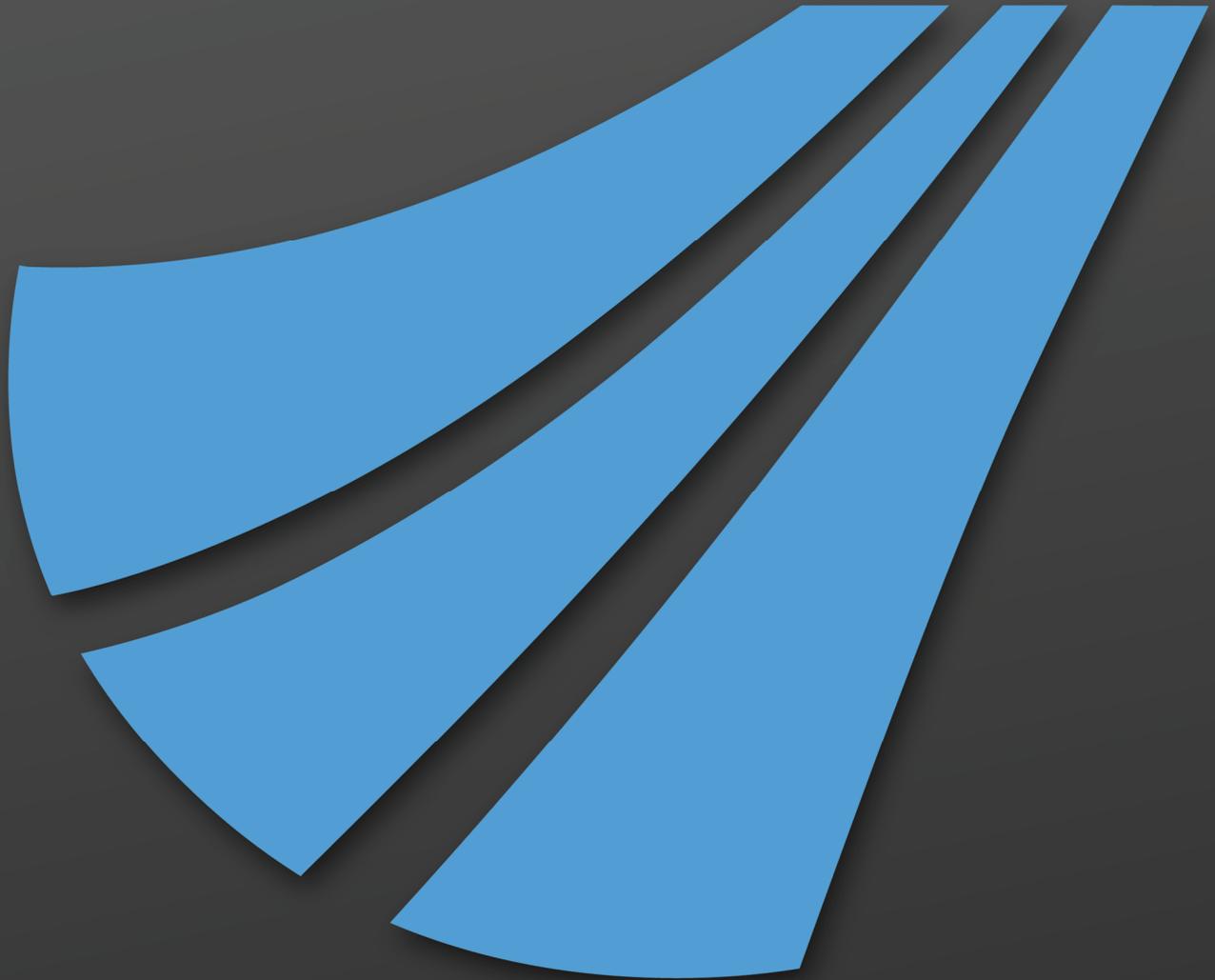


InterForm CookBook



InterForm400®
**eForms & Intelligent Document Management
for System i, i5, iSeries & AS/400**

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Introduction

This document is meant as an extra addition to the InterForm400 manual. Where the manual in detail is describing each and every function in InterForm400 this document is meant as an aid for those trying to solve a specific problem and just want a recipe to follow in order to solve the specific problem. This document can be very much compared to the IBM red books, describing concrete problems and how to solve them.

