TXT2PDF User Reference Guide

Convert Text Files to Portable Document Format (PDF)

Version 09.107 Revised April 17, 2009

From

```
Version Change History

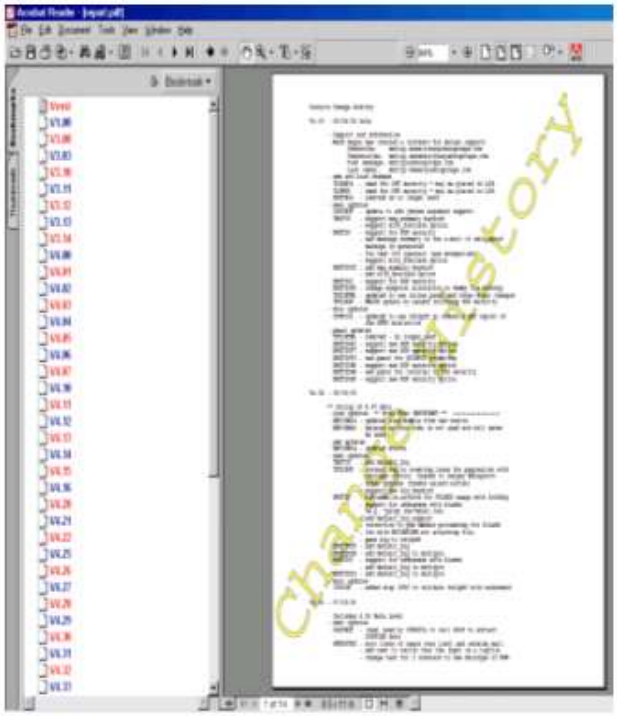
v4.59 - 09/04/02 beta

      - Support and Information
        Mark Regan has created a listserv for mutual support:
            Subscribe:     xmitip-subscribe@yahoogroups.com
            Unsubscribe:   xmitip-unsubscribe@yahoogroups.com
            Post message:  xmitip@yahoogroups.com
            List owner:    xmitip-owner@yahoogroups.com
      - asm and Load changes
        T2PARC4  - used for PDF security * may be placed in LPA
        T2PMD5   - used for PDF security * may be placed in LPA
        XMITB64  - removed as no longer used
      - exec updates
        SDSFEXT  - update to add jobnum argument support
        TESTCU   - support msg_summary keyword
                 - support site_disclaim option
        XMITIP   - support for PDF security
                 - new message summary in the e-mail if anti-spoof
                   message is generated
                 - fix test for ignorecc (was misspelled)
                 - support site_disclaim option
        XMITIPCU - add msg_summary keyword
                 - add site_disclaim option
        XMITIPI  - support for PDF security
        XMITIPZP - change sysprint allocation to dummy for infozip
        TXT2HTML - updated to use inline panel and other minor changes
        TXT2PDF  - MAJOR update by Leland including PDF security
      - misc updates
        STAT2CL  - updated to use txt2pdf to create a pdf report of
                   the SMTP statistics
      - panel updates
        TXT2HTML - removed - no longer used
        XMITIPF2 - support new PDF security option
        XMITIPF7 - support new PDF security option
        XMITIPF9 - new panel for ZIPXMIT prompting
        XMITIPHP - support new PDF security option
        XMITIPH4 - new panel for tutorial on PDS security
        XMITIPZP - support new PDF security option

v4.58 - 08/05/02

      ** rollup of 4.57 beta
      - Load updates  ** Note this IMPORTANT **  <<<<<<<<<<<<<<<<<
        ENCODE64 - updated load module from new source
        ENCODE85 - deleted as this code is not used and will never
                   be used
      - asm updates
        ENCODE64 - updated source
      - exec updates
        TESTCU   - add default_hlq
        TXT2PDF  - correct bug in counting lines for pagination with
                   carriage control (thanks to Sergey Makogonov)
                 - other updates (thanks Leland Lucius)
```

To



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Notices

This software contains encryption source and object code that is regulated by the United States Bureau of Industry and Security. Since this is an "open-source" project, the required notice was submitted for License Exception TSU. This allows the software to be exported from the United States.

However, the software may not be exported to certain countries and their nationals as they are restricted by Section 734.2 of the EAR (Export Administration Regulations). These countries include, but are not limited to, Cuba, Iran, Iraq, Libya, North Korea, Syria, and Sudan. Please refer to the Export Administration Regulations website for more information.

Individuals

We would like to acknowledge the following individuals. Through their suggestions, testing, and code contributions, TXT2PDF has become a much better product overall.

Leland Lucius: For the TXT2PDF REXX code and the T2PINIT, T2PARC4, T2PMD5, and T2PTERM assembler code.

Lionel B. Dyck: For creating XMITIP without which the original TXT2PDF code would have remained hidden in some other homegrown applications and never seen the light of day. (Not to mention his already established distribution channels. Lionel has also contributed the TXT2PDFI ISPF dialog and this document, for which you should be extremely thankful. I hate doing documentation

Andy W. Robertson: For fixing and enhancing the original escaping code and translation tables.

A. Harry Williams: For adding the original CMS and Regina support without which TXT2PDF would still be running on OS/390 only.

Neal E. K. Gooch: For fixing some environment handling issues, adding Object REXX compatibility, and contributing the initial multi-level indexing code.

Felipe Cvitanich: For contributing the PDFXLIB EXEC making it much easier to create the external translation table.

Len Steele: For major testing, feature suggestions, and making me think about other things "the right way."

Frank M. Ramaekers Jr.: For giving all you VMers compression and encryption by doing a pretty darn good job of converting and generalizing the assembler routines.

And many more: See the EXEC for a list of all contributors and the list of changes for their contribution. (Gettin' to be too many to list here. ;-))

Routines

Several routines used by TXT2PDF were located on the Internet and we'd like to thank their authors for publishing them. Any and all rights to these routines remain with the original authors.

The Cos(), Pi(), Sin(), Sqrt() and QSort() routines were culled from the "Album of Algorithms and Techniques" by Vladimir Zabrodsky. If you use REXX, you HAVE to check this out:

www.geocities.com/zabrodskyvlada/aat

Peter Butler (pbutler1@ix.netcom.com) posted the Atan() function to sci.math.num-analysis in 1995.

Contact Information

Feel free to contact either of us if you have suggestions or encounter problems with this documentation or the application.

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Introduction

The TXT2PDF utility is used to convert a text file into a Portable Document Format (PDF) file. It has many options to control the conversion, output appearance, and final presentation. Some of the features include:

- Annotations
- Outline Generation
- Color Control
- Several Background Options
- Viewer Control

The following features are only available on OS/390, z/OS, and z/VM platforms:

- Encryption (will come to other platforms in the future)
- Compression

The following feature is only available on OS/390 and z/OS:

- ISPF Dialog

The ISPF Dialog features of interest are:

- Prompted creation of the TXT2PDF options
- Foreground and Batch processing options
- Easy modeling for production batch JCL
- Support for FTP and E-Mail of the generated report
- Creation of Configuration file

While the original design was simply to convert OS/390 reports to PDF prior to emailing, TXT2PDF has been generalized and adapted to other platforms including Linux, VM, and Windows. All that is required is a REXX interpreter or compiler on the target platform.

Not sure about the load modules within the z/VM environment – awaiting word from someone who knows z/VM.

TXT2PDF: The Command

TXT2PDF is a standard command line utility and must be executed from a standard command line interface on the appropriate platform. For OS/390 and z/OS it is a standard TSO command and must therefore be executed while logged in or in batch using the batch terminal monitor program (TMP). See the Examples section for examples of the JCL which can be used.

The complete syntax is:

```
TXT2PDF IN <input filespec>
        OUT <output filespec>
        ANNOT <type> / <type spec>
        BG <type> / <type spec>
        BM <bottom margin>
        BROWSE <browse messages>
        CC <carriage control>
        COLOR <fore> / <back >
        COMPRESS <level>
        CONFIG <config filespec>
        CONFIRM <level>
        DELIM <character>
        DINFO <document info filespec>
        DRAW <type> / <specs>
        ENCODING <func> / <specs>
        ENCRYPT <type> / <opts>
        FONT <size> / <name> / <zoom>
        HLQ <hlq>
        IFEMPTY <option>
        IMAGE <func> / <name> / <specs>
        LM <left margin>
        LPI <line per inch>
        MAG <level>
        MAXOSIZE <max output size|0>
        MSGID <prefix messages>
        MSGLVL <msgnum> / <msglvl>
        OLOPT <option/...>
        OLSORT <direction>
        OLTOK <token>
        ORIENT <orientation>
        OUTLINE <type> / <args>
        OUTREC <len>
        PAGE <mode> / <layout>
        PAPER <size> / <type> / <style>
        RM <right margin>
        TM <top margin>
        TRANS <style> / <dur> / <opts/...>
        UNITS <unit of measure>
        VIEWER <flags/...>
        VONLY <opt>
        XFONT <type> / <opts>
```

The command syntax is keyword followed by an option with no intervening equal sign. If the option contains embedded blanks then the entire option must be enclosed in quotes.

Under TSO, and ISPF, all data set names are processed using the standard TSO and ISPF conventions. This means that if a TSO PREFIX is different from the Userid then that PREFIX will be used when accessing data set names that are not fully qualified and enclosed within quotes.

IN

The IN keyword defines the input file that will be converted to PDF format. Any valid file specification for the platform is allowed.

On platforms that have "standard" input and output files, you may omit this parameter and the input text will be read from "standard" input. This includes the CMS environment when TXT2PDF is run as a PIPELINE stage.

Syntax: IN file-specification

Examples:

z/OS:	IN 'userid.report.text' IN DD:ddname IN report.text
z/VM:	IN report.text.a
Others:	IN report.txt

OUT

The OUT keyword defines the file that will be created from the conversion of the input file. The file specification is any valid file specification for the platform.

On platforms that have "standard" input and output files, you may omit this parameter and the output PDF file will be written to "standard" output. This includes the CMS environment when TXT2PDF is run as a PIPELINE stage.

Syntax: OUT file-specification

Examples:

z/OS:	OUT 'userid.report.text' OUT DD:ddname OUT report.text
z/VM:	OUT report.text.a
Others:	OUT report.txt

ANNOT

Annotations are similar to yellow post-it notes that are placed within a document.

Syntax: ANNOT TEXT/page/row/col/state/text

page — On what page should the note be placed:

First	F	On first page only
Last	L	On the last page only
All	A	On all pages

Default: ALL

row — the row, or line, on the page where the note will be placed
Default: 1

col — the column where the note will be placed. This is only approximate as TXT2PDF does not have the font metrics for an exact placement.
Default: 1

state	the initial display state of the note specified as:		
	Open	O	causes the note to be open
	Closed	C	causes the note to be closed
	Default: 1		
text	the text for the sticky note		

Examples: ANNOT Text/1/1/1/O/sample-text
ANNOT "T/1/1/1/C/Sample Text" Quotes are needed to include the blanks

BG

The background will be drawn before the text of the document and this allows you to specify as many backgrounds as you like. They will be placed in the order you specify.

The STREAM background allows you to include valid PDF stream content from an external file, while the TEXTMARK and TMARK types produce an effect similar to a watermark.

