Kofax Communication Server

TC/LANPrt Technical Manual

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KOFAX

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Chapter 1

Preface

The TCLANPRT process is a Windows application and belongs to the group of TCOSS processes. It can run either on the TCOSS Server (*local*) or on an external workstation (*remote*).

In both cases it is a *client* that connects via TC transport interface (TCTI) to the LAN Laser Printer (ULL) module on the TCOSS *server*.

The ULL module can be seen as some kind of Fax module without line interface: it handles outgoing text and image messages, prepares the complete image pages including header, overlays, page breaks etc. (in the same way as if it was an outgoing fax) and sends them via TCTI to the TCLANPRT process (instead of to the fax receiver).

The access of TCLANPRT to the network resources (printers and /or network file server(s)) is provided by the means of Windows Printer manager and Windows network support.

TCLANPRT process performs these tasks:

- Printing of TCOSS messages on local or network printers
- Converting of TCOSS messages to TIFF and MODCA image formats.

TCLANPRT process converts the received image to one of following three formats:

- bit map format, used for printing TCOSS messages on local or network printers
- TIFF format (TIFF image file is created and copied into specified directory on the file server)
- MODCA format (MODCA file is created and copied into specified directory on the file server)

Chapter 2

Requirements

- TCOSS Server release: 7.34.04 or higher
- Operating system: Any currently supported Operating System.
  For more details about supported operating systems, refer to *Environment Guide - Platform System Manual*.

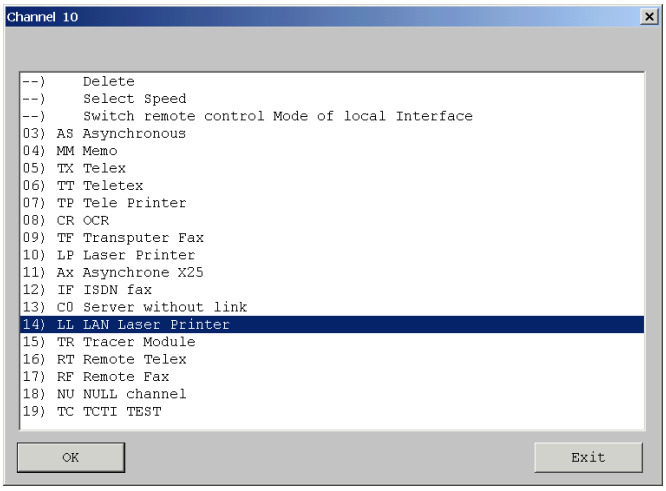
Chapter 3

Installation

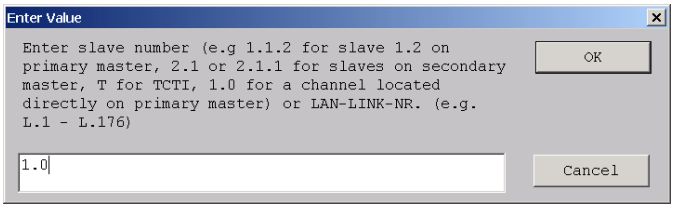
This section describes the installation.

Part 1: Installation of ULL Module

1. Configure the ULL Module (LL LAN Laser Printer) with the WCONFIG.
   No ULL configuration changes are necessary.



2. Choose the Slave number (e.g. 1.0 for Primary Master)



For optimal performance the ULL modules should always run on the system master. For model 165 or 22x installation, there are two different configurations possible.

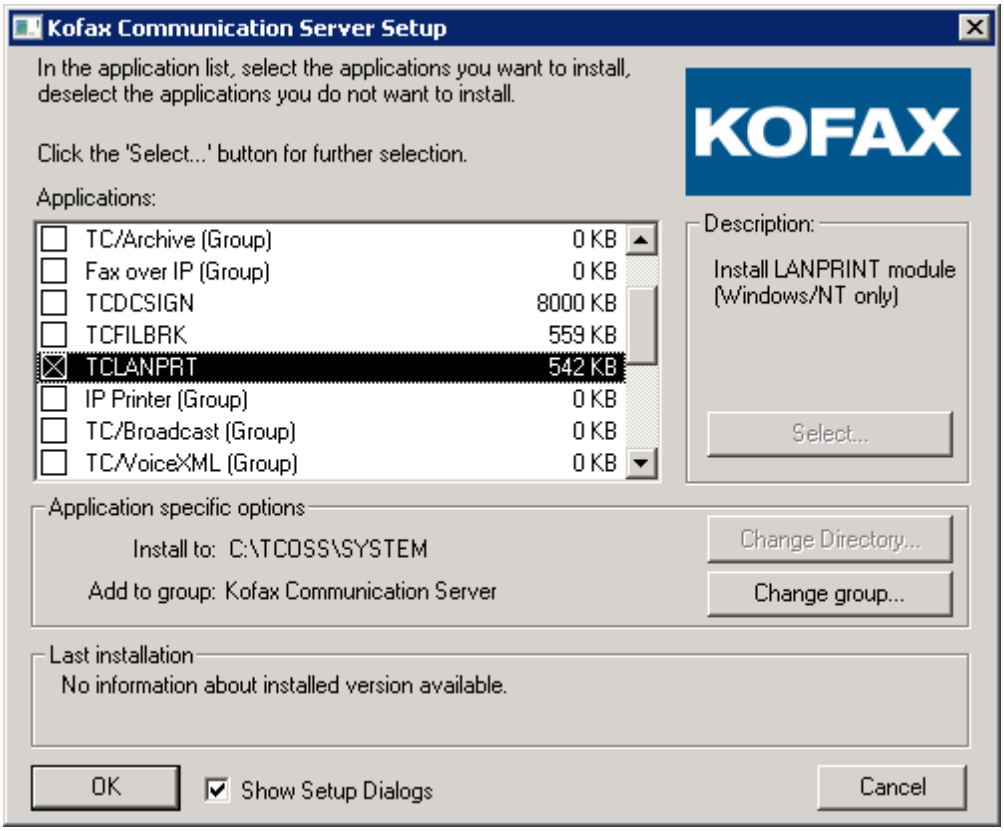
configured as slave	if primary master is running	if secondary master is running standalone
T (TCTI)	ULL runs on primary master	ULL run on secondary master
1.0 (primary master)	ULL runs on primary master	ULL is not started