This document cannot be used as a substitute for the manual - it does not describe all functions in InterForm400 - only the most common questions/functionality.

The basis of the document is mainly the many technical tips that have been distributed to business partners and support questions answered over the past years. Now they are available here.

Contrary to the manual this document is also divided into segments describing various parts of InterForm400 instead of following the structure of the menus.

If you find that the document is missing a 'recipe' for something that must be a common problem/goal, then feel free to forward the suggestion to support@interform400.com.

Handling Images in InterForm400

When you want to insert an image or logo in the output of InterForm400 you can use any of these formats:

Format	For Output	Advantages	Disadvantages
BMP	PCL and PDF	Top quality. Color.	Takes up a lot of space in both PCL and PDF output => Resulting output get larger.
GIF	Color PCL*	Fairly good quality. Color.	Only for use with &&IMG *COLOR commands in the spooled file. Up to 256 colors.
JPG	PCL and PDF	Good quality. Color.	Takes a while to convert when used the first time. PCL result includes the BMP equivalent (i.e. larger PCL output)
PCL	PCL	Easy to create from any windows application. Works great with grey scale images. Can be converted into TIF with Swiftview. Can be either color or black/white	Is not supported for PDF or ZPL output! Cannot be viewed in the graphical designer
TIF	PCL, PDF and ZPL	Works with all output formats. Images are very small/efficient resulting in small output.	TIF files must be sharp black/white. Images with grey scales can be a problem.

* Notice that GIF files can only be used for color PCL output with the command &&IMG *COLOR in the spooled file.

As a general rule it is normally recommended to use **TIF** files for black/white graphics and **JPG** files for color images. These formats supports most output formats while giving you output of a fairly small size. The result is usually best if you use a specific black/white image for black/white output instead of using the same color image for both color and black/white output.

The images are installed in InterForm400 by uploading the image files to the IFS in **/APF3812Home/Work** and run option '8. Work with images' on the Administration menu of InterForm400.

Reducing the size of used images to minimum

When you are using images in InterForm400 you of course want the best output, but sometimes you are also met with a need to reduce the size of the final output to an absolut minimum. This can e.g. be the case if you want to archive PDF files created by InterForm400. Below are a few tricks to help you do just that.

☺ **TIP** ☺

The 2010 versions of Interform400 include a new feature to compress any used text in PDF files. If this COMPRESS feature is activated any text in the PDF file will be compressed reducing the PDF file size even more.

Reducing the resolution of the original image

The most simple way to reduce the resulting size of the output from InterForm400 is simply to reduce the resolution (or color dept) of the original image before you install it in InterForm400. You then compensate of the smaller size by selecting a different resolution in InterForm400 when you use the image in overlays.

(In InterForm400 you reduce the resolution in order to enlarge the image.)

The problem with this is that the quality of the output will also be reduced.

Reducing the size of simple color images with few colors.

Sometimes customers are using color BMP images in InterForm400 in order to insert a simple color image, but there are a couple of ways to reduce the impact of a simple color image quite a lot:

The simple way is simply to convert the BMP image into JPG and then install the JPG image instead. This will however not reduce the size of the printed output and you might also get even a larger reduction by cutting out the image into parts containing each color like below:

Consider this image:



The image is using only 2 colors: Black and blue, so a large reduction (compared to the original bmp file) can normally be found if you cut up the image into parts (two different images) consisting of each color like below:

The black part:



The blue part:



This can e.g. be done via such a simple tool as MS Paint, but other similar programs might be able to separate the images in another better/easier way. Next you need to convert them into sharp black/white (converting the color into black) and save them as TIF files. This can be done e.g. in Irfanview. Irfanview can be downloaded for free via www.irfanview.com. Irfanview is a recommendable product, but use it at your own risk.

