



## **DocOut for Linux and AIX Installation and Operator's Guide**

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# 1 Introduction to DocOut for Linux and AIX

Printing host data on an inexpensive LAN-based printer used to require expensive hardware and complicated programming in order to eliminate the incompatibilities between the two environments. Now, thanks to DocOut, your LAN-based printers can receive host print data using standard TCP/IP host attachments.

Quite simply, DocOut converts host print data to a format that is understood by LAN printers and passes the data along to existing LAN print devices. Moreover, DocOut provides several additional facilities, including viewing, archiving, and reprint. Not only do these facilities extend your ability to manage and control host output, they also provide greatly increased print flexibility.

DocOut provides conversion of IPDS and ICDS host data streams into PCL5/5c, PostScript or PDF.

The DocOut software can be easily installed on any Linux or AIX server (RedHat Linux 7.3 or 8.0, AIX 5.1L) to couple multiple host and mid-range systems for network printing—the ideal solution for companies with mixed print environments.

Input data can be received from all IBM PSF versions and ida PSS / EPM. TCP/IP inbound communication is supported.

This manual describes how to install DocOut for Linux and AIX and how to configure the system for the DocOut TCP/IP sessions and associated programs. It also describes the prerequisite hardware and software to run DocOut for Linux and AIX and how to operate it. See chapter 2, **Features of DocOut for Linux and AIX** for further information.

The manual provides information to system-support personnel for the configuring and installing of DocOut for Linux and AIX and its associated software. The system-support personnel must be familiar with these specific installation environments. DocOut for Linux and AIX provides support for the following environments:

**Direct host connection: DocOut TCP/IP VTAM**

See chapter 1.3, **Requirements** for details on hardware and software specifications.

The reader must have basic knowledge of operating a Linux / AIX server.

## 1.1 Product features

The *DocOut for Linux and AIX* is based on *DocOut Version 4* and features the following:

### **TCP/IP sessions**

- IPDS printer emulation (IBM IP40, 4028 and 3812/16)
- PCL, PostScript and PDF output
- supports disk resident resources
- operates in Linux environments
- operates in conjunction with TCP/IP
- provides bi-directional communication between host and Linux workstation/server

## 1.2 Related manuals

- Getting Started with PrintGuide, doc. no. 60364
- PSS MVS, Product Installation Guide, doc. no. 63052
- PSS VM, Installation Guide, doc. no. 63055
- Host Print Redirector Product Guide, doc. no. 63068

## 1.3 Requirements

This section describes the hardware and software requirements needed for operating *DocOut*.

For specifications on host-operating system requirements and installation, please see:

- *PSS MVS* Product Installation Guide, document no. D63052
- *PSS VM* Product Installation Guide, document no. D63055
- *Host Print Redirector* Product Guide, document no. D63068

### 1.3.1 PC / Server system requirements

#### Linux

##### Hardware:

- PC with LAN adapter able to run RedHat Linux 7.3 or 8.0 (x86).

##### Software:

- RedHat Linux 7.3 or 8.0 with TCP/IP (TCP/IP support),

#### AIX

##### Hardware:

- AIX pServer system

##### Software:

- AIX V5.1L

## 1.3.2 Host system requirements

### Mainframe MVS

- PSS/MVS  
Either MPI Tech PSS ver. 6.01 or higher, or MPI Tech HPR version 1.04
- IBM PSF ver 2.1 or higher
- ACF/VTAM ver. 3.1 or higher is required
- IBM TCP/IP ver. 2.1 or higher or Interlink TCP/Access ver.3.1 or higher.

### Mainframe VM

- MPI Tech PSS VM ver. 6.01 or higher
- IBM PSF ver. 2.1 or higher (only VTAM connection)
- ACF/VTAM ver. 3.1 or higher
- IBM TCP/IP ver. 2.1 or higher

### Mainframe VSE

- PSF/VSE
- ACF VTAM

### AS/400

- OS/400 ver 3.x or 4.x (incl. PTFs) or higher
- PSF/400

## 2 Features of DocOut for Linux and AIX

The software PrintServer *DocOut for Linux and AIX* is typically downloaded from [www.mpitech.com](http://www.mpitech.com) but can also be supplied on a CD, which includes all set-up files and instructions for *DocOut for Linux and AIX* and *PrintGuide*. The Installation and Operator's Guide and a copy of Acrobat Reader 5.0 are also included on the CD.

### 2.1 Overview of DocOut for Linux and AIX

*DocOut for Linux and AIX* is a software print server designed to operate on a Linux server.

*DocOut for Linux and AIX* can connect to multiple host and midrange systems and process host print input to address the needs of heterogeneous print environments. It provides a method to receive host print TCP/IP host attachments, convert host print data to a format that can be printed on LAN printers, and redistribute output to existing LAN print devices. DocOut provides conversion of IPDS and ICDS host data streams into PCL5/5c, PostScript or PDF.

One of the key design elements used in DocOut for Linux and AIX is the ability to support multiple print sessions, or logical host printers simultaneously. Similar to a physical printer, each logical printer can have its own set of attributes (e.g. network connection, print protocol, print transform options and output device).

**PrintGuide** is a setup and configuration software program and is delivered with DocOut. PrintGuide is used to discover, monitor and configure MPI Tech print servers, including **DocOut for Linux and AIX**. Please note that PrintGuide is a **necessary** condition of monitoring, configuring and activating DocOut. PrintGuide must be installed on a Windows PC. PrintGuide can manage all DocOut servers it can access through the network.

## 3 How to purchase and register DocOut

### 3.1 How to purchase DocOut

You can download a trial version of DocOut from MPI Tech's web site at [www.mpitech.com/docout/index.htm](http://www.mpitech.com/docout/index.htm). Please note that the trial version expires 30 days after it has been received.

If you want to purchase DocOut, please contact your MPI Tech reseller, where you will get a copy of the DocOut CD.

When purchasing a DocOut for Linux and AIX license, you will need to inform us of your Servers computer ID. This server ID is generated by DocOut and can be obtained from PrintGuide. Please refer to chapter 4.5.1 "License file download" for further information.

### 3.2 Updating DocOut

Updates for DocOut will be available on the MPI Tech support web site. You will not need a new licence file to install a service update.



## 4 Installation

### 4.1 Pre-installation requirements

Linux and TCP/IP must be installed on the computer.

### 4.2 Installation

DocOut for Linux and AIX will be distributed on a CD-ROM.

The CD-ROM will contain the following directories:

/DocOut	(DocOut for Linux and AIX distribution and documentation)
/PrintGuide	(PrintGuide distribution and documentation)
/Acrobat	(Acrobat reader)

#### 4.2.1 PrintGuide installation

Insert the CD-ROM into the Windows PC where PrintGuide shall be installed.

Install PrintGuide, by running the executable in the /PrintGuide directory.

#### 4.2.2 DocOut installation

Copy (binary) the gzipped tar archive located in the /DocOut directory to the destination Linux machine, into a **temporary** directory (Use e.g. /home/"User"/docouttmp) on the Linux/AIX system.

The identity of the user installing the system **must** be root.

Linux:

Un-tar the distribution:

```
tar xzf "tarfile".tgz
```

AIX:

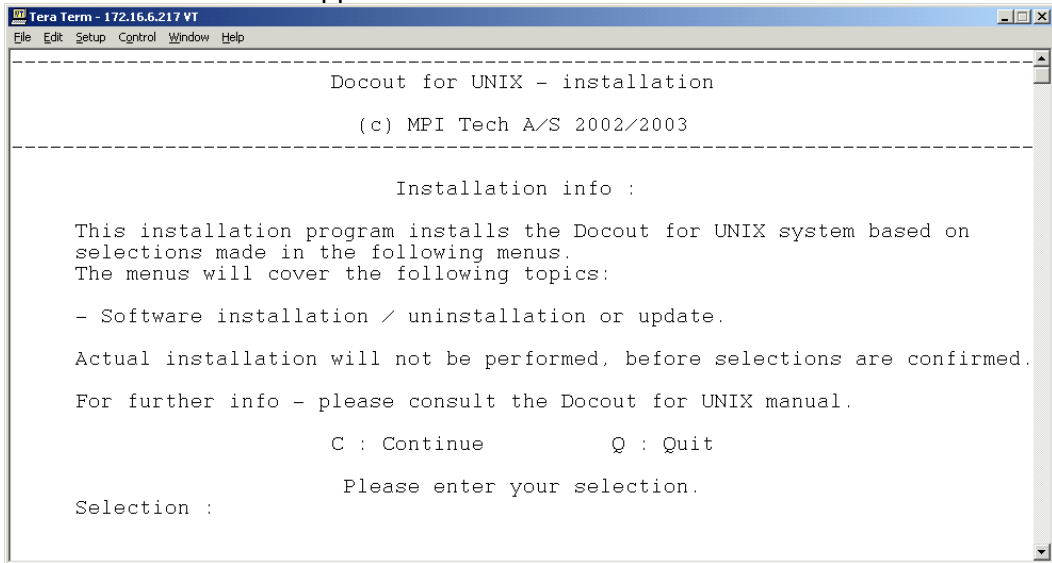
Uncompress and un-tar the distribution

```
uncompress docout.tar.Z  
tar xvf docout.tar
```

The installation of DocOut for Linux and AIX will be done by means of a text UI based program - ./install.

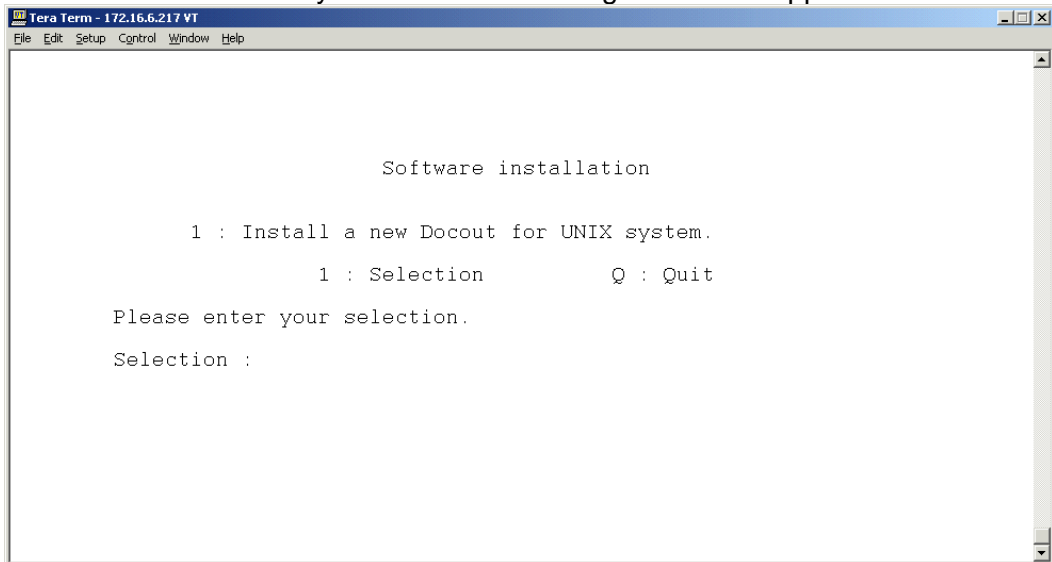
Next the ./install program must be executed – using the system super user "root" identity.

An introduction screen appears:



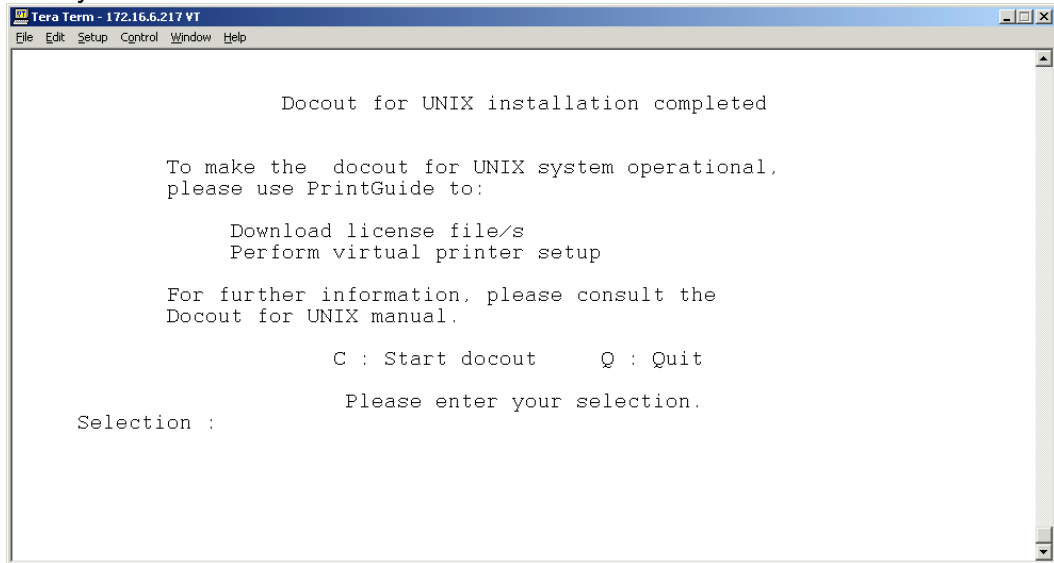
Press 'c' to continue

If "DocOut" is not already installed the following screen will appear:



Press '1' to install DocOut.