For none fault tolerant models configuration T and 1.0 has the same meaning.

Part 2: Installation of TCLANPRT Application

TCLANPRT is installed as part of Kofax Communication Server.

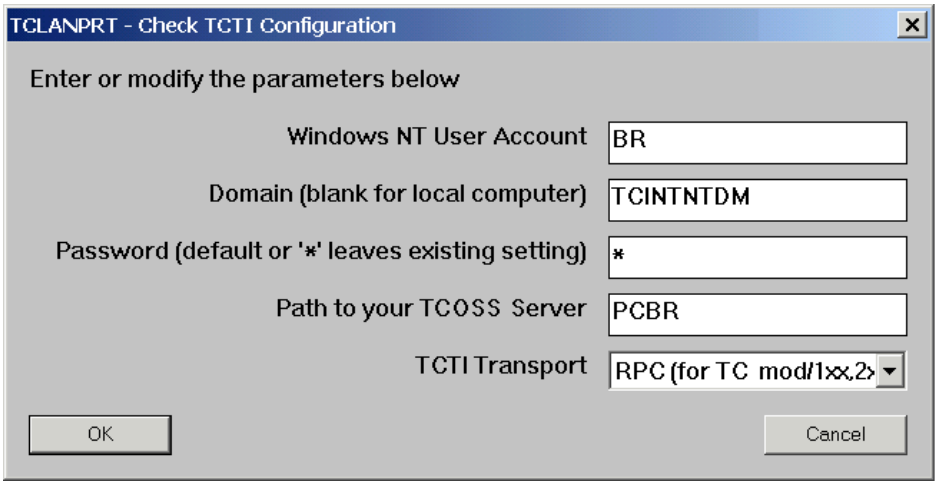
1. Run the setup and select “TCLANPRT”.



2. Enter the TCLANPRT’s Windows Login User and Domain

Note
This user must have Local Administrative Rights and “Logon as a batch job” right.

3. Enter the used KCS (TCOSS) Server parameters



Installation with NOVELL Networks

For installations with Novell 4.1 server environments, you have to use IntraNetWare 4.11a or later on the workstation where TCLANPRT is running.

TCLANPRT may be started by TCSRV, and even no auto-login for NetWare and Windows is required. The only requirement is that TCLANPRT processes must be started with a user account that is defined with the same user id and password under Windows user manager and also on Novell server. This Windows user must have the Local Administrative rights "Logon as a batch job" right.

TCLANPRT should always use UNC paths to access network (e.g. Novell) resources, not logical drives.

Note Windows CSNW or GWSN must not be used, since they do not completely support NDS.

How to check Directory names on Novell 4.x servers:

When the KCS runs under Windows please check the directory names on Novell servers running NDS!

To check whether the UNC of a Novell directory is correct, simply enter this UNC in the Start/Run menu of Windows. If the name is entered correctly, Windows will open a Folder window for the Novell Directory. This is also a good test for the access rights, if done with the same user account as TCFILBRK, etc.

ATTENTION:

The correct path is different when the TCLANPRT user is not logged in:

- User is logged in (TCLANPRT started manually): \\Servername\NDS_SRING\Directory
- User not logged in (TCLANPRT started from TCSRV): plain UNC

This is at least valid, if the user has a preferred server in CSNW or GSNW (The Novell Server runs bindery emulation).

Use More Than One TCLANPRT via TCSRV

Each application that is controlled by TCSRV must have a unique application name. This name is used both as registry sub-key (HKEY_LOCAL_MACHINE\Software\Topcall\<application>) and for the communication to TCSRV.