Syntax: BG STREAM/file-specification
BG TEXTMARK/style/text-color/fill-color/opacity/text
BG TMARK/style/text-color/fill-color/opacity/font-size/text
BG TMARK/style/text-color/fill-color/opacity/font-name/font-size/text

Supported types are:

Stream	PDF stream content
Textmark	Simulated watermark
Tmark	Enhanced watermark

STREAM:

file-specification	Contains the PDF control statements that define stream content. See Appendix B for an example.

TEXTMARK and TMARK:

style	The direction in which to draw the text:		
	TopDown	TD	upper left to bottom right
	BottomUp	BU	bottom left to upper right
	Default: BottomUp		
text-color	Color of the text Default: none		
fill-color	If not specified the text will appear hollow, otherwise the color used to fill the letters. Default: Gray		
opacity	Percent of solidness of the text. Default: 100		
font-name	(TMARK) Name of the font. Default: Courier		
font-size	(TMARK) Size of the font in points. Default: 100		

	text	Text to draw Default: none

Examples:

BG Stream/'userid.stream.data set'
BG Textmark/bottomup//gray/100/TXT2PDF
BG Textmark/td/yellow/black/80/TXT2PDF
BG Tmark/td/yellow/black/80/12/TXT2PDF
BG Tmark/td/yellow/black/80/Vera/12/TXT2PDF

BM

The bottom margin is the offset in inches from the bottom of the page.

Syntax: BM offset

Default: 0.5 inches

Example: BM 0.8

Note: See UNITS

BROWSE

Defines whether messages generated by TXT2PDF will be displayed. If under ISPF the messages will be displayed in an ISPF Browse display otherwise the message will appear on the active window.

Syntax: Browse option

option — Specify one of the following:

Yes	Y
No	N

Default: No

Example: BROWSE No

CC

Specifies if the input data set contains carriage control characters in column 1 of the data. Both ASA and Machine carriage control characters are supported.

Syntax: CC option

option — Specify one of the following:

Yes	Y	First column contains machine or ASA CC characters
No	N	No (or ignore) CC characters
Ascii	A	File contains ASCII CC characters

Default: No (or based upon the DCB of data set)

Example: CC Yes

COLOR

Defines the color of the Text as well as the Background color of the page.

Syntax: COLOR foreground/background

Where foreground defines the color of the text on the page and background is the color of the page.

All colors can be specified using either the following names or by specifying the exact RGB values by using 6 hexadecimal digits formatted as RRGGBB.

```
Aqua     A     Black    Bla   Blue     Blu   Fuchsia  F
Gray     Gra   Green    Gre   Lime     L     Maroon   M
Navy     N     Olive    O     Purple   P     Red      R
Silver   S     Teal     T     White    W     Yellow   Y
```

Though intended for use with the barred paper style, the following colors may also be used:

```
BlueBar        GrayBar        GreenBar
OrangeBar      WhiteBar       YellowBar
```

Examples:

COLOR Black/White	the default
COLOR Y/N	for Yellow text and Navy background
COLOR 00FF00	green

COMPRESS

Defines a level of compression from level 0 (none) to level 9 (maximum).

Syntax: COMPRESS level

Default: 0

Example: COMPRESS 2

CONFIG

The CONFIG keyword defines a file containing additional parameters. Everything in this file will be processed as if it had been included as arguments to the TXT2PDF command. Any arguments on the TXT2PDF command will override parameters in the Config file. Nested Config files are also supported. Comments are statements with an * in column 1. Continuation is by either a blank dash " –" combination or a plus "+" at the end of a record.

Syntax: CONFIG file-specification

Default: none

Examples:
CONFIG 'userid.txt2pdf.config'
CONFIG DD:ddname
CONFIG txt2pdf.config.a
CONFIG c:\winnt\pdfconfig.txt
CONFIG ~/.txt2pdf

Sample CONFIG File:

```
* sample configuration file
Rm .2 lm .2 tm .3 bm .3
```

```
Msgid yes color yellow/black
Config 'userid.nested.config'
```

CONFIRM

Defines the level of messages displayed during the TXT2PDF conversion process.

Syntax: CONFIRM level

Level — Specify one of the following:

Yes	Y	for standard messages
No	N	for quiet mode (no messages)
Verbose	V	for extensive messages

Default: Yes

Examples: CONFIRM Yes
CONFIRM V

DEFCFG

Defines the name of the default config file as used by the CONFIG parameter. This does not actually cause inclusion. The specified file will be included only if there are no command line parameters.

You would normally use this in your TXT2PDFD EXEC.

Syntax: DEFCFG file-specification

Default: none

Examples: DEFCFG 'userid.txt2pdf.config'
DEFCFG DD:ddname
DEFCFG txt2pdf.config.a
DEFCFG c:\winnt\pdfconfig.txt
DEFCFG ~/.txt2pdf

DELIM

The DELIM parameter allows you to change the character used to delimiter between arguments. Any parameter following this one must use the new specification.

Syntax: DEFLIM character

Default: /

Examples: DELIM ,

DINFO

Document Information, or DINFO, references a file which contains a name followed by a description that will be added to the Document Information dictionary within the PDF file.

Syntax: DINFO file-specification

Default: none

Examples: DINFO 'userid.pdfdinfo.text'
DINFO dinfo.txt.a
DINFO c:\pdf\dinfo.txt

Syntax for the DINFO file:

Title The title of this document Subject A subject line for the document Author Name of the author(s) Keywords any associated keywords (you create the keyword)

Sample DINFO File:

Title TXT2PDF User's Guide Subject Getting Started with TXT2PDF Author Prefers to remain unknown Bogus – you created this keyword so you must know what it means

DRAW

The DRAW parameter allows you to draw different objects on the page. At this time, you may draw lines, unfilled rectangles, filled rectangles, static text, and dynamic strings.

To provide the most flexibility, coordinates and sizes are specified in PDF user space units. Each unit is 1/72 of an inch and the origin is the bottom left of the page. In addition, margins are ignored.

Syntax: DRAW Line/x/y/endx/endy/opacity/fore/thickness/style/doton/dotoff
DRAW Rect/x/y/width/height/opacity/fore/back/thickness/style/doton/dotoff
DRAW Text/x/y/font/size/opacity/fore/back/thickness/style/rotation/zoom/text
DRAW String/x/y/font/size/opacity/fore/back/thickness/style/rotation/zoom/text

Supported types are:

Line	Draws a line
Rect	Draws a rectangle
Text	Draws text
String	Draws dynamic text

LINE and RECT:

x	The lower left x-axis coordinate. Default: none
y	The lower left y-axis coordinate. Default: none
endx	(LINE only) The upper right x-axis coordinate. Default: none
endy	(LINE only) The upper right y-axis coordinate. Default: none
width	(RECT only) The width of the rectangle. Default: none
height	(RECT only) The height of the rectangle. Default: none
opacity	A value specifying the percentage of opacity the image will have. A value of 100 will produce a solid image and anything

less will produce transparent images.
Default: 100%

fore — (LINES) Color of the line
(RECT) Color of the outline around the rectangle. Omitting it will produce a rectangle without a bounding box.
Default: Black

back — (RECT) Specifies the background or fill color.
Default: none

thickness — The thickness of the line or bounding box.
Default: 0

style — (LINE) The type of encaps that will be placed at the beginning and end of the line. The ROUND and SQUARE caps project past the line end points so you will need to account for it when positioning.

Possible values are:

Butt	Square ends with no projection
Round	Round ends with projection
Square	Square ends with projection

Default: Butt

(RECT) The shape used for the corners of the rectangle.

Possible values are:

Miter	Pointed (like a picture frame)
Round	Rounded
Bevel	Like miter, but the points are chopped.

Default: Miter

doton/dotoff — These 2 values work together to create lines and bounding boxes with different dash patterns. Line thickness and cap style affect the dashes, so it will take a bit of trial and error to get exactly what you want.

The “doton” value specifies the number of units dashes will have within the pattern. If you do not specify this, then a value of 0 will be used.

The “dotoff” value specifies the number of units the gaps will have between dashes. If you do not specify a “dotoff” value, it will default to the “doton” value and the result will be same sized dashes and gaps.

Default: none (solid line)

TEXT and STRING:

x — The lower left x-axis coordinate.
Default: none

y	The lower left y-axis coordinate. Default: none
font	The name of the font to use. Default: Courier
size	The size in points Default: 9
opacity	A value specifying the percentage of opacity the text will have. A value of 100 will produce solid text and anything less will produce transparent text. Default: 100%
fore	Specifies the color of the outline around the characters. Default: none
back	Specifies the fill color of the characters. Default: none
thickness	The thickness of the line or bounding box. Default: 0
style	The shape used for the corners of the glyphs. Possible values are: Miter — Pointed (like a picture frame) Round — Rounded Bevel — Like miter, but the points are chopped. Default: Miter
rotation	A value specified in degrees which controls the rotation of the text. Negative numbers rotate clockwise. Default: 0
zoom	Zoom is a percentage factor used to increase or decrease the font size. Default: 100%

text	The text to draw.
	
	The value may contain certain format sequences that get replaced with different values. These sequences fall into 2 categories, date/time and dynamic.
	
	Date and time sequences can be used in both TEXT and STRING types. The date and time used is that at time of parsing.
	
	The sequences start with a percent (%) and are followed by one of:
	
	`% - literal percent`
	`a - abbreviated weekday name`
	`A - full weekday name`
	`b - abbreviated month name`
	`B - full month name`

```
c - format: Sun Oct 26 02:00:00 2003
d - 2 digit day of month (zero padded)
e - 2 digit day of month (space padded)
H - 2 digit (24) hour
I - 2 digit (12) hour
j - 3 digit day of year
m - 2 digit month of year
M - 2 digit minute
p - meridian
S - 2 digit second
w - 1 digit day of the week (0=Sunday)
x - date format: 10/26/03
X - time format: 02:00:00
y - 2 digit year
Y - 4 digit year
```

Dynamic sequences can only be used with the STRING type. The values for these sequences change during processing.

The sequences start with an at sign (@) and are followed by one of:

```
@ - literal at sign
p - PDF page number (1 based)*

A zero pad and length may be specified for
sequences marked with an "*" like so:

@4p - blank pad page number to 4 bytes
@04p - zero pad page number to 4 bytes
```

Default: none

Examples:
DRAW LINE/0/0/700/600/100/Red
DRAW line/100/300/400/300///4/Round/0/4
DRAW RECT/0/0/700/600/50/Red/Green
DRAW rect/50/50/400/90/Blue///Bevel
DRAW "text/10/600/Times/30/100/Blue/Red///-45/300/ Just Some Test Text "
DRAW "text/10/600/Times/30/100/Blue/Red/////Date: %c"
DRAW "string/10/600/////////Date %m/%d/%Y – Time %H:%M:%S – Page @4p"

ENCODING

The ENCODING parameter allows you to define Unicode character map which are used to map characters in the PDF file to their Unicode equivalents. This is mostly important when using languages to do not use a Latin character set, but may also be used instead of the translation table in TXT2PDFX or the one specified via the XLATE parameter.

The UCM files can be obtained from the ICU Project source code repository. Select the desired mapping and save it as a plain text file. If needed, upload it to either a PDS or sequential file as ASCII to allow conversion to EBCDIC.

Syntax: ENCODING DEFINE/name/file-specification

DEFINE:

name	The name to assign to the encoding. Use this name to associate the encoding to a font via the XFONT parameter.
file-specification	Specifies the file name or dataset name that contains the UCM format encoding.

