# Kofax Communication Server

## TC/PDD User Manual

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KOFAX

# Legal Notice

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Chapter 1

# Overview

The KCS Printer Driver creates images from printable documents. In addition to the proprietary KCS fax format (TCI), it supports the creation of color TIFF files using the LIBTIFF library.

There are two KCS printer types: TOPCALL Fax and TOPCALL TIFF. The difference is configured in the registry settings of the printer instance; when installing the printer, the printer type has to be set – this is done by setup. Depending on the “PrinterType” configuration the printer settings show either the TOPCALL Fax GUI or the TOPCALL TIFF GUI.

**Important The Kofax Communication Server and its components formerly used the name TOPCALL. Some screen shots and texts in this manual may still use the former name.**

## User Interfaces

With version 3.01.xx the KCS printer supports additional TIFF color formats as output. If the printer is installed as TOPCALL TIFF printer there is a separate settings dialog. If installed as TOPCALL Fax printer, the settings are unchanged. See the screen-shots of the new dialog boxes in Chapter Configuration.

## List of Printer Features

| Feature | TOPCALL Fax | TOPCALL TIFF |
|---|---|---|
| Fax printer | x | |
| Output to TCfW | x | |
| Output to TCI | x | |
| Output to TIFF b/w, 200dpi | x | |
| Output to TIFF, Colormode: b/w, grayscale, color; Compression: G4, Packbits, JPEG; Resolution 200dpi, 300dpi | | x |
| Output to MDA and DCX | x | |
| Start application | x | |
| Monochrome output | x | x |
| Grayscale output | | x |
| Color output | | x |
| Configurable command line | x | |

| Feature | TOPCALL Fax | TOPCALL TIFF |
|---|---|---|
| API commands | x | |
| SIGN command | x | |
| Removal of API commands | x | |
| **Orientation**: Portrait | x | x |
| Landscape | x | x |
| **Paper size**: Legal | x | x |
| Letter | x | x |
| A3 | x | x |
| A4 | x | x |
| A5 | x | x |
| Fax resolution compatible printing | x | |
| Cut top margin | x | |
| **Resolution**: Normal 200 dpi | x | |
| Normal 204 dpi | x | |
| Normal 204x98 dpi | x | |
| Fine 200 dpi | x | x |
| Fine 204 dpi | x | |
| Fine 204x196 dpi | x | |
| 300 dpi | | x |
| **Scaling**: Fit Letter | x | |
| Fit Legal | x | |
| Fit A4 | x | |
| Forms | x | |
| Forms as paper sources | x | |
| National Language support | x | x |
| Trace facility | x | x |

Chapter 2

# What is TCPDD?

The KCS Printer Device Drivers contain several printer drivers for various operating systems and types of output.

## What TCPDD Does

KCS printer drivers are used by applications to print output which can be sent by the Kofax Communication Server system. This output can either be printed to a file or directly to applications such as **TCfW**.

## Requirements

- Windows Vista / 7 / 8 / 10
- Windows Server 2008 / 2012

## Unicode Support

You can print Unicode documents using KCS printers, however, the configuration options don't support all Unicode characters.

## Printer Models

The KCS printer driver supports two printer models:

- TOPCALL Fax
- TOPCALL TIFF

### KCS Print Monitor

The port **TOPCALL:** is a special port which is required by the KCS Printer Driver. This port implements output to TCfW and output to file. It also starts the target application and performs all the output conversion and overlay handling.

## Common KCS Printer Capabilities

The KCS printers support the following features:

- Setup and Options dialog box
- National language support
- Portrait and Landscape page orientation
- A4, Letter and Legal paper sizes
- Output to file

## TOPCALL Fax Printer

The TOPCALL Fax printer is used to produce TCI (KCS Image format) output from virtually any existing Windows application. You can store TCI output in a TCI file or forward it to TCfW.

In addition to the general features of the KCS printers, the TOPCALL Fax printer offers the following features:

- Output to TCfW
- Optional automatic creation of file name (number series)
- Insertion of API commands as normal text
- Text conversion (Output to file only)
- Optional application launch upon printing
- Two resolutions (both group III fax resolutions, normal and fine mode)
- Scaling to any of three fax paper sizes (A4, Letter or Legal)
- Optional overlay on every printed page

## TOPCALL TIFF Printer

The TOPCALL TIFF printer is used to produce TIFF images output from virtually any existing Windows application. The TOPCALL TIFF printer is used by the KCS Document Converter.

This type of printer is primarily used for grayscale or color document conversions.

# Features

## National Language Support

The KCS printer drivers for Windows are language independent. A language file is provided containing all text appearing in configuration panels and windows. The language is specified in the advanced printer settings. The default language is English.

The language files (TCPDDxx.LNG) must be installed in the Windows System directory. If a language file cannot be found then the default English texts are used. Language files for other languages can be created with the well-known KCS translation tools.

The language code is always the same for all installed KCS printers. The language code represents the last two digits of the language file. The language code is stored in the key **HKEY_CURRENT_USER/SOFTWARE/TOPCALL/TCPDD/Language=xx** (Windows Vista).

The default language code is 01 (English). Note that the Language Selection dialog only lists the installed languages. The list remains empty if no language files are found. A new language can be added by simply installing a new language file. The printer driver automatically searches for language files in the range of TCPDD01.LNG to TCPDD19.LNG.

## Resolution

This section describes the resolution information for Kofax Communication Server printers.

### TOPCALL Fax Printer Model Resolution

More and more applications do no longer seem to be truly device independent. Device independent means that they among others query the printer driver resolution and take into account that there might be a different horizontal and vertical resolution. Output will be corrupted if the application only queries the horizontal resolution and assumes that the vertical resolution is the same.

Some printer drivers have different horizontal and vertical resolutions. The TOPCALL Fax printer driver supports exactly the CCITT G3 Fax resolution, assuring the highest possible output quality. Other printers, e.g., the classic dot matrix printers work with resolution like 240x144 dpi. The Microsoft Personal Fax printer driver uses a resolution of 200x100 for its draft mode. All these printer drivers do no longer work with applications that do not (always) take this into account.

Examples of such applications are Microsoft Word 97 or Microsoft Excel 97.

Within the TOPCALL Fax printer driver a workaround for this problem is provided in the form of new resolutions and internally scaling of the printed output.

The following resolutions are provided by the TOPCALL Fax printer:

- Fine 204 x 196 dpi
- Fine 200 dpi
- Fine 204 dpi
- Normal 204 x 98 dpi
- Normal 200 dpi (internally scaled to 200 x 100 dpi)
- Normal 204 dpi (internally scaled to 204 x 102 dpi)

Both the new Fine 204 dpi and Normal 204 dpi resolutions are provided to minimize the effect of changing line and page breaks caused by the application reformatting the document for the new resolutions. The 200 and 204 dpi normal resolutions are internally scaled to half the vertical resolution. This means that part of the output quality is lost because every second pixel line is combined with the previous line.