This application name (default is TCLANPRT) can be changed with a command line option (-k <key name>). This allows running more than one instances of TCLANPRT, controlled by TCSRV as shown in the description below.

Example: How to use a second TCLANPRT on the same computer:

1. Install the first TCLANPRT with KCS setup.
2. Create the registry key TCLANPRT2.
3. Copy all registry values from TCLANPRT to TCLANPRT2 (must be done by creating each value manually).
4. Add TCLANPRT2 to value BOOT\Startup (use REGEDT32.exe!).

   (Remark: all registry keys refer to _HKEY_LOCAL_MACHINE\Software\Topcall)

Note

- If you make any changes with KCS setup the key TCLANPRT2 must be updated manually.
- You can use any other name instead of TCLANPRT2.
- All trace files created by the second TCLANPRT starts with TCLANPRT2.

Installation in a Japanese Environment (Code Page 932)

1. Install TCLANPRT and TCOSS on Windows using code page 932 as System Code page.
2. Configure code page 932 as TCOSS System code page.
3. Rendering must be enabled in all ULL channels (=default).
4. Use code page 932 for Japanese texts created by applications (e.g. TCfW).

Chapter 4

Functionality

This section describes the functionality of TCLANPRT.

Command Line Parameters

The TCLANPRT process can be started manually from the command lines or with TCSRV service.
In both cases following command line parameters are possible:

-u*[DE]*	use Windows command interpreter for execution of D or E commands (default: -uDE).
-e*path*	the full path to the directory where backreception text files are copied to.
-k*KeyName*	changes the default application key name (TCLANPRT).
-a*[TempDir]*	printing in the “Store-and-Forward” mode (see chapter Printer Names for details)

Definition and Support of ++HEADER and ++BODY Lines

KCS messages being sent to the ULL module are interpreted as consisting of two parts the *header* and the *body part*, as in the following example:

```
++HEADER
Line 1
...
Line n
++BODY
++TXT
Line 1
...
Line m
++FX2
TCI Code
++TXT
...
```

If a KCS message starts with ++HEADER as the **very first line**, all following lines up to the ++BODY line (or to the end of the message if ++BODY line is not present) are considered to be a *header.* All lines behind the ++BODY line are considered to be a *body.*

If the message doesn’t contain the ++HEADER line, the whole message is considered to be a *body*.

General Structure of the Message

The incoming messages transferred via ULL to the TCLANPRT process must have the following structure:

```
++HEADER
[Dcommand line]
...
[Dcommand line]
[Ecommand line]
...
[Ecommand line]
[Fcommand line]
P/B/Ccommand line
[txtcntrl 1]
...
[txtcntrl y]
++BODY
anyline 1
...
anyline z
```

D-, **E-**, **F-**, **P-** and **C** command lines are message specific command lines (those in [] brackets are optional). **anyline 1-z** are all possible text, control (++) and TCI code lines. **txtcntrl 1-y** are text control lines.

Command lines specify the desired activity performed by the TCLANPRT on the received **body part** of the message (printing, converting, the destination printer or destination file server)..

Following general rules on setting up an incoming message apply:

- Each ULL message must start with ++HEADER.
- Each message command line must start on the very first position in the line.
- Each message must contain just one of the ‘C’ or ‘P’ command lines.
- The ‘C’ or ‘P command line in the message can be (optionally) preceded by up to 5 ‘D’, up to 5 ‘E’ and/ or one ’F’ command lines.
- The **Header** part of the ULL message is being sent transparently via ULL module to the TCLANPRT, the **body part** is being converted to the completely prepared image including header line, overlays, page breaks etc. just in the same way as the Fax output message looks like. The **Header part** of the message contains the **controlling information** for the TCLANPRT about the final conversion which should be performed on the image (body) part of the message.

Commands for the TCLANPRT Process

There are following message commands defined:

Main action command lines:

P command - Print on the LAN printer.
C command - Convert to TIFF/MODCA image formats.

Support command lines

D command - Windows internal/external command execution before the main action specified via P/C line has been started.

E command - Windows internal/external command execution after the main action specified via P/C line has been done.

F command - Define variable footer line for the printout

Commands to be executed include internal commands such as dir, .COM, .EXE programs or even .BAT file. The manner how this command/program file is executed depends on the TCLANPRT command line parameter -u[DE].

There are two possibilities:

1. If the -u was specified for specific command line(s) (e.g. -uD for the D command line), the command of this line is executed by passing it to the CMD.COM Windows command interpreter. Thus, **all kinds of commands (Windows internal/external, .COM,.EXE and .BAT files)** can be executed, but **no** return code of the command/program can be checked. This means, that the **send order on the KCS does not terminate with an error code, if the executed command/program terminates with an error**.
2. If -u switch was not specified for specific command line(s) (e.g. -uE for D command line) the **command of this line is executed directly by starting it as a thread process under Windows**. Thus, only external command, .COM and .EXE program files can be executed. Return code of the command/program is checked, so that the send order on the KCS terminates with corresponding error code (for specific error codes refer to description of the command line).