Examples:

```
ENCODING DEFINE/ibm1047/'userid.stream.data set'
ENCODING DEFINE/1255/ibm-1255_P100-1995.ucm
```

ENCRYPT

Encryption enables the securing of the created PDF file. At present only the PDF Standard security is supported. Note: This option is only supported on OS/390, z/OS, and CMS at this time.

Syntax: ENCRYPT ST/owner/user/key-length/parms

The currently defined encryption types are:

ST	Uses PDF standard encryption

ST:

owner	A password granting full access to the document. Only the first 32 characters are used. The rest are ignored. Default: none
user	A password giving the user access to the document based on the selected parms (see below). It is limited to 32 characters as well. Default: none

key-length	Specifies the length of the encryption key. Valid values are:
	`40 40-bit key (all Acrobat versions)`
	`128 128-bit key (Acrobat 5 or above)`
	Default: 40

parms	Controls what the user can do with the document. Specify any of the following, separated by a "/":

NOPRINT	NP	No printing
NOEDIT	NE	No editing
NOCOPY	NC	No copying
NOEDITNOTES	NEN	No editing notes/forms
NOSAVEAS	NSA	Don't allow Save As
NOFILLANDSIGN	NFS	No fill/sign forms
NOTACCESSIBLE	NAC	Not accessible (Not Recommended!)
NOASSEMBLY	NAS	No insert/rotate/
NOHIRESPRINT	NHP	No Hires printing
NONE	N	No permissions

Default: (all permissions)

Examples: ENCRYPT ST/Owner//128/np/ne/nc
ENCRYPT ST/Owner/User/40/ne
ENCRYPT "ST/owner password with blanks//nc"

FONT

Defines the font to be used.

Syntax: FONT size/name/zoom

size — Size of the font in points (1/72 of an inch)
Default: 9

name — Name of the font defined via the XFONT parameter or one of the following predefined PDF Type 1 font names:

Times	T
TimesBold	TB
TimesItalic	TI
TimesBoldItalic	TBI
Helvetica	H
HelveticaBold	HB
HelveticaItalic	HI
HelveticaBoldItalic	HBI
Courier	C
CourierBold	CB
CourierItalic	CI
CourierBoldItalic	CBI
Symbol	S
ZapfDingbats	Z

Default: Courier

zoom — Zoom factor in percent of original font size. Specifying a percentage less than 100 will cause the font to shrink and a percentage greater than 100 will cause the font to enlarge.
Default: 100

Examples: FONT 9/Courier/100
FONT 12/TB/50

HLQ

High level qualifier for OS/390+ data set names. It will be prepended to any DSN not beginning with a single quote (') or the special "DD:" syntax.

Under TSO, the default value will be the prefix from the current profile. If one is not assigned, the current userid will be used. If the current prefix and userid are both assigned AND they aren't the same, both will be used, separated by a period.

Under IRXJCL, the default value will be the current userid, if available.

For all other environments, the default will be null.

Syntax: HLQ high-level-qualifer

Default: (see above)

Examples: HLQ SYS1
HLQ Z891001

IFEMPTY

Alters the behavior when an empty input file is detected.

Syntax: IFEMPTY option

Option	Specify one of the following: ERROR – causes an error message to be generated BLANK – produces a warning message and a blank PDF file Anything else will cause a warning message to be produced and a PDF file will be created with the text you specify here. Default: ERROR.

Examples: IFEMPTY ERROR
IFEMPTY “The input file was empty”
IFEMPTY BLANK

IMAGE

The IMAGE parameter allows you to draw images on the page. Currently, this only includes JPEG and BMP files but more are planned.

You use the LOAD function to load the image from a file and assign it a name. Then you use the DRAW or TILE functions to draw the image on the page using the name you assigned.

An advantage of separating the LOAD and DRAW/TILE functions is that you may LOAD several images in the default configuration file (TXT2PDFD) and they will always be available. Just DRAW it by name when you need it.

To provide the most flexibility, coordinates are specified in PDF user space units. Each unit is 1/72 of an inch and the origin is the bottom left of the page. In addition, margins are ignored.

Syntax: IMAGE Load/name/file-specification
IMAGE Draw/name/x/y/opacity/rotation/scalex/scaley/skewx/skewy
IMAGE Tile/name/x/y/w/h/opacity

Supported functions are:

Load	Loads specified file and associates it with "name"
Draw	Draws "name" using given parameters
Tile	Tiles "name" within given constraints

LOAD:

name	The name to assign the image Default: none
file-specification	The name of the file containing the image Default: none

DRAW:

name	The name of the image to draw Default: none
x	The position on the horizontal axis where the image will be placed. This is relative to the left edge of the page. Default: none
y	The position on the vertical axis where the image will be placed. This is relative to the bottom edge of the page. Default: none
opacity	A value specifying the percentage of opacity the image will have. A value of 100 will produce a solid image and anything less will produce transparent images. Default: 100%
rotation	A value specified in degrees which controls the rotation of the image. Negative numbers rotate clockwise. Default: 0

scalex	The relative horizontal size of the image specified as a percentage of the original. Default: 100%
scaley	The relative vertical size of the image specified as a percentage of the original. Default: 100%
skewx	The amount of horizontal skew (or slant) specified in degrees the image will have. Default: 0
skewy	The amount of vertical skew (or slant) specified in degrees the image will have. Default: 0
start	Specifies the first page number on which the image will be drawn. Default: 1
interval	Specified the interval at which successive images will be drawn. Use a value of "0" to draw the image on the first page only. Default: 1

TILE:

name	The name of the image to tile Default: none
x	The position on the horizontal axis where the image will be placed. This is relative to the left edge of the page. Default: none
y	The position on the vertical axis where the image will be placed. This is relative to the bottom edge of the page. Default: none
w	The width of the constraining box. Default: none
h	The height of the constraining box. Default: none
opacity	A value specifying the percentage of opacity the image will have. A value of 100 will produce a solid image and anything less will produce transparent images. Default: 100%

Examples:
```
IMAGE LOAD/Logo/company.logo.jpg
IMAGE LOAD/Pic/image.jpeg.a
IMAGE DRAW/Pic/100/100
IMAGE DRAW/Logo/100/100/70//200/200
IMAGE TILE/Pic/100/100/300//300
```

LM

The offset in inches from the left side of the page where the text will start.

Syntax: LM offset

Default: 0.5 inches

Examples:
LM 0.5
LM 2
LM -.5

Note: See UNITS

LPI

Defines the number of Lines-Per-Inch for the text to be placed on the page.

Syntax: LPI n

Default: 8

Examples:
LPI 8
LPI 6

Note: LPI is not affected by the Inch vs. Centimeter installation configuration option. It is always in lines per inch.

MAG

Allows you to specify the initial magnification level upon opening the document.

Syntax: MAG level

level — A numeric value specified as a percent of the original or one of the following:

```
FitInWindow  FI - show whole page
FitWidth     FW - show entire width of page
FitVisible   FV - show contents of page
```

Default: none

Examples:
MAG 150
MAG fitwidth

MAXOSIZE

Allows you to place limits on the size of the PDF file produced and, if exceeded, will an error message will be produced.

Syntax: MAXOSIZE size

Default: 0 (disabled)

Examples:
MAXOSIZE 10000
MAXOSIZE 200000

MSGID

Enables/disables prefixing of all messages with the program name.

Syntax: MSGID option

option — Display message ID or not

Yes Y	Prefix each message
No N	Don't prefix the messages

Default: Yes

Examples:
MSGID Y
MSGID No

MSGLVL

Provides a way to override the default level of any message produced by TXT2PDF.

Syntax: MSGLVL msgnum / level

msgnum — Number of message
Default: none

level — New message level (see CONFIRM)
Default: none

Example: MSGLVL 131/info

OLOPT

Allows setting of options that relate to all outlining types.

Syntax: OLOPT opt/…

Specify any of the following options, separated with the "/" character:

```
Color    C - Primary outline text color
AltColor A - Alternate text color
Italic   I - Italicized text
Bold     B - Boldfaced text
Expand   E - Expanded all levels
Full     F - Display full lineage at each level of hierarchy
Dups     D - Allow duplicate indexes
Show     S - Includes the token as part of the index
```

Default: none

Examples:
OLOPT Color/Black/Altcolor/Black
OLOPT Italic/Show/Expand

OLSORT

Allows sorting of the document outline.

Syntax: OLSORT direction

direction — Specify the direction as follows:

```
A - Ascending sequence
D - Descending sequence
```

Default: unsorted

Examples: OLSORT A
OLSORT d

OLTOK

Specifying an outline token allows you to generate a multi-level outline. The token is one or more characters that will be used to split the outline text into multiple segments. Each segment will become a new outline level.

For instance, if the OUTLINE keyword selected "2003/10/27" as an outline and you specified a token of "/", then you would get a 3 level outline. The first level would be 2003, the second would be 10, and the third would be 27.

Syntax: OLTOK token

Default: none (single level outline)

Examples: OLTOK /
OLTOK "it can be a phrase"
OLTOK " "

ORIENT

Orientation of the image on the paper.

Syntax: ORIENT orientation

orientation — Specify one of the following:

```
Landscape Land L
Portrait  Port P
```

Default: Portrait

Examples: ORIENT P
ORIENT Landscape
ORIENT Land

OUTLINE

Outlining allows you to select text from the document you're converting and use it to build an outline. Viewer apps display the outline as a multi-level tree. Selecting the leaf nodes will reposition the display to the location where the index was found in the document.

Syntax: OUTLINE Rowcol/row/col/len
OUTLINE Scanrow/row/data-col/data-len/text
OUTLINE Scancol/col/data-col/data-len/text
OUTLINE Scan/data-col/data-len/text

Supported scan types are:

RowCol	RC	Text at a specific row/column
ScanRow	SR	Scan a row for specified text
ScanCol	SC	Scan a column for specified text
Scan	S	Scan entire page for specified text

ROWCOL:

row	The row where the text is located or 0 to select all non-blank rows on the page. Default: none
col	The column where the text starts. Default: none
len	The length of the text. Default: none

SCANROW:

row	The row that will be scanned for a match to the "text" argument. Default: none
data col	The column where the data starts. This may be a specified as an absolute column within the selected row or it may be relative to the start of the located text. You specify a relative location by prefixing the "data col" argument with a plus (+) or minus (-) sign. Default: none
data len	The length of the data. Default: none
text	The text for which to search. Default: none

SCANCOL:

col	The column that will be scanned for a match to the "text" argument. Default: none
data col	The column where the data starts. While this may be a relative column location as described under ScanRow, it doesn't make much sense because the scan column is known ahead of time. This should really be a "data row" argument, but the scanning routine does not have access to all rows at once.

Default: none

data len — The length of the data.
Default: none

text — The text for which to search.
Default: none

SCAN:

data col — The column where the data starts. This may be a specified as an absolute column within the selected row or it may be relative to the start of the located text. You specify a relative location by prefixing the "data col" argument with a plus (+) or minus (-) sign.
Default: none

data len — The length of the data.
Default: none

text — The text for which to search. Every row will be scanned for this text.
Default: none

Examples:
OUTLINE Rowcol/1/1/20
OUTLINE rc/0/6/10
OUTLINE RC/9/120/1
OUTLINE sr/4/2/1/This_one_has_absolute_position
OUTLINE "sr/4/-10/5/Scan row for me…Index precedes by 10"
OUTLINE "S/-10/5/Scan row for me…Index precedes by 10"
OUTLINE scan/2/1/This_one_has_absolute_position

OUTREC

Forces truncation of output records to the given length.

