtherTalk (Apple)	-	On or Off

Requirements

Before configuration, make sure that:

- ✓ The printer is operational.
- ✓ No password has been assigned to the print server.

The following section illustrates the configuration of a print server using an example: the entry of the IP address.

**Example**

Proceed as follows:

'Mode' Button

1. Switch to configuration mode.

'+' Button

2. Select the 'Interface' menu.

ENTER

'+' Button

3. Change the interface type in 'Option' if necessary:

The following appears in the display:

ENTER



Fig. D-25: 'Interface - Option' menu

'Form Feed' Button

4. Switch to the print server submenu.

'+' Button

5. Select the 'TCP/IP' menu.

The following appears in the display:

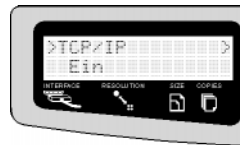


Fig. D-26: 'TCP/IP' menu of print server

'Form Feed' Button

6. Switch to the submenu.

'+' Button

7. Select the 'IP Address' menu.

ENTER

'+' Button

8. Enter the IP address of the print server.

The following appears in the display:

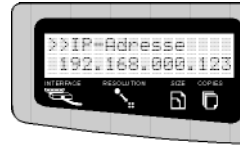


Fig. D-27: Entering the IP address

'ENTER' Button

9. Save the entries.

'Mode' Button

10. Switch the printer to 'Ready' mode.

D.4.2. Configuring KYOCERA Printers with OPTION Interfaces

The operating panel of the FS-1700 and FS-3700 KYOCERA printer models is shown in the following illustration:

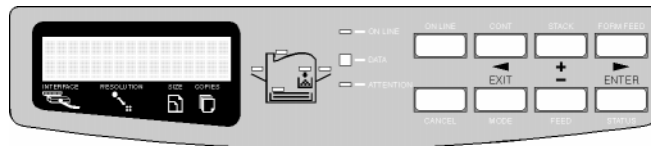


Fig. D-28: Operating panel of the FS-1700 and FS-3700 KYOCERA Printers

The operating panel of the FS-1500, FS-1550(+), FS-1600(+), FS-3400, FS-3600(+), FS-3500, and FS-6500 KYOCERA printer models is shown in the following illustration:

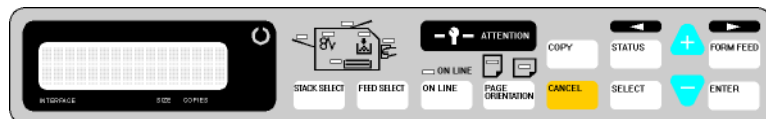


Fig. D-29: Operating panel of other KYOCERA printers



The configuration parameters of the print server are configured in the 'Others > Network' menu. The following parameters can be configured using the operating panel:

Menu	Meaning	Setting
IP Address	Saves the IP address	Example: 192.168.000.123
Gateway	Saves the IP address of the gateway	Example: 000.000.000.000
Net Mask	Saves the IP address subnet mask	Example: 255.255.255.000
BOOTP/DHCP	Activates the BOOTP, DHCP, and RARP boot protocols	On or off
IP AutoConf	Activates saving the IP address by means of the 'arp' and 'ping' commands	On or off
Apple	Activates EtherTalk	On or off
NetWare	Activates remote printer mode and print server mode in Novell networks	On or off
Interface Restart	Activates the changed Apple and NetWare parameters without having to turn the printer off and on	On or off

Requirements

Before configuration, make sure that:

- ✓ The printer is operational.
- ✓ The 'pp1_panel' parameter is activated, thus enabling configuration by means of the operating panel.

The following section illustrates the configuration of a print server using an example: the entry of the IP address.