### TOPCALL TIFF Printer Model Resolution

TOPCALL TIFF printer supports 200 and 300 dpi resolution.

## Fax Compatible Printing of Quadratic Resolutions

(Applies to TOPCALL Fax only)

TCPDD offers you four quadratic printing resolutions:

- Fine 204x204 dpi ……..produces output of 204x204 dpi
- Normal 204x204 dpi……..produces output of 204x102 dpi
- Fine 200x200 dpi……produces output of 200x200 dpi
- Normal 200x200 dpi……..produces output of 200x100 dpi

The vertical resolutions of all these printing resolutions are not conform to the vertical resolutions which are necessary for faxing a document. For faxing in fine mode your document needs to have a vertical resolution of 196 dpi and for faxing in normal mode 98 dpi.

Therefore documents created with such a quadratic resolution are vertically oversized for faxing.

TCPDD 2.19.00 offers the possibility to select a checkbox labeled “FAX compatible Y-Resolution” if you have selected a quadratic resolution. When you select the checkbox you print your document with a fax compatible vertical resolution. This means that TCPDD readjusts the document during the print process, so that the resolution of the printed document is either 196 dpi (when printing in fine mode) or 98 dpi (normal mode). So when you print in fax compatible mode you get the following output when you select:

- Fine 204x204 dpi ……..produces output of 204x196 dpi
- Normal 204x204 dpi……..produces output of 204x98 dpi
- Fine 200x200 dpi……produces output of 200x196 dpi
- Normal 200x200 dpi……..produces output of 200x98 dpi

**Note** Under Windows Vista you can change the setting of the “Fax-compatible Y-Resolution” – just as it is for the “Cut top margin” checkbox – only when you configure the TOPCALL Fax printer via the control panel. When you select the printer options from within an application (like Microsoft Word) the checkbox is always disabled.

Clearly, when printing with a non-quadratic resolution, the “Fax-compatible Y-Resolution” is always disabled.

## Paper Size

The following table shows the page sizes and the corresponding maximum lines per page (LPP) and characters per line (CPL) for the Text printer.

| Paper size | Width | Height | LPP | Telex CPL | Text CPL |
|---|---|---|---|---|---|
| A3 Portrait | 297 mm | 420 mm | 93 | 69 | 109 |
| A3 Landscape | 420 mm | 297 mm | 65 | 69 | 165 |
| A4 Portrait | 210 mm | 297 mm | 65 | 69 | 74 |
| A4 Landscape | 297 mm | 210 mm | 45 | 69 | 109 |
| A5 Portrait | 148 mm | 210 mm | 45 | 50 | 50 |

| Paper size | Width | Height | LPP | Telex CPL | Text CPL |
|---|---|---|---|---|---|
| A5 Landscape | 210 mm | 148 mm | 30 | 69 | 74 |
| Letter Portrait | 8.5 inches | 11 inches | 61 | 69 | 77 |
| Letter Landscape | 11 inches | 8.5 inches | 46 | 69 | 102 |
| Legal Portrait | 8.5 inches | 12 inches | 67 | 69 | 77 |
| Legal Landscape | 12 inches | 8.5 inches | 46 | 69 | 112 |

**Note** The above table is based on a fixed text resolution of 10 cpi and 6 lpi.

## TOPCALL Fax Scaling

(Applies to TOPCALL Fax only)

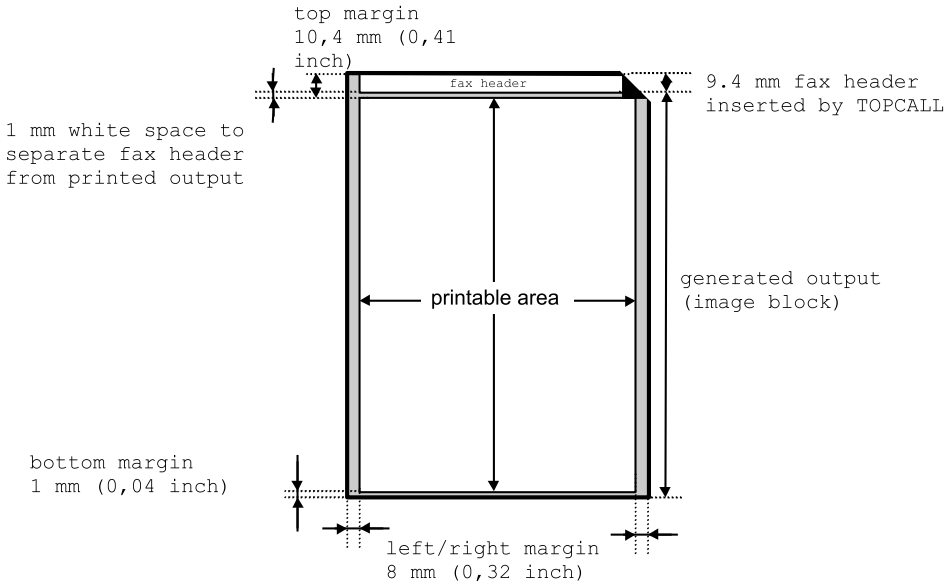
The scaling feature ensures that the selected paper size will fit on one fax page. The size of one fax page depends on the receiving fax machine. Most European fax machines use the A4 format. Most American fax machines use the Letter format. Scaling only reduces the output to fit the selected scaled size. Output is never enlarged.

## Cut Top Margin

(Applies to TOPCALL Fax only)

You should enable Cut Top Margin only when you want to send the printed output via a fax channel which **inserts** a fax header line.

With Cut Top Margin enabled, TOPCALL Fax will cut off the top 9.4 mm of the page.



You should disable Cut Top Margin when you want to send the printed output via a fax channel which **overlays** the fax header line.

## Overlays (Forms)

(Applies to TOPCALL Fax only)

The TOPCALL Fax printer lets you select an overlay form for every page. A form is a single TCI file consisting of one or more pages. Only the first page is used as an overlay. You can use any existing TCI file as a form. And you store all forms in a single directory which you enter in the Options dialog box. All files in the Forms directory with the extension .TCI are displayed in the Form drop-down list and can be found under Paper Source or Paper Tray in the Print dialog box of your application. You can select different forms for each page of a document provided your application supports the selection of various paper sources (trays).

### Forms Directory

The Forms directory is the directory in which the overlay forms are stored. All files in this directory with the .TCI extension are displayed in the Form drop-down list in the Setup dialog box and can be found in your application under Paper Source in the Print dialog box, provided your application supports this.