Printing Command (‘P’ Command Line)

This section describes the Printing Command.

Printing Methods

The ‘P’ command line may have following syntax:

1. **P**local_printer_name
2. **P**\\computer_name\PrinterShareName
3. **P**\\computer_name\PrinterShareName –dPCL5
4. **P**lptx –dPCL5

The body part of the message is then being sent to the printer specified within the ‘P’ command line. **With printing method 1) and 2), there is no restriction on the kind of the printer** - all printers supported by Windows can be used.

Printer Names

It is possible to use long printer names.

1. Blanks and upper/lower case letters are supported within the directory and file names

2. Trailing and leading blanks from directory and file names are removed (in particular blanks before and after a backslash)

Example

```
++HEADER
P\\SERVERNAME\Long Printer Name –dPCL5
++BODY
…
```

But they may be also specified within quotation as shown in the example below:

```
++HEADER
P”\\SERVERNAME\Long Printer Name” –dPCL5
++BODY
…
```

Instead of ServerName, the dot may be used. It will be replaced by the own computer name before printing.

Example

```
P\\.\HPIII Laser Jet –dPCL5
```

Printing via Local Printer Driver (1)

The corresponding printer must be installed on the local machine. *local_printer_name* is shown in the printer folder of Windows Explorer.

If you want to print to a network printer using a local printer driver you have to:

1. Create a new printer. Select **Local printer**.
2. Select the printer model.
3. Set port to UNC name (*computer_name**PrinterQueue*) of the printer or
   set port to any unused local printer port (lptx:). This printer port can be redirected to any network printer by using the capture (or equivalent) command. (see example 2)

This method is required for none PCL5 compatible local printers or in network environments (e.g. Novell print server) where method 2 is not supported. Whenever possible alternatives (2) or (3) should be preferred, due to performance and memory usage considerations.

Example 1

Assume locally connected printer named “HP Laser Jet III” to e.g. local port lpt1:

Following mask may be used:

```
++HEADER
PHP LaserJet III
++BODY
$X$
```

Example 2

Assume Novell 4 server “DEV_TEST” with the printer queue “q2.organisation” and the local printer “HP LaserJet III” configured to print to the port lpt1:. There is no printer connected to lpt1:.

```
++HEADER
D\\dev_test\sys\public\capture /endcap /l=1
D\\dev_test\sys\public\capture  l=1 q=q2.organisation1 nb nff
PHP LaserJet III
++BODY
$X$
```

Printing via Network Printer Driver (2)

The printer driver must be installed on the print server. It is not required on the local machine where TCLANPRT is running.

This method is recommended for none PCL5 compatible network printers on a Windows print server.

Example

Assume Windows print server “TCDEVNTSRV” with the printer “HP LaserJet 4 Plus”, shared name “HPIV_DEV_PRINTER”.

```
++HEADER
P\\TCDEVNTSRV\HPIV_DEV_PRINTER
++BODY
$X$
```

Direct Printing to PCL5 Compatible Network Printer (3)

This is the most efficient printing method. But it can be used for PCL5 compatible printers (e.g. HP LaserJet III, HP LaserJet 4P) only.

This method is recommended for all PCL5 compatible network printers.

Example

Assume Windows print server “TCDEVNTSRV” with the printer “HP LaserJet 4 Plus”, shared name “HPIV_DEV_PRINTER”.

```
++HEADER
P\\TCDEVNTSRV\HPIV_DEV_PRINTER -dPCL5
++BODY
```

Direct Printing to Local PCL5 Compatible Printer (4)

This is the most efficient printing method for local connected PCL5 compatible printers. It can also be used for network printers if the printer port will be redirected.

This method is recommended for all PCL5 compatible printers (local or remote).

Example 1

Assume a PCL5 compatible printer (e.g. HP LaserJet 4 Plus) which is connected to port LPT1:.

```
++HEADER
PLPT1 -dPCL5
++BODY
```

Example 2

Assume Windows print server “TCDEVNTSRV” with the printer “HP Laser Jet 4 Plus”.

Following masks may be used:

```
++HEADER
Dnet use lpt2: /delete
Dnet use lpt2: \\TCDEVNTSRV\ HP Laser Jet 4 Plus
Plpt2 -dPLC5
++BODY
$X$
```