Syntax: OUTREC length

Default: 999999

Example: OUTREC 500

PAGE

Specifies the recommended display mode.

Syntax: PAGE mode/layout

mode — Sets the recommended display mode. This is only a recommendation as the viewer application may choose otherwise.

Currently defined values are:

None	N	Don't display thumbnails or outline
Outline	O	Display the document outline
Thumbs	T	Display the document thumbnails
Full	F	Full screen mode

The default setting is to allow the viewer app to decide the mode. This is different than the "None" option since the "None" option could override what the user currently has selected. However, if you are creating an outline then the default will be "Outline". If that isn't desired, use this option to override it.
Default: let viewer app decide

layout — Set the recommended display layout.

Currently defined values are:

SinglePage	SP	One page at a time
OneColumn	OC	Pages in one column
TwoColumnLeft	TCL	Pages in two columns, odd page on left
TwoColumnRight	TCR	Pages in two columns, odd page on right

Default: (let viewer app decide)

Examples:
```
PAGE Thumbs/SinglePage
PAGE Full
PAGE /OneColumn
```

PAPER

Defines the geometry of the logical paper size.

Syntax: PAPER size/type/style

size — Size of the paper to use.

You may specify the exact width and height in inches, e.g., 8.5" x 11" or one of the following values:

Letter	Let	for 8.5" x 11" page
Legal	Leg	for 8.5" x 14" page
A4		for 8.27" x 11" page

Default: 8.5" x 11"

type — Type or design of paper.

Valid values are:

Bluebar	Graybar	Greenbar
Orangebar	Whitebar	Yellowbar

Default: none

style — Attributes specific to the <type>.

Valid values are:

Holed	Simulated holes will be drawn at the left and right edges of the paper.

Default: none

Examples:
PAPER 8.5x11
PAPER A4/BlueBar
PAPER Letter//Holed

Note: See UNITS

RM

Defines the offset in inches from the right side of page where the text will end.

Syntax: RM offset

Default: 0.5

Example: RM 0.5

Note: See UNITS

TEXT

The TEXT parameter allows you to perform various actions on the input text. Currently, the only action is to allow attribute changes of the text. This allows you to do things like selective bolding or colorizing.

Syntax: TEXT Attr/fontname/fontsize/forecolor/RowCol/row/col/len
TEXT Attr/fontname/fontsize/forecolor/Scan/text

Supported text types are:

Attr	A	Change output text attributes

ATTR:

font name	The name of the font to apply to the text. See the FONT parameter for allowable values. Default: none – uses page level font
font size	The size of the font. Default: none – uses page level font size
foreground color	The foreground colorspec. See the COLOR parameter for allowable values. Default: none – uses page level text color
scan type	The method used to select the text to which the attributes will be applied. Supported scan types are: RowCol RC Text at a specific row/column Scan S Scan entire page for specified text Default: none

ROWCOL:

row	The row where the text is located or 0 to select all non-blank rows on the page. Default: none
col	The column where the text starts. Default: none
len	The length of the text. Default: none

SCAN:

text	The text to scan for. The entire page will be scanned and, if the text is found, the specified attributes will be applied Default: none

Examples:
```
TEXT ATTR/Courier/18/Red/SCAN/Debit
TEXT ATTR///green/SCAN/Go
TEXT ATTR/Vera/12//RowCol/3/5/32
TEXT ATTR/BarCode/8//RowCol/64/100/10
```

TM

Defines the offset in inches from the top of page where the text will start.

Syntax: TM offset

Default: 0.5

Example: TM 0.5

Note: See UNITS

TRANS

Define transition effects when moving from one page to the next when displaying a document in full screen or slide show modes.

Syntax: TRANS style/duration/options

style — The transition styles that may be used are:

Blinds	BL
Box	BO
Dissolve	D
Glitter	G
Replace	R
Split	S
Wipe	W

Default: none

dur — The duration of the effect in seconds.

Default: 1

opts/... — Allows you to modify the behavior of the effect. The options are different for each effect, but they aren't described individually. You will need to experiment.

Specify as many of the following flags as is appropriate for the transition style:

Horizontal	H	Split / Blinds
Vertical	V	Split / Blinds
Inward	I	Split / Box
Outward	O	Split / Box
L2R	0	Wipe / Glitter (Left to right)
B2T	90	Wipe (Bottom to top)
R2L	180	Wipe (Right to left)
T2B	270	Wipe / Glitter (Top to bottom)
TL2BR	315	Glitter (Top left to bottom right)

Default: none

Examples:
TRANS Blinds/1
TRANS split//Vertical/Inward
TRANS G/.1/270

UNITS

Allows you to specify certain parameters using centimeters or inches. The values affected by this are the paper size and margins.

Syntax: UNITS option

option — Desired unit of measure, specified as:

Inches	I
Centimeters	C

Default: Inches

Example:
```
UNITS Centimeters
UNITS I
UNITS C
```

VIEWER

Allows you to specify how the viewer should behave when displaying the file. Again, these are only recommendations and the viewer may simply ignore them.

Syntax: VIEWER opt/…

opt/… — Specify as many of the following flags as you like, separated with the "/" character:

CenterWindow	CW	Center window on screen
DisplayDocTitle	DD	Document title in title bar instead of filename
FitWindow	FW	Resize window to first page size
HideMenuBar	HM	Hide the menu bar
HideToolBar	HT	Hide the title bar
HideWindowUI	HW	Hide all UI elements
NonFullScreen	NF	Page mode after exiting full screen.

Next option must be one of:

None	N
Outlines	O
Thumbs	T

Default: none

Examples:
```
VIEWER Fitwindow
VIEWER FitWindow/HideMenuBar/HideToolBar
VIEWER NF/Outlines
```

VONLY

Allows validation of parameters without performing any conversion processing. If specified, the VONLY parameter should precede all others.

Syntax: VONLY option

option — Specify one of the following:

Yes	Y	Validation Only
No	N	Do the work – not just validation.

Default: No

Example: VONLY Yes

XFONT

Allows the use of fonts other than the standard 14 Adobe fonts.

Syntax: XFONT Internal/name/encoding/font
XFONT TrueType/name/encoding/flag/file-specification

Supported extended font types are:

Internal	I	Define font based on builtin font
TrueType	TT	Define font from truetype font

INTERNAL:

name — Name to assign to the font.

This name is used wherever a font name would be specified.

Default: none

encoding — Name given to an encoding via the ENCODING parameter.
Default: none

font name — Name of one of the following builtin PDF font names:

Times	T
TimesBold	TB
TimesItalic	TI
TimesBoldItalic	TBI
Helvetica	H
HelveticaBold	HB
HelveticaItalic	HI
HelveticaBoldItalic	HBI
Courier	C
CourierBold	CB
CourierItalic	CI
CourierBoldItalic	CBI
Symbol	S
ZapfDingbats	Z

Default: none

TRUETYPE:

name — Name to assign to the font.

This name is used wherever a font name would be specified.

Default: none

encoding — Name given to an encoding via the ENCODING parameter.
Default: WinAnsi

flag — Controls how a TrueType font should be handled.

Nosubset NS — Do not subset the TrueType font

The entire TrueType font will be embedded, not just the glyphs whose characters were used in the input data.

Noembed NE — Do not embed the TrueType font

The TrueType font will be used only to gather the required metrics and will not be included in the PDF. To display properly, the font must be installed wherever the PDF will be viewed.

Default: none (font will be embedded and subsetted)

file-specification — Name of the file that contains the TrueType font.
Default: none

Examples:
XFONT internal/latin5-courier/latin5/courier
XFONT internal/courieralias//courier
XFONT truetype/veramono/ibm1047//font.pds(veramono)
XFONT truetype/verabold//noembed/DD:VERABOLD
XFONT truetype/veramono/win1252/nosubset/veramon.ttf

XLATE

Allows you to specify the name of a translation table EXEC other than the default TXT2PDFX. This allows you to override the default at runtime.

The <execname> parameter specifies a standard Rexx EXEC that you can model after TXT2PDFX or one of the XLATEnnn samples.

Syntax: XLATE execname

Default: none

Example: XLATE customcp

The ISPF dialog is very easy to use and greatly simplifies the coding of the TXT2PDF command, as the dialog actually reports on the complete syntax of the generated TXT2PDF command. The Batch Execution Mode option can be used to generate a data set with the TXT2PDF generated command as well as the necessary JCL. This data set can then be submitted for batch execution or to be copied into a production job's JCL.

Access the ISPF Dialog in one of the following ways:

1. The TXT2PDF command, when entered with no parameters and under ISPF, will invoke the ISPF dialog.
2. The TXT2PDFI command will directly invoke the ISPF dialog.

Note: the ISPF Dialog interface does not support the following TXT2PDF options: CONFIG, DINFO, OUTREC, TRANS, UNITS, or VIEWER..

Primary ISPF Panel

```
----------------------------  Text-to-PDF   1.7  -------------------------
Command ===>

 Input data set    ===>
 Output data set   ===>
                       must be new data set or new member

Optional information: (select to display prompting panel)

   _ Annot                              _ Background
   _ Color                              _ Miscellaneous options
   _ Encryption                         _ Outline Options
   _ Font Specification                 _ Page Specification
   _ Validation Only
```

This panel requires the entry of the input and output data set names. The output data set must not currently exist, if it does an ISPF popup will appear asking the user if they wish to proceed, by entering Yes, or to re-specify the output data set, by pressing PF3.

The optional selections will bring up additional panels that allow the specification of more detailed conversion options.

The Validation Only option will cause the generated TXT2PDF command syntax to be validated without performing any processing.

If the TXT2PDFI exec is executed with the option of CONFIG then the following panel will be displayed and the Processing prompt panel will be bypassed.

```
----------------------------  Text-to-PDF   1.8  -------------------------
Command ===>

 Configuration File  ===>
      (a sequential Data Set or member of a PDS - will be allocated new
       if it doesn't already exist)

Optional information: (select to display prompting panel)

   _ Annot                              _ Background
   _ Color                              _ Miscellaneous options
   _ Encryption                         _ Outline Options
   _ Font Specification                 _ Page Specification
   _ Validation Only
```

Annotation Panel

```
-------------------------  Text-to-PDF - Annotation  ------------------------
Command ===>

  Page:                 First, Last, All
  Row:                  Row placement from top of page
  Column:               Column placement from left
  State:                Open or Closed
  Text:     _____________________________________________________________ <
            _____________________________________________________________ <
            _____________________________________________________________ <
```

This panel will prompt the user to enter the information to create a single yellow sticky note.

Background Panel

```
-------------------------  Text-to-PDF - Background  ------------------------
Command ===>

  Style      :                  TopDown (TD) or BottomUp (BU)
  Text Color :                  see below
  Fill Color :                  see below
  Opacity    :                  100 for solid to 0 for transparent
  Text       :

 Valid Color specifications are:

 Color      Abbrev   Color     Abbrev    Color     Abbrev    Color     Abbrev
 Aqua       A        Gray      Gra       Navy      N         Silver    S
 Black      Bla      Green     Gre       Olive     O         Teal      T
 Blue       Blu      Lime      L         Purple    P         White     W
 Fuchsia    F        Maroon    M         Red       R         Yellow    Y
```

The Background panel prompts for the entry of the information used to generate the BG keyword. This information is used to define a watermark for each page of the generated report.