Example

Proceed as follows:

'Mode' Button

1. Switch to the configuration mode.

'+' Button

2. Select the 'Others' menu.
The following appears in the display:



Fig. D-30: 'Others' menu

'Form Feed' Button

3. Switch to the submenu.

'+' Button

4. Select the 'Network' menu if required.
The following appears in the display:

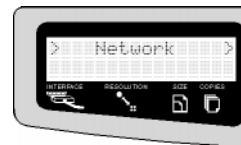


Fig. D-31: 'Network' submenu

'Form Feed' Button

5. Switch to the print server menu.

'+' Button

6. Enter the IP address of the print server.

'ENTER' Button

The following appears in the display:



Fig. D-32: Entering the IP address

'ENTER' Button

7. Save the entries.

Button 'Mode'

8. Switch the printer to 'Ready' mode.



D.5 Configuring Parameters Using PRESCRIBE Commands

In the case of some KYOCERA printers, you can use PRESCRIBE commands to change print server parameters. These printers all have a KUIO interface, such as the FS-600, FS-800, FS-1700+, FS-3700+, and FS-7000 models.

The following parameters can be configured:

Parameter	PRESCRIBE command
Activate IPX protocol	!R!SIOP2,"IPX:1";EXIT;
Deactivate IPX protocol	!R!SIOP2,"IPX:0";EXIT;
Activate Apple EtherTalk	!R!SIOP2,"APPLE:1";EXIT;
Deactivate Apple EtherTalk	!R!SIOP2,"APPLE:0";EXIT;
Save IP address of the print server	!R!SIOP2,"IP:192.168.0.123";EXIT;
Save IP address of the subnet mask	!R!SIOP2,"SUBNET:255.255.255.0";EXIT;
Save address of the gateway	!R!SIOP2,"DEFAULT:192.168.0.004";EXIT;

Procedure

Proceed as follows:

1. Create an ASCII file and assign it an arbitrary name.
2. Insert the corresponding PRESCRIBE command.
3. Transfer the file to the print server as a print file by means of the parallel, serial, or KUIO interface.



PRESCRIBE commands cannot be used if a password has been assigned to the print server.



D.6 Parameter Printout

By mean of the status button, you can print out a list of the configuration parameters.

Procedure

Proceed as follows:

1. Press and keep the status button pressed for 5 seconds to print out a status page containing a list of parameters.



For NB-100 and SB-100, press the status button twice in three seconds to print out a status page containing a list of parameters.



D.7 Parameter Reset

The configuration parameters of the print server may be reset to their default factory settings using the print server homepage, the KYOCON or the status button on the print server. In the process, all parameters including the IP address, for example, are deleted. Resetting the parameters results in the red LED of the print server starting to blink and requires you to turn the printer on and off again.

The following topics are described:

- Parameter Reset Using the Homepage
- Parameter Reset Using the KYOCON
- Parameter Reset Using the Status Button
- Parameter Reset Using FTP

D.7.1. Parameter Reset Using the Homepage

Procedure

Proceed as follows:

1. Open your Internet browser.
 2. Type the IP address of the print server into the 'Address' box.
 3. Click the 'Default Settings' link.
 4. Click 'Default Settings.'
- The parameters will be reset.



D.7.2. Parameter Reset Using the KYOCON

The print server parameters may be reset easily by means of the 'Set Default' button on the 'Parameter' tabs. The 'Parameter' tabs are called on the 'Config.' menu. Please read "The 'Config.' Menu" section on page B-10 if necessary.

D.7.3. Parameter Reset Using the Status Button

Procedure

Proceed as follows:

1. Keep the status button pressed.
2. Turn on the printer.
Both LEDs blink rapidly.
3. Release the status button within 5 seconds.
Both LEDs blink alternatively.
4. Press the status button once more.
The parameters are reset and both LEDs blink three times.
After that, the red LED blinks rhythmically.
5. Turn the printer off and back on, .

D.7.4. Parameter Reset Using FTP

Procedure

Proceed as follows:

1. Open an FTP connection to the print server:
Syntax: `ftp <IP address>`
Example: `ftp 192.168.0.123`
2. Enter the print server password if one exists or press ENTER.