Finally a confirmation screen is shown.



Press 'c' to start the DocOut system.

When DocOut is started, an information message will be shown, indicating that no valid licences are found. A valid license should be downloaded to DocOut using PrintGuide. See chapter 4.5 for further information.

The installation procedure will put the DocOut package in the:  
*/usr/local/docout* directory.

The following files will be installed in the DocOut directory

<i>/usr/local/docout/docoutux</i>	DocOut Linux program
<i>/usr/local/docout/CFG/</i>	DocOut configuration directory
<i>/usr/local/docout/4028/</i>	Font resources for 4028 emulation
<i>/usr/local/docout/3212/</i>	Font resources for 3212 emulation
<i>/usr/local/docout/IP40/</i>	Font resources for IP40 emulation
<i>/usr/local/docout/PPDX/</i>	Per session work directory
<i>/usr/docout/licstat</i>	License status file.

During installation the following files will be modified:

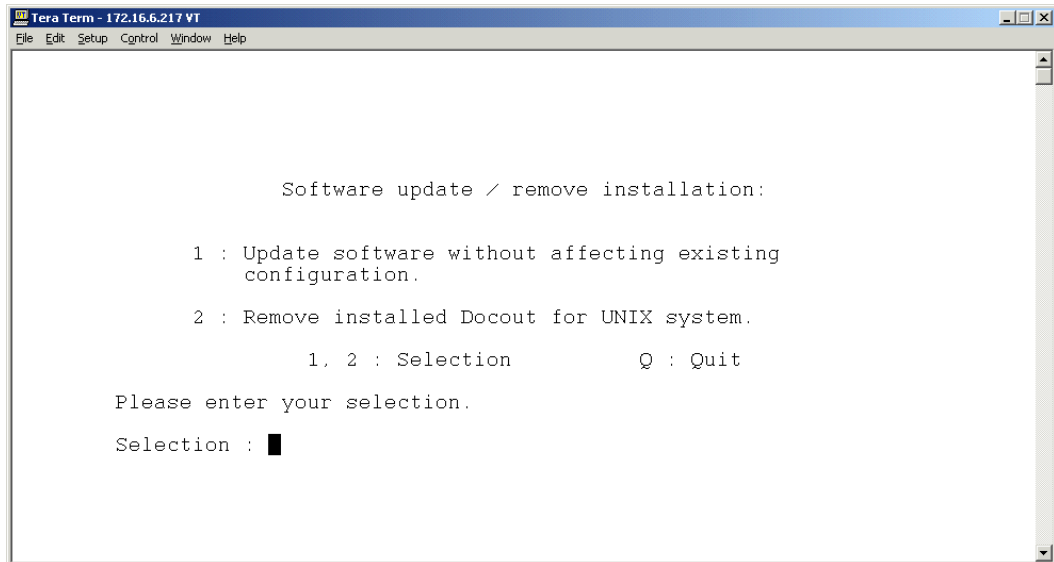
*/etc/rc.d* Automatic startup/shutdown of the system will be enabled

## 4.3 Update

Copy the new release into a **temporary** directory (Use e.g. /home/"User"/docouttmp) on the Linux/AIX system.

Untar the distribution.

If DocOut is already installed, and the ./install program is executed the following screen will appear after the introduction screen:



```
Tera Term - 172.16.6.217 VT
File Edit Setup Control Window Help

Software update / remove installation:

1 : Update software without affecting existing
  configuration.
2 : Remove installed Docout for UNIX system.

      1, 2 : Selection      Q : Quit

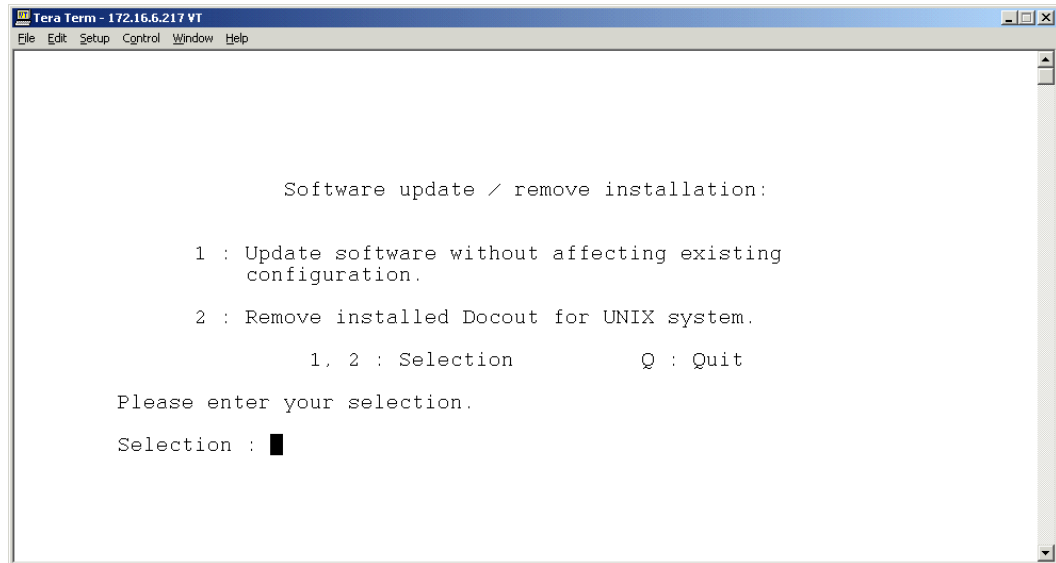
Please enter your selection.

Selection : █
```

If '1' is selected, the installation will be updated with the new release. Configuration, license files, spool files, output files and downloaded resources will not be affected by the update.

## 4.4 Uninstall

If DocOut is already installed, and the `./install` program is executed the following screen will appear after the introduction screen:



If '2' is selected, the installation will be **completely** removed (A confirmation screen will be shown prior to file removal).

**IMPORTANT: All** Configuration, spool files, output files and downloaded resources located in subfolders of `/usr/docout` **will be removed**.

## 4.5 Configuration

Changes to the initial configuration of DocOut can be made by using PrintGuide, as described in the separate manual, *Getting Started with PrintGuide*, doc. no. 60364.

Additional information can be found on our web site or on the CD supplied with DocOut.

The following paragraphs will describe DocOut for Linux and AIX specific configuration.

### 4.5.1 License file download

DocOut for Linux and AIX will automatic generate a 30 days evaluation license the first time it is installed on your system.

When you have purchased DocOut you should authorise your system by obtaining production licenses.

You can verify the current status of your DocOut in the PrintGuide License Manager (Figure 2, The License Manager)

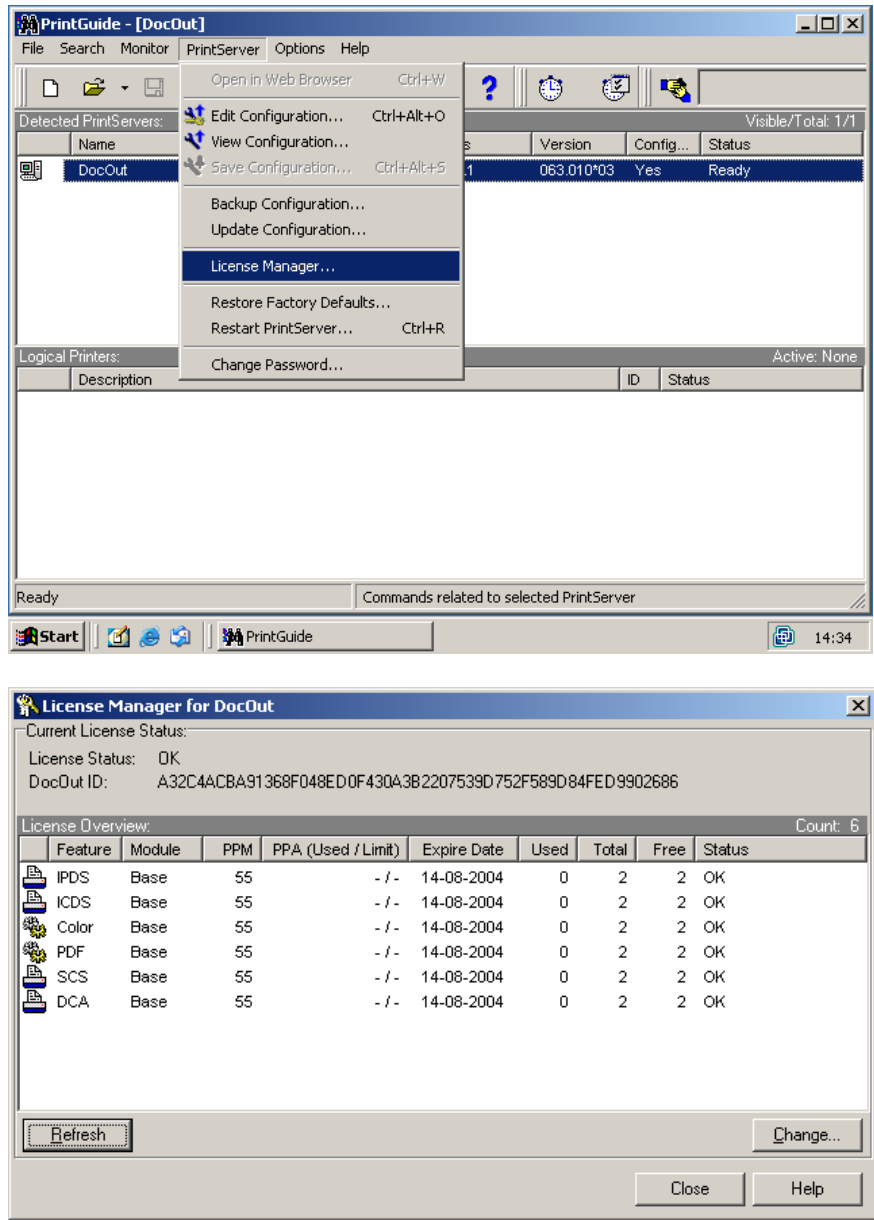
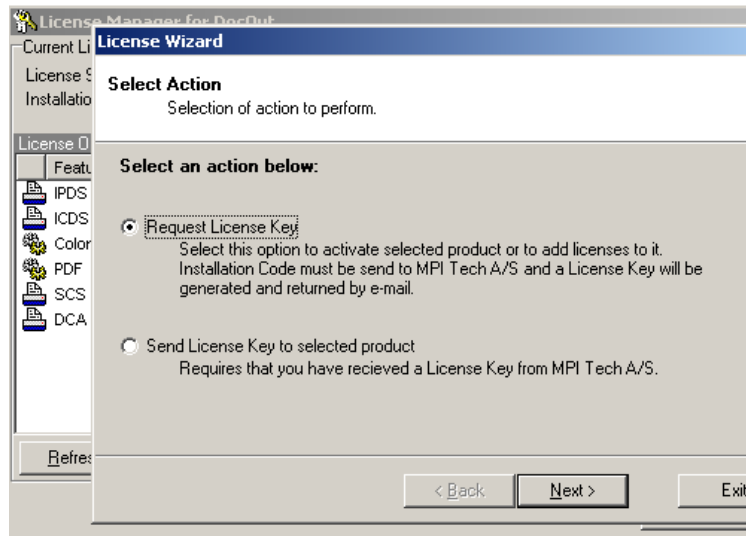


Figure 2, The License Manger. Status view.