Printing in the “Streaming” and “Store-and-Forward” Modes

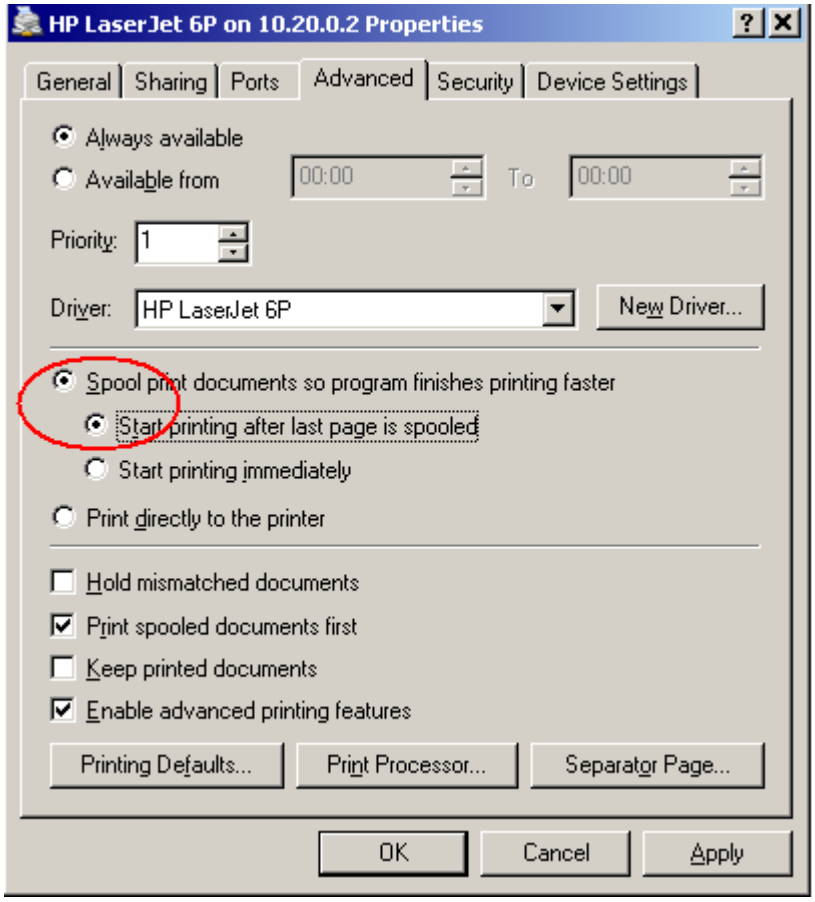
Traditionally TC/LanPrt has been always printing in the *Streaming mode*. This means that the image data received from the ULL module has been immediately sent to the printer, block by block, without waiting for the end of the document. This approach has the disadvantage that if any network connection problem occurs between TC/LanPrt and the TCOSS (ULL module), the print job is interrupted but the printer may have already printed a couple of pages out. In this case the interrupted print job would be re-printed again (through TCOSS retries), but it may seem that the same document has been printed for two or even more times, especially when documents with several pages are being printed.

Therefore the *Store-and-Forward* printing has been introduced. This mode of operation can be activated by the TC/LanPrt command line option –a and works for both printing modes: printing via Windows printer driver(s) and for the PCL5 direct mode as well.

Using this mode, TC/LanPrt receives the whole document to be printed from the ULL module at first, and it is being printed to the printer afterwards. In this way print breakouts on the printer can be avoided.

Store-and-Forward Mode If Printing via Windows Printer Driver

Besides of using the TC/LanPrt command line option –a, the printer driver must be configured to use spooler and start printing after the last page of document is spooled.



If any error occurs during the printing operation, TC/LanPrt removes the broken document from the spooler and the document will be printed later through TCOSS retries.

Store-and-Forward Mode If Printing in the Direct PCL5 Mode

In the direct printing mode no changes on the printers are necessary. TC/LanPrt stores the print data in the temporary file at first, and after the last page has been received from the ULL module, it sends the whole document en-block to the printer.

If the TC/lanPrt is started with –a command line parameter, the temporary file is created in the default Windows temporary directory (given by the environmental variable “TMP”). But there is also a possibility to specify explicit temporary directory from the TC/LanPrt working directory by using command line option –a*TempDir.*

Example

TC/LanPrt is started with the command line

```
TCLANPRT.EXE -aLPTEMPDIR
```

In the c:\TCOSS\SYSTEM directory.

During startup TC/LanPrt creates directory C:\TCOSS\SYSTEM\LPTEMPDIR (if it does not already exist) and uses it for storing temporary files. This directory is not deleted by the TC/LanPrt.

Printer Mapping with rr99

If required, a mapping from printer names to printer queue can be done in rr99 routing directory on KCS as shown in the example below.

Examples:

Users are familiar with printing to Printer *HPPS_Support* but the corresponding printer queue is named \\Server\HPPS_Printer1. Assuming that ULL polls the queue N: the following entries in the rr99 can be defined.

```
**SENDMODES
**NORMALIZE
P:BH95~,P:<BH95>~,
**ROUTE
P:HPPS_Support,P://Server/HPPS_Printer1
**NODES
```

Printing on Postscript Printers

Printing of images (bitmaps) is very inefficient with PostScript printers. If the Postscript printer in the Windows Printer Manager is configured as “print directly to printer”, it may happen that after the printer had received first few image lines, it starts to handle them and stops receiving next data from TCLANPRT for several minutes. As a consequence, the ULL module falls into inactivity timeout (1 minute).

One possible workaround would be to configure the Postscript printer to print via spooler.