3. Reset the parameters:
quote SITE RESET
4. Close the FTP connection:
bye



Shell Scripts

E.1 Basic Principles

The following topics are described:

- Function of Shell Scripts
- Description of Variables



E.2 Function of Shell Scripts

In UNIX networks, you can use shell scripts to print when remote printing by means of the LPD protocol and printing by means of direct TCP/IP ports are not possible. The *.sh shell scripts are sample scripts for the standard printer interfaces of the print spoolers supported by the print server: lpsched, lpd, and qdaemon.

The following shell scripts are available:

- aix.sh (for AIX systems)
- bsd.sh (for BSD systems)
- sys5.sh (for System V)

Before you can print using shell scripts, you must first transfer them from the print server and then adapt them to the respective UNIX network. Please read the "Printing Using Shell Scripts" section on page 5-26 if necessary.

The following chapter deals with the basic functions of these shell scripts.

Transfer of Print Data

At the beginning of the shell script, a few variables are initialized. The print data is gathered in a temporary file ('/tmp/xxx.d') and then transferred to the print server by means of FTP. In the process, the name of the FTP target file determines the printer port of the print server. The transfer mode of the FTP server preset in the shell script is binary to suppress the conversion of LF to CR+LF and thus to make the correct transfer of graphic data possible. For the proper output of text data, this conversion must therefore be carried out in the printer itself.

End of Print Job

When all data has been transferred, the print server sends the '226 Transfer complete' message to the FTP server. In this case, the



shell script comes to an end and informs the spooler of the correct completion of the print job by means of a return value of '0.' If the printer port is already occupied because another printer is currently printing, for example, the printer server sends the '552 No print slot available' message to the FTP server. The further processing of the shell script depends on the initialization of the MAXR variables. When the shell script has come to an end without the data having been able to be printed, a return value of '129' (V UNIX or AIX systems) or '1' (BSD UNIX) indicates that the print job must be repeated.

Log Files in Case of Error

The operating sequence of the print job will be recorded in a log file having the name of the printer and the extension '.last' in the '/tmp' directory. This file contains, among other things, the start time of the print job, the parameters with which the printer interface was called, and the output of the FTP command. In case of an error, this data provides information concerning the causes of the error.

Printing of a Banner Page

If you print using shell scripts, you can print a banner page. In the process, the 'nobanner' variable, which is initialized with 'no', must be set to 'yes' by means of the '-o nobanner' variable of the 'lp' command.



This banner page cannot be used for PostScript printing. When a PostScript printer is connected, the output of the banner page must therefore be suppressed. This is achieved by initializing the 'nobanner' and 'nofilebreak' variables with 'yes'.



E.3 Description of Variables

In this section, the variables of the shell scripts which must or can be changed are described.

HOST

Contains the host name or IP address of the print server, such as `HOST=NB0001FF`.

PORTS

Indicates the logical printer. The '`PORTS=lp1, lp2, lp3, lp4, lp5, lp6, lp7, lp8`' presetting specifies all logical printers of the print server. Select the desired logical printer and delete the others. By means of the '`PORTS=lp1`' default setting, for example, the printing sequence will be carried out by means of logical printer no. 1. For more information, read the "Logical Printers" section on page 2-3.

FTP

Indicates the complete path of the FTP command. This path depends on the respective UNIX System, such as '`FTP=/usr/bin/ftp`' for System V or AIX and '`FTP=/usr/ucb/ftp`' for BSD.

WAIT

Indicates the waiting period in seconds after which the print job is repeated. This value can usually remain unchanged.

MAXR

Contains a loop counter. This counter determines the behavior of the shell script when the print data could not be transferred because, for example, the desired printer port is currently occupied. In case of a presetting of `MAXR=10`, the system will wait a maximum of 1024 seconds, that is, approx. 15 minutes, for the desired printer port to be free.

When `MAXR` has been initialized with a value of zero, the shell script will come to an end. When `MAXR` has been initialized with



a value greater than zero, another attempt will be made to send the data to the printer via FTP. After every attempt, the loop counter will be decremented and the waiting period will be doubled. This will be repeated until the data have been able to be printed or MAXR has reached a value of '0,' and the shell script has come to an end. When MAXR has been initialized with a value of '-1,' the shell script will come to an end only if the data have been able to be printed.