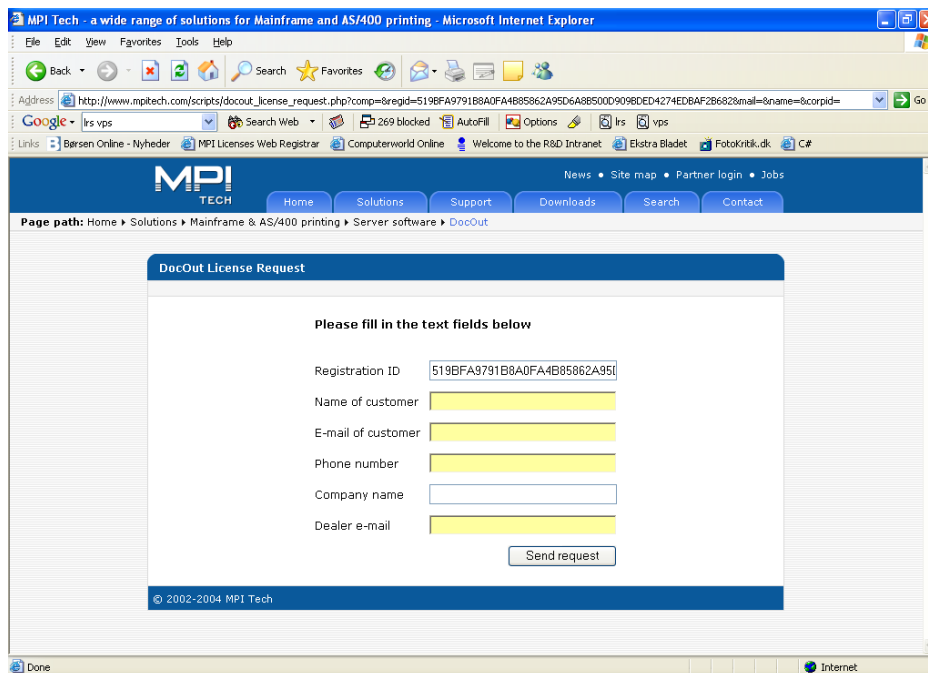
## 4.5.2 Request your License key

Open PrintGuide and select the DocOut to be authorized  
Select 'PrintServer' – 'License Manager' – Change – 'OK'



Follow the instructions.

You will be directed to a web form that you should update with your data.

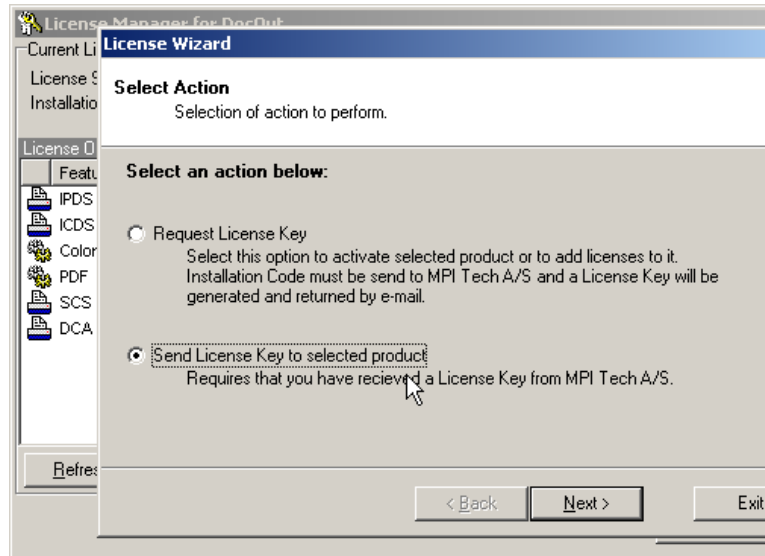


The request will be sent to our order department that will co-ordinate the request with the dealer from whom you have purchased DocOut for Linux and AIX.

Upon completion, you will receive a license key file with the DocOut for Linux and AIX options purchased. Detach the received license file.

### 4.5.3 Install obtained License Key

Open PrintGuide and select the DocOut to be authorized  
Select 'PrintServer' – 'License Manager' – Change – 'OK'



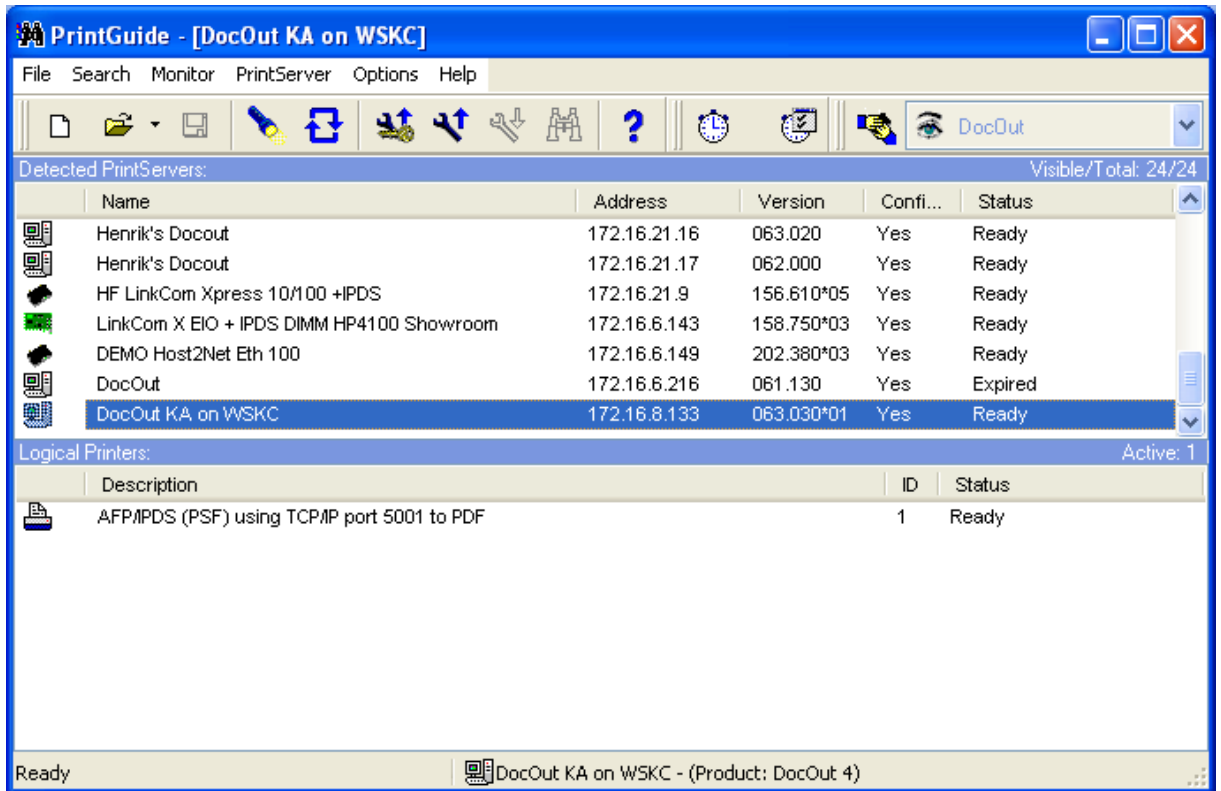
Follow the instructions, and select the previously detached license file for download.

**Important:** Make sure that the “Restart Printserver after download” checkmark is set in the download dialog, in order to restart DocOut after license download.

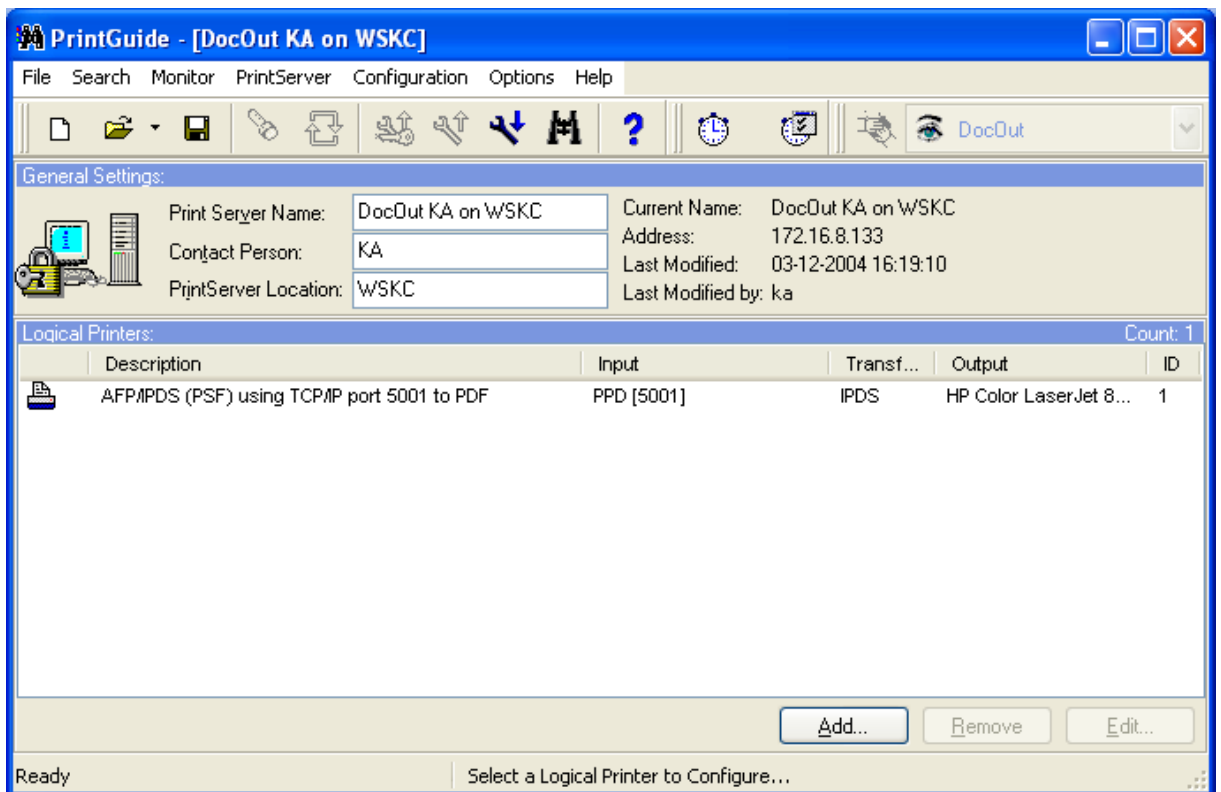
Upon successful installation the license can be verified by inspecting the License Manager using PrintGuide.



