e-BARZ™

Software as a Service

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** This software is based in part on the work of the Independent JPEG Group. **

Phone: 888.696.4090
Email: globalsupport@dsionline.com
Web: www.DSIonline.com/en/labelingsolutions.aspx

INTRODUCING e-BARZ™ Software-as-a-Service

An e-commerce version of the popular Unibar barcode printing software, offering graphics output that can be added to HTML documents (or other document types supported by a browser), then viewed and printed from a browser on the client system. This is accomplished without downloading any software to the client PC or installing any software on a web-server. The Web application dynamically creates the barcode images by executing *e*-BARZ™. Anyone accessing the target Web site can print through the browser to the PC's local printer. Now, account applications, shipping documents, coupons, order forms purchase orders, invoices, pick slips, created on Web Servers can contain barcodes that can be viewed and printed locally on any Browser-supported printer.

Unibar's **e-BARZ PRO Service** lets users add and print barcodes on Web pages and electronic documents without purchasing, installing or supporting barcode software or printers.

- Available as an annual subscription
- Extremely easy to use and requires no software to be installed
- Electronic forms become barcode-enabled simply by adding an HTML command, and the e-BARZ PRO Service handles the rest
- Compatible with common scripting languages such as Active Server Pages (.asp), Java Server Pages (.jsp), Perl, PHP and Cold Fusion.
- Supports 1D and 2D barcode types including Code 128, PDF 417, Code 3 of 9, POSTNET, UPC and EAN

Client ID Authorization Number

Once you have signed up for the service, a Client ID number will be provided to you which authorizes the use of the e-BARZ Pro service according to your monthly usage.

AVAILABLE SETTINGS

Default Settings

The settings shown below are e-BARZ™'s built-in Default settings. Each option setting and the available choices for each is listed and defined on the following pages.

Barcode Symbology	3 of 9
Height	1”
Density	High

Barcode Symbology

This setting selects the barcode symbology to be used when encoding the data. Each type has its own character sets, specifications, etc. e-BARZ™ adheres to all these criteria when bar coding the data. It assures that the data you barcode follows all guidelines specified by the agencies responsible for the development of the various barcode standards.

3 of 9	EAN 13	UPC Version D
Extended 3 of 9	UCC EAN 128	Postnet
Interleaved 2 of 5	UPC 2	PDF417†
Code 128	UPC 5	
Codabar	UPC A	
EAN 8	UPC E	

† – indicates available only with 2D option

Human-Readable

Human-readable allows the user to specify the addition of actual text of the barcode to be included. The text may be placed above or below the barcode. The default is none.

Checksum

Check characters are a method used to assure the integrity of the data read by barcode scanning equipment and software. Though most barcode symologies are self-checking and highly reliable, occasionally a user may desire the added security a check digits affords. When selected, e-BARZ™ will include in the barcode data a check character, generated by an algorithm specified by the various barcode symbology. When printing human text, this check digit will also be printed. If you do not require a check character, or the data already includes one, leave this option disabled. Some symbologies require a checksum and ignore this option.

Rotation

Rotation allows the user to turn the barcode 90, 180, or 270 degrees. The default is 0.

Height

Height controls the vertical distance that e-BARZ™ will use to barcode data. The height setting is set in 1/100 th of an inch.

Density

The e-BARZ™ density option defines the width to use for the narrowest element in the barcode. This density setting provides the user with three options of controlling the resolution printed. The HIGH setting allows for a narrow element of approximately 10 mils, the medium setting is approximately 15 mils, and the low setting is approximately 23 mils.

HIGH (Command Line Mode ONLY)	highest resolution (thinnest bars) - 10 mils
MEDIUM (Command Line Mode ONLY)	medium resolution - 15 mils
LOW (Command Line Mode ONLY)	lowest resolution (wide bars) - 23 mils
DENSITY	Set the narrow bar width

Barcode densities can be stretched and compressed inside HTML using the <IMG> attribute after you have created the barcode.

Inkjet/Dot Matrix Printers – a minimum narrow bar width of 10 mils is required due to ink spreading. If you still have problems scanning a barcode at high density, please set the narrow bar width to a higher number (example - DENSITY=115)

DPI

The Dots Per Inch (DPI) setting in e-BARZ™ determines the resolution of the barcode. There are only two settings for this option, 100 DPI and 300 DPI. The default is 100 DPI. The 300 DPI setting allows you to set more densities but this will create a barcode 3 times the specified size. If you are using 300 DPI, you can use the <IMG> attribute in HTML to set the height and width of the image.

Rows (PDF417)

Controls the number of rows in the barcode. The range is 3-90. As a default, e-BARZ will automatically determine the correct number of rows.