But on the other hand, using Postscript printers for printing with TCLANPRT makes no sense due to extremely low throughput. **Printing on Postscript printers should be avoided.**

Change Font Size of Footer Line of Printed Fax

Font size of footer line may be changed for easier readability. The default value is 8.5dots (1dot=0.35mm, 1/72”). To change the size, create the registry key:

```
HKEY_LOCAL_MACHINE\Software\TOPCALL\TCLANPRT\Printer
```

Value

```
FooterHeight REG_DWORD
```

Desired character height (range 6..18) as integer value like (NO decimal values like 8.5 !)

Works with Windows printer driver as well as with direct PCL5-mode. If the key does not exist or is 0 the default value (8.5 dots) will be used.

Selection of Paper Bin for First and Consecutive Pages of Printed Fax

When printing a fax, the first page should come from a different paper tray than the other pages. This is done by appending the optional –p flag to the Print command in the header section:

```
P\\hostname\PrinterName [-dPCL5] [-p:<firstpage>,<otherpages>]
```

This works for PCL and windows printers.

The parameter may consist of either one integer value, or two comma-separated integer values. In the latter case, the first value is for the title page and the last is for all other pages.

The values have following meaning:

0 - paper from default tray

1 - paper from upper tray

2 - paper from manual input

4 - paper from lower tray

Examples:

-p:2 - Print everything from manual input.

-p:1,4 - Print title page from upper tray, all other pages from lower tray.

Custom Printer Initialization Sequence with –dPCL5 Mode

There is a new switch “-r” for the P command line that suppresses sending of the PCL5 printer reset command sequence prior to each print job. This switch may be used if customers would like to use their own PCL5 initialization sequences for any reason (e.g. setting the paper tray, fonts etc.)
Such a initialization sequence must be stored in a special command file and must be merged with the PCL5 data stream prior to the printing using mask command lines D and E.

Example:

The KCS mask below performs following actions:

- Copies the PCL5 init-sequence file “initseq.pcl” to the local file R
- Appends the PCL5 data stream to the same file
- Prints the PCL5 stream (without resetting the printer)
- Deletes the local file R

```
++HEADER
Dcopy initseq.pcl $R$
Ecopy $R$ \\tcdevntsrv\HP_LJet_4000_PCL6
Edel $R$
P$R$  -dPCL5  -r
++BODY
$X$
```

Convert Command (‘C’ Command Line)

Generally, the Convert command has the following syntax:

C*path*/*outfile* [-o] [-d*FMT*] [-b] [-f]

The first string behind the ‘C’ specifies the complete path to the output file (incl. file name ‘outfile’), is mandatory. In the path specification, as to delimit different directories, the slash (‘/’) or backslash (‘\’) may be used. Slash ‘\’ in the file name is converted to backslash ‘\’.

Note For network drives the UNC naming convention (e.g. \\TOPCALL\VOL2\API\File.1) must be used!

The ‘path’ and ‘outfile’ parameters could be generated for example by means of the KCS mask parameter R.

1. Blanks and upper/lower case letters are supported within the directory and file names
2. Trailing and leading blanks from directory and file names are removed (in particular blanks before and after a backslash)

It is recommended to use file name with appropriate file extension (TIF for TIFF and MDA for MODCA format).

Example

```
++HEADER
Cz:\api\My Long File Name.tif -o -dTIF3
++BODY
$X$
```

Generates file “My Long File Name.tif” in the api directory on the drive Z:

If there is no explicit file extension specified in the KCS mask, TCLANPRT will add default extension according to the –dFMT switch:

1. „.TIF“ for –dTIFx format
2. „.MDA“ for –dMDA format

Example

```
++HEADER
Cz:\api\My Long File Name -o -dTIF3
++BODY
$X$
```

Generates file “My Long File Name.tif” in the api directory on the drive Z:

Convert Function of the ‘C’ Command

While specifying any of the following optional parameters, the body part of the message will be converted into TIFF or MODCA format as specified within the -dFMT switch.

The summary of all switches available is:

-dMDA	If specified the body part of the message is converted into MODCA format and written to the output file. All text/control lines behind the ‘C’ command line in the header part of the message are being ignored.switch:-dTIFx
-dTIFx (convert body)	If specified the body part of the message is converted into TIFF format and written to the output file.

Where x is defined as:	‘0’ for TIFF Packbits ‘1’ for TIFF Uncompressed ‘2’ for TIFF G3 without EOL ‘3’ for TIFF G3 with EOL ‘4’ for TIFF G4

The converted body part is written to the file starting at the current file position (just behind the header part of the message possibly written to the beginning of the file, refer to the -o switch). Thus, the current file position can be either at the beginning of the file (if -o switch was specified) or after the linefeed character of the ++BODY line (without the -o switch).

Note

With -o switch:	the output file will be a standard TIFF file, which should be readable by all standard TIFF file readers.
Without -o switch:	output is a specific “combined” text/TIFF image file, which could be read by the dedicated reader application only. This output file consists of the pure text part (header part of the KCS message, at least the ++BODY line) followed by the TIFF image part. In this case, all sub-file indexes used in the TIFF image code are related to the first position after the linefeed character of the ++BODY line. Thus, if reading the TIFF part of such file by means of one of the standard TIFF file readers is desired, the TIFF part of the file should be copied first to a separate file and then it can be viewed as a normal TIFF file by the TIFF file reader.