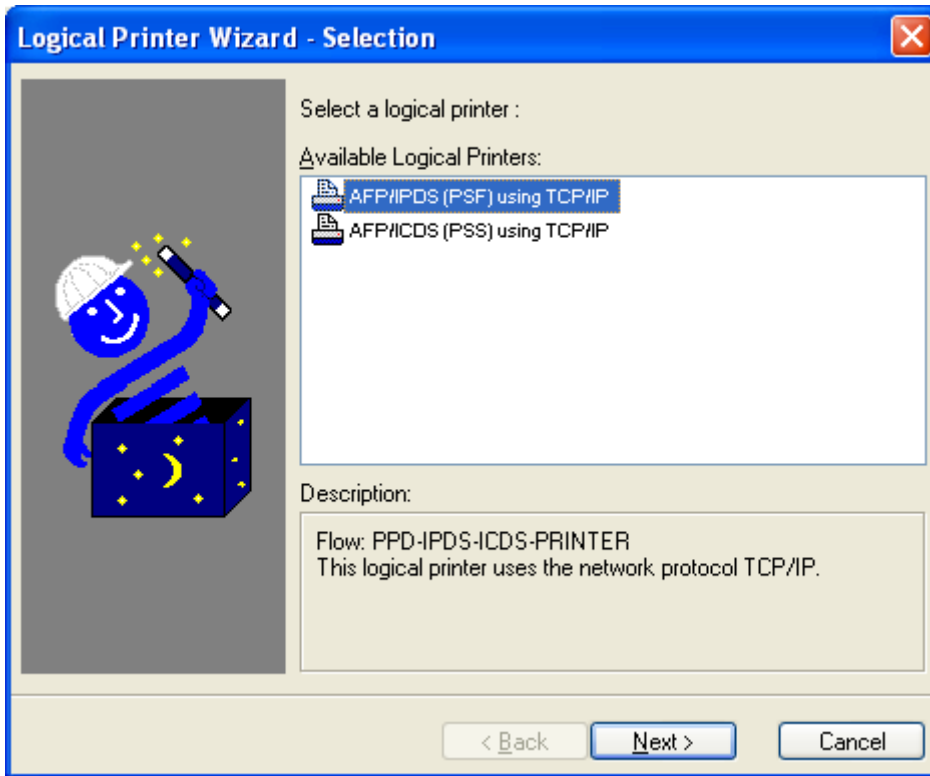
## 4.5.4 Session configuration



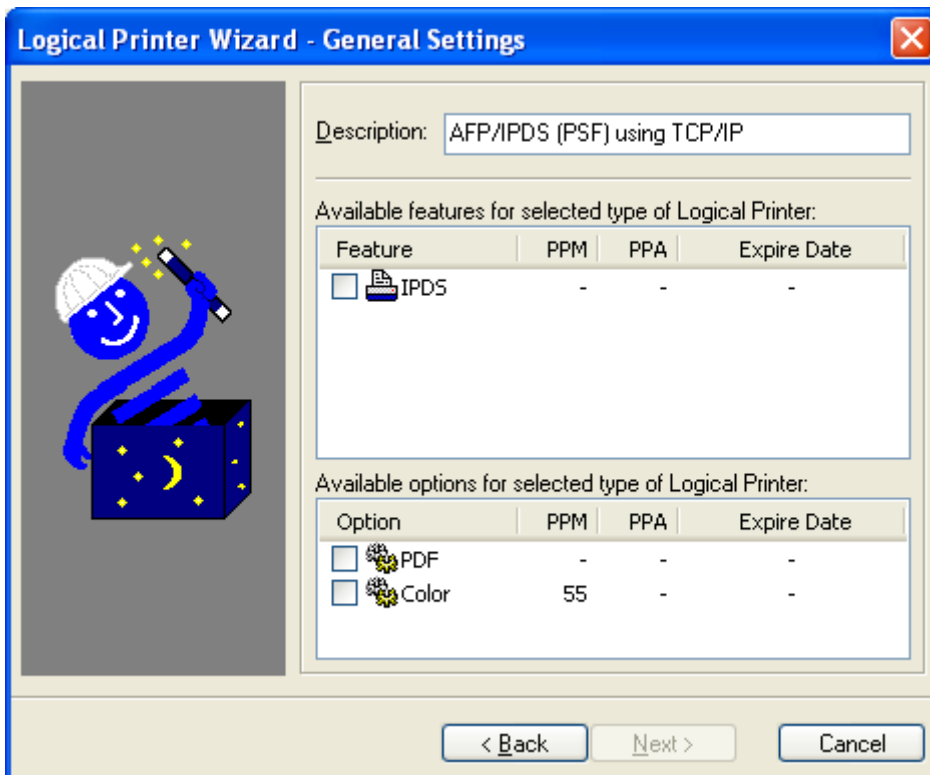
Double click on the DocOut for Linux and AIX to be configured.



Click the Add .. button.



Select the session type to be added.



Select the required license attributes from the list of available licenses.

Next select the TCP/IP port to be used by the session.

**Note** that on Redhat Linux servers TCP/IP port **5002 is already in use**. Do **not** use this port when defining virtual printers.

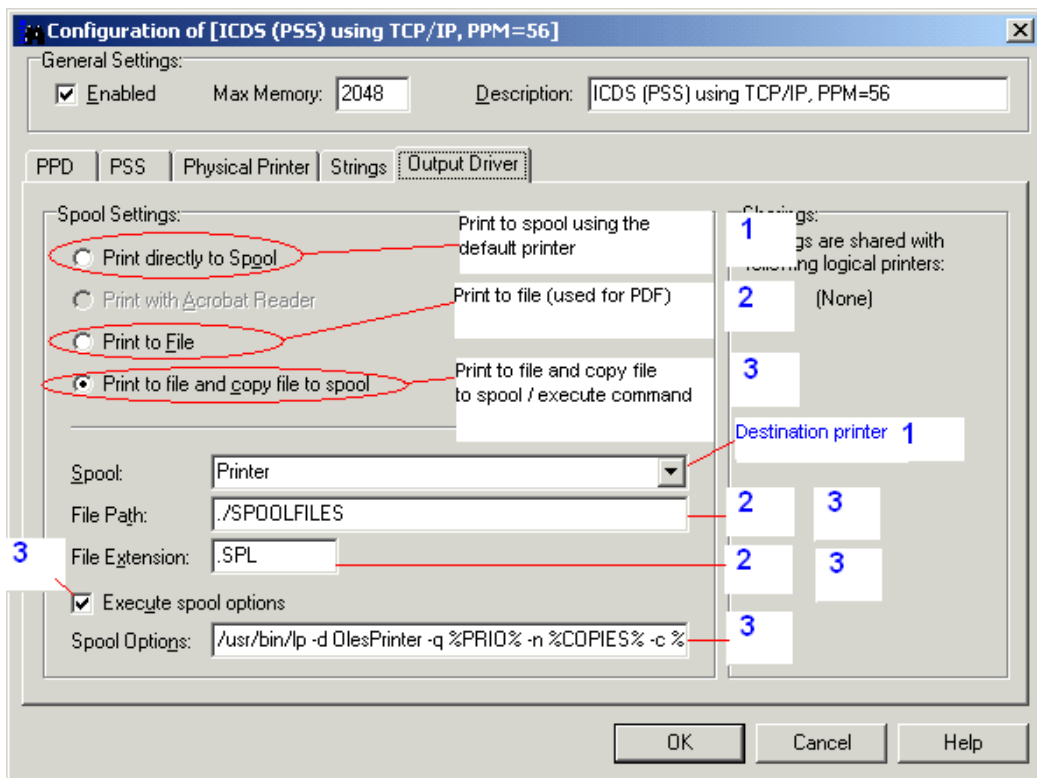
Next select the output printer destination.

Press "Finish"

Finally select the "Printserver" menu item "Save configuration", in order to download the configuration.

Now your logical printer session is created and ready for further setup.

## 4.5.5 Output driver setup



The DocOut for Linux and AIX output driver can output print using 3 different schemes.

- 1: Send the print job to a output printer
- 2: Print to a file
- 3: Print to a file and execute a Linux command in order to print/send it.  
e.g.

```
/usr/bin/lp -c -d Printer %SPOOL_FILE%
```

The tags “-d Printer” specifies the destination Linux printer, these tags must be the first in the “lp” command parameters.

Where the tags %X% specifies parameters delivered by DocOut for Linux and AIX.

The available tags are:

%JOBNAME%	Host Job Name (PSS and IPDS)
%USERNAME%	Host User Name (PSS and IPDS)
%QUEUE_PORT%	Windows Printer Spool Port
%QUEUE%	Windows Printer Spool Name
%SPOOL_FILE%	Output Spool File (not applicable if Print directly to Spool is selected).
%COPIES%	Job Copies (PSS)
%PRIO%	Job Priority (PSS)

%FORM%	Job Form Name (PSS and IPDS)
%LIBNAME%	Host Library Name (IPDS)
%DEVNAME%	Host Device Name (IPDS)
%JOBID%	Host Device Name (PSS and IPDS)
%SESSNAME%	Host Session Name (IPDS)
%SESSID%	Host Session Identifier (IPDS)

## 4.6 Stop and start DocOut

The DocOut service starts automatically after a Linux reboot, but it can also be stopped and started manually.

### 4.6.1 How to stop and start DocOut for Linux and AIX manually

DocOut program syntax:

```
docoutux [?] [-h] [-start [-debug]] [-stop]
```

#### Startup

```
docoutux -start [-debug]
```

Starts up DocOut optionally with debug. If debug is enabled trace files (.TRC) will be created in /usr/local/docout and in each per session directory (PPDX). These files are for MPI Tech internal use only. Debug will decrease performance significantly, and is not intended for normal operation.

Two types of debug files will be created DEBUG.TRC – readable trace and LOG.TRC – binary trace, used to analyse and replay a situation.

#### **IMPORTANT:**

Enabling debug will slow down DocOut, and should only be enabled when troubleshooting.

#### Stop

```
docoutux -stop
```

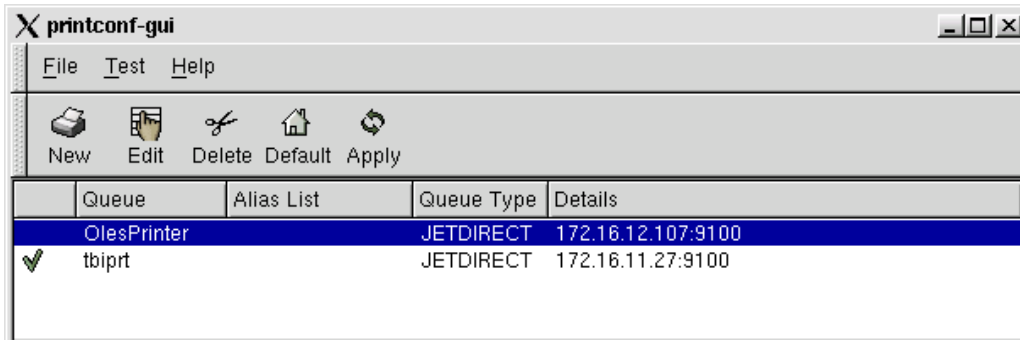
Stops the DocOut system.

## 4.7 How long time does it take to upload configurations to PrintGuide

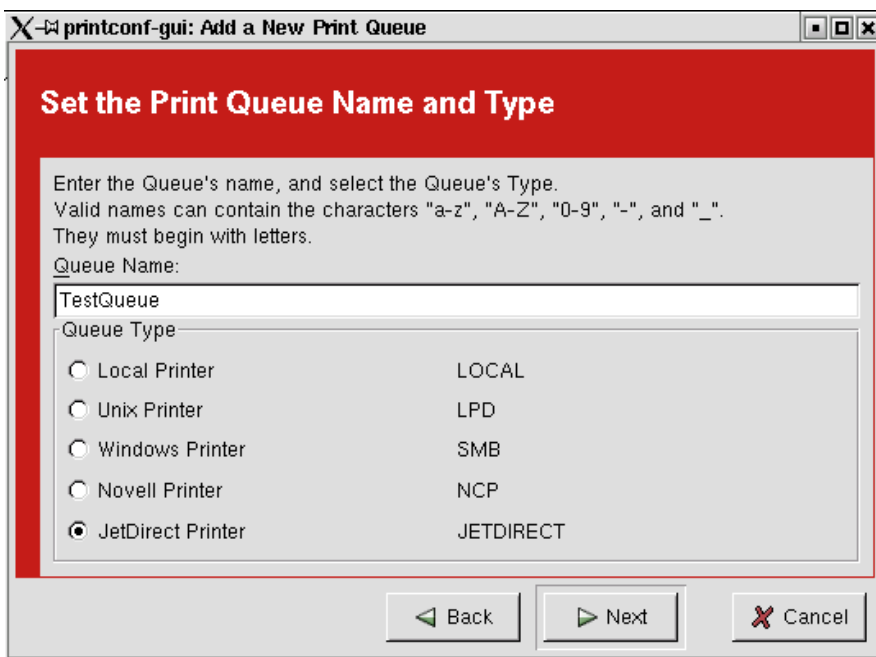
The time it takes to upload the configuration from DocOut to PrintGuide is proportional to the number of defined logical printers. The more logical printers the longer it will take to upload a configuration. A large configuration with more than 100 logical printers could take half a minute or more. The time is affected by other factors as well, such as network traffic, etc.