Color Panel

```
---------------------------  Text-to-PDF - Color  --------------------------
Command ===>

  Foreground color:
  Background color:

 Valid Color specifications are:

 Color      Abbrev   Color     Abbrev    Color     Abbrev    Color     Abbrev
 Aqua       A        Gray      Gra       Navy      N         Silver    S
 Black      Bla      Green     Gre       Olive     O         Teal      T
 Blue       Blu      Lime      L         Purple    P         White     W
 Fuchsia    F        Maroon    M         Red       R         Yellow    Y

 Additional Background colors include:
 BlueBar  GrayBar  GreenBar  OrangeBar  WhiteBar  YellowBar
```

The Color panel prompts for the color of the characters on the page (foreground) and the color of the background. Special background colors are available which generate a bar-like paper color.

Encryption Panel

```
-------------------------  Text-to-PDF - Encryption  -------------------
Command ===>

 Owner Password   :
 User Password    :
 Encryption Length:               40 or 128 bit encryption

 Optional Protections

   _ No Print      _ No Edit      _ No Copy       _ No Edit Notes
   _ No Save As    _ No Fill/Sign _ No Insert/Rot _ No HiRes Print

Note: 128-bit encryption will only work with Adobe Acrobat 5.0 and newer
```

The Encryption panel prompts for security information for the generated report. Note that the 128-bit encryption is not supported by Adobe Acrobat 4.0 and older

Font Panel

```
-----------------------------  Text-to-PDF - Font  --------------------------
Command ===>

  Font Size:                          Font size in points (72 = 1 inch)
  Font Name:                          See below
  Font Zoom:                          Increase (>100) or Decrease (<100)

 Valid Font Names:
 Font          Abbrev     Font           Abbrev    Font                Abbrev

 Times         T          TimeBold       TB        TimeBoldItalic      TBI
 Helvetica     H          HelveticaBold  HB        HelveticaBoldItalic HBI
 Courier       C          CourierBold    CB        CourierBoldItalic   CBI
 Symbol        S          ZapfDingbats   Z
```

The Font panel prompts for the size and name of the font to be used for the characters printed on the report. The zoom option allows you to take an existing font size and scale it up or down.

Miscellaneous Panel

```
-----------------------  Text-to-PDF - Miscellaneous  ----------------------
Command ===>

  Carriage Control    :             Yes or No (or blank to use DCB RECFM)
  Compression Level   :             0 (none) to 9 (max)
  Message Level       :             Yes (Normal) No (Quiet) Verbose (Lots)
  Maximum Output Size :             Maximum output size (bytes) 0 = nolimit
```

The Miscellaneous panel is a catch all panel for options that didn't neatly fit with the other organized panels.

Outline Panel

```
--------------------------  Text-to-PDF - Outline  --------------------------
Command ===>

  Select Outline Scan Type:        1 (RowCol) 2 (ScanRow) 3 (ScanCol) 4 (Scan)

  Specify the scanning criteria:               Applies to:
  Row    :                                     RowCol and ScanRow
  Column :                                     All
  Length :                                     All
  Text   : ____________________________________ ScanRow, ScanCol and Scan
```

The Outline panel prompts for basic outlining information. An outline is how the table of contents is created to display on the left of the report in the Adobe Acrobat Reader.

Outline Options

```
----------------------  Text-to-PDF - Outline Options  ---------------------
Command ===>

  Outline Options: (select one or more)

     Color   :
     AltColor:
     Sort    :                  A:Ascending D:Descending
     Token   :

   _ Bold                         _ Full Hierarchy
   _ Dups (Allow Duplicates)      _ Italic
   _ Expand                       _ Show (Includes the token in the index)

 Valid Color specifications are:
 Color      Abbrev   Color     Abbrev    Color     Abbrev    Color     Abbrev

 Aqua       A        Gray      Gra       Navy      N         Silver    S
 Black      Bla      Green     Gre       Olive     O         Teal      T
 Blue       Blu      Lime      L         Purple    P         White     W
 Fuchsia    F        Maroon    M         Red       R         Yellow    Y
```

The Outline Options panel prompts for additional formatting options for the outline

Page and Paper Panel

```
-------------------------  Text-to-PDF - Page/Paper  -------------------------
Command ===>

  Lines Per Inch:          Number of Lines of Text per Inch
  Margins:   Top: ______ Bottom ______ Left ______ Right ______

  Paper Orientation:             Landscape or Portrait
  Page Mode  :                   Full(F), None(N), Outline(O), Thumbs(T)
  Page Layout:                   SinglePage(SP), OneColumn(OC),
                                  TwoColumnLeft(TCL), TwoColumnRight(TCR)

  Paper Size :              Letter (Let), Legal (Leg), A4, or widthXheight (4x6)
  Paper Type :              BlueBar, Graybar, GreenBar, OrangeBar, WhiteBar,
                            YellowBar
  Paper Style:              Holed

  Note: Margins and Paper size in units of:
```

The Page and Paper panel prompt for information about the layout of the logical page for the report. The Margin and Paper size displayed will be based on the installation defaults and will be either Inches or Centimeters.

Processing Selection

Once all the options have been selected the following process selection panel will be displayed:

```
------------------------  TXT2PDF Execution Selection ---------------
Select Processing Option: ===>

    B - Browse the generated job
    C - Copy to a data set
    E - Edit the generated job
    J - Change the JOB Statements
    S - Submit the generated job
    SC- Save statements in TXT2PDF Configuration File
        Config DSN:
    X - eXecute the Command under TSO

    F - Generate Batch JCL for FTP
    M - Generate Batch JCL for E-Mail

    data set containing the generated job is:
    DSN='SYSLBD.TXT2PDF.jcl'

    During Edit the Job Statements and the TXT2PDF Command may be
    changed.
```

This allows the user to review the generated TXT2PDF command with the following options:

B	Browse the generated JCL and TXT2PDF control statements.
C	Copy the generated JCL and TXT2PDF control statements to another data set. You could use this to copy this into a JCL library where you could further tailor it and then insert it into a regularly scheduled production job.
E	Edit the generated JCL and TXT2PDF control statements. This allows you to change the JCL statements and the TXT2PDF control statements prior to submitting the JCL for batch execution.
J	Use this option to modify the predefined JOB statements that are inserted into the generated JCL.
S	Submit the generated JOB for batch execution.
SC	Save the configuration options in a sequential Configuration data set, or member of a Configuration data set.
X	Execute the TXT2PDF conversion in the foreground under ISPF.
F	Add the necessary JCL step and FTP control statements to the JOB to FTP the generated PDF to another system.
M	Add the necessary JCL step and statements to e-mail the generated PDF to an e-mail address using XMITIP.

The following is an example of the generated JCL and control statements. The first four statements are the JOB statements. These statements may be modified while using the J or the E (Edit) options. The data set name on the SYSEXEC DD statement is dynamically determined based upon the location of where the TXT2PDF REXX is currently being executed from.

```
//jobname  JOB  account,'sample',CLASS=L,NOTIFY=&SYSUID,
//        MSGLEVEL=(1,1),MSGCLASS=X
//HOLD     OUTPUT JESDS=ALL,DEFAULT=Y,OUTDISP=(HOLD,HOLD)
//*
//*---------------------------------------------*
//* TXT2PDF JCL generated: September 03, 2002   *
//* Statements 1-4 are reserved for the JOB Card *
//* Verify all dsnames in the command if not    *
//* running under the generating userid.        *
//*                                             *
//* TXT2PDF Version 0.4                         *
//*---------------------------------------------*
//TXT2PDF  EXEC PGM=IKJEFT1B,DYNAMNBR=50
//SYSEXEC  DD DISP=SHR,DSN=hlq.rexx.exec
//SYSPRINT DD  SYSOUT=*
//SYSTSPRT DD  SYSOUT=*
//SYSTSIN  DD  *
%txt2pdf IN TXT2PDF.PDS($DOC) OUT TXT2PDF.TEST.PDF +
TM .5 BM .5 LM .5 RM .5 +
ORIENT Portrait +
PAGE None/SinglePage +
PAPER let//
/*
```

Batch FTP Option

```
-----------------------------  TXT2PDF FTP Prompt  -----------------
Command ===>

  PDF Data Set:  output-data-set
  Target File :
  Target Host :

  Target Userid  :
  Target Password:                Confirm Password:
```

This panel will prompt for information needed to build the JCL and control statements to FTP the generated report to another platform.

Batch Mail Option

```
--------------------------  TXT2PDF E-Mail Prompt  -------------------------
Command ===>

  To Address   :
  From Address :
  Subject      :
  Attach Name  :
  Short Message:

  It is important the you specify your real e-mail address in the from field
  in case the to address is incorrect causing the mail to bounce or the
  recipient tries to reply to this e-mail.
```

This panel will prompt for the information necessary to build the JCL and XMITIP command to e-mail the generated report to an e-mail address.

Foreground Processing options

If a foreground execution is selected the following process selection panel will be displayed:

```
-------------------------  TXT2PDF Post-Processing  -------
Select Processing Option: ===>

    D - Download to your PC
    F - FTP the generated PDF File
    M - E-Mail the geneated PDF File (via XMITIP)
```

From this panel the following options are available:

D	Provides a prompting panel to facilitate downloading the generated PDF file using the file transfer option of the 3270 emulator.
F	Prompts and then executes the FTP process to put the generated PDF file to another system (a FTP Server must be active on the target system).
M	Sets up the environment and then invokes the XMITIP ISPF interface to facilitate e-mailing the generated PDF file.

Download Panel

```
------------------------------  TXT2PDF Download -----------------------------
Command ===>


 File:  output-data-set-name

You may now begin the file transfer using your emulator file transfer process
or you may use TCP/IP FTP (File Transfer Protocol) from a workstation
command prompt:

     ftp  your-host-name
     - enter your userid and password when prompted
     get output-data-set-name workstation.filename
     quit

Note: When the file transfer is complete press Enter or PF3 to leave this
      panel. At that point the above data set will be deleted.
```

This panel is used to prompt the user to download the generated report data set. Both IND$FILE and TCP/IP FTP are supported.

FTP Panel

```
----------------------------  TXT2PDF FTP Prompt  --------------
Command ===>

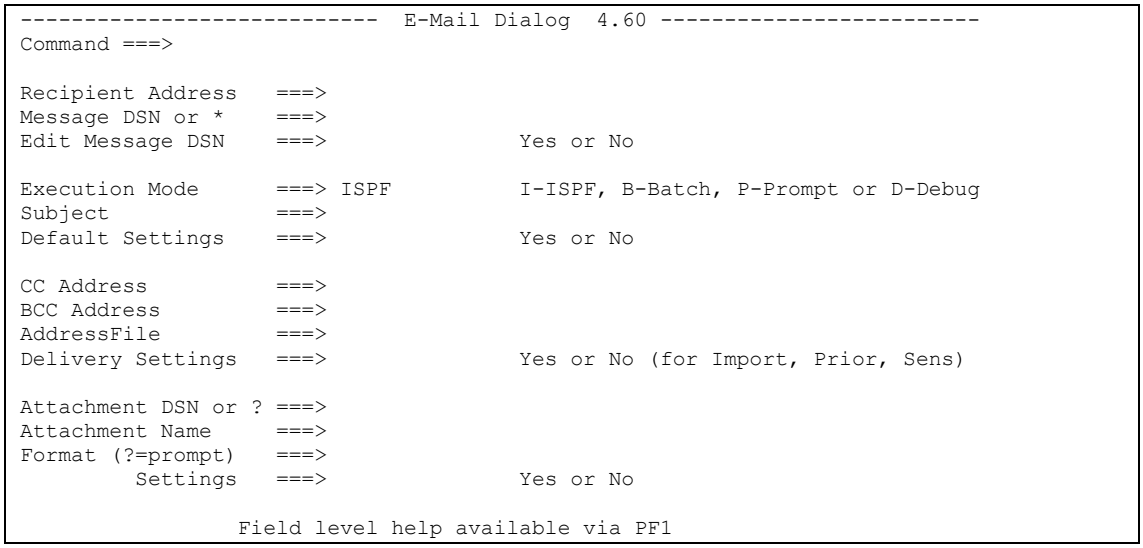
  PDF Data Set:  output-data-set-name
  Target File :
  Target Host :

  Target Userid  :
  Target Password:                Confirm Password:
```

This panel prompts for the necessary information to execute the TCP/IP FTP command under ISPF to transfer the generated report to the requested target host.