### Restrictions

- Filenames have to have the extension “tci”; the maximum length without extension is 24 characters, longer filenames are not shown in the combo box of the printer properties.
- The tci-file has to be a valid tci-image (text files are not allowed – take care, the TCI-Viewer is able to display text files!); invalid tci-images might lead to a restart of the printing application or the printer spooler.
- The forms directory has to be different from the directory of the output file.

## Output to File

When you select Output to File, all printed output is stored in a TCI/TIFF file. You should enter a file name in the Options dialog box. The printer driver will warn you if this file already exists.

See also section Automatic File Naming.

The TOPCALL TIFF printer also prints to file, however the GUI does not support configuring it, as the filename is set automatically by the TC/LINK process (typically to “c:\tcoss\tclp\tmp\tclink<type>\att.tif”). For testing purposes it is possible to set this value in the registry, however TC/LINK will always reset it when printing:

HKLM\System\CurrentControlSet\Control\Print\Printers\<printer-name>\PrinterDriverData\file

### Output Formats for TOPCALL Fax

The TOPCALL Fax Printer driver additionally supports output to a TIFF, MODCA or DCX file (beside output to TCI, the TOPCALL Fax image format). The type of output file is configured after the file name by specifying a special parameter.

| | |
|---|---|
| -dfmt | where fmt is either **TCI** (default), **TIF**n, **MDA**n or **DCX** |

The optional number provided with TIF specifies the type of compression.

| | |
|---|---|
| TIF0 | Packbit (default) |
| TIF1 | Uncompressed |
| TIF2 | CCITT G3 Type 2 / 1D-Code without EOL |
| TIF3 | CCITT G3 Type 3 / 1D-Code with EOL |
| TIF4 | CCITT G4 Type 4 / 2D-Code without EOL |
| TIF41 | CCITT G4 Type 4 / 2D-Code with EOL |

The optional number provided with **MDA** specifies the output format.

| | |
|---|---|
| MDA0 | MO:DCA P IS/1 with Resource Group and Invoke Medium Map (default) |
| MDA1 | MO:DCA P IS/1 without Resource Group and Invoke Medium Map |

**Note** Long filenames are not supported.

## Output Formats for TOPCALL TIFF

The TOPCALL TIFF printer driver creates TIFF image files. TIFF is an open and universal format. Different compression standards and color schemes can be applied. See section Configuration for details.

## Printing to a Temporary Directory

If you use TCPDD you can specify the variable *&temp* in the “Filename” edit field. You have to put *&temp* to the beginning of the text string in this edit field, but you do not have to match case – *&TEMP* is also valid. If you use TCPDD to print to a file, the printer replaces *&temp* with the path specified in the printing users environment variable TEMP. If this variable is not specified, *&temp* will by default be replaced by *C:\temp*. You do not have to specify a filename directly after the *&temp* variable, it is absolutely legal to specify a subdirectory path of the temporary folder after *&temp* and then specify the filename.

**Example**:

Filename: &temp\tcfiles\myprintouts\test.tci

If the environment variable *&temp* is set to C:\Tempfiles the printout is found under C:\Tempfiles\tcfiles \myprintouts\test.tci

If a user changes the content of his TEMP environment variable, he must restart TCLAUNCH.exe. If he does not, the *&temp* variable is replaced with the old content of the TEMP environment variable, not with the new content.

This feature should be especially useful on Citrix/TS systems, because it enables each user to print automatically into their temp folder.

## Output to TCfW

(Applies to TOPCALL Fax only)

Output to the Kofax Communication Server Client (TCfW) allows direct printing to the TCfW mail application. Additionally, this type of output is used by KCS Document Converter.

For further information about using printer drivers in combination with **TCfW**, see the **TCfW User Manual**. Refer to the TC/LINK manuals for more information on TC/DC.

## Automatic File Naming

(Applies to TOPCALL Fax only)

When you select Output to File, you can specify either a name that does not change (e.g., MYFILE.TCI) or a template followed by a number (e.g., BM######.TLX;1234).

If the file name itself (not the extension) contains one or more number characters (#) then the file is a template. These number characters will be replaced by the number following the semicolon (;). If no number is specified after the semicolon, the number zero (0) will replace the number characters. For example, "BM######.TLX;1234" will be converted to "BM001234.TLX".

After each printed document, this number increases by one and the new number appears after the template. When the maximum number is reached, the number restarts with 0 (zero).

## Start Application

(Applies to TOPCALL Fax only)

You can specify an application to start after printing in the Start Application field in the Options dialog box.

If you have selected Output to TCfW, you should specify the complete path and file name of TCfW, including optional parameters, in the Start Application field.

If you have selected Output to File, the printer driver will start with the output file you entered in the Name field as the first parameter and the document name as second parameter. The printer driver receives the document name from the printing application. This is the same name which is displayed in Print Manager.

In order to start an application from the TOPCALL Fax printer, the TC Application Launcher (TCLAUNCH) must be started. Under Windows Vista the application is not started by the TOPCALL Fax printer but by the KCS Print monitor. This raises the problem that the KCS Print Monitor runs under the so called System Account and has only limited access to user resources. Any program started by the KCS Print Monitor also runs under the System Account. Normally, programs run under the account of the currently logged on user. For this reason, TCPDD is shipped with a small utility called the TC Application Launcher (TCLAUNCH). TCLAUNCH is started automatically the first time an application uses the TOPCALL Fax printer. This way the application runs under the same account as the logged on user. In order for the printer driver to start TCLAUNCH, TCLAUNCH.EXE must be located in the same directory as TCDDIMON.DLL, normally the SYSTEM32 directory of Windows.

Long filenames are supported with ‘start application’. The syntax used to specify the application name and its parameters is the same as used for the command prompt. If the application name contains blanks it must be specified between quotation marks.

**Example**:

```
"c:\program files\topcall\tcfw.exe" /P
```

When printing to a file, the printer driver automatically attaches the name of the output file and the name of the printed document to the command line of the application configured started.

If there are parameters provided on the command line for ‘Start application’ then the name of the output file is attached directly after the last parameter. In order to insert a blank between the last parameter and the filename an underscore must be added to the command line.

For example:

```
c:\topcall\tcattach.exe /notes
```

is started as:

```
c:\topcall\tcattach.exe /notesC:\TEMP\SPL0012.TCI notepad
```

but:

```
c:\topcall\tcattach.exe /notes_
```

is started as:

```
c:\topcall\tcattach.exe /notes C:\TEMP\SPL0012.TCI notepad
```

**Note** The underscore after /notes is converted to a blank.

## Configurable Command Line

(Applies to TOPCALL Fax only)

Optionally, the TOPCALL Fax printer drivers provide API commands ('<<..>>' ) embedded in the printed document via the command line to the starting application. In this case, the API command is not written to the header of the resulting TCI file.

```
Start Application: C:\TOPCALL\ADAVIS.EXE "&job" "&file" "&p1" "&p2"
```

&file, &job, &p1 to &pn are placeholders for the file name, the name of the document and API commands where &p1 is the first API command found in the document, &p2 the second, etc. Quotes are optional but usually required by the starting application to distinguish between the different parameters as each might contain blanks. The <<sign>> command is an exception – it is never passed to the command line and therefore always written to the header of the TCI file.