## 4.8 Adding a Linux printer

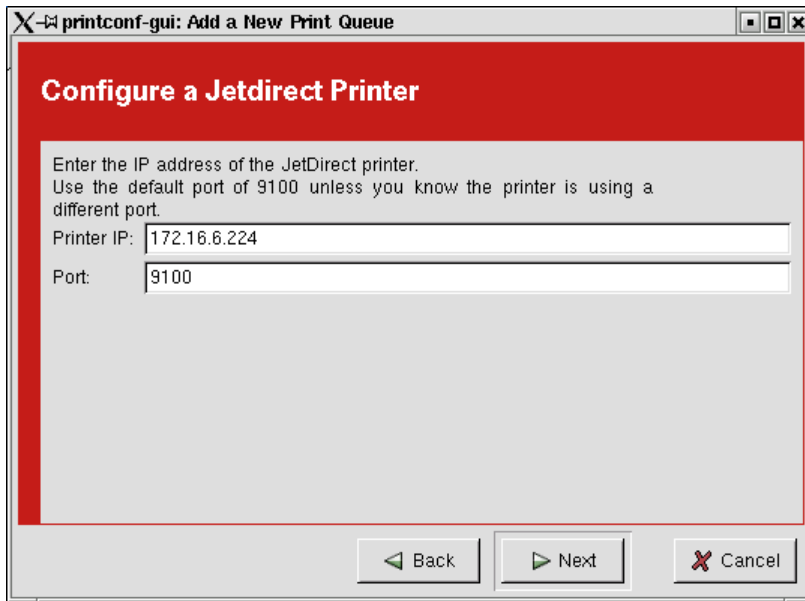
Use the “X printconf-gui” (“Printer configuration”) tool to create a RAW printer e.g:



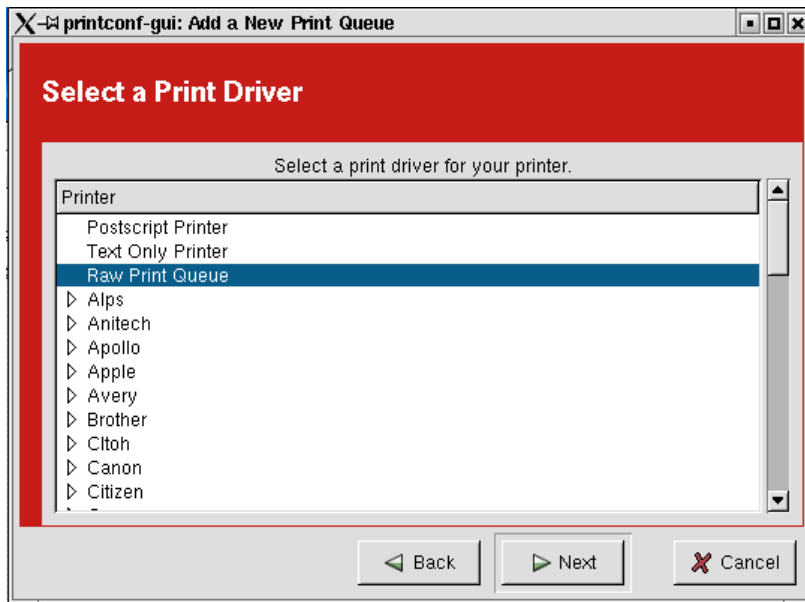
Press the “New” button, to create a new printer.



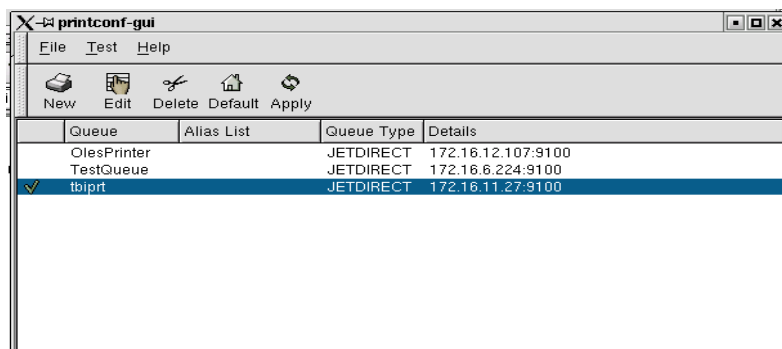
Choose the attachment type of the printer



Set up the attributes of the attachment.



**IMPORTANT:** Select "Raw Print Queue" as the printer driver.



The printer is added. Print a test page to verify connection.



## 4.9 Adding a AIX printer

Use "smit" to set up the requested printer. Remember to configure the printer as a "RAW" printer, i.e. no formatting.

## 4.10 Troubleshooting DocOut for Linux and AIX

1: Make sure that port 5002 is not used by any DocOut session. This port is a reserved port (rsync) on Linux.

2: Ensure that DocOut is started by **root** or the system (boot procedures).

3: Ensure that the DocOut is restarted (by means of PrintGuide) after settings are changed/added.

4: Try to print a file, located in the directory to be used, to the destination Linux printer from the command line.

e.g. "lp -d MyPrinter -c /var/spool/docout/testfile"

If this does not locate the problem:

5: Check /var/log/messages for error messages from DocOut

6: Inspect (vi/cat) the license status file /usr/docout/licstat, to see the current license status.

7: Backup the DocOut configuration, by means of PrintGuide.

8: Enable trace  
docoutux -stop  
docoutux -start -debug

Note: All docoutux commands must be performed as **root**.

IMPORTANT:

Debug will slow down DocOut substantially, and should only be enabled when locating problems.

9: Print to the desired DocOut printer from the host system.

10: Stop DocOut  
docoutux -stop

11: Obtain all .TRC and .LOG files from the /usr/docout directory and the PPD"X" subdirectories.

12: Send all files (zip compress please) from step 7 and 11, and the information obtained from the other steps to MPI Tech support.

## 5 IBM Mainframe printing using TCP/IP

### 5.1 IBM PSF/MVS AFP/IPDS printing

This section provides you with the PSF Startup Procedures

Once these parameters have been configured, and the basic TCP/IP installation of *DocOut* has been completed, direct AFP / IPDS from PSF / MVS will be possible.

**Requirements:**

- PSF/MVS version 2.2.0 with PTF level UW21345
- TCP/IP ver. 2, Rel. 1
- Interlink TCP/Access Ver.3.1 or higher

**MTU size**

- The Maximum Transmission Unit (MTU) of the IP packet for the MVS system is *recommended* to be set up to 2000.

**NOTE:** The MTU size should not exceed the maximum size sent through the control unit. Failure may lead to transmission problems.

## 5.1.1 PSF/MVS start-up procedure

```
000001 //PSF4 PROC
000002 //STEP01 EXEC PGM=APSPPIEP,REGION=1750K
.
.
.
000034
//*****
000035 //* STANDARD PRINTDEV
*/
000036
//*****
000037 //PRT420 CNTL
000038 //PRT420 PRINTDEV FONTDD=*.FONT01, /* FONT LIBRARY DD
*/
.
.
.
000058 // IPADDR='192.0.110.21' /* IP ADDRESS
*/
000059 // PORTNO=5001 /* PORT NUMBER
*/
000060 //PRT420 ENDCNTL
```

Using IP address 192.0.110.21 and port number 5001

The IP address of the *DocOut* server should be programmed in the IP-address (IPADDR='192.0.110.21'). The port number (PORTNO=5001) is the default port number of the first IPDS port in the *DocOut*.

## 5.2 MPI Tech HPR/MVS printing

Below you will find an example of the definition of two printers, one of which is VTAM attached and the other TCP/IP attached.

### Sample HPR Profile

```
*
PROCNAME HPR - NAME IF HPR TO READ THIS
APPLID APPLID=VLUAPPL

*
* ICDS OUTPUT ICDS ON DOCOUT VIA LU62
*
*
PRINTER PRTID=VLU2,SLUNAME=APVLU2,LOGDD=LOG2,FORMAT=PAGE,
        PLUNAME=IDNET003,TPNAME=IDAPSS,LANG=277
*
* ICDS OUTPUT ICDS ON DOCOUT VIA TCP/IP
*
PRINTER PRTID=VLU3,SLUNAME=APVLU3,LOGDD=LOG3,
        IP=192.0.110.21,PORT=5005,FORMAT=PAGE,TRACE=OUTPUT
```

Using IP address 192.0.110.21 and port number 5005

## 5.3 MPI Tech PSS/MVS AFP/ICDS printing

This section provides:

- MPI Tech PSS Start-up Procedure
- MPI Tech PSS Printer Profile

Once these parameters have been configured and the basic TCP/IP installation of *DocOut* has been completed, direct AFP / ICDS from MPI Tech PSS / MVS will be possible.

**Requirements:**

- MPI Tech PSS, version 6.01 or higher
- TCP/IP for MVS, version 2, release 1 or higher
- Interlink TCP/Access Ver.3.1 or higher

**MTU size**

Gateway statement for TCP/IP profile

- The Maximum Transmission Unit (MTU) of the IP packet for the MVS system is *recommended* to be set up to 2000.

**NOTE:** The MTU size should not exceed the maximum size sent through the control unit. Failure may lead to transmission problems.

### 5.3.1 PSS printer profile using TCP/IP attachment

```
*TCPIP DEFINITIONS
TCPIP      USER=TCPIP
NAMESRV   IP=192.0.15.0
NAMESRV   IP=192.0.14.1
*-----*
* PSS PRINTER DEFINITION FOR USE WITH DIRECT TCP/IP CONNECTION
*-----*
PRINTER   PRTID=PRT411, IP=192.0.110.21,
          PORT=5005
*-----*
```

Example of PSS printer profile using TCP/IP

The IP address of the *DocOut* server should be programmed in the IP-address (IPADDR='192.0.110.21'). The port number (PORTNO=5005) is the default port number of the first ICDS port in *DocOut*. The PrintGuide dialogue below allows you to enter the TCP/IP Port. See *Getting Started with PrintGuide*, doc. no. 60364.

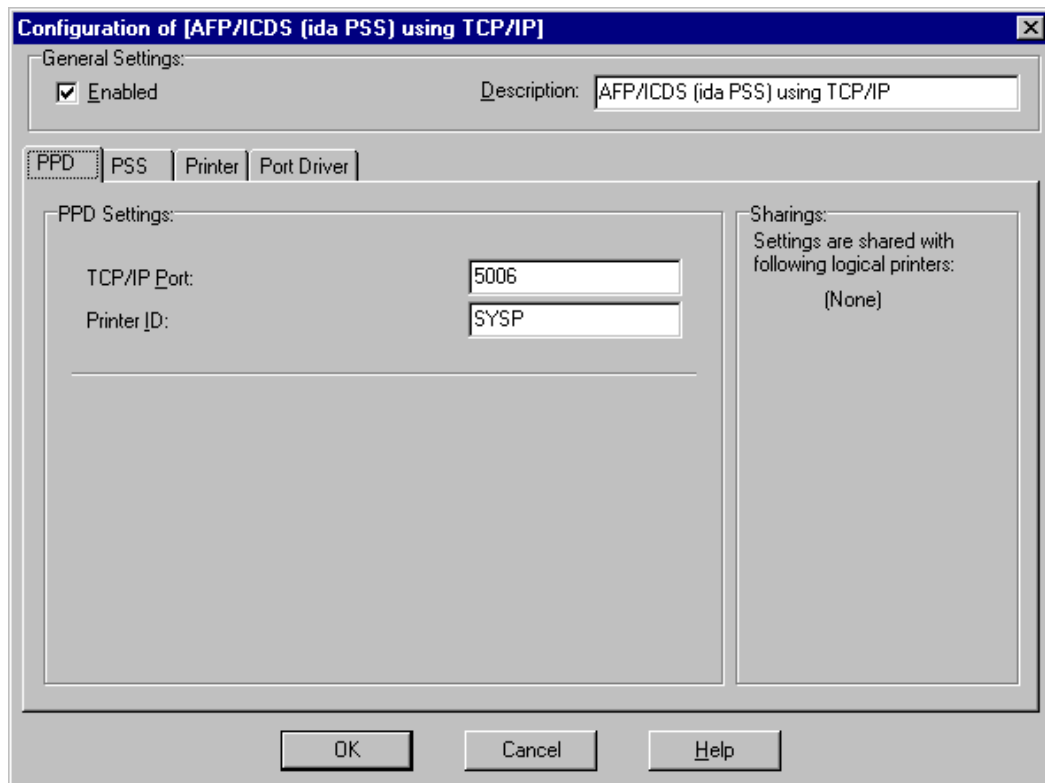


Figure 1

## 5.4 MPI Tech PSS/VM AFP printing using TCP/IP

This section provides:

PSS VM printer profile statements

Once these parameters have been configured, and the basic TCP/IP installation of *DocOut* has been completed, direct AFP / ICDS from PSS / VM will be possible.