Mail Panel

The Mail panel is the XMITIP ISPF dialog. For further information see the XMITIP Users Guide.



```
---------------------------  E-Mail Dialog  4.60 ------------------------
Command ===>

Recipient Address   ===>
Message DSN or *    ===>
Edit Message DSN    ===>               Yes or No

Execution Mode      ===> ISPF          I-ISPF, B-Batch, P-Prompt or D-Debug
Subject             ===>
Default Settings    ===>               Yes or No

CC Address          ===>
BCC Address         ===>
AddressFile         ===>
Delivery Settings   ===>               Yes or No (for Import, Prior, Sens)

Attachment DSN or ? ===>
Attachment Name     ===>
Format (?=prompt)   ===>
         Settings   ===>               Yes or No

                 Field level help available via PF1
```

TXT2PDF: Examples

These examples illustrate some of the capabilities of the TXT2PDF application. To experiment and learn more about the application use the ISPF front-end which has the ability to generate all of the TXT2PDF options along with the necessary batch JCL to execute it.

Example 1: This demonstrates creating a PDF document in Portrait orientation with Letter size paper, using the BlueBar scheme for the paper background. A watermark is created using the BG Textmark option. This generates text flowing from the bottom up to the top of the page diagonally in 30 point font size with the characters TXT2PDF. Margins are specified and carriage control is turned off.

```
//TEST     JOB  . . .
//BATCHTMP PROC
//TMP  EXEC PGM=IKJEFT1B,DYNAMNBR=200
//STEPLIB   DD  DISP=SHR,DSN=hlq.load
//SYSEXEC   DD  DISP=SHR,DSN=rexx.lib
//SYSTSPRT  DD  SYSOUT=*
//SYSTSIN   DD  DDNAME=SYSIN
//  PEND
//IVPK   EXEC BATCHTMP
//SYSIN  DD *
%txt2pdf IN 'install.pds(changes)' +
         OUT 'hlq.temp.changes.pdf' +
         ORIENT Port  +
         PAPER Letter/Bluebar  +
         BG Textmark/Bottomup/Black/Yellow/30/TXT2PDF  +
         FONT 9  +
         LM .5 RM .5 TM .46 BM .5 +
         CC No
/*
```

In this example a generic inline PROC is used for the batch TSO terminal monitor program. The STEPLIB is required if the TXT2PDF load modules are not in either the LPA or a Linklist library.

Coding the TXT2PDF command to span records requires a continuation character. This character may be either a plus (+) or a minus (-) at the end of a statement as shown. The continuation is not required on the last statement.

Example 2: This example shows the JCL and control statements generated by the ISPF dialog. In this example the TXT2PDF processing is followed by an FTP step to transfer the generated report to a workstation and that is followed by a step to e-mail the report. This demonstrates the power of the ISPF dialog in generating JCL that can be copied into a production batch job after you have verified that the generated report is of the desired format.

```
//jobname JOB 'sample',NOTIFY=&SYSUID,
//      MSGCLASS=A,MSGLEVEL=(1,1)
//HOLD OUTPUT JESDS=ALL,DEFAULT=Y,OUTDISP=(HOLD,HOLD)
//*
//*--------------------------------------------*
//* TXT2PDF JCL generated: September 06, 2002    *
//* Statements 1-4 are reserved for the JOB Card *
//* Verify all dsnames in the command if not     *
//* running under the generating userid.         *
//*                                              *
//* TXT2PDF ISPF Interface Version 0.6           *
//*--------------------------------------------*
//TXT2PDF  EXEC PGM=IKJEFT1B,DYNAMNBR=50
//STEPLIB  DD DISP=SHR,DSN=hlq.txt2pdf.LOAD
//SYSEXEC  DD DISP=SHR,DSN=hlq.txt2pdf.EXEC
//SYSPRINT DD  SYSOUT=*
//SYSTSPRT DD  SYSOUT=*
//SYSTSIN  DD  *
%txt2pdf IN XMITIP.PDS(CHANGES) OUT TEST.PDF +
BG "Textmark/BU/Navy/Yellow/75/XMITIP Changes" +
Color Black/White +
FONT 9/t/ +
OUTLINE RC/0/3/5 +
OLOPT Color/Navy/AltColor/Yellow +
LPI 8
/*
//FTP      EXEC PGM=FTP,PARM='test.host.com  (EXIT'
//SYSPRINT DD SYSOUT=*
//INPUT    DD *
userid p
binary
put TEST.PDF test.pdf
quit
/*
//MAILSTEP EXEC PGM=IKJEFT1B,DYNAMNBR=50
//STEPLIB  DD DISP=SHR,DSN=hlq.txt2pdf.LOAD
//SYSEXEC  DD DISP=SHR,DSN=hlq.txt2pdf.EXEC
//SYSPRINT DD  SYSOUT=*
//SYSTSPRT DD  SYSOUT=*
//SYSTSIN  DD  *
xmitip first.m.last@host.com +
  From your.name@host.com +
  Subject 'Sample'  +
  File TEST.PDF +
  Filename sample.pdf +
  MSGT 'short message for sample report'
/*
```

Example 3: This is a very basic demonstration of usage in a Linux and Windows environment. Three methods of execution are given, but there may be more depending on your system setup. The created document will have landscape orientation on letter sized paper. All other parameters will take the installation defaults.

```
txt2pdf IN changes.txt OUT changes.pdf ORIENT land PAPER letter
```

or

```
txt2pdf.rex IN changes.txt OUT changes.pdf ORIENT land PAPER letter
```

or

```
rexx txt2pdf IN changes.txt OUT changes.pdf ORIENT land PAPER letter
```

Installation is simple and straightforward. However, since the supported platforms are so dissimilar, only general instructions will be given. You will need to understand the target system or request assistance from your support personnel.

Linux and Windows instructions are based on the use of the Regina interpreter. If you are using a different interpreter on these platforms, you will need to make the appropriate adjustments.

Setting TXT2PDF Defaults: All Platforms

The TXT2PDFD EXEC provides the ability to override the static defaults contained within the main EXEC. The return value from TXT2PDFD is simply a list of valid keyword/value pairs just as you would specify them on the command line. All of the keywords are valid and may be specified in any order.

This EXEC is optional and need not be present.

Basically, the order of value assignment for any of the keywords is:

1) Use value from command line or from files sourced with CONFIG and DEFCFG
2) If not specified on command line, use value from TXT2PDFD
3) If not specified in TXT2PDFD (or TXT2PDFD not installed), use built in default

Once you've made the desired modifications, place the EXEC where your particular interpreter will find it. For Linux and Windows, this is usually somewhere in your PATH. On OS/390 and z/OS, place the EXEC somewhere in your SYSEXEC or SYSPROC DD concatenation. On VM place the exec on the same mini-disk as the TXT2PDF.

National Language Translation: All Platforms

There are two methods of handling translation of input data to character sets that will display properly when viewing the PDF.

Translation tables as defined in the TXT2PDFX EXEC or via the XLATE parameter are used to convert each input byte from whatever code page it was created with to the WinAnsiEncoding that PDF uses.

The TXT2PDFX EXEC or EXEC specified via the XLATE parameter contains two translation tables that are used to convert the text of the input file and the EXECs internal data to other code pages. This was originally intended to convert EBCDIC data to ASCII, but has been externalized to allow you to convert from any character set to another in case you need to distribute the output file to other nationalities.

This EXEC is optional as there are default tables built into the main EXEC. Therefore, if you do not require specific translations, skip these instructions and continue with the appropriate platform instructions below.

If you want to use this EXEC you'll need to carefully modify the tables contained within. Each table is 256 values in length and each 2 character hexadecimal value represents a character in the target code page. Each byte in the input file will be used as an offset into this table to get the value of the output byte. For instance, if you look at the default table, you'll notice that at hex offset 40 a value of 20 is given. This will convert the "space" character from EBCDIC to ASCII.

Once you've made the desired modifications, place the EXEC where your particular interpreter will find it. For Linux and Windows, this is usually somewhere in your PATH. On OS/390 and z/OS,

place the EXEC somewhere in your SYSEXEC or SYSPROC DD concatenation. On VM place the exec on the same mini-disk as the TXT2PDF.

An alternative approach is to use Unicode Character Map (UCM) files via the ENCODING parameter to define a mapping between each byte of the input data to their Unicode equivalent. An internal representation of this mapping is embedded within the PDF, so the input bytes aren't actually converted to Unicode and the viewing application will use the mapping to display the input bytes using the mapped Unicode character. This method also provides proper cut and paste and text searching.

http://source.icu-project.org/repos/icu/data/trunk/charset/data/ucm/

Linux and Cygwin

Nothing special needs to be done if you'll be specifically invoking your interpreter to execute TXT2PDF. However, if you wish to invoke TXT2PDF by simply typing its name, then you must do the following:

1) Determine the location of the REXX interpreter.
2) Insert the following line at the top of TXT2PDF, replacing <path> with the location of the interpreter from step 1 above:

   #!<full path to interpreter> Example: #!/usr/local/bin/rexx

3) Copy TXT2PDF to a directory in your PATH.
4) Ensure that the TXT2PDF has proper execution permissions.

Windows

Nothing special needs to be done if you'll be specifically invoking your interpreter to execute TXT2PDF. However, if you wish to invoke TXT2PDF by simply typing its name, then you must do the following:

1) Determine what extension has been defined to implicitly invoke the interpreter. For Regina, this is usually REX.
2) Rename TXT2PDF to TXT2PDF.<extension> replacing <extension> with the value you determined in step 1 above.
3) Copy the renamed EXEC to a directory in your PATH.

OS/390 and z/OS

In addition to the TXT2PDF command line utility, this platform also includes Lionel's ISPF dialog. The dialog makes it a LOT easier to create the necessary parameters and/or batch job to invoke the command line utility since there are so many values to remember.

There are many choices when installing on this platform. If you are unfamiliar with the ISPF, REXX, and LOADLIB standards in your shop, please consult your systems support personnel for assistance.

The TXT2PDF.EXEC, TXT2PDF.PANELS, and TXT2PDF.LOAD data sets will need to be made available to your TSO logon PROC or the contents copied to the appropriate system data sets.