Columns (PDF417)

Controls the number of columns in the barcode. The range is 1-30. As a default, e-BARZ will automatically determine the correct number of columns.

Ratio (PDF417)

The ratio is cell height to width.

Aspect (PDF417)

The aspect is height:width of the entire barcode. Height is fixed at '1', range is 0.1 to 99.9, and the default is 2.0.

Truncate (PDF417)

The right row indicators are eliminated, and the stop bar can be reduced to a single module bar.

Error Level (PDF417)

The Error Level controls how many codewords are placed in the PDF417 symbology. The higher the Error Level, the more codewords are placed in the PDF417 symbology. Codewords are used to check for two types of problems: erasuers (where a character is undecodable), and actual errors (where the position and value of a character are unknown).

Error Correction Level	Number Of Error Correction Codewords
0	2
1	4
2	8
3	16
4	32
5	64
6	128
7	256
8	512

In File (PDF417)

In File determines whether to interpret the data string parameter (-data*filename*), as a file name, or as a string to be encoded. The default is No.

PDF417 Options

The PDF417 is a 2-Dimensional symbology. For more information on the PDF417 parameters, see Appendix A.

-ROWS= Sets the number of rows, range is 3-90, default is 0 (automatic) (-ROWS=90)

-COLUMNS= Sets number of column, range 1-30, default is 0 (automatic) (-COLUMNS=30).

-DENSITY= Sets cell width (x dimension) in mils, range is 10 to 100, default is 10. (-DENSITY=10 sets cell width to 10 mils).

-RATIO= Sets ratio of cell height to width, range is 1.0 to 10.0, default is 3.0. ("-RATIO=3.2" sets the cell height to 3.2 times cell width, for a ratio of 3.2:1).

-ASPECT= Sets the "width" of the aspect ratio, which is *"height:width"* of the entire barcode. The height is fixed at '1'. The range is 0.1 to 99.9, the default is 2.0. ("-ASPECT=2.0" would result in an aspect ratio of '1:2').

-TRUNCATE= Truncate the barcode, default is normal. (-TRUNCATE=Y selects a truncated barcode; 'N' selects a normal, non-truncated bar).

-ERRLEVEL= Selects error level. Range is 0 to 8, default is 0.

-IN_FILE= Determines whether to interpret the data string parameter (-data*filename*) as a file name or as a string to be encoded, default is 'N', take the data as a string. (IN_FILE=Y means take the string as a file name and pass the contents of the file to the encoder. IN_FILE=N means interpret the data string as a string and pass that string to the encoder).

Using e-BARZ SaaS

The following are CGI switches for specifically calling out each selection for the barcode. They must be typed exactly as they appear below, including the "&" leading each switch.

NOTE: The '*client'* parameter can be added anywhere in the string with one exception: the '*-cgi'* parameter has to be first.

Executing e-BARZ™

http://<www.unibar.com/webservices/ebarzSAS.asp?-CGI&-data=<data>&<configurations>&client=xxxxxx

Data | Barcode Characteristics | Client ID

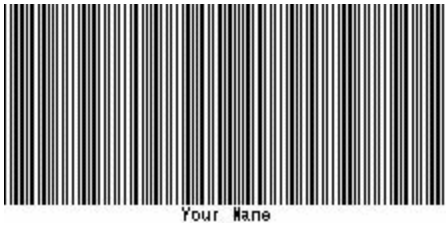
Examples:

To barcode the numbers "1234", using the 2 of 5 symbology, density=14.0mils, ½" tall:

<IMG SRC="http://www.unibar.com/webservices/ebarzSAS.asp?–CGI&data=1234&sym=2&den=140&h=50&h=50&client=xxxxx">

To barcode the name "Your Name", using 3 of 9 Extended symbology, density=7.0mils, 1" tall:

<IMG SRC="http://www.unibar.com/webservices/ebarzSAS.asp?-CGI&data=Your%20Name&den=70&h=100&sym=1&hr=B&client=xxxxx">



To barcode "a b c 1 2 3", using 3 of 9 Extended symbology, density=23mils, ¼" tall:

<IMG SRC="http://www.unibar.com/ webservices/ebarzSAS.asp?-CGI&data=a%20b%20c%201%202%203&den=230&h=25&client=xxxxx">

CGI Mode

-CGI — Sets program to CGI Mode

Symbology

&sym=*nn* — "nn" is a numeric value indicating the symbology

Symbology	Number
Code 39/3 of 9	0
Extended Code 39/3 of 9	1
Interleaved 2 of 5	2
Codabar	3
Code 128	4
EAN 8	5
EAN 13	6
UCC EAN 128	7
UPC 2	8
UPC 5	9
UPC A	10
UPC E	11
UPC Version D	12
<Reserved>	13
Postnet	14
PDF417†	15

† – indicates available only with 2D option

String

&data=<*string*> — "string" is a URL encoded string of the data to be bar-coded

URL Encoding Example:

Data to be bar-coded = My Data!
URL Encoded String = My%20Data%21

Human-Readable

&hr=<A/B/N> — sets Human-readable to Above, Below or None, default is none

Checksum

&chk=<Y/N> — add a checksum, Yes or No, default is No. For symbologies requiring a checksum this parameter is ignored.