### Requirements:

- MPI Tech PSS, version 6.01 or higher
- TCP/IP for VM, version 2, release 2.1 or higher

### 5.4.1 Sample PSS VM printer profile definition using TCP/IP

```
KEY          KEY=12345678901234567890
CONSLOG     NO
*****TCP/IP DEFINITIONS*****
*
TCPIP              USER=TCPIP
NAMESERV IP=192.0.15.0
NAMESERV IP=192.0.15.1
*
*****TCP/IP ATTACHMENT*****
*
PRINTER  PRTID=NET022, IP=192.0.110.21, PORT=5005
*
*****
```

The IP address of *DocOut* server should be programmed in the IP-address (IPADDR='192.0.110.21'). The port number (PORTNO=5005) is the default port number of the first ICDS port in *DocOut*. The PrintGuide dialogue in [Figure 1](#) on page [29](#) allows you to enter the TCP/IP Port. See *Getting Started with PrintGuide*, doc. no. 60364.

## 6 IBM PSF/400 AFP printing using TCP/IP

This chapter provides configuration guidelines for OS/400 using TCP/IP. The versions differ somewhat in the setup.

For the different OS/400 versions, use the cross-references below:

[6.1, AS/400 settings for version 3.1](#)

[6.2, AS/400 settings for version 3.2](#)

[6.3, AS/400 settings for version 3.6](#)

[6.4, AS/400 settings for version 3.7](#)

[6.5, AS/400 settings for version 4.1](#)

[6.6, AS/400 settings for version 4.2](#)

[6.7, AS/400 settings for version 4.3](#)

### **Requirements:**

Before IPDS printing using TCP/IP can be accomplished, the following points need to be checked:

- TCP/IP is installed and enabled
- The relevant PTFs are applied
- The WRKAFF2 command is compiled (for AS/400 3.1 and 3.6 only)

Details on how to verify these items can be found on the internet.

Consult the following IBM web address for details:

<http://as400service.rochester.ibm.com/>

In the **Technical Information database**, you find the following links:

### **AS/400 Knowledge Base**

This link directs you to the area of the Knowledge Base, which is specifically about **Print**. IBM Doc. No. 8414724, *PTF Listing for AFP Printing* is a good entry.

### **Preventive Service Planning (PSP)**

This link directs you to the area of the Knowledge Base about **Cumulative PTF Package** for all OS/400 versions. IBM Doc. No. 8203740, *PTF Listing for TCP/LAN Printing* is a good entry.

## 6.1 AS/400 settings for version 3.1

To configure IPDS printing on OS/400 V3R1, you must use two commands:

- CRTDEVPRT
- WRKAFP2

### 6.1.1 Configuring PSF with CRTDEVPRT on V3R1

On V3R1, on the AS/400 command line, enter a command in the form:

**CRTDEVPRT DEVD(DOCOUT) DEVCLS(\*RMT) TYPE(\*IPDS) MODEL(0)  
 AFP(\*YES) AFPATTACH(\*APPC) FONT(11)  
 RMTLOCNAME(TCPIP) FORMFEED(\*AUTOCUT) TEXT('MPI TECH DOCOUT  
 IPDS')**

A completed screen looks like the following example:

```

Display Device Description                               Page 1
5763SS1 V3R1M0 940909 BLDSYS1 09/11/96 11:15:40

Device description . . . . . : DEVD                DOCOUT
Option . . . . . : OPTION                *ALL
Category of device . . . . . :                  *PRT
Automatically created . . . . . :                  NO
Device class . . . . . : DEVCLS                *RMT
Device type . . . . . : TYPE                  *IPDS
Device model . . . . . : MODEL                0
Advanced function printing . . . : AFP          *YES
AFP attachment . . . . . : AFPATTACH          *APPC
Online at IPL . . . . . : ONLINE              *YES
Font . . . . . : FONT
Identifier . . . . . :                       011
Point size . . . . . :                       *NONE
Form feed . . . . . : FORMFEED              *AUTOCUT
Separator drawer . . . . . : SEPDRAWER        *FILE
Separator program . . . . . : SEPPGM          *NONE
Library. . . . . :
Printer error message . . . . . : PRTERMSG        *INQ
Message queue (V3R1) . . . . . : MSGQ          QSYSOPR
Shadowing message queue (V3R6) . : MSGQ        QSYSOPR
Library. . . . . : *LIBL
Maximum pending requests . . . . : MAXPNDRQS    6
Print while converting . . . . . : PRTCVT        *YES
Print request timer . . . . . : PRTRQSTMR      *NOMAX
Form definition . . . . . : FORMDF            F1C10110
Library. . . . . : *LIBL
Character identifier . . . . . : CHRID          *SYSVAL
Remote location . . . . . : RMTLOCNAME        TCP/IP
Local location . . . . . : LCLLOCNAME          *NETATR
Remote network identifier . . . . : RMTNETID    *NETATR
Mode . . . . . : MODE                        QSPWTR
Text . . . . . : TEXT                        MPI TECH DOCOUT
IPDS
  
```



## 6.1.2 Configuring AFP with WRKAFP2 on V3R1

On V3R1, on the AS/400 command line, enter a command in the form:

**WRKAFP2 DEVD(DOCOUT) IPDSPASTHR(\*YES) TCPIP(\*YES)  
RMTSYS('128.9.12.134') PORT(5001) INACTTMR(\*SEC15)**

A printout should look like the following:

```
QPQXWAFP
-----
DEVD          DOCOUT
IPDSPASTHR    *YES
TCPIP         *YES
RMTSYS        192.194.134.90
PORT         5001
ACTTMR        *NOMAX
INACTTMR      *SEC15
SBP           *NO
PSC           *YES
DRF           *NO
DRR           *NO
EDGSNSTV     *NO
```

Then do the following:

Ping the IP address to verify communication with the printer:

**PING '192.194.134.90'**

Vary the printer on:

**VRYCFG DOCOUT CFGTYPE(\*DEV) STATUS(\*ON)**

Start the print writer:

**STRPRTWTR DOCOUT**

## 6.2 AS/400 settings for version 3.2

To configure IPDS on OS/400 V3R2, you use the following commands:

- CRTDEVPRT
- CRTPSFCFG

### 6.2.1 Configuring PSF with CRTDEVPRT on V3R2

On the AS/400 command line, enter a command in the form:

```
CRTDEVPRT DEVD(DOCOUT) DEVCLS(*RMT) TYPE(*IPDS) MODEL(0)
AFP(*YES) AFPATTACH(*APPC) FONT(11)
RMTLOCNAME(TCPIP) FORMFEED(*AUTOCUT) TEXT('MPI TECH DOCOUT
IPDS')
```

A completed screen looks like this:

Display Device Description Page 1		
Device description . . . . .	: DEVD	DOCOUT
Option . . . . .	: OPTION	*ALL
Category of device. . . . .	:	*PRT
Automatically created. . . . .	:	NO
Device class. . . . .	: DEVCLS	*RMT
Device type . . . . .	: TYPE	*IPDS
Device model. . . . .	: MODEL	0
Advanced function printing. . . . .	: AFP	*YES
AFP attachment . . . . .	: AFPATTACH	*APPC
Online at IPL. . . . .	: ONLINE	*YES
Font . . . . .	: FONT	
Identifier . . . . .	:	011
Point size . . . . .	:	*NONE
Form feed . . . . .	: FORMFEED	*AUTOCUT
Separator drawer. . . . .	: SEPDRAWER	*FILE
Separator program . . . . .	: SEPPGM	*NONE
Library . . . . .	:	
Printer error message. . . . .	: PRTERMSG	*INQ
Message queue. . . . .	: MSGQ	QSYSOPR
Library . . . . .	:	*LIBL
Maximum pending requests . . . . .	: MAXPNDRQS	6
Print while converting. . . . .	: PRTCVT	*YES
Print request timer . . . . .	: PRTRQSTMR	*NOMAX
Form definition . . . . .	: FORMDF	
F1C10110		
Library. . . . .	:	*LIBL
Character identifier. . . . .	: CHRID	*SYSVAL
Remote location . . . . .	: RMTLOCNAME	TCPIP
Local location . . . . .	: LCLLOCNAME	*NETATR
Remote network identifier. . . . .	: RMTNETID	*NETATR
Mode . . . . .	: MODE	QSPWTR
Dependent location name . . . . .	: DEPLOCNAME	*NONE
Text . . . . .	: TEXT	MPI TECH
DOCOUT IPDS		

## 6.2.2 Configuring AFP with CRTPSFCFG on V3R2

On the AS/400 command line, enter a command in the form:

```
CRTPSFCFG PSFCFG(P4317) IPDSPASTHR(*YES) RLSTMR(*SEC15)  
TEXT(MPI TECH DOCOUT IPDS)  
RMTLOCNAME('194.192.134.90) PORT(5001)
```

A completed screen looks like this:

```
PSF configuration: DOCOUT          Library: QGPL  
User resource library . . . . . : *JOBLIBL  
IPDS pass through . . . . . : *YES  
Activate release timer . . . . . : *NORDYF  
Release timer . . . . . : *SEC15  
Restart timer . . . . . : *IMMED  
SNA retry count . . . . . : 2  
Delay time between retries. . . . . : 0  
Blank page. . . . . : *YES  
Page size control . . . . . : *YES  
Resident fonts. . . . . : *YES  
Resource retention. . . . . : *YES  
Edge orient . . . . . : *NO  
Remote location:  
Name or address . . . . . : 194.192.134.90  
TCP/IP port . . . . . : 5001  
TCP/IP activation timer . . . . . : 170  
PSF defined options:                *NONE  
Text description. . . . . : MPI TECH DOCOUT  
IPDS  
Device resource library list:        *DFT
```

Then do the following:

Ping the IP address to verify communication with the printer:

```
PING '192.194.134.90'
```

Vary the printer on:

```
VRYCFG DOCOUT CFGTYPE(*DEV) STATUS(*ON)
```

Start the print writer:

```
STRPRTWTR DOCOUT
```

## 6.3 AS/400 settings for version 3.6

To configure IPDS printing on OS/400 V3R6, you must use two commands:

- CRTDEVPRT
- WRKAFP2

### 6.3.1 Configuring PSF with CRTDEVPRT on V3R6

On V3R6, at the AS/400 command line, enter a command in the form:

```
CRTDEVPRT DEVD(DOCOUT) DEVCLS(*RMT) TYPE(*IPDS) MODEL(0)
AFP(*YES) AFPATTACH(*APPC) FONT(11)
RMTLOCNAME(TCPIP) FORMFEED(*AUTOCUT) TEXT('MPI TECH DOCOUT
IPDS')
```

A completed screen looks like the following example:

```
Display Device Description Page 1
5763SS1 V3R6M0 940909 BLDSYS1 09/11/96 11:15:40

Device description . . . . . : DEVD                DOCOUT
Option . . . . . : OPTION                *ALL
Category of device . . . . . :                  *PRT
Automatically created . . . . . :                  NO
Device class . . . . . : DEVCLS                *RMT
Device type . . . . . : TYPE                  *IPDS
Device model . . . . . : MODEL                0
Advanced function printing . . . : AFP          *YES
AFP attachment . . . . . : AFPATTACH          *APPC
Online at IPL . . . . . : ONLINE              *YES
Font . . . . . : FONT
Identifier . . . . . :                        011
Point size . . . . . :                        *NONE
Form feed . . . . . : FORMFEED               *AUTOCUT
Separator drawer . . . . . : SEPDRAWER        *FILE
Separator program . . . . . : SEPPGM          *NONE
Library . . . . . :
Printer error message . . . . . : PRTERMSG        *INQ
Message queue (V3R1) . . . . . : MSGQ          QSYSOPR
Shadowing message queue (V3R6) . : MSGQ        QSYSOPR
Library. . . . . : *LIBL
Maximum pending requests . . . . : MAXPNDRQS    6
Print while converting . . . . . : PRTCVT       *YES
Print request timer . . . . . : PRTRQSTMR      *NOMAX
Form definition . . . . . : FORMDF            F1C10110
Library. . . . . : *LIBL
Character identifier . . . . . : CHRID         *SYSVAL
Remote location . . . . . : RMTLOCNAME        TCPIP
Local location . . . . . : LCLLOCNAME
Remote network identifier . . . . : RMTNETID    *NETATR
Mode . . . . . : MODE                        QSPWTR
Text . . . . . : TEXT                        MPI TECH DOCOUT
IPDS
```

### 6.3.2 Configuring AFP with WRKAFP2 on V3R6

On V3R1, on the AS/400 command line, enter a command in the form:

**WRKAFP2 DEVD(DOCOUT) IPDSPASTHR(\*YES) TCPIP(\*YES)  
RMTSYS('194.192.134.90') PORT(5001) INACTTMR(\*SEC15)**

A printout should look like the following:

```
QPQXWAFP
-----
DEVD      DOCOUT
IPDSPASTHR      *YES
TCPIP      *YES
RMTSYS      192.194.134.90
PORT      5001
ACTTMR      *NOMAX
INACTTMR      *SEC15
SBP      *NO
PSC      *YES
DRF      *NO
DRR      *NO
EDGSNSTV      *NO
```

Then do the following:

Ping the IP address to verify communication with the printer:

**PING '192.194.134.90'**

Vary the printer on:

**VRYCFG DOCOUT CFGTYPE(\*DEV) STATUS(\*ON)**

Start the print writer:

**STRPRTWTR DocOut**

## 6.4 AS/400 settings for version 3.7

To configure IPDS printing on OS/400 V3R7, you must use two commands:

- CRTDEVPRT
- CRTPSFCFG

### 6.4.1 Configuring PSF with CRTDEVPRT on V3R7

At the AS/400 command line, enter a command in the form:

```
CRTDEVPRT DEVD(DOCOUT) DEVCLS(*LAN) TYPE(*IPDS) MODEL(0)
LANATTACH(*IP) AFP(*YES) PORT(5001)
FONT(11) FORMFEED(*AUTOCUT) RMTLOCNAME('192.194.134.90)
USRDFNOBJ(AFP/NETWRKPRT *PSFCFG)
TEXT('MPI TECH DOCOUT IPDS')
```

A completed screen looks like this:

Display	Device	Description		Page 1
5716SS1	V3R7M0	961108	BLDRB1	09/11/96 12:02:59
Device description . . . . .	:	DEVD		DOCOUT
Option . . . . .	:	OPTION		*ALL
Category of device . . . . .	:			*PRT
Device class . . . . .	:	DEVCLS		*LAN
Device type. . . . .	:	TYPE		*IPDS
Device model . . . . .	:	MODEL		0
LAN attachment . . . . .	:	LANATTACH		*IP
User-defined object. . . . .	:	USRDFNOBJ		NETWRKPRT
Library. . . . .	:			AFP
Object type. . . . .	:			*PSFCFG
Data transform program . . . . .	:	USRDTATFM		*NONE
User-defined driver program . . . . .	:	USRDRVPGM		*NONE
Advanced function printing . . . . .	:	AFP		*YES
Port number. . . . .	:	PORT		5001
Online at IPL. . . . .	:	ONLINE		*YES
Font . . . . .	:	FONT		
Identifier . . . . .	:	011		
Point size . . . . .	:			*NONE
Form feed. . . . .	:	FORMFEED		*AUTOCUT
Separator drawer . . . . .	:	SEPDRAWER		*FILE
Separator program. . . . .	:	SEPPGM		*NONE
Library. . . . .	:			
Printer error message. . . . .	:	PRTERRMSG		*INQ
Message queue. . . . .	:	MSGQ		QSYSOPR
Library. . . . .	:			*LIBL
Activation timer . . . . .	:	ACTTMR		170
Maximum pending requests . . . . .	:	MAXPNDRQS		6
Print while converting . . . . .	:	PRTCVT		*YES
Print request timer. . . . .	:	PRTRQSTMR		*NOMAX
Form definition. . . . .	:	FORMDF		F1C10110
Library. . . . .	:			*LIBL
Remote location. . . . .	:	RMTLOCNAME		
Name or address. . . . .	:	'194.192.134.90'		
Dependent location name. . . . .	:	DEPLOCNAME		*NONE
Text . . . . .	:	TEXT		MPI TECH DOCOUT
IPDS				
User-defined options . . . . .	:	USRDFNOPT		
-----User-defined options-----				

## 6.4.2 To configure AS/400 for IPDS printing on V3R7

On the AS/400 command line, enter a command in the form:

```
CRTPSFCFG PSFCFG(AFP/NETWRKPRT) IPDSPASTHR(*YES)  
RLSTMR(*SEC15) TEXT('MPI TECH DOCOUT IPDS')
```

A completed screen looks like this:

```
PSF Configuration Information Page 1  
PSF configuration: NETWRKPRT Library: AFP  
User resource library. . . . . :  
*JOBLIBL  
IPDS pass through. . . . . : *YES  
Activate release timer . . . . . : *NORDYF  
Release timer. . . . . : *SEC15  
Restart timer. . . . . : *IMMED  
SNA retry count. . . . . : 2  
Delay time between retries . . . . . : 0  
Blank page . . . . . : *YES  
Page size control. . . . . : *YES  
Resident fonts . . . . . : *YES  
Resource retention . . . . . : *YES  
Edge orient. . . . . : *NO  
Remote location:  
Name or address. . . . . : *NONE  
TCP/IP port. . . . . : *NONE  
TCP/IP activation timer. . . . . : 170  
PSF defined options: *NONE  
Text description . . . . . : MPI  
TECH DOCOUT IPDS  
Device resource library list: *DFT
```

**Note:** The lines in bold in the above screen are not used by PSF/400. Instead, PSF/400 uses the information entered in the device description screen.

Then do the following:

Ping the IP address to verify communication with the printer:

```
PING '192.194.134.90'
```

Vary the printer on:

```
VRYCFG DOCOUT CFGTYPE(*DEV) STATUS(*ON)
```

Start the print writer:

```
STRPRTWTR DOCOUT
```

## 6.5 AS/400 settings for version 4.1

To configure IPDS printing on OS/400 V4R1, you must use two commands:

- CRTDEVPRT
- CRTPSFCFG

### 6.5.1 Configuring PSF with CRTDEVPRT on V4R1

On the AS/400 command line, enter a command in the form:

```
CRTDEVPRT DEVD(DOCOUT) DEVCLS(*LAN) TYPE(*IPDS) MODEL(0)
LANATTACH(*IP) AFP(*YES) PORT(5001)
FONT(11) FORMFEED(*AUTOCUT) RMTLOCNAME('192.194.134.90)
USRDFNOBJ(AFP/NETWRKPRT *PSFCFG)
TEXT('MPI TECH DOCOUT IPDS')
```

A completed screen looks like this:

Display	Device	Description		Page 1
5716SS1	V4R1M0	971108	BLDRB1	09/11/97 12:02:59
Device description . . . . .	:	DEVD		DOCOUT
Option . . . . .	:	OPTION		*ALL
Category of device . . . . .	:			*PRT
Device class . . . . .	:	DEVCLS		*LAN
Device type. . . . .	:	TYPE		*IPDS
Device model . . . . .	:	MODEL		0
LAN attachment . . . . .	:	LANATTACH		*IP
User-defined object. . . . .	:	USRDFNOBJ		NETWRKPRT
Library. . . . .	:			AFP
Object type. . . . .	:			*PSFCFG
Data transform program . . . . .	:	USRDTATFM		*NONE
User-defined driver program . . . . .	:	USRDRVPGM		*NONE
Advanced function printing . . . . .	:	AFP		*YES
Port number. . . . .	:	PORT		5001
Online at IPL. . . . .	:	ONLINE		*YES
Font . . . . .	:	FONT		
Identifier . . . . .	:	011		
Point size . . . . .	:			*NONE
Form feed. . . . .	:	FORMFEED		*AUTOCUT
Separator drawer . . . . .	:	SEPDRAWER		*FILE
Separator program. . . . .	:	SEPPGM		*NONE
Library. . . . .	:			
Printer error message. . . . .	:	PRTERRMSG		*INQ
Message queue. . . . .	:	MSGQ		QSYSOPR
Library. . . . .	:			*LIBL
Activation timer . . . . .	:	ACTTMR		170
Maximum pending requests . . . . .	:	MAXPNDRQS		6
Print while converting . . . . .	:	PRTCVT		*YES
Print request timer. . . . .	:	PRTRQSTMR		*NOMAX
Form definition. . . . .	:	FORMDF		F1C10110
Library. . . . .	:			*LIBL
Remote location. . . . .	:	RMTLOCNAME		
Name or address. . . . .	:	'194.192.134.90'		
Dependent location name. . . . .	:	DEPLOCNAME		*NONE
Text . . . . .	:	TEXT		MPI TECH DOCOUT
IPDS				
User-defined options . . . . .	:	USRDFNOPT		
-----User-defined options-----				



## 6.5.2 To configure AS/400 for IPDS printing on V4R1

On the AS/400 command line, enter a command in the form:

```
CRTPSFCFG PSFCFG(AFP/NETWRKPRT) IPDSPASTHR(*YES)  
RLSTMR(*SEC15) TEXT('MPI TECH DOCOUT IPDS')
```

A completed screen looks like this:

```
PSF Configuration Information                Page 1  
PSF configuration:  NETWRKPRT      Library:  AFP  
  
User resource library . . . . . : *JOBLIBL  
IPDS pass through . . . . . : *YES  
Activate release timer. . . . . : *NORDYF  
Release timer . . . . . : *SEC15  
Restart timer . . . . . : *IMMED  
SNA retry count . . . . . : 2  
Delay time between retries. . . . . : 0  
Blank page. . . . . : *YES  
Page size control . . . . . : *YES  
Resident fonts. . . . . : *YES  
Resource retention. . . . . : *YES  
Edge orient . . . . . : *NO  
Remote location:  
Name or address . . . . . : *NONE  
TCP/IP port . . . . . : *NONE  
TCP/IP activation timer . . . . . : 170  
PSF defined options:                *NONE  
Text description. . . . . : MPI TECH DOCOUT  
IPDS  
Device resource library list:                *DFT
```

**Note:** The lines in bold in the above screen are not used by PSF/400. Instead, PSF/400 uses the information entered in the device description screen.

Then do the following:

Ping the IP address to verify communication with the printer:

```
PING '192.194.134.90'
```

Vary the printer on:

```
VRYCFG DOCOUT CFGTYPE(*DEV) STATUS(*ON)
```

Start the print writer:

```
STRPRTWTR DOCOUT
```

## 6.6 AS/400 settings for version 4.2

To configure IPDS printing on OS/400 V4R2, you must use two commands:

- CRTDEVPRT
- CRTPSFCFG

### 6.6.1 Configuring PSF with CRTDEVPRT on V4R2

On the AS/400 command line, enter a command in the form:

```
CRTDEVPRT DEVD(DOCOUT) DEVCLS(*LAN) TYPE(*IPDS) MODEL(0)
LANATTACH(*IP) AFP(*YES) PORT(5001)
FONT(11) FORMFEED(*AUTOCUT) RMTLOCNAME('192.194.134.90)
USRDFNOBJ(AFP/NETWRKPRT *PSFCFG)
TEXT('MPI TECH DOCOUT IPDS')
```

A completed screen looks like this:

Display	Device	Description		Page 1
5716SS1	V4R2M0	981108	BLDRB1	09/11/98 12:02:59
Device description . . . . .	:	DEVD		DOCOUT
Option . . . . .	:	OPTION		*ALL
Category of device . . . . .	:			*PRT
Device class . . . . .	:	DEVCLS		*LAN
Device type. . . . .	:	TYPE		*IPDS
Device model . . . . .	:	MODEL		0
LAN attachment . . . . .	:	LANATTACH		*IP
User-defined object. . . . .	:	USRDFNOBJ		NETWRKPRT
Library. . . . .	:			AFP
Object type. . . . .	:			*PSFCFG
Data transform program . . . . .	:	USRDTATFM		*NONE
User-defined driver program . . . . .	:	USRDRVPGM		*NONE
Advanced function printing . . . . .	:	AFP		*YES
Port number. . . . .	:	PORT		5001
Online at IPL. . . . .	:	ONLINE		*YES
Font . . . . .	:	FONT		
Identifier . . . . .	:	011		
Point size . . . . .	:			*NONE
Form feed. . . . .	:	FORMFEED		*AUTOCUT
Separator drawer . . . . .	:	SEPDRAWER		*FILE
Separator program. . . . .	:	SEPPGM		*NONE
Library. . . . .	:			
Printer error message. . . . .	:	PRTERRMSG		*INQ
Message queue. . . . .	:	MSGQ		QSYSOPR
Library. . . . .	:			*LIBL
Activation timer . . . . .	:	ACTTMR		170
Maximum pending requests . . . . .	:	MAXPNDRQS		6
Print while converting . . . . .	:	PRTCVT		*YES
Print request timer. . . . .	:	PRTRQSTMR		*NOMAX
Form definition. . . . .	:	FORMDF		F1C10110
Library. . . . .	:			*LIBL
Remote location. . . . .	:	RMTLOCNAME		
Name or address. . . . .	:	'192.194.134.90'		
Dependent location name. . . . .	:	DEPLOCNAME		*NONE
Text . . . . .	:	TEXT		MPI TECH DOCOUT
IPDS				
User-defined options . . . . .	:	USRDFNOPT		
-----User-defined options-----				

## 6.6.2 To configure AS/400 for IPDS printing on V4R2

On the AS/400 command line, enter a command in the form:

**CRTPSFCFG PSFCFG(AFP/NETWRKPRT) IPDSPASTHR(\*YES)  
RLSTMR(\*SEC15) TEXT('MPI TECH DOCOUT IPDS')**

A completed screen looks like this:

```
PSF Configuration Information                Page 1
PSF configuration:  NETWRKPRT  Library:  AFP

User resource library . . . . . : *JOBLIBL
IPDS pass through . . . . . : *YES
Activate release timer. . . . . : *NORDYF
Release timer . . . . . : *SEC15
Restart timer . . . . . : *IMMED
SNA retry count . . . . . : 2
Delay time between retries. . . . . : 0
Blank page. . . . . : *YES
Page size control . . . . . : *YES
Resident fonts. . . . . : *YES
Resource retention. . . . . : *YES
Edge orient . . . . . : *NO
Remote location:
Name or address . . . . . : *NONE
TCP/IP port . . . . . : *NONE
TCP/IP activation timer . . . . . : 170
PSF defined options: *NONE
Text description. . . . . : MPI TECH
DOCOUT IPDS
Device resource library list: *DFT
```

**Note:** The lines in bold in the above screen are not used by PSF/400. Instead, PSF/400 uses the information entered in the device description screen.