You may use TSO's ALTLIB command for the EXEC data set and ISPF's LIBDEF service for the PANEL and LOAD data sets, or the LOAD data set may be allocated to STEPLIB or JOBLIB DD statements. Another alternative would be to add the LOAD modules to a library in your LINKLIST or LPA.

VM and z/VM

The REXX EXECs need to be installed on a shared mini-disk that is available to your users.

Appendix B: GreenBar Stream Example

This appendix includes a full example for the GreenBar Stream file that may be used with the TXT2PDF BG keyword. This file is included with the standard package distribution.

```
%
% Good old greenbar (green to my eyeball anyway .-))
%
% Created:      02/11/2002
%      by:      Leland Lucius
%               pdf@homerow.net
%
% Form:         11.875x14
% Orientation:  Landscape
% Requires:     Font named "Courier"
%

%
% Setup
%
1 w                                                     % Line width
1.000 1.000 1.000 rg                                    % Non-stroking color
0.780 0.860 0.780 RG                                    % Stroking color

%
% Draw outside frame with rounded corners
%
  31.500  720.000 m                                     % Start at top/left
  29.250  720.000   27.000  717.750   27.000  715.500 c % Draw corner
  27.000   40.500 l                                     % Line to bot/left
  27.000   38.250   29.250   36.000   31.500   36.000 c % Draw corner
1039.500   36.000 l                                     % Line to bot/right
1041.750   36.000 1044.000   38.250 1044.000   40.500 c % Draw corner
1044.000  715.500 l                                     % Line to top/right
1044.000  717.750 1041.750  720.000 1039.500  720.000 c % Draw corner
  31.500  720.000 l                                     % Line to top/left
B                                                       % Fill and stroke

%
% Draw color bars
%
0.880 0.960 0.880 rg                                    % Set color
  36.000  684.000  999.000   36.000 re                   % Color Bar 1
  36.000  612.000  999.000   36.000 re                   % Color Bar 2
  36.000  540.000  999.000   36.000 re                   % Color Bar 3
  36.000  468.000  999.000   36.000 re                   % Color Bar 4
  36.000  396.000  999.000   36.000 re                   % Color Bar 5
  36.000  324.000  999.000   36.000 re                   % Color Bar 6
  36.000  252.000  999.000   36.000 re                   % Color Bar 7
  36.000  180.000  999.000   36.000 re                   % Color Bar 8
  36.000  108.000  999.000   36.000 re                   % Color Bar 9
  36.000   36.000  999.000   36.000 re                   % Color Bar 10

%
% Draw inner verticals
%
  36.000  720.000 m                                     % Start at top
  36.000   36.000 l                                     % Line down to bot
1035.000   36.000 m                                     % Start at bottom
1035.000  720.000 l                                     % Line up to top
B                                                       % Fill and stroke

%
% Setup for text
```

```
%
BT                                                          % Begin text
0.780 0.860 0.780 rg                                        % Text color
/FC 9 Tf                                                    % Select font & size
75 Tz                                                       % Reduce size a tad

%
% Draw the left side 6 LPI line numbers
%
1 0 0 1 29.5 723 Tm                                         % Starting position
12 TL                                                       % Line spacing
(1)'(2)'(3)'(4)'(5)'(6)'(7)'(8)'(9)'                        % Write the first 9
1 0 0 1 27.5 615 Tm                                         % Bump left a bit
(10)'(11)'(12)'(13)'(14)'(15)'(16)'(17)'                    % Write the rest
(18)'(19)'(20)'(21)'(22)'(23)'(24)'(25)'                    %
(26)'(27)'(28)'(29)'(30)'(31)'(32)'(33)'                    %
(34)'(35)'(36)'(37)'(38)'(39)'(40)'(41)'                    %
(42)'(43)'(44)'(45)'(46)'(47)'(48)'(49)'                    %
(50)'(51)'(52)'(53)'(54)'(55)'(56)'(57)'                    %

%
% Draw the right side 6 LPI line numbers
%
1 0 0 1 1037.5 722 Tm                                       % Starting position
9 TL                                                        % Line spacing
(1)'(2)'(3)'(4)'(5)'(6)'(7)'(8)'(9)'                        % Write the first 9
1 0 0 1 1035.5 641 Tm                                       % Bump left a bit
(10)'(11)'(12)'(13)'(14)'(15)'(16)'(17)'                    % Write the rest
(18)'(19)'(20)'(21)'(22)'(23)'(24)'(25)'                    %
(26)'(27)'(28)'(29)'(30)'(31)'(32)'(33)'                    %
(34)'(35)'(36)'(37)'(38)'(39)'(40)'(41)'                    %
(42)'(43)'(44)'(45)'(46)'(47)'(48)'(49)'                    %
(50)'(51)'(52)'(53)'(54)'(55)'(56)'(57)'                    %
(58)'(59)'(60)'(61)'(62)'(63)'(64)'(65)'                    %
(66)'(67)'(68)'(69)'(70)'(71)'(72)'(73)'                    %
(74)'(75)'(76)'                                             %
ET                                                          % End text

%
% Draw the holes
%
0.95 0.95 0.95 rg                                           % Hole color
0.85 0.85 0.85 RG                                           % Hole border color
  13.500    778.5 m                                         % Left #1
  11.250    778.5    9.000   776.25    9.000   774.00 c % Upper Left
   9.000   771.75   11.250    769.5   13.500    769.5 c % Lower Left
  15.750    769.5   18.000   771.75   18.000   774.00 c % Lower Right
  18.000   776.25   15.750    778.5   13.500    778.5 c % Upper Right
1057.500    778.5 m                                         % Right #1
1055.250    778.5 1053.000   776.25 1053.000   774.00 c % Upper Left
1053.000   771.75 1055.250    769.5 1057.500    769.5 c % Lower Left
1059.750    769.5 1062.000   771.75 1062.000   774.00 c % Lower Right
1062.000   776.25 1059.750    778.5 1057.500    778.5 c % Upper Right
  13.500    742.5 m                                         % Left #2
  11.250    742.5    9.000   740.25    9.000   738.00 c % Upper Left
   9.000   735.75   11.250    733.5   13.500    733.5 c % Lower Left
  15.750    733.5   18.000   735.75   18.000   738.00 c % Lower Right
  18.000   740.25   15.750    742.5   13.500    742.5 c % Upper Right
1057.500    742.5 m                                         % Right #2
1055.250    742.5 1053.000   740.25 1053.000   738.00 c % Upper Left
1053.000   735.75 1055.250    733.5 1057.500    733.5 c % Lower Left
1059.750    733.5 1062.000   735.75 1062.000   738.00 c % Lower Right
1062.000   740.25 1059.750    742.5 1057.500    742.5 c % Upper Right
  13.500    706.5 m                                         % Left #3
  11.250    706.5    9.000   704.25    9.000   702.00 c % Upper Left
   9.000   699.75   11.250    697.5   13.500    697.5 c % Lower Left
```

```
  15.750    697.5   18.000   699.75   18.000   702.00 c % Lower Right
  18.000   704.25   15.750    706.5   13.500    706.5 c % Upper Right
1057.500    706.5 m                                     % Right #3
1055.250    706.5 1053.000   704.25 1053.000   702.00 c % Upper Left
1053.000   699.75 1055.250    697.5 1057.500    697.5 c % Lower Left
1059.750    697.5 1062.000   699.75 1062.000   702.00 c % Lower Right
1062.000   704.25 1059.750    706.5 1057.500    706.5 c % Upper Right
  13.500    670.5 m                                     % Left #4
  11.250    670.5    9.000   668.25    9.000   666.00 c % Upper Left
   9.000   663.75   11.250    661.5   13.500    661.5 c % Lower Left
  15.750    661.5   18.000   663.75   18.000   666.00 c % Lower Right
  18.000   668.25   15.750    670.5   13.500    670.5 c % Upper Right
1057.500    670.5 m                                     % Right #4
1055.250    670.5 1053.000   668.25 1053.000   666.00 c % Upper Left
1053.000   663.75 1055.250    661.5 1057.500    661.5 c % Lower Left
1059.750    661.5 1062.000   663.75 1062.000   666.00 c % Lower Right
1062.000   668.25 1059.750    670.5 1057.500    670.5 c % Upper Right
  13.500    634.5 m                                     % Left #5
  11.250    634.5    9.000   632.25    9.000   630.00 c % Upper Left
   9.000   627.75   11.250    625.5   13.500    625.5 c % Lower Left
  15.750    625.5   18.000   627.75   18.000   630.00 c % Lower Right
  18.000   632.25   15.750    634.5   13.500    634.5 c % Upper Right
1057.500    634.5 m                                     % Right #5
1055.250    634.5 1053.000   632.25 1053.000   630.00 c % Upper Left
1053.000   627.75 1055.250    625.5 1057.500    625.5 c % Lower Left
1059.750    625.5 1062.000   627.75 1062.000   630.00 c % Lower Right
1062.000   632.25 1059.750    634.5 1057.500    634.5 c % Upper Right
  13.500    598.5 m                                     % Left #6
  11.250    598.5    9.000   596.25    9.000   594.00 c % Upper Left
   9.000   591.75   11.250    589.5   13.500    589.5 c % Lower Left
  15.750    589.5   18.000   591.75   18.000   594.00 c % Lower Right
  18.000   596.25   15.750    598.5   13.500    598.5 c % Upper Right
1057.500    598.5 m                                     % Right #6
1055.250    598.5 1053.000   596.25 1053.000   594.00 c % Upper Left
1053.000   591.75 1055.250    589.5 1057.500    589.5 c % Lower Left
1059.750    589.5 1062.000   591.75 1062.000   594.00 c % Lower Right
1062.000   596.25 1059.750    598.5 1057.500    598.5 c % Upper Right
  13.500    562.5 m                                     % Left #7
  11.250    562.5    9.000   560.25    9.000   558.00 c % Upper Left
   9.000   555.75   11.250    553.5   13.500    553.5 c % Lower Left
  15.750    553.5   18.000   555.75   18.000   558.00 c % Lower Right
  18.000   560.25   15.750    562.5   13.500    562.5 c % Upper Right
1057.500    562.5 m                                     % Right #7
1055.250    562.5 1053.000   560.25 1053.000   558.00 c % Upper Left
1053.000   555.75 1055.250    553.5 1057.500    553.5 c % Lower Left
1059.750    553.5 1062.000   555.75 1062.000   558.00 c % Lower Right
1062.000   560.25 1059.750    562.5 1057.500    562.5 c % Upper Right
  13.500    526.5 m                                     % Left #8
  11.250    526.5    9.000   524.25    9.000   522.00 c % Upper Left
   9.000   519.75   11.250    517.5   13.500    517.5 c % Lower Left
  15.750    517.5   18.000   519.75   18.000   522.00 c % Lower Right
  18.000   524.25   15.750    526.5   13.500    526.5 c % Upper Right
1057.500    526.5 m                                     % Right #8
1055.250    526.5 1053.000   524.25 1053.000   522.00 c % Upper Left
1053.000   519.75 1055.250    517.5 1057.500    517.5 c % Lower Left
1059.750    517.5 1062.000   519.75 1062.000   522.00 c % Lower Right