The resolution for the output image files (both TIFF and MODCA) is taken from the ULL’s send command parameters, and can be 196 dpi or 98 dpi (fine or normal fax resolution).

-o (omit header)	If specified the header part (including the ++BODY line) is not copied to the output file (suppressed). if not specified the header part (including the ++BODY line) is copied without any format conversion into the output file. Note: The -o switch works only with the TIFF converter. With the MODCA converter, the header part of the message is always being ignored.
-b	Activates the backreception of the header (text) part of the message. The header part of the incoming document is put in the temporary file in the API-out directory (which was specified with TCLANPRT command line parameter -e) and thus sent back to KCS. This feature can be used to send some text control lines back to the KCS after the document is converted.
-f (forward)	If specified the message is forwarded (instead of sent) - the state of the entry is set to ‘at next node’ after successful converting (instead of ‘positively terminated’) and expects a notification for setting the send order to terminated. This parameter works with all above described parameter combinations (refer also to the section API files for delivery notification).

Example (mask to convert body part of a message to MODCA and send its header part back to KCS using -b switch)

```
++HEADER
CI:\TLXFLR1\$R0209$.MDA -dMDA –b
DN=A0:+O
R:$R0111$ A:FAX:$A0124$ D:$D$ T:$T$
++BODY
$X$
```

Windows Command Execution (‘D’ and ‘E’ Command Lines)

The command starting on the 2-nd position just behind the ‘D’ or ‘E’ letter is executed by the TCLANPRT, those starting with ‘D’ before the main action is started, those with ‘E’ after the main action has been successfully completed.

It should be taken into account, that once the ‘D’ command has been executed, another ‘D’ , ‘P’ , ‘B’ or ‘C’ command line is expected. If the line with an invalid command identifier follows the last D-command line in the message, the send order on the KCS terminates with error code R1 - illegal 1st line.

If ‘D’ is not specified within the -u TCLANPRT command line parameter and invoked command/program returns a non-zero error code an **application error** (R9) is reported. If the command could not be executed (e.g.: because off too less memory) **can't execute** (R8) will be reported (The break-code off both errors is 2).

Variable Footer Line (‘F’ Command Line)

The footer line may be customized by using the ‘F’ command line in the KCS printing mask.

The ‘F’ command line must precede the ‘P’ (print) command line and may contain any text and KCS mask parameters that are available.

The TCLANPRT simply prints this line followed by the page number to the footer line of each printed page.

With standard footer line size (8.5 dots), up to 90 characters may be used within the ‘F’ command line.

If there is no ‘F’ command line in the printing mask, TCLANPRT uses the old footer line format.

Please note, that it is not possible to support two features of the old footer line style with ‘F’ command line:

1. Printing out the information on the resolution of the incoming fax
   (with old style, ‘F’ letter if fine mode, no information if normal mode)
2. The date formats “24-FEB-2002” and “FEB-24-2002” are not supported

Example: (+P mask):

```
++HEADER
F$R0101$:$R0207$ $N1214$ Reception: $DS$ $TS$/$TE$ Printout: $D$ $T$
P\\tcdevntsrv\HPLJ_4000_PCL5E -dPCL5
++BODY
$X$
```

Send order:

```
..S,R=TF1234,N=04:+PN90
```

Footer line:

```
A:TF1234 N90 Reception: 02-01-15 16:28:02/16:28:13 Printout: 02-01-15 12:20:02    last
 page 1
```

Error Codes

During the TCLANPRT's operation, following error situations can occur:

JOB (printing, copying or converting) specific errors.

If such an error occurs, the corresponding send order on the KCS will end with one of the following error codes. With all error codes except the 'user break' TCLANPRT itself recovers and goes on further.

Answerback field	Error	Break	Meaning
illegal 1st line	R1	5	doc. empty or first line does not start with C or P
can't capture	R2	4	capture command is not successful
can't open printer	R3	3	error during opening the printer (e.g. wrong printer name)
file already exists	R4	2	DOS file (spec. with C command line) already exists
no write permission	R5	4	insufficient rights or directory does not exist
break during copy	R6	2	error during copying (perhaps disk full)
break while printing	R7	2	break while printing
can't execute	R8	2	Can't execute DOS command
application error	R9	2	application error (e.g. wrong command line)
unknown image format	RA	5	image format not supported (C command, -d switch)
too many commands	RB	5	too many commands lines
output file error	RC	1	output DOS file error (during converting)
temp. file error	RD	1	temporary DOS file error
user break	RE	1	TCLANPRT stopped by user during printing
time-out	RF	1	time-out in TCLANPRT – protocol problem
TCTI attach error	RG	1	can't attach to TCTI
TCTI disconnect	RH	1	TCTI disconnect error
internal error 1	RI	1	TCLANPRT internal error (wrong event)
internal error 2	RJ	1	TCLANPRT internal error (wrong state)
ULL time-out	RK	1	ULL time-out protocol problem
ULL TCTI disconnected	RL	1	TCTI disconnect occurred during printing
ULL protocol error	RM	1	ULL protocol error

If a user break occurs, the following event log entry is created:

Event ID:	23500
Severity:	Information
Message:	"TCLANPRT has been stopped by TCSRV or with Ctrl-Break."