Then do the following:

Ping the IP address to verify communication with the printer:

**PING '192.194.134.90'**

Vary the printer on:

**VRYCFG DOCOUT CFGTYPE(\*DEV) STATUS(\*ON)**

Start the print writer:

**STRPRTWTR DOCOUT**

## 6.7 AS/400 settings for version 4.3

To configure IPDS printing on OS/400 V4R3, you must use two commands:

- CRTDEVPRT
- CRTPSFCFG

### 6.7.1 Configuring PSF with CRTDEVPRT on V4R3

On the AS/400 command line, enter a command in the form:

```
CRTDEVPRT DEVD(DOCOUT) DEVCLS(*LAN) TYPE(*IPDS) MODEL(0)
LANATTACH(*IP) AFP(*YES) PORT(5001)
FONT(11) FORMFEED(*AUTOCUT) RMTLOCNAME('192.194.134.90)
USRDFNOBJ(AFP/NETWRKPRT *PSFCFG)
TEXT('MPI TECH DOCOUT IPDS')
```

A completed screen looks like this:

Display	Device Description		Page 1
5716SS1	V4R3M0 981108	BLDRB1	09/11/98 12:02:59
Device description . . . . .	: DEVD	DOCOUT	
Option . . . . .	: OPTION	*ALL	
Category of device . . . . .	:	*PRT	
Device class . . . . .	:DEVCLS	*LAN	
Device type. . . . .	: TYPE	*IPDS	
Device model . . . . .	: MODEL	0	
LAN attachment . . . . .	: LANATTACH	*IP	
User-defined object . . . . .	: USRDFNOBJ	NETWRKPRT	
Library. . . . .	:	AFP	
Object type. . . . .	:	*PSFCFG	
Data transform program . . . . .	: USRDTATFM	*NONE	
User-defined driver program . . . . .	: USRDRVPGM	*NONE	
Advanced function printing . . . . .	: AFP	*YES	
Port number. . . . .	: PORT	5001	
Online at IPL. . . . .	: ONLINE	*YES	
Font . . . . .	: FONT		
Identifier . . . . .	: 011		
Point size . . . . .	:	*NONE	
Form feed. . . . .	: FORMFEED	*AUTOCUT	
Separator drawer . . . . .	: SEPDRAWER	*FILE	
Separator program. . . . .	: SEPPGM	*NONE	
Library. . . . .	:		
Printer error message. . . . .	: PRTERMSG	*INQ	
Message queue. . . . .	: MSGQ	QSYSOPR	
Library. . . . .	:	*LIBL	
Activation timer . . . . .	: ACTTMR	170	
Maximum pending requests . . . . .	: MAXPNDRQS	6	
Print while converting . . . . .	: PRTCVT	*YES	
Print request timer. . . . .	: PRTRQSTMR	*NOMAX	
Form definition. . . . .	: FORMDF	F1C10110	
Library. . . . .	:	*LIBL	
Remote location. . . . .	: RMTLOCNAME		
Name or address. . . . .	: '192.194.134.90'		
Dependent location name. . . . .	: DEPLOCNAME	*NONE	
Text . . . . .	: TEXT	MPI TECH DOCOUT IPDS	
User-defined options . . . . .	: USRDFNOPT		
-----User-defined options-----			

## 6.7.2 To configure AS/400 for IPDS printing on V4R3

On the AS/400 command line, enter a command in the form:

```
CRTPSFCFG PSFCFG(AFP/NETWRKPRT) IPDSPASTHR(*YES)  
RLSTMR(*SEC15) TEXT('MPI TECH DOCOUT IPDS')
```

A completed screen looks like this:

```
PSF Configuration Information                Page 1  
PSF configuration:  NETWRKPRT  Library:  AFP  
  
User resource library . . . . . : *JOBLIBL  
IPDS pass through . . . . . : *YES  
Activate release timer. . . . . : *NORDYF  
Release timer . . . . . : *SEC15  
Restart timer . . . . . : *IMMED  
SNA retry count . . . . . : 2  
Delay time between retries. . . . . : 0  
Blank page. . . . . : *YES  
Page size control . . . . . : *YES  
Resident fonts. . . . . : *YES  
Resource retention. . . . . : *YES  
Edge orient . . . . . : *NO  
Remote location:  
Name or address . . . . . : *NONE  
TCP/IP port . . . . . : *NONE  
TCP/IP activation timer . . . . . : 170  
PSF defined options:                *NONE  
Text description. . . . . :MPI TECH DOCOUT IPDS  
Device resource library list:        *DFT
```

**Note:** The lines in bold in the above screen are not used by PSF/400. Instead, PSF/400 uses the information entered in the device description screen.

Then do the following:

Ping the IP address to verify communication with the printer:

```
PING '192.194.134.90'
```

Vary the printer on:

```
VRYCFG DOCOUT CFGTYPE(*DEV) STATUS(*ON)
```

Start the print writer:

```
STRPRTWTR DOCOUT
```

## 7 Trace

Should any specific problems arise, you can generate a trace file by doing the following,

1. From Linux shell, go to where DocOut is installed (/usr/docout) and write the command:

```
./docoutux -stop
```

2. Next start docut with trace enabled

```
./docoutux -start -debug
```

3. and the program will generate a file called **debug.trc** and **log.trc** in the DocOut directory, for each virtual printer the same files will be generated in the sub folders PPD'X'.

4. Disable the trace by entering the commands:

```
./docoutux -stop
```

```
./docoutux -start
```

5. Send all trace files DocOut directory and per virtual printer directory to MPI Tech, where our Customer Response Center will be able to find the problem and solve it.

## Appendix A. Abbreviations

Abbreviation	Full name	Explanation
AFP	Advanced Function Presentation	IBM concept for print data formatting that defines how print control files should be structured. This is the current standard.
APL	A Programming Language	
ASCII	American Standard Code for Information Interchange	
CPI	Characters Per Inch	
DCA	Document Content Architecture	
DIMM	Dual Inline Memory Module	
DIP	Dual Inline Packet	
DSC	Data-Stream Compatibility	Print datastream generated by IBM mainframes. Contains almost exclusively text, i.e. text that could be produced by a type writer.
FLASH	(Usually memory)	Memory chip able to store information permanently without power. Depending on the type, flash memory can be 'written' between 1.000 and 100.000 times.
FSL	Function Selection via the Line	Used to configure default values in MPI Tech interfaces for line data printing. Also used for printjob specific formatting like bold and font change.
GFID	Global Font ID	
HEX	Hexadecimal	

Abbreviation	Full name	Explanation
ICDS	i-data Compressed Data Stream	i-data equivalent for the IPDS datastream. ICDS will for instance be generated and sent by ida PSS and translated to PCL or PostScript by e.g. the ida PS03. ICDS supports the complete print datastream and communication between ICDS capable devices (including software devices).
IPDS	Intelligent Printer Data Stream	IPDS is generated and sent by e.g. PSF and translated to PCL by e.g. the ida PS13. IPDS supports the complete print datastream and communication between IPDS capable devices (including software devices).
ITDS	i-data Transparent Data stream	Used to configure and upgrade i-data IPDS capable devices. Only IPDS related functions are affected. ITDS can be used locally via Centronics or printed using PSF.
LAN	Local Area Network	Usually TokenRing or Ethernet. Coax and Twinax are usually regarded as WAN's
LED	Light-Emitting Diode	
LPD	Line Printer Demon	Part of the standard TCP/IP stack (programs). Two major (incompatible) variations of LPR/LPD are generally used Works only in conjunction with LPR. The sender of a printjob via TCP/IP will be LPR and the receiver will be LPD.
LPR	Line Printer Requester	Part of the standard TCP/IP stack (programs). Two major (incompatible) variations of LPR/LPD are generally used Works only in conjunction with LPD. The sender of a printjob via TCP/IP will be LPR and the receiver will be LPD.



Abbreviation	Full name	Explanation
MVS	Multiple Virtual Machine	IBM operating system for mainframes. This is the most commonly used operating system for large corporations.
OS/390	New name for MVS	IBM operating system for mainframes. This is the most commonly used operating system for large corporations. The only operating system that supports IBM CMOS and SYSPLEX technology.
PPD	Page Printer Demon	Enhanced version of LPR/LPD. The enhancement enables bidirectional communication when printing. Not part of the standard TCP/IP stack (programs). Used by ida Psxx, ida RPPC, IBM Network printers, PSF/AIX and others. Works only in conjunction with PPR. The sender of a printjob via TCP/IP will be PPR and the receiver will be PPD.
PPR	Page Printer Requester	Enhanced version of LPR/LPD. The enhancement enables bidirectional communication when printing. Not part of the standard TCP/IP stack (programs). Used by ida PSS, ida HPR and PSF. Works only in conjunction with PPR. The sender of a printjob via TCP/IP will be PPR and the receiver will be PPD.

Abbreviation	Full name	Explanation
PSF	Print Service Facility	IBM printer driver for AFP printing. Converts line data and AFP data to IPDS only. PSF/AIX and PSF/2 is capable of converting the data to PCL as well.
PSS (ida PSS)	Print Subsystem	MPI Tech print system for OS/390 (MVS) and VM systems. Prints AFP and line data files on all remote printers, NOT channel attached printers.
RAM	Random Access Memory	Memory chip that is able to store information while powered on. RAM can be 'written' an indefinite number of times.
SCS	SNA Character String	Control information for simple print formatting like e.g. set CPI, LPI and Form Feed.
SIMM	Single Inline Memory Module	
SNA	Systems Network Architecture	IBM networking concept usually for Mainframe and AS/400. On mainframes the actual program that implements SNA is called VTAM.
TCP/IP	Transmission Control Program/Internet Protocol	Suite of programs for network communication. TCP/IP can be installed on almost every existing operating system, but the supported functions vary between operating systems. TCP/IP consist of a base TCP program and various other programs providing support for e.g. LPD, Telnet or BootP.
VTAM	Virtual TeleAccess Method	IBM network communication program. VTAM is used to connect printers and terminals to OS/390 (MVS) and VM systems

<b>Abbreviation</b>	<b>Full name</b>	<b>Explanation</b>
VM	Virtual Machine	IBM operating system for mainframes. OS/390 (MVS) and other operating systems can run under control of VM.
WAN	Wide Area Network	Usually Coax and Twinax networks. Today it is also used for larger TokenRing and Ethernet networks and/or Router base networks.

## **About MPI Tech**

MPI Tech, formerly i-data Printing Systems is a global vendor of workflow and output management solutions with distribution worldwide. MPI Tech develops and markets a world-leading portfolio of technologies and products for unique Document Managing and Printing solutions.

With offices located in France, Denmark, Germany, UK and USA, MPI Tech operates in most of the world through sales and support offices and partners. Our partners include Hewlett-Packard, IBM, Ricoh, Xerox, Konica Minolta and Dascom.

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