If none of the placeholders is found, the command line is as with previous versions: file name and document name are automatically added to the command line. This ensures compatibility with previous versions. If one placeholder is found, all others are not automatically added.

## API Commands (Text Between << and >>)

(Applies to TOPCALL Fax only)

Any text between < < and > > (double angle brackets) is treated as an API command. API commands can be used to control the application which receives the printed output.

Each page containing an API command is treated as the start of a new document. This means that output goes to a new file when you select Output to File or to a new message when output to TCfW is selected.

When you select Output to File, the API commands are put in front of the first page (before the first + +A4H). Each API command is stored on a single line followed by a carriage return. The angle brackets are not stored.

To leave the double angle brackets in your output, insert a blank between them.

See the documentation of the target application (TCfW or other application) for an overview of available API commands.

**Note** Some applications for PDF only send image data to the printer. With such applications the API commands do not work, as no text information is sent to the printer driver.

## Removal of API Commands from Output

(Applies to TOPCALL Fax only)

API commands are removed from the top left corner of the left brackets (< <) to the bottom right of the right brackets (> >). The text block removed is always rectangular.

In the following examples the shaded areas show which part of the output is removed.

The API commands are removed completely:

```
< <To: FAX,6613321> >
```

**Only the brackets (< < and > >) are removed**:

```
< <To: Fax,6613321
> >
```

**Part of the API command is removed**:

```
< <To: Fax,6613321
  > >
```

**Nothing is removed**:

```
  <<To: Fax, 6613321
>>
```

**To: and Cc: are not removed. Bcc: and Send are removed**:

```
< <To: LA
> >
< <Cc: BM
> >
< <Bcc: SM> >
```

```
< <Send> >
```

**Note** API commands are removed from the fax page. This means that any background drawings are also removed. Black text on a grey background will leave a white rectangle in place of the API commands.

## Tracing

The printer driver provides a built-in tracing facility for troubleshooting (standard KCS tracing as provided with TCLIB). When activated, this facility creates a detailed log file. Kofax may want to see this file if you are having problems.

To activate the trace, set the following registry key:

```
HKLM\Software\Topcall\TCPDD\PDDTraceLevel = 0xff
```

Typically, the traces of the printer monitor and the printer monitor client are interesting; to see the traces only of these modules set the following:

```
HKLM\Software\Topcall\TCPDD\PDDTraceLevel = 0x12
```

The trace file location is defined in the key HKLM\Software\Topcall\TCPDD\Tracefile. The printer monitor client trace (module tcddimcl.dll) is written to the trace of the application, this is either the TC/LINK or the TCfW trace file.

Changing the trace level becomes effective immediately.

**Configuration details**:

```
HKLM\SOFTWARE\TOPCALL\TCPDD (x32)
  HKLM\Software\Wow6432Node\TOPCALL\TCPDD (x64)
```

| Registry Key | Type | Default | Description |
|---|---|---|---|
| AppendTrace | DWORD | 1 | Defines if a new trace file should be started. As TCLIB is initialized regularly with TCPDD, only the default setting makes sense, so do not change it. (TCLIB standard parameter) |
| MaxTraceFiles | DWORD | 4 | Maximum number of trace files (TCLIB standard parameter) |
| MaxTraceFileSize | DWORD | 1024 | Maximum size of trace file (TCLIB standard parameter) |
| PDDTraceLevel | DWORD | 0 | This is a bit trace level:<br>bit 1: rendering module (TCDDI40.DLL)<br>bit 2: port monitor module (TCDDIMON.DLL)<br>bit 3: driver UI module (TCDDIUI.DLL)<br>bit 4: application launch module (tclaunch.exe)<br>bit 5: printer monitor client (TcDdiMCl.dll); this module writes the trace to the application receiving the print output (TC/LINK, TCfW)<br>To disable, set 0; to enable all (and also future levels) set to 0xff. |

| Registry Key | Type | Default | Description |
|---|---|---|---|
| TraceFile | STRING | TCCP: “C:\Program Files\Topcall\Traces \tcpdd.trc”<br>TCLP, TCSP:<br>“C:\TCOSS\Trace \tcpdd.trc” | Location of trace-file (TCLIB standard parameter) |

Required user rights

- If the trace file TCPDD0.trc is overwritten and no new files are created even if you configured more than one trace file, you need to grant access to the mentioned registry paths for all users (allow full control).
- When using TCLaunch on a non-administrator user, that user must have the rights to access / create / modify the files in the TCPDD trace folder.

## Support of Citrix and Terminal Services Systems

(Applies to TOPCALL Fax only)

Since version 2.20.00 TCPDD supports Citrix and Terminal Services systems. There is no need for any extra configuration if you are running TCPDD on such a system. It automatically detects if it is installed on a Citrix/TS system and automatically switches to “Citrix mode”.

In this mode, TCPDD communicates with applications which receive print output via named pipes. For each user on the Citrix/TS system, a pipe is created automatically when the user prints for the first time. When TCPDD is unloaded by the system, TCPDD removes all these pipes.

**Note** When printing to an application like TCfW on a Citrix/TS system, the printing user may have only one Citrix/TS session open. Otherwise, the printer does not know to which application in which session of that user it should print and it cannot be predicted to which session the output goes.