List of figures

TCP/IP network classes.....	2-7
Main menu of PCONSOLE	3-8
'Print Services Quick Setup' window	3-8
Main menu of PCONSOLE	3-11
'Print Services Quick Setup' window	3-12
'NetWare' tab	3-13
Main menu of PCONSOLE	3-16
'New Print Server Name' window	3-17
'New Print Queue Name' window	3-18
'Print Queue Information' window	3-19
'Queue Server Candidates' window	3-19
'Queue Servers' window	3-20
Main menu of PCONSOLE	3-23
'New Print Queue Name:' window	3-23
'New Print Server Name' window	3-24
'Print Server Information' window	3-25
'Configured Printers' window	3-25
'Printer Configuration' window	3-26
'Print Server Information' window	3-27
'Print Server Configuration Menu' window	3-27
'Defined Printers' window	3-27
'File Server, Queue, and Priority' window	3-28
'Available Queues' window	3-28
'NetWare' tab	3-29
Peer-to-peer network with print server	4-4
'Configuration' tab	4-5
'Select Network Protocol' window	4-6
'TCP/IP Properties' window	4-7
'Add Port' window	4-9
TCP/IP Port Configuration for KYOCERA Monitor.....	4-10
Server-based network with print server	4-12
'Select Network Protocol' window	4-13
'Microsoft TCP/IP Properties' window	4-14
'Services' tab	4-16



'Select Network Service' window.....	4-17
Add Computer Wizard: 'My Computer'	4-18
Add Printer Wizard: Available Ports	4-19
'Printer Ports' window	4-20
'Add LPR Compatible Printer' window.....	4-20
Server-based network with print server	4-23
'Network Settings' window	4-24
'Add Network Software' window	4-25
'Windows NT TCP/IP Installation Options' window	4-25
'TCP/IP Configuration' window	4-26
'Print Destinations' window.....	4-28
'Add LPR Compatible Printer' window.....	4-29
'Add Remote Printer/Plotter' window	5-18
'Chooser' window	6-3
'Open Firmware File' window	7-3
Print server homepage.....	A-3
User interface of KYOCON.....	B-3
'Print Server' Menu.....	B-7
'Status' menu.....	B-8
'Status' tabs.....	B-9
'Config.' Menu.....	B-10
'Parameter' tabs.....	B-10
'Download' menu.....	B-12
'Open Firmware File' window	B-12
'Sort' menu.....	B-13
'Options' menu.....	B-14
'Help' menu.....	B-15
Front panel of NB-4e	C-3
Front panel of NB-5ef.....	C-4
Front panel of NB-100	C-5
Front panel of NB-6e	C-6
Front panel of SB-4e	C-7
Front panel of SB-5ef.....	C-8
Front panel of SB-100.....	C-9
Front panel of SB-6e	C-10
Operating panel of the FS-1700+ and FS-3700+ KYOCERA printers	D-12
Operating panel of the FS-800 KYOCERA printer.....	D-13
Operating panel of the FS-7000 KYOCERA printer.....	D-13
Operating panel of the FS-5800C KYOCERA printer	D-14
'Interface - Option' menu.....	D-15
'TCP/IP' menu of print server.....	D-15

Entering the IP address.....	D-16
Operating panel of the FS-1700 and FS-3700 KYOCERA Printers.....	D-16
Operating panel of other KYOCERA printers	D-16
'Others' menu.....	D-18
'Network' submenu.....	D-18
Entering the IP address.....	D-18



Index

Numerisch

- 100BaseTX C-20
- 10Base2 C-18
- 10Base5 C-19
- 10BaseT C-19
- 15-pin D-Sub connector C-14
- 9-pin D-Sub connector C-16

A

Address

- AppleTalk address 6-2
- Ethernet address 2-2
- gateway address 2-17
- hardware address 2-2
- IP address 2-6
- MAC address 2-2
- subnet mask 2-17