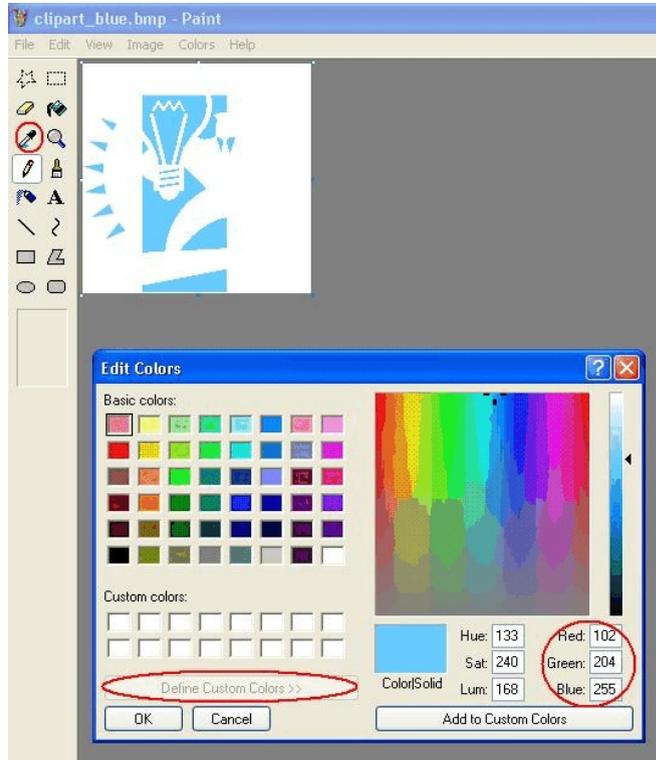
If you open the image in Irfanview you can do the conversion of the images above by doing this:

- 1 Open the image in Irfanview
- 2 Reduce the color dept to 2: Select '**Image**' and '**Decrease color dept**' and select '**2**'.
- 3 Save the image as TIF: Select save compression: CCITT Fax4.

Before you can use the black/white images in Interform400 for color output you only need to identify the exact RGB (Red, Green, Blue) combination of the light Blue color in the image

above. That can be done in MS Paint by opening the image and selecting the pipette on the upper left, clicking on 'Define custom colors' on the pop-up window and now you can see the RGB color settings on the right. Below we can see the color setting for this special color is:

Red 102
Green 204
Blue 255



Now you can use this information to use the image in InterForm400 as two images, where you simply color the blue part as found above:

Select this in InterForm400 to define a color to use with the Ink command:

80. Administering InterForm 400

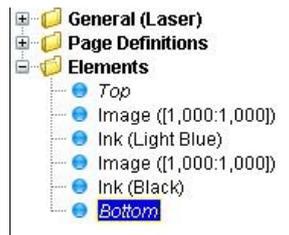
10. Work with palette colors

Now use option 2=Change to set one of the colors to the right RGB setting:

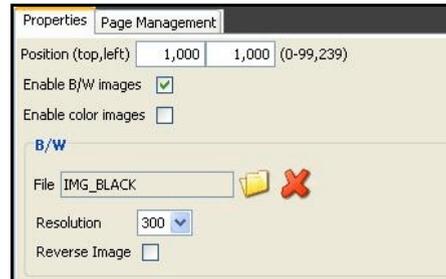
```
Color nbr . . . . . :      9
Description . . . . . Light Blue
Red . . . . .      102  0-255
Green . . . . .     204  0-255
Blue . . . . .     255  0-255
```

Finally you can now use the two images in an overlay like shown below:

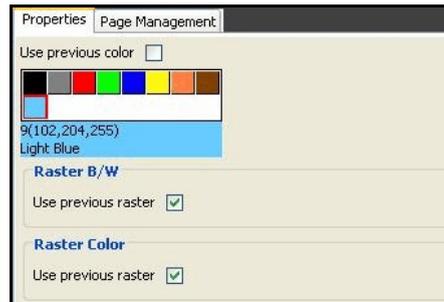
List of the overlay elements:



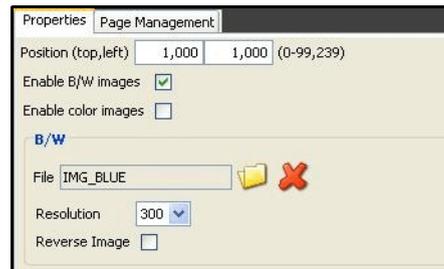
The first element - inserting the black part of the image:



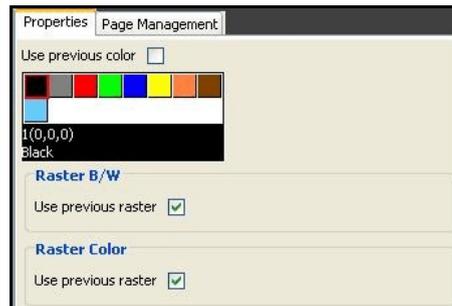
The second element - changing the ink into blue:



The third element - inserting the blue part of the image as a B/W image:



The fourth element - changing the ink back to black so not other elements are getting blue:



Especially color images, that are 'polluted' with many different colors instead of just the 2 or 3 colors that are actually needed, can be reduced quite a lot in size when you compare the final output from InterForm400. The final result using colored B/W images like above may also be

better as the colored areas now are 100% homogeneous without any 'pollution'.

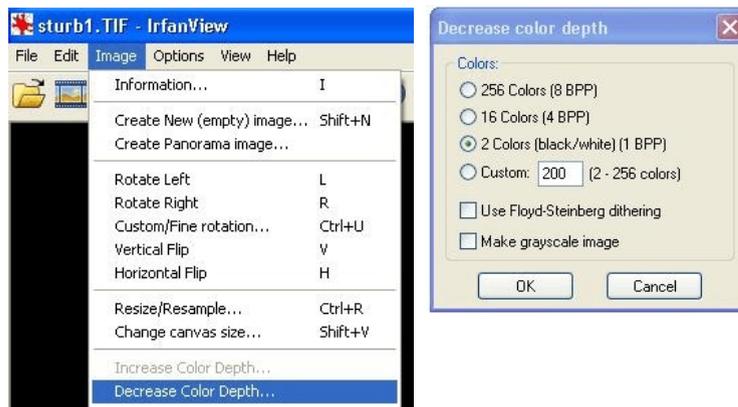
Tips for handling TIF files in InterForm400

As mentioned earlier we recommend you to use TIF files whenever you want to insert a black/white image in InterForm400. There is however some misunderstandings when it comes to the actual TIF formats, as the TIF extension covers several different tif format with separate compression methods.

The TIF image must be sharp black/white (no grey tones) and must not contain any other colours than black and white. The image can even look black/white, while having the color attribute activated making it impossible to use in InterForm400. Here is how you can ensure that the image can be used in InterForm400:

Irfanview: Converting an image into sharp black/white TIF

Converting an image into sharp black/white TIF and saving it with the right compression can be done with many tools. One of them is IrfanView, which can be downloaded for free via www.irfanview.com (A small fee is required for commercial use). If you open the image in Irfanview you can first convert the image to a sharp black/white (i.e. no grey tones or colors) by selecting 'Image' and 'Decrease color dept' and then select '2':



(Converting a TIFF image to sharp black/white in IrfanView)