# Document Formatting

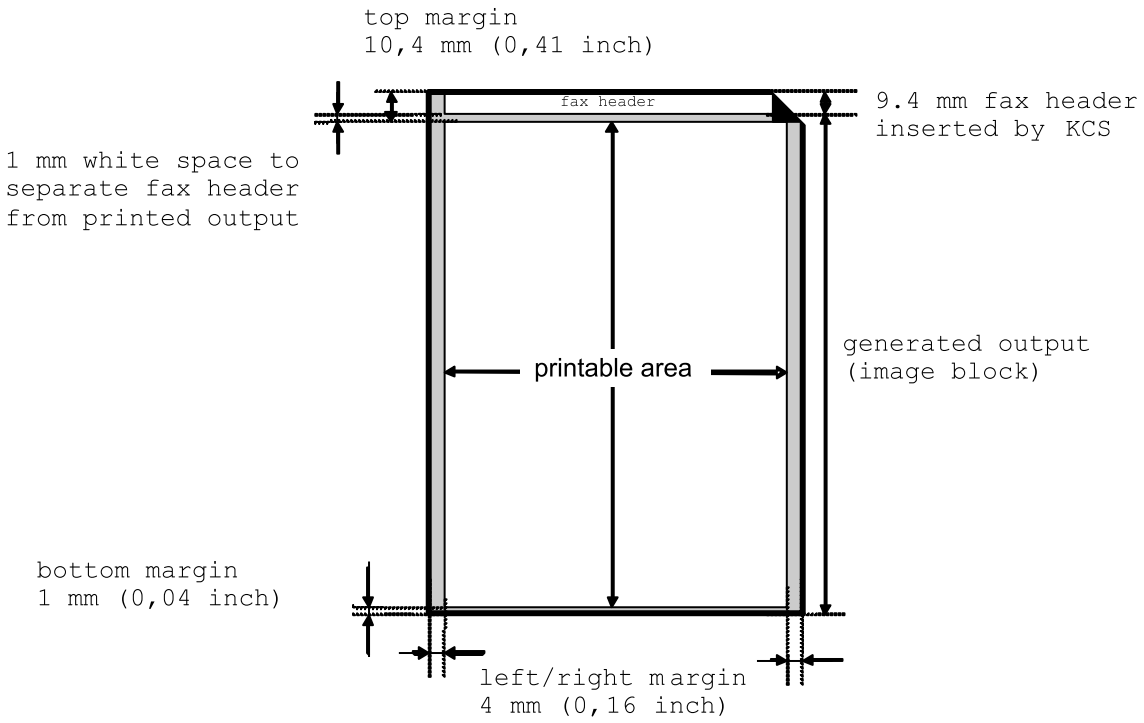
Each document is formatted for a specific printer. When you switch to a different printer in your application, the format will change causing different line and page breaks.

This is resulting from the different resolution of the printers. Different resolutions cause different character widths, which result in turn in different numbers of characters per line and lines per page when you switch printers.

TOPCALL Fax uses a resolution of 204 x 196 dpi or 204 x 98 dpi. Standard laser printers use 300 x 300 dpi. You can format your documents so that line and page breaks do not change when you switch printers by inserting manual line and page breaks. Otherwise you can expect slight differences in your printouts.

## Printable Area for TOPCALL Fax

The printable area is that part of the page on which the printer actually prints. It is the complete page minus a top, bottom, left and right margin. All text printed outside the printable area is not printed.


top margin
10,4 mm (0,41 inch)
fax header
9.4 mm fax header
inserted by KCS
1 mm white space to
separate fax header
from printed output
printable area
generated output
(image block)
bottom margin
1 mm (0,04 inch)
left/right margin
4 mm (0,16 inch)

Chapter 3

# Installation

The KCS printer driver is installed automatically with KCS if needed. If necessary, the setup will ask to restart the computer. On a 64-bit version of Windows, automatically the 64-bit versions of the printer module are installed.

No additional steps are necessary. The following is just for reference.

## Printer Components

The KCS printer consists of the following components:

- Tcddi40.dll - printer driver
- Tcddimon.dll – printer port monitor
- Tcddiui.dll - module handling the user interface
- Tclaunch.exe – TC application launcher
- TcDdiMcl.dll – printer monitor client
- Printer.exe – printer installation module

During setup of one of the packages all necessary components are installed, including the special “TOPCALL:” port used to capture the printer output.

### TC Application Launcher Installation

The TC Application Launcher is a small tool running in the background responsible for starting an application receiving print output (TCfW, Outlook or Notes) for the logged on user that started the print job.

For this purpose Tclaunch.exe should be added to the Startup Folder of the user. This can be done by copying the TCLAUNCH.EXE to this folder or by creating a Link to TCLAUNCH.EXE in the Startup Folder. For the user that installed the KCS Client Applications this is not necessary.

### Port Driver Update

Updating the port monitor (tcddimon.dll, monitoring the “**TOPCALL**:” port) requires that the Windows Print Spooler is stopped. This can either be done from a command line with the command **NET STOP SPOOLER** or from Control Panel/Services. After the spooler is stopped manually copy the new TCDDIMON.DLL to the SYSTEM32 directory. Restart the spooler with **NET START SPOOLER** or from Control Panel/Services after the updated TCDDIMON.DLL is copied.

Chapter 4

# CONFIGURATION

You configure the KCS printer features in the Setup and Options dialog boxes.

There are two main types of KCS Printer models: TOPCALL Fax and TOPCALL TIFF. These two types have different user interfaces and a different set of parameters.

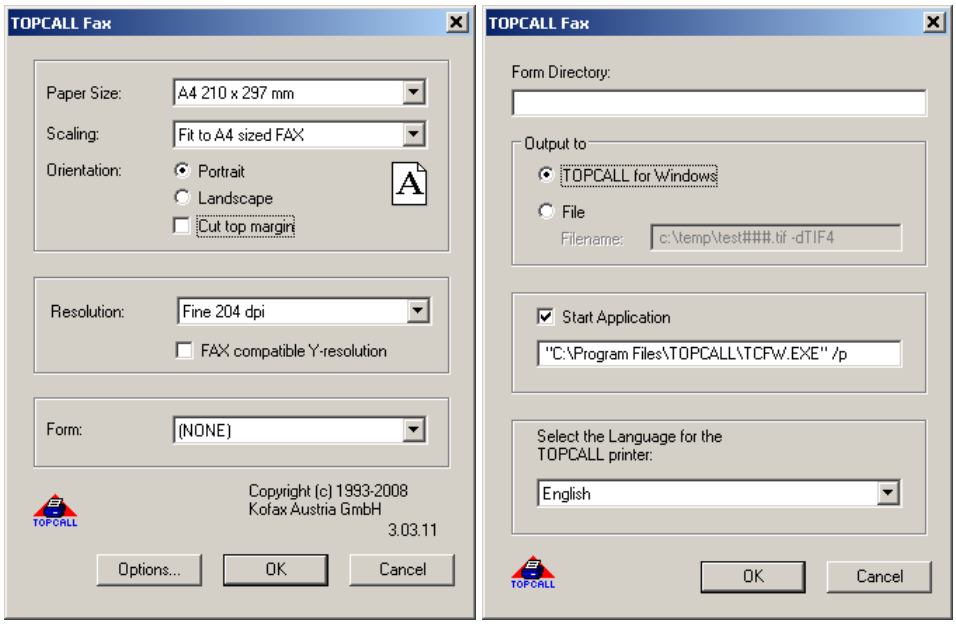
KCS server installs the KCS printer for document conversion with the names “TOPCALL Fax to TCDC” and “TOPCALL TIFF to TCDC”.

KCS Client Applications installs the “TOPCALL Fax” printer (and also other instances for printing to Notes or Exchange).

## TOPCALL Fax Settings

Use the Settings window (left screen shot) to set default page size and orientation. The TOPCALL Fax Setup window has also fields for defining scaling, resolution and form.