Administration Tool B-1

- menu bar B-7
- toolbar B-5
- user interface B-3

AIX 3.x 5-13

AIX 4.x 5-12

AIX without SMIT 5-15

aix.sh 5-26

Allocation

- host name 5-4

Apple 6-2

- logical printers 2-5

Apple name 2-3

- configuration via Administration Tool B-11
- configuration via homepage A-9
- display via Administration Tool B-9

AppleTalk 6-2

ARP 2-11

- in UNIX networks 5-8

ARP Table 2-15



Assigning

host name 2-15

AUI connector C-14

B

Banner page 2-4, E-3

BNC connector C-14

Boot protocol

BOOTP in UNIX networks 2-9, 5-6

DHCP 2-8

RARP in UNIX networks 2-10, 5-7

BOOTP

in UNIX networks 2-9, 5-6

bootptab 2-9

Browser A-2

BS2000 8-2

bsd.sh 5-26

C

Carriage Return 2-3

CDE 5-17

Class B C-22

Common Desktop Environment 5-17

Compliance FCC C-24

Config. menu B-10

Configuring

Apple name and zone 6-2, A-9, B-11

parameters via FTP D-10

password via homepage A-7

print server parameters D-1

Controls C-11

Conventions and symbols 1-8

CR 2-3

D

Declaration of conformity C-22

Default zone 6-2

DHCP 2-8

Direct printer port 2-16

Displaying

general status information A-4

Novell NetWare status information A-5

printer status messages A-4, B-4

TCP/IP status information A-5

Documentation 1-5
Download 7-2
Download menu B-12

E

EC conformity 1-2
EC declaration of conformity C-22
Electromagnetic compatibility C-22
EMC C-22
EN 50082-1 C-22
EN 55022 C-22
etc/bootptab 2-9, 5-4, 5-6
etc/config 5-12, 5-13, 5-15
etc/ethers 2-10, 5-4, 5-7
etc/hosts 2-15, 5-4
etc/printcap 5-19, 5-34
etc/rarpd.cf 2-10, 5-4, 5-7
Ethernet address 2-2
ETHERNET_II 3-4
ethers 2-10
EtherTalk 6-2

F

FCC compliance C-24
File
 etc/bootptab 2-9, 5-4, 5-6
 etc/config 5-13, 5-15
 etc/ethers 2-10, 5-4
 etc/hosts 5-4
 etc/others 5-7
 etc/printcap 5-19, 5-34
 etc/qconfig 5-12
 etc/rarpd.cf 5-4
 params D-1, D-10
 usr/lip/lpd 5-3
Firmware 7-2
Frame type 3-4
 switching on/off via homepage A-9
FS-1500 D-16
FS-1550(+) D-16
FS-1600(+) D-16
FS-1700 D-16
FS-1700+ D-12
FS-3400 D-16



FS-3500 D-16
FS-3600(+) D-16
FS-3700 D-16
FS-3700+ D-12
FS-5800C D-14
FS-6500 D-16
FS-7000 D-13
FS-800 D-13
FTP
 configuring parameters D-10
 logical printers 2-4

G
Gateway 2-17
 configuration via Administration Tool B-11
 configuration via homepage A-8

H
Hardware address 2-2
 display via Administration Tool B-9
 display via homepage A-4
Hardware Installation Guide 1-5
Help menu B-14
Hex dump mode 2-4
Homepage A-2
 actions A-10
 Apple configuration A-9
 Apple status information A-6
 calling A-2
 configuration A-7
 general status information A-4
 logical printer configuration A-8
 Novell NetWare configuration A-9
 Novell NetWare status information A-5
 resetting parameters A-10, D-21
 restarting print server A-10
 SNMP configuration A-9
 status A-4
 TCP/IP configuration A-8
 TCP/IP status information A-5
 type info string A-7
 type password A-7
Host name 2-14, 5-4
Hosts 2-15