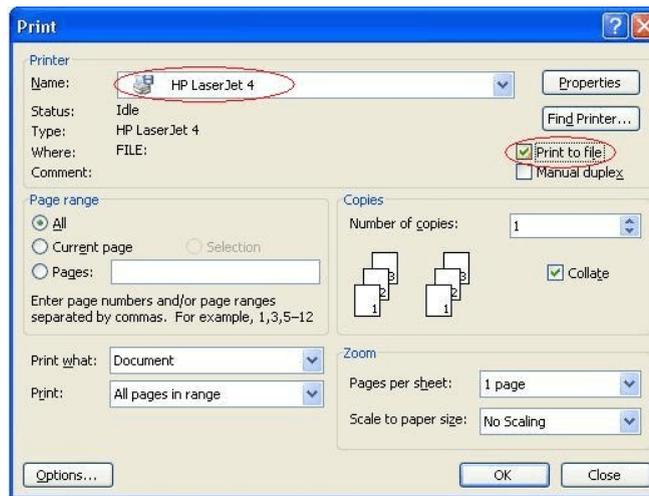
It is often a good idea to **disable** the option 'Use Floyd-Steinberg dithering' (as above) as this option will create 'flussy' edges. The idea with this dithering is to smooth transitions out, but in low resolution it will often not look good.

Finally you can save the image as a tif file by selecting 'File', 'Save as..' and use 'CCITT Fax 4' compression.

Swiftview: Converting an image into black/white TIFF

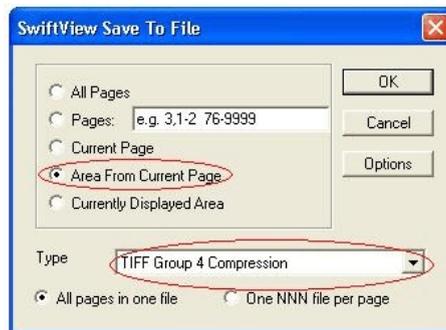
If the image contains many shades of grey (or colors) the result might not be perfect. If the image is like that you can e.g. open up MS Word (or any other application where you can resize the image and print it), resize the image to double the size (to get the best possible quality later when using 600 dpi as the resolution in InterForm400) - you can even change the paper size to e.g. A3 to get enough room for the double size.

In MS Word (or whatever application you are using) you should now print the image to file using a simple HP printer driver e.g. HP4:



Now you need to open the .prn file created above in Swiftview. You must open Swiftview from InterForm400 in order to be allowed to use it, so you need to preview an overlay as PCL (to start Swiftview) and then open the prn file created above. In Swiftview you simply click the icon 'Open' and select the prn file.

To save the image as a compressed TIF file you now select the icon 'Convert' in Swiftview. A new window will pop up:



Here you select 'Area from Current Page' and 'TIFF Group 4 Compression'. When you click 'OK' a scissors will appear and now you drag around the image with the left mouse button pressed. When you release the mouse button the tif file is saved. The extension might not be .tif as expected - it can be .001, but it is a real tif file anyway. This file can be used directly in Interform400.

Normally this procedure will create quite good TIF files, but if this still fails to give a result that is good enough, then you can consider to use a black/white PCL file for the PCL output instead. There is a tip below for doing that: 'Combining a B/W PCL file with a color image'.

Combining a B/W PCL file with a color image

Normally it is a bad idea to use PCL files in your overlays because:

- a) They are not visible in the graphical designer (only a red frame is shown).
- b) They cannot be used for ZPL overlays and are ignored for PDF output.

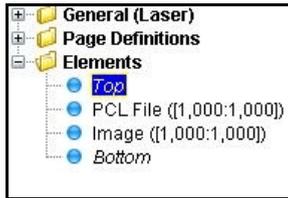
But there may be situations where the black/white result is not good enough when you use TIF files. In such cases you can consider to combine a B/W PCL file with a color image:

Then the B/W PCL file is used for the printed result (provided that you print in B/W, which is normally the case) and the color image (e.g. a JPEG image) is then used instead in the PDF output (provided that you create color PDF file, which is normally the case).

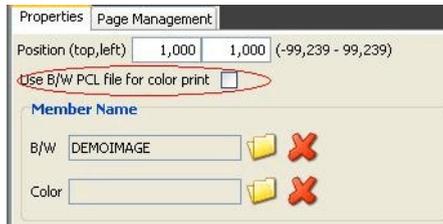
The B/W PCL file can be created in any windows application when printing to file using a simple HP printer driver (HP4 is recommended). You can see how on page [11](#).

For the overlay you then make sure, that the B/W PCL file is used ONLY for B/