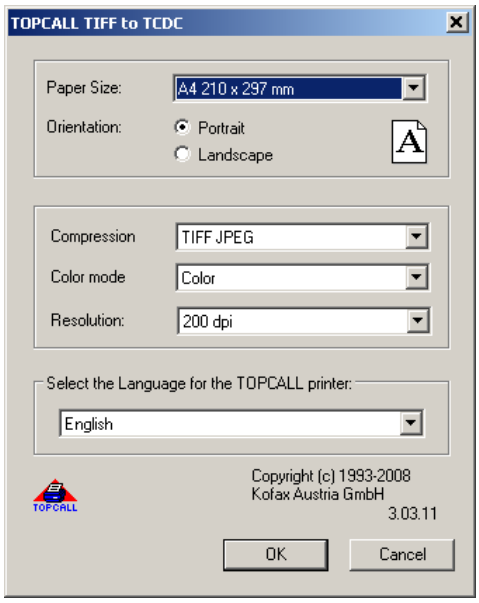
When the Setup window is called from an applications print window, **Scaling**, **Cut top margin**, **FAX compatible Y-Resolution** and **Options...** are disabled. This is because these are non-standard printer properties and therefore can only be changed from within the Windows Print Manager.



The Options window (right screen shot) contains settings you use to determine where the output is sent (to **TCfW** or file), whether an application is started after printing and which language you want to use.

# TOPCALL TIFF Settings

If the printer is installed as a TOPCALL TIFF printer, the following settings are available.




# KCS Print Monitor

Special features of the KCS Print Monitor for Windows are configured via the Windows registry.

## Unattended Mode

The KCS Print Monitor provides error handling for situations where printed output cannot be converted or stored. In these cases a dialog is presented to the user describing the problem. Depending on the problem, the user can make a corrective action and continue the print job or, in the worst case, has to restart the Print Spooler.

For the KCS Document Converter (TC/DC) it is required that the KCS Print Monitor works unattended. No dialogs should pop up because there is no user to decide what corrective action to take. Therefore, KCS Print Monitor can be configured to omit these dialog boxes and continue running. In the event of a fatal error (for example an exception during PCL conversion), the Windows Spooler process is terminated. TC/DC checks if the spooler process is running and restarts it if required.

To set the KCS Print Monitor to unattended mode, add the following registry key of type DWORD:
`HKEY_LOCAL_MACHINE\SOFTWARE\TOPCALL\TCPDD\Unattended=1`

Remove the key or set it to 0 to restore the default behavior.

**Note** Unattended mode is a global setting affecting all printers connected to the TOPCALL Port.

# TC Application Launcher

TCLAUNCH is configured via command line options:

```
TCLAUNCH [/stop] [/hidden] [/?]
```

| | |
|---|---|
| /stop | Stop a previously started instance of TCLAUNCH |
| /hidden | Do not display any dialog box and make TCLAUNCH invisible |
| /? | Display the TCLAUNCH command line options |

TCLAUNCH is responsible for reading the users TEMP environment variable. The value of this variable is used for resolving the *&temp* variable of the “Filename:” edit field. Therefore, after changing the content of a TEMP environment variable, the user has to restart TCLAUNCH. Without restarting, TCLAUNCH will not detect the change and resolve *&temp* with the old value of the TEMP environment variable.

Chapter 5

# Hints

This section describes various hints for using Kofax Communication Server printers.

## Application Parameters with ‘Output to File’

When printing to a file, the printer driver automatically attaches the name of the output file and the name of the printed document to the command line of the application configured to be started.

If there are parameters provided on the command line for ‘Start application’ then the name of the output file is attached directly after the last parameter. In order to insert a blank between the last parameter and the filename an underscore must be added to the command line.

For example:

```
c:\topcall\tcattach.exe /notes
```

is started as:

```
c:\topcall\tcattach.exe /notesC:\TEMP\SPL0012.TCI notepad
```

but:

```
c:\topcall\tcattach.exe /notes_
```

is started as:

```
c:\topcall\tcattach.exe /notes C:\TEMP\SPL0012.TCI notepad
```

**Note** The underscore after /notes is converted to a blank.

## Corrupt Output with Normal Mode Resolution

More and more applications do no longer seem to be truly device independent. Device independent means that they among others query the printer driver resolution and take into account that there might be a different horizontal and vertical resolution. Output will be corrupted if the application only queries the horizontal resolution and assumes that the vertical resolution is the same.

Some printer drivers have different horizontal and vertical resolutions. The TOPCALL Fax printer driver supports exactly the CCITT G3 Fax resolution, assuring the highest possible output quality. Other printers, e.g., the classic dot matrix printers work with resolution like 240x144 dpi. The Microsoft Personal Fax printer driver uses a resolution of 200x100 for its draft mode. All these printer drivers do no longer work with applications that do not (always) take this into account.

Examples of such applications are Microsoft Word or Microsoft Excel.

Within the TOPCALL Fax printer driver a workaround for this problem is provided in the form of new resolutions and internally scaling of the printed output.

The following resolutions are provided by the TOPCALL Fax printer:

- Fine 204 x 196 dpi
- Fine 200 dpi
- Fine 204 dpi
- Normal 204 x 98 dpi
- Normal 200 dpi (internally scaled to 200 x 100 dpi)
- Normal 204 dpi (internally scaled to 204 x 102 dpi)

Both the new Fine 204 dpi and Normal 204 dpi resolutions are provided to minimize the effect of changing line and page breaks caused by the application reformatting the document for the new resolutions. The 200 and 204 dpi normal resolutions are internally scaled to half the vertical resolution. This means that part of the output quality is lost because every second pixel line is combined with the previous line.

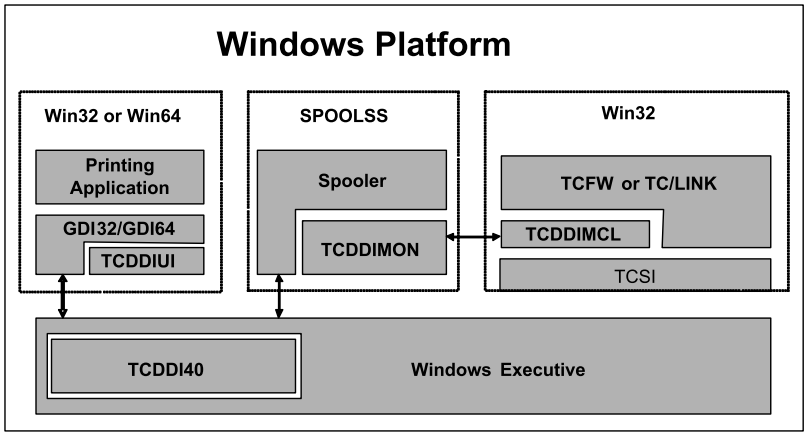
Additionally, as stated in chapter 2.4.3 you can select the “FAX compatible Y – Resolution” option to print with a quadratic resolution and – nevertheless – get an output with a vertical resolution of either 196 or 98 dpi.