HP VUE 5-17

HP-UX 5-17

|

Icon in the Administration Tool B-5

IEEE_802.2 3-4

IEEE_802.3 3-4

Indicating

 AppleTalk on/off A-6

Installation

 Administration Tool B-2

 print server BS2000 8-2

 print server into AIX 3.x 5-13

 print server into AIX 4.x 5-12

 print server into AIX without SMIT 5-15

 print server into Apple networks 6-2

 print server into HP-UX 5-17

 print server into Novell NetWare 3.x 3-15, 3-21

 print server into Novell NetWare 4.x 3-7, 3-10

 print server into SCO UNIX 3.2 5-20

 print server into SINIX SPOOL V4.x 5-24

 print server into SunOS 5-19

 print server into System V 5-22

 print server into UNIXWare 4.2 - 1.1.2 5-21

 print server into Windows 98 or 95 4-3

 print server into Windows NT 3.51 4-22

 print server into Windows NT 4.0 4-11

 TCP/IP print services into Windows NT 4.0 4-15

 TCP/IP protocol into Windows 98 or 95 4-5

 TCP/IP protocol into Windows NT 4.0 4-12

 TCP/IP services into Windows NT 3.51 4-23

installation

 KYOCERA Monitor 4-8

Intended use 1-3

Internet browser A-2

IP address 2-6

 configuration via Administration Tool B-11

 configuration via homepage A-8

 saving in UNIX networks 5-6

 saving methods 2-7

 saving using Administration Tool 2-12

 saving using arp and ping 2-11

 saving using BOOTP 2-9

 saving using DHCP 2-8



- saving using PRESCRIBE 2-14, 5-10
- saving using RARP 2-10
- saving via printer operating panel 2-13, 4-7, 4-15, 4-27, 5-9, 8-3
- IPX protocol 3-3

K

KYOCERA

- printer operating panel D-11
- KYOCERA Monitor 4-4
 - installation 4-8
 - setup 4-9
- KYOCON B-1
 - installation B-2
 - resetting parameters D-21
 - saving IP address 2-12
 - toolbar B-5
 - user interface B-3

L

- LED C-11

LF

- print as LF+CR 2-3
- Line Feed
 - print as Carriage Return with Line Feed 2-3
- LocalTalk 6-2
- Log file 5-26, E-3
- Logical printer 2-3
 - configuration via Administration Tool B-11
 - configuration via homepage A-8
- LPD protocol
 - UNIX 5-2, 5-11
 - Windows 4-2
 - Windows NT 3.51 4-22
 - Windows NT 4.0 4-11
- LPR port 4-11, 4-22

M

- MAC address 2-2
- Menu bar B-7
- MIB 2-19
- Microsoft TCP/IP print services
 - installation into Windows NT 3.51 4-24
 - installation into Windows NT 4.0 4-15
- Mode

- hex dump mode 2-4
- network printer mode 3-4
- print server mode 3-4
- remote printer mode 3-4

N

Name

- changing Apple name 6-2
- host name 2-14
- Novell name 3-5
- print server name 2-3

Namer tool 6-2

NDS tree D-5

Network

- peer-to-peer 4-3
- server based 4-11, 4-22

Novell

- frame type 3-4
- IPX protocol 3-3
- logical printer 2-4
- network printer mode 3-4
- Novell name 2-3
- Novell print server 3-5
- NPRINTER 3-5
- NWADMIN 3-3
- PCONSOLE 3-3
- print server mode 3-4
- printing 3-3
- remote printer mode 3-4
- RPRINTER 3-5
- user licence 3-4

Novell name 3-5

- configuration via Administration Tool B-11
- configuration via homepage A-9
- display via homepage A-5

Novell NetWare

- status information A-5

Novell NetWare 3.x

- installation in the print server mode 3-15
- installation in the remote printer mode 3-21

Novell NetWare 4.x

- installation in the print server mode 3-7
- installation in the remote printer mode 3-10