Rotation

&r=<*rotation*> — "rotation" is one of: { 0, 90, 180, 270 }, default is 0

Height

&h=<height> — "height" is in .01 inch units

Density

&den=<density> — for all 1-dimensional barcodes, "density" is the width of the narrow bar in 0.1 mil units (e.g. 75 is 7.5 mils), valid numbers are 50 and above

DPI

&dpi=<dots per inch> "dots per inch" is either 100 or 300 (default is 100)

Client

&client=<client id #> Your authorized Client ID number to access e-BARZ Pro SaaS

Parameters for PDF417 ONLY:

Rows† (PDF417)

&rows=<rows> "rows" is the number of rows, range is 3-90, default is 0 (automatic)

Columns† (PDF417)

&cols=<cols> "cols" is number of columns, range 1-30, default is 0 (automatic)

Ratio† (PDF417)

&ratio=<ratio> "ratio" is cell height to width, range is 1.0 to 10.0, default is 3.0

Aspect† (PDF417)

&aspect=<aspect> "aspect" is *height:width* of the entire barcode, height is fixed at '1', range is 0.1 to 99.9, the default is 2.0.

Truncate† (PDF417)

&trunc=<Y/N> truncate the barcode, default is normal

Error Level† (PDF417)

&errlvl=<error level> "error level" is value, range is 0 to 8, default is 0.

In File† (PDF417)

&infile=<Y/N> determines whether to interpret the data string parameter (-data*filename*) as a file name or as a string to be encoded, default is 'N'
(IN_FILE=Y interprets the data string as a file name and passes the contents of the file to the encoder)
(IN_FILE=N interprets the data string as a string and passes the string to the encoder)

Appendix A - PDF417 Parameters

These parameters are what we use to define a PDF417 barcode across all Unibar products. They are a subset of the parameters defined by the PDF417 symbology.

- **X dimension** – width of a module, or cell, specified in mils, range is 1 to 100, default is 10.
- **Y dimension** – height of a module, specified as a multiple of the x dimension (sometimes referred to as a ratio; e.g., "3.0:1"). The range is 1.0 to 10.0; the default is 3.0.
- **Number of Rows** – number of rows of modules, range is 3 to 90. A value of 0 means 'automatic', let the printer determine the number of rows needed. The default is automatic.
- **Number of columns** – number of columns of code words, range is 1 to 30. A value of 0 means automatic, like rows. The default is automatic.
- **Error Level** – The range is 0 to 8, default is 0.
- **Truncate** – Yes or no, default is no.
- **Aspect** – Aspect ratio of the barcode, height to width. The height is set as '1', the range of the width is 0.1 to 100. The default is 1:2.

Handling of Rows, Columns and Aspect Ratio of the overall Barcode

By default, the barcode is made as small as possible for the given data, with an overall aspect ratio of 1:2. That is, height to width of the entire barcode.

If the user sets the Row value, the number of rows is fixed at that value, the number of columns is set to *automatic* and the barcode will add columns as needed to handle the given data.

Likewise, if the user sets the Column value, the number of rows is set to automatic.

Thus, the user has a way to control either the width or the height of the barcode. The other direction grows depending on the amount of data.

If the user sets both the Row and Column, the size is fixed.
The user must make sure the data will fit in the specified barcode size.

The aspect ratio is only used if both rows and columns remain at (or set to) zero.

This table shows the support provided by various print devices.

Print Device	x-dim	y-dim	Rows	Columns	Error Level	Truncate	Aspect
JPEG 100	10-100, 10	2.0–4.0, 0.1	Y	Y	Y	Y	
JPEG 300	3-100, 3.33	2.0–4.0, 0.1	Y	Y	Y	Y	

APPENDIX B –Control Characters

You may barcode control characters as permitted by the symbology being used. Code 128 is recommended. The commonly used control characters are Tab and Enter. The format for entering hex data (control characters) is:

(the hex 0B is encoded, the \x tells e-BARZ™ a control character needs to be inserted)
\x0B for Tab
\x0D for Enter