# Output to TCfW Architecture Overview

This section gives an overview of the structure of the KCS printer drivers on the different platforms.

## Output to TCfW

The KCS printer driver for Windows Vista/2008 requires the special port “**TOPCALL:**” to print to **TCfW**. The port driver communicates with the KCS printer driver to send output to **TCfW**. The printer driver is part of the Windows Executive.



### Output to TCfW on a Citrix or Terminal Services System

On such a system the actual setting of useTCPD does not matter. TCPDD automatically detects that if it is installed on a Citrix/TS system and automatically switches to “Citrix mode”.

In this mode, TCPDD communicates with applications which receive print output via named pipes. For each user on the Citrix/TS system, a pipe is created automatically when the user prints for the first time. When TCPDD is unloaded by the system, TCPDD removes all these pipes.

**Note** When printing to an application like TCfW on a Citrix/TS system, the printing user may have only one Citrix/TS session open. Otherwise, the printer does not know to which application in which session of that user it should print and it cannot be predicted to which session the output goes.

## Configurable Margins for Printer Driver

For the Windows printer driver the default for left/right margin was 8mm until TCPDD 3.00.00. The margin was configurable via registry-key:

```
HKLM\System\CurrentControlSet\Control\Print\Printers\<printer-
name>\PrinterDriverData\Margin
```

Since TCPDD 3.00.00 this single parameter is replaced by parameters for each of left, right, top and bottom margin:

```
HKLM\System\CurrentControlSet\Control\Print\Printers\<printer-
name>\PrinterDriverData
```

| Registry Key | Type | Default | Description |
|---|---|---|---|
| leftmargin | STRING | 4 | Setting for left margin in millimeters |
| rightmargin | STRING | 4 | Setting for right margin in millimeters |
| topmargin | STRING | 1 | Setting for top margin in millimeters |
| bottommargin | STRING | 1 | Setting for bottom margin in millimeters |

## Deleting Failed Print Jobs from Spooler

With the following registry key TCPDD can be configured to delete failed print jobs from the spooler:

```
HKLM\Software\Topcall\TCPDD\DeleteFailedPrintJob (x32)
HKLM\Software\Wow6432Node\TOPCALL\TCPDD\DeleteFailedPrintJob (x64)
```

If you set it to a non-zero value, any print job which cannot be printed by TCPDD is not set to paused/restarting but is deleted from the spooler.

# JETFORMS and Offset Parameters

(32-Bit systems only)

TC/LINK document conversion makes it possible to merge JETFORM data-files with form-files. This creates a postscript stream that is handled by the KCS printer driver. The printer driver (tcddimon.dll) calls the Lincoln converter to convert the postscript stream to TIFF.

The Lincoln parameters can be configured with the file “epfax.ini”, located in the Windows directory. There it is possible to define an offset for the generated image:

```
[Options]
offsetX=100
offsetY=-200
```

For some Lincoln-internal reasons, the “offsetX” (left margin) has to be specified as positive value, the “offsetY” (top margin) as negative value.

# TCfW and Document Converter on the Same Server

Printing to TCfW is not supported on a Document Converter machine (link or TWS Document Converter), as this can disturb the Document Converter. Link and TWS Document Converter setup deactivate printing to TCfW by setting the following registry key:

```
HKLM\Software\Topcall\Tcfw\Workstation\AttachToPrinter = “N”
```

# Dither Mode Setting

Dithering mode can be set for black & white printing (FAX and TIFF). Dithering mode is configurable via the registry-key:

```
HKLM\System\CurrentControlSet\Control\Print\Printers\<printer-
name>\PrinterDriverData
```

| Registry Key | Type | Default | Description |
|---|---|---|---|
| halftonedither | STRING | 1 | Setting if dithering should be used for black & white printing |

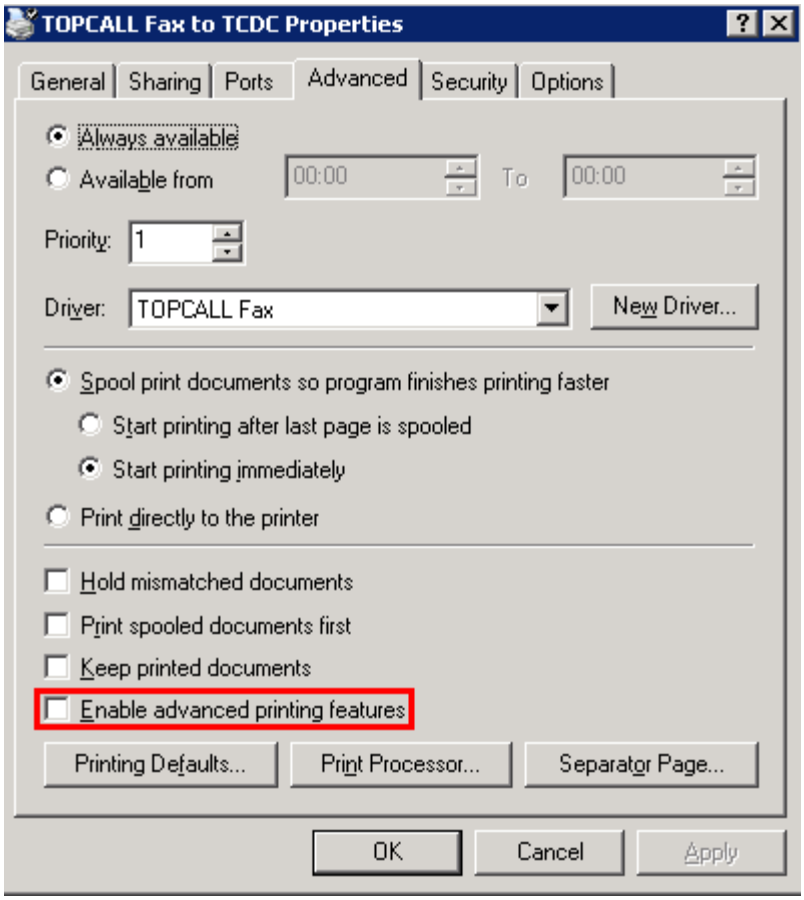
**Example**:

| Original image | halftonedither=0 | halftonedither=1 |
|---|---|---|
| | | |

# Advanced Printing Features May Cause Document Conversion Problems

KCS document conversion might produce documents with garbled characters and/or extra blank pages if the parameter “Enable advanced printing features” is selected in the advanced properties of KCS printers.

Since KCS 9.1.1, this flag is cleared by default. It is also cleared when upgrading to KCS 9.1.1 or later.




# Printing Application May Override Default Settings

Some printing applications may override your default printer settings when using KCS printers. For example, Microsoft Word ignores the settings of all printers and instead uses the settings from the Word document.