1062.000   524.25 1059.750    526.5 1057.500    526.5 c % Upper Right
  13.500    490.5 m                                     % Left #9
  11.250    490.5    9.000   488.25    9.000   486.00 c % Upper Left
   9.000   483.75   11.250    481.5   13.500    481.5 c % Lower Left
  15.750    481.5   18.000   483.75   18.000   486.00 c % Lower Right
  18.000   488.25   15.750    490.5   13.500    490.5 c % Upper Right
1057.500    490.5 m                                     % Right #9
1055.250    490.5 1053.000   488.25 1053.000   486.00 c % Upper Left
1053.000   483.75 1055.250    481.5 1057.500    481.5 c % Lower Left
1059.750    481.5 1062.000   483.75 1062.000   486.00 c % Lower Right
```

```
1062.000   488.25 1059.750    490.5 1057.500    490.5 c % Upper Right
  13.500    454.5 m                                    % Left #10
  11.250    454.5    9.000   452.25    9.000   450.00 c % Upper Left
   9.000   447.75   11.250    445.5   13.500    445.5 c % Lower Left
  15.750    445.5   18.000   447.75   18.000   450.00 c % Lower Right
  18.000   452.25   15.750    454.5   13.500    454.5 c % Upper Right
1057.500    454.5 m                                    % Right #10
1055.250    454.5 1053.000   452.25 1053.000   450.00 c % Upper Left
1053.000   447.75 1055.250    445.5 1057.500    445.5 c % Lower Left
1059.750    445.5 1062.000   447.75 1062.000   450.00 c % Lower Right
1062.000   452.25 1059.750    454.5 1057.500    454.5 c % Upper Right
  13.500    418.5 m                                    % Left #11
  11.250    418.5    9.000   416.25    9.000   414.00 c % Upper Left
   9.000   411.75   11.250    409.5   13.500    409.5 c % Lower Left
  15.750    409.5   18.000   411.75   18.000   414.00 c % Lower Right
  18.000   416.25   15.750    418.5   13.500    418.5 c % Upper Right
1057.500    418.5 m                                    % Right #11
1055.250    418.5 1053.000   416.25 1053.000   414.00 c % Upper Left
1053.000   411.75 1055.250    409.5 1057.500    409.5 c % Lower Left
1059.750    409.5 1062.000   411.75 1062.000   414.00 c % Lower Right
1062.000   416.25 1059.750    418.5 1057.500    418.5 c % Upper Right
  13.500    382.5 m                                    % Left #12
  11.250    382.5    9.000   380.25    9.000   378.00 c % Upper Left
   9.000   375.75   11.250    373.5   13.500    373.5 c % Lower Left
  15.750    373.5   18.000   375.75   18.000   378.00 c % Lower Right
  18.000   380.25   15.750    382.5   13.500    382.5 c % Upper Right
1057.500    382.5 m                                    % Right #12
1055.250    382.5 1053.000   380.25 1053.000   378.00 c % Upper Left
1053.000   375.75 1055.250    373.5 1057.500    373.5 c % Lower Left
1059.750    373.5 1062.000   375.75 1062.000   378.00 c % Lower Right
1062.000   380.25 1059.750    382.5 1057.500    382.5 c % Upper Right
  13.500    346.5 m                                    % Left #13
  11.250    346.5    9.000   344.25    9.000   342.00 c % Upper Left
   9.000   339.75   11.250    337.5   13.500    337.5 c % Lower Left
  15.750    337.5   18.000   339.75   18.000   342.00 c % Lower Right
  18.000   344.25   15.750    346.5   13.500    346.5 c % Upper Right
1057.500    346.5 m                                    % Right #13
1055.250    346.5 1053.000   344.25 1053.000   342.00 c % Upper Left
1053.000   339.75 1055.250    337.5 1057.500    337.5 c % Lower Left
1059.750    337.5 1062.000   339.75 1062.000   342.00 c % Lower Right
1062.000   344.25 1059.750    346.5 1057.500    346.5 c % Upper Right
  13.500    310.5 m                                    % Left #14
  11.250    310.5    9.000   308.25    9.000   306.00 c % Upper Left
   9.000   303.75   11.250    301.5   13.500    301.5 c % Lower Left
  15.750    301.5   18.000   303.75   18.000   306.00 c % Lower Right
  18.000   308.25   15.750    310.5   13.500    310.5 c % Upper Right
1057.500    310.5 m                                    % Right #14
1055.250    310.5 1053.000   308.25 1053.000   306.00 c % Upper Left
1053.000   303.75 1055.250    301.5 1057.500    301.5 c % Lower Left
1059.750    301.5 1062.000   303.75 1062.000   306.00 c % Lower Right
1062.000   308.25 1059.750    310.5 1057.500    310.5 c % Upper Right
  13.500    274.5 m                                    % Left #15
  11.250    274.5    9.000   272.25    9.000   270.00 c % Upper Left
   9.000   267.75   11.250    265.5   13.500    265.5 c % Lower Left
  15.750    265.5   18.000   267.75   18.000   270.00 c % Lower Right
  18.000   272.25   15.750    274.5   13.500    274.5 c % Upper Right
1057.500    274.5 m                                    % Right #15
1055.250    274.5 1053.000   272.25 1053.000   270.00 c % Upper Left
1053.000   267.75 1055.250    265.5 1057.500    265.5 c % Lower Left
1059.750    265.5 1062.000   267.75 1062.000   270.00 c % Lower Right
1062.000   272.25 1059.750    274.5 1057.500    274.5 c % Upper Right
  13.500    238.5 m                                    % Left #16
  11.250    238.5    9.000   236.25    9.000   234.00 c % Upper Left
   9.000   231.75   11.250    229.5   13.500    229.5 c % Lower Left
  15.750    229.5   18.000   231.75   18.000   234.00 c % Lower Right
  18.000   236.25   15.750    238.5   13.500    238.5 c % Upper Right
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1057.500    238.5 m                                          % Right #16
1055.250    238.5 1053.000   236.25 1053.000   234.00 c % Upper Left
1053.000   231.75 1055.250    229.5 1057.500    229.5 c % Lower Left
1059.750    229.5 1062.000   231.75 1062.000   234.00 c % Lower Right
1062.000   236.25 1059.750    238.5 1057.500    238.5 c % Upper Right
  13.500    202.5 m                                          % Left #17
  11.250    202.5    9.000   200.25    9.000   198.00 c % Upper Left
   9.000   195.75   11.250    193.5   13.500    193.5 c % Lower Left
  15.750    193.5   18.000   195.75   18.000   198.00 c % Lower Right
  18.000   200.25   15.750    202.5   13.500    202.5 c % Upper Right
1057.500    202.5 m                                          % Right #17
1055.250    202.5 1053.000   200.25 1053.000   198.00 c % Upper Left
1053.000   195.75 1055.250    193.5 1057.500    193.5 c % Lower Left
1059.750    193.5 1062.000   195.75 1062.000   198.00 c % Lower Right
1062.000   200.25 1059.750    202.5 1057.500    202.5 c % Upper Right
  13.500    166.5 m                                          % Left #18
  11.250    166.5    9.000   164.25    9.000   162.00 c % Upper Left
   9.000   159.75   11.250    157.5   13.500    157.5 c % Lower Left
  15.750    157.5   18.000   159.75   18.000   162.00 c % Lower Right
  18.000   164.25   15.750    166.5   13.500    166.5 c % Upper Right
1057.500    166.5 m                                          % Right #18
1055.250    166.5 1053.000   164.25 1053.000   162.00 c % Upper Left
1053.000   159.75 1055.250    157.5 1057.500    157.5 c % Lower Left
1059.750    157.5 1062.000   159.75 1062.000   162.00 c % Lower Right
1062.000   164.25 1059.750    166.5 1057.500    166.5 c % Upper Right
  13.500    130.5 m                                          % Left #19
  11.250    130.5    9.000   128.25    9.000   126.00 c % Upper Left
   9.000   123.75   11.250    121.5   13.500    121.5 c % Lower Left
  15.750    121.5   18.000   123.75   18.000   126.00 c % Lower Right
  18.000   128.25   15.750    130.5   13.500    130.5 c % Upper Right
1057.500    130.5 m                                          % Right #19
1055.250    130.5 1053.000   128.25 1053.000   126.00 c % Upper Left
1053.000   123.75 1055.250    121.5 1057.500    121.5 c % Lower Left
1059.750    121.5 1062.000   123.75 1062.000   126.00 c % Lower Right
1062.000   128.25 1059.750    130.5 1057.500    130.5 c % Upper Right
  13.500     94.5 m                                          % Left #20
  11.250     94.5    9.000    92.25    9.000    90.00 c % Upper Left
   9.000    87.75   11.250     85.5   13.500     85.5 c % Lower Left
  15.750     85.5   18.000    87.75   18.000    90.00 c % Lower Right
  18.000    92.25   15.750     94.5   13.500     94.5 c % Upper Right
1057.500     94.5 m                                          % Right #20
1055.250     94.5 1053.000    92.25 1053.000    90.00 c % Upper Left
1053.000    87.75 1055.250     85.5 1057.500     85.5 c % Lower Left
1059.750     85.5 1062.000    87.75 1062.000    90.00 c % Lower Right
1062.000    92.25 1059.750     94.5 1057.500     94.5 c % Upper Right
  13.500     58.5 m                                          % Left #21
  11.250     58.5    9.000    56.25    9.000    54.00 c % Upper Left
   9.000    51.75   11.250     49.5   13.500     49.5 c % Lower Left
  15.750     49.5   18.000    51.75   18.000    54.00 c % Lower Right
  18.000    56.25   15.750     58.5   13.500     58.5 c % Upper Right
1057.500     58.5 m                                          % Right #21
1055.250     58.5 1053.000    56.25 1053.000    54.00 c % Upper Left
1053.000    51.75 1055.250     49.5 1057.500     49.5 c % Lower Left
1059.750     49.5 1062.000    51.75 1062.000    54.00 c % Lower Right
1062.000    56.25 1059.750     58.5 1057.500     58.5 c % Upper Right
  13.500     22.5 m                                          % Left #22
  11.250     22.5    9.000    20.25    9.000    18.00 c % Upper Left
   9.000    15.75   11.250     13.5   13.500     13.5 c % Lower Left
  15.750     13.5   18.000    15.75   18.000    18.00 c % Lower Right
  18.000    20.25   15.750     22.5   13.500     22.5 c % Upper Right
1057.500     22.5 m                                          % Right #22
1055.250     22.5 1053.000    20.25 1053.000    18.00 c % Upper Left
1053.000    15.75 1055.250     13.5 1057.500     13.5 c % Lower Left
1059.750     13.5 1062.000    15.75 1062.000    18.00 c % Lower Right
1062.000    20.25 1059.750     22.5 1057.500     22.5 c % Upper Right
  13.500    -13.5 m                                          % Left #23
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  11.250    -13.5    9.000   -15.75    9.000   -18.00 c % Upper Left
   9.000   -20.25   11.250    -22.5   13.500    -22.5 c % Lower Left
  15.750    -22.5   18.000   -20.25   18.000   -18.00 c % Lower Right
  18.000   -15.75   15.750    -13.5   13.500    -13.5 c % Upper Right
1057.500    -13.5 m                                     % Right #23
1055.250    -13.5 1053.000   -15.75 1053.000   -18.00 c % Upper Left
1053.000   -20.25 1055.250    -22.5 1057.500    -22.5 c % Lower Left
1059.750    -22.5 1062.000   -20.25 1062.000   -18.00 c % Lower Right
1062.000   -15.75 1059.750    -13.5 1057.500    -13.5 c % Upper Right
B                                                       % Fill and stroke
%
% The end
%
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GreenBar Stream Example.