NPRINTER 3-4



NWADMIN 3-3

O

Operating panel 4-7, 4-15, 4-27, 5-9, 8-3

FS-1700+ and FS-3700+ D-12

FS-5800C D-14

FS-7000 D-13

FS-800 D-13

other printers D-16

turning on A-8, B-11

Operating systems 1-3

Options menu B-14

P

Panel D-11

Parameter D-3

Apple parameters D-6

configuration via Administration Tool B-6

configuration via FTP D-10

general parameters D-4

KYOCERA-PrintServer parameters D-9

logical printer parameters D-7

Novell NetWare parameters D-5

print list C-12, D-20

resetting A-10, C-13, D-21

SNMP parameters D-6

TCP/IP parameters D-4

TokenRing parameters D-4

params D-1, D-10

Password

homepage A-7

PCONSOLE 3-3

Peer-to-peer networks 4-3

Pin assignment C-14

ping 2-11

in UNIX networks 5-8

Poll time 3-4

Port 4-2

Port number 2-16

PostScript

printing instead of ASCII 2-4

PRESCRIBE 2-14, 5-10, D-19

Print Monitor

installation 4-8

- setup 4-9
- Print server
 - Apple name 2-3
 - changing Apple name and zone 6-2
 - controls C-11
 - documentation 1-5
 - hardware address 2-2
 - homepage A-2
 - host name 2-14
 - installation AIX without SMIT 5-15
 - installation into AIX 3.x 5-13
 - installation into AIX 4.x 5-12
 - installation into Apple networks 6-2
 - installation into BS2000 8-2
 - installation into HP-UX 5-17
 - installation into Novell NetWare 3.x 3-15, 3-21
 - installation into Novell NetWare 4.x 3-7, 3-10
 - installation into SCO UNIX 3.2 5-20
 - installation into SINIX SPOOL V4.x 5-24
 - installation into SunOS 5-19
 - installation into System V 5-22
 - installation into UNIXWare 4.2 - 1.1.2 5-21
 - installation into Windows 98 or 95 4-3
 - installation into Windows NT 3.51 4-22
 - installation into Windows NT 4.0 4-11
 - intended use 1-3
 - logical printer 2-3
 - name 2-3
 - Novell name 2-3
 - operating systems 1-3
 - parameters D-3
 - print server mode 3-4
 - protocols 1-3
 - remote printer mode 3-4
 - resetting parameters A-10, D-21
 - restarting A-10, B-8
 - safety instructions 1-4
 - saving IP address using Tool 2-12
 - SNMP 2-19
 - software update 7-2, B-12
- Print server list B-3
- Print server menu B-7
- Print server mode 3-4
 - configuration via Administration Tool B-11



- configuration via homepage A-9
- Print server name
 - display via Administration Tool B-9
 - display via homepage A-4
- Print server number 2-3
- Printer
 - logical printer 2-3
 - operating panel 2-13, D-11
 - setup in Windows 98 and 95 networks 4-8
 - setup in Windows NT 3.51 networks 4-27
 - setup in Windows NT 4.0 networks 4-17
 - status messages A-4, B-4
- printing
 - ASCII as PostScript 2-4
 - banner page 2-4
 - hex dump mode 2-4
 - in Novell networks 3-3
 - in UNIX networks using shell scripts 5-2, 5-26, E-2
 - in UNIX networks using TCP/IP ports 5-24
 - in UNIX networks using the LPD protocol 5-11
 - in Windows networks 4-2
 - LF+CR instead of LF 2-3
 - list of parameters C-12, D-20
 - status page via Administration Tool B-6, B-8
 - status page via status button C-12
- Printout
 - User Manual 1-7
- Private MIB 2-19
- Protocol 1-3
 - BOOTP 2-9
 - DHCP 2-8
 - LPD 4-2, 4-11, 4-22, 5-2
 - RARP 2-10
 - SNMP 2-19
 - TCP/IP 4-2
- PSERVER 3-5
- Q
 - Quick Software Installation Guide 1-5
- R
 - RARP
 - in UNIX networks 2-10, 5-7
 - rarpd.cf 2-10