This applies also to the number of copies. If you select to print multiple copies of a document, different printing applications may react differently (for example, Word sends multiple copies, but Internet Explorer sends only one). For best and consistent results, set the number of copies to “1”.

Chapter 6

# Restrictions

This section describes various usage restrictions.

## No Signatures in Landscape

KCS does not support faxing Landscape images. Therefore, signatures are faxed in Portrait mode.

## Multiple Instances of TCfW

When starting an instance of TCfW, it connects to the KCS Print Monitor (tcddimon.dll). The KCS Print Monitor can only connect to a single TCfW instance. Thus, when starting another instance of TCfW the old connection is destroyed, and a new one is established.

Therefore, printing to TCfW prints always to the last created instance. However, if the last created instance of TCfW is closed, the printer either opens a new instance (if configured) or printing fails.

## No API Commands with PDF Applications

Some applications for PDF only send image data to the printer. With such applications the API commands do not work, as no text information is sent to the printer driver.

## TOPCALL TIFF Restrictions

- The TOPCALL TIFF printer is only supported to be used by the KCS Link Document Converter. Printing TIFF to TCfW or file is not supported.
- Changing some of the TIFF printer settings from the printing dialog of the printing application is not supported, these settings are disabled.

## Printer Defaults on 64-Bit Windows

When printing from an application, some general printer settings (like paper size and orientation) are taken from the default printer and not from the printer the user has selected. On 64-bit systems there always is a default printer “Microsoft XPS Document Writer” that is set per default to “Letter”. If you

typically use “A4”, it might be a good idea to change that setting also for this printer, or set another default printer and set that appropriately.

Chapter 7

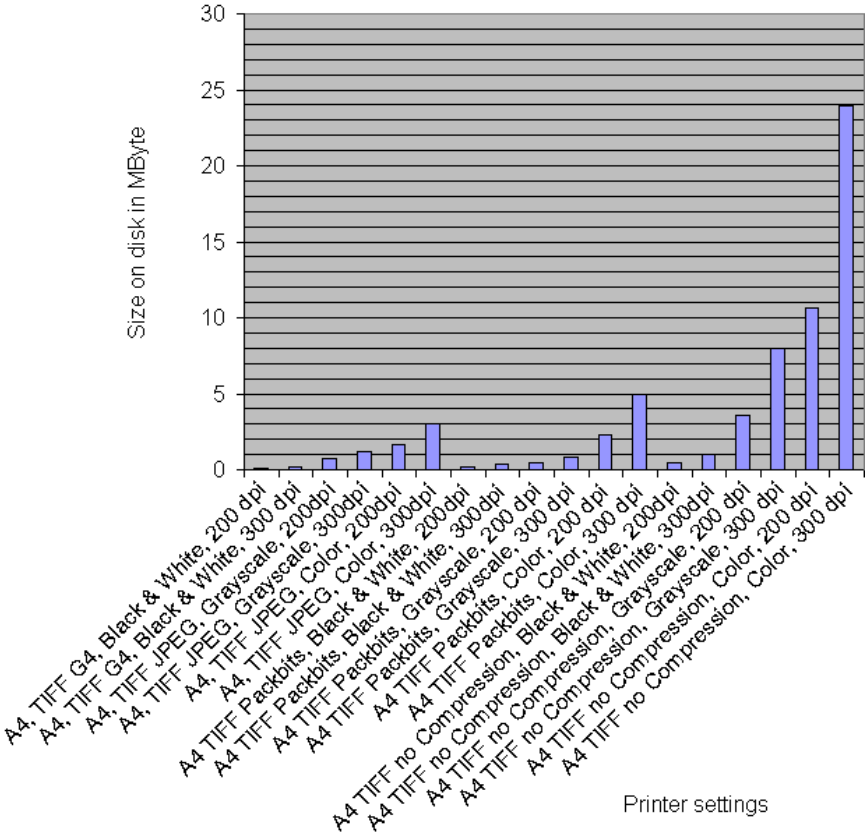
# Performance

This section describes the performance of Kofax Communication Server printers.

## TIFF File Size

TIFF printer settings and the generated document size based on one predefined MS-Word document (Landscape document with one single picture from JPEG-file):

| Printer Setting | Document size on disk |
|---|---|
| A4, TIFF G4, Black & White, 200 dpi | 105 kByte |
| A4, TIFF G4, Black & White, 300 dpi | 184 kByte |
| A4, TIFF JPEG, Grayscale, 200dpi | 705 kByte |
| A4, TIFF JPEG, Grayscale, 300dpi | 1,23 Mbyte |
| A4, TIFF JPEG, Color, 200dpi | 1,69 Mbyte |
| A4, TIFF JPEG, Color, 300dpi | 3,03 Mbyte |
| A4 TIFF Packbits, Black & White, 200dpi | 186 kByte |
| A4 TIFF Packbits, Black & White, 300dpi | 402 kByte |
| A4 TIFF Packbits, Grayscale, 200 dpi | 490 kByte |
| A4 TIFF Packbits, Grayscale, 300 dpi | 791 kByte |
| A4 TIFF Packbits, Color, 200 dpi | 2,28 Mbyte |
| A4 TIFF Packbits, Color, 300 dpi | 5,00 Mbyte |
| A4 TIFF no Compression, Black & White, 200dpi | 454 kByte |
| A4 TIFF no Compression, Black & White, 300dpi | 1,02 MByte |
| A4 TIFF no Compression, Grayscale, 200 dpi | 3,55 Mbyte |
| A4 TIFF no Compression, Grayscale, 300 dpi | 7,98 Mbyte |
| A4 TIFF no Compression, Color, 200 dpi | 10,64 Mbyte |
| A4 TIFF no Compression, Color, 300 dpi | 23,93 MByte |




# Printer Performance with TC/LINK-FI

The following test system was used to measure printer performance with TC/LINK-FI, TCOSS installed on the same computer:

| | |
|---|---|
| Hardware | TC model 301 standard, 1Gbyte RAM, 2,8GHz CPU |
| Platform | Windows 2003 SP2 with latest security patches (June 2007) |
| TC/LP | Version 2.26.00, TC/LINK-FI with standard settings |
| TCPDD | Version 3.01.08 |

Message throughput based on TCLINK settings

| TCLINK settings | Messages / minute | Messages / hour |
|---|---|---|
| Input file → single page Word doc<br>Output file → TCI file only | 32 messages | 1920 messages |
| Input file → single page Word doc<br>Output file → TCI file and TIFF file | 15 messages | 900 messages |

| TCLINK settings | Messages / minute | Messages / hour |
|---|---|---|
| Input file → single page Word doc<br>Output file → TCI file and PDF file | 12 messages | 720 messages |
| Input file → single page Word doc<br>Output file → TCI file and PDF file and TIFF file | 7 messages | 420 messages |

Graphical presentation of message throughput (message throughput tested with standard settings, no optimization)