Registry

All registry settings specific to TCLANPRT are subkeys of

```
HKEY_LOCAL_MACHINE\Software\TOPCALL\ApplKey,
```

By default *ApplKey* is TCLANPRT.

Note *ApplKey* may be changed by the TCLANPRT command line switch -k

Refer to *TCOSS Configuration Manual* and *Kofax Communication Server Service User Manual* (TCSRV Manual) for further registry values.

Parameter	registry value	type	used for
Transport	{ApplKey}\TCTI\Transport	REG_SZ	TCTI transport (native or PRC)
Linktypes	{ApplKey}\TCTI\Linktypes	REG_SZ	TCTI link types
Path	{ApplKey}\Topcall\Path	REG_SZ	Path to KCS Server
Logon Type	{ApplKey}\LogonType	REG_SZ	The logon type (“Batch”)
Height of the footer line	{ApplKey}\ Printer\FooterHeight	REG_DWORD	Footer character height in dots, allowed range: 6…18 Default: 8.5 dots (if the key does not exist or set to 0)

Chapter 5

Performance

The performance as number of printed pages per hour with ULL modules (with –dPCL5 option) running on the master is shown below:

TC: mod/165 with P133, 32MB RAM, 4GB Hard disk

Test document: 1 page 46kBytes TCI code

test case	1 ULL	2 ULL	4 ULL
no other load	2000 pages/h	2700 pages/h	3400 pages/h
additional fax traffic (1800 pages sent + 1800 pages received per hour)	1500 pages/h	2000 pages/h	2400 pages/h

Chapter 6

Scalability, Fault Tolerance

To achieve fault tolerant printing the following system configuration can be used:

- ULL configured to the Primary Master (Slave 1.0)
- ULL configured to the current Master (Slave T)
- TCLANPRT on the primary Master (Path = LOCAL,)
- TCLANPRT on the secondary Master (Path = LOCAL,|NETBIOS,<name of prim.Master>)

Chapter 7

Compatibility

1. PCL5 compatible printers if printing with the –dPCL5 print parameter
2. Any local or network printer accessible via Windows Printer manager

Chapter 8

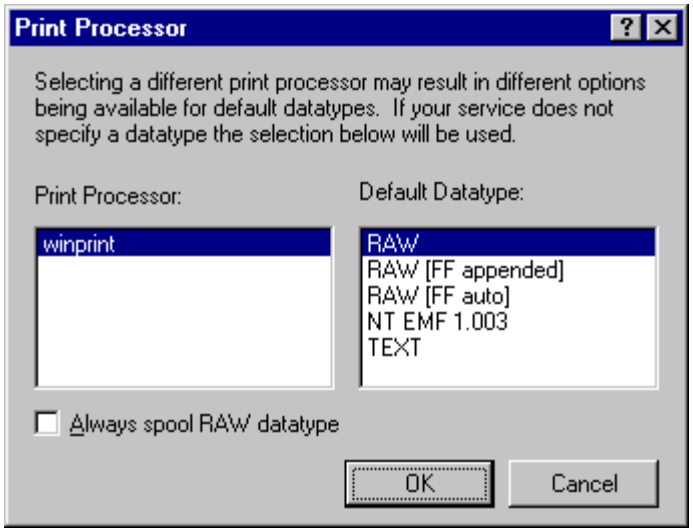
Hints

This section describes hints to use TCLANPRT.

Blank Pages When Running TCLANPRT (Hint #3370)

It is possible to get blank pages when running TCLANPRT under NT4.

If you face this problem (printing to a shared printer e.g. on another Windows computer), please check if the checkbox "Always spool RAW datatype" within the printprocessor settings of your printer is enabled.



Windows Code Page Support

All internal string manipulation routines have been changed to support the current Windows System code page.

This change effects both text lines within the ++HEADER and ++BODY block (file/printer names and D/E commands) and command line parameters. The content of documents (including headerline) is still transmitted as image between ULL and TCLANPRT and therefore remains unchanged. Different code pages in the content are supported by rendering in the same way as with UTF/UIF module. Refer to TCOSS documentation for more detail.

TCLANPRT interprets the header (text lines within ++HEADER and ++BODY) with its current Windows code page. The code page information of the text block containing the header is not used! When using only 7bit ASCII characters (TCOSS codes 20h to 7Fh) all code pages are identical. If you want to use other characters (codes 01h to 1Fh, 80h or higher), you have to take care, to use the correct code page in text blocks. Neither TCOSS nor TCLANPRT performs any code conversion.