- Refresh rate 3-4
- Remote line printing 5-20
- Remote printer mode 3-5, 5-2
 - configuration via Administration Tool B-11
 - configuration via homepage A-9
- Resetting
 - parameters A-10, C-13, D-21
- Restarting
 - print server via Administration Tool B-8
 - print server via homepage A-10
- RJ-45 connector C-15
- RLP 5-20
- RPRINTER 3-4
- S**
- Safety instructions 1-4
- SAM 5-17
- Saving
 - IP address in UNIX networks 5-6
 - IP address using Administration Tool 2-12
 - IP address using arp and ping 2-11
 - IP address using boot protocols 2-7
 - IP address using BOOTP 2-9
 - IP address using DHCP 2-8
 - IP address using PRESCRIBE 2-14, 5-10, D-19
 - IP address using RARP 2-10
 - IP address via printer operating panel 2-13, 4-7, 4-15, 4-27, 5-9, 8-3
 - methods for IP address 2-7
- SCO UNIX 3.2 5-20
- Server based network 4-11, 4-22
- Setup
 - KYOCERA Monitor 4-9
 - printer in Windows 98 and 95 networks 4-8
 - printer in Windows NT 3.51 networks 4-27
 - printer in Windows NT 4.0 networks 4-17
- Shell scripts 5-2, 5-26, E-2
 - basic functions E-2
 - variables E-4
- SINIX SPOOL V4.x 5-24
- SMIT 5-12, 5-14
- SNAP 3-4
- SNMP 2-19
 - configuration via Administration Tool B-11
 - configuration via homepage A-9



- Socket 2-16
- Software update 7-2
 - Administration Tool 7-3, B-12
 - using TFTP in UNIX networks 7-6
 - using TFTP in Windows NT networks 7-4
- Sort menu B-13
- Spooler 5-3
- SPX protocol 3-3
- Status button C-12
- Status information
 - display via Administration Tool B-6, B-8
- Status menu B-8
- Status page C-12
 - printing via Administration Tool B-6, B-8
- Subnet mask 2-17
 - configuration via Administration Tool B-11
 - configuration via homepage A-8
- Subnetwork 2-17
- SunOS 5-19
- Symbols and conventions 1-8
- sys5.sh 5-26
- System Administration Manager 5-17
- System V 5-22

T

Tab

- Apple B-9, B-11
- General B-9, B-11
- General NetWare B-9
- KYOCERA B-9
- Logical Printer B-11
- NetWare B-11
- NetWare Connections B-9
- NetWare Queues B-9
- Physical Printer B-11
- SNMP B-11
- TCP/IP B-11

TCP/IP

- configuration via Administration Tool B-11
- configuration via homepage A-8
- status information display A-5

TCP/IP port 2-16, 4-2, 5-2

- BS2000 8-2
- UNIX 5-24

- TCP/IP print services
 - installation in Windows NT 4.0 networks 4-15
- TCP/IP protocol
 - installation in Windows 98 and 95 networks 4-5
 - installation in Windows NT 4.0 networks 4-12
 - Windows 4-2
- TCP/IP services
 - installation in Windows NT 3.51 networks 4-23
- TFTP
 - software update in UNIX networks 7-6
 - software update in Windows NT networks 7-4
- TokenTalk 6-2
- Toolbar B-5
- Trap 2-19

U

- UNIX 5-2
 - boot protocol BOOTP 2-9, 5-6
 - boot protocol RARP 2-10, 5-7
 - logical printers 2-4
 - printing using shell scripts 5-26, E-2
 - printing using TCP/IP ports 5-24
 - printing using the LPD protocol 5-11
 - spooler 5-3
- UNIXWare 5-21
- Update 7-2
- User Manual 1-6
 - printout 1-7
- usr/lib/lpd 5-3

V

- Variables of the shell scripts E-4
- Visual User Environment 5-17

W

- Windows
 - logical printers 2-4
- Windows 95 4-3
- Windows 98 4-3
- Windows NT 3.51 4-22
- Windows NT 4.0 4-11
- Windows/hosts 2-15



Z

Zone 6-2

- changing Apple zone 6-2

- configuration via Administration Tool B-11

- configuration via homepage A-9

- display via Administration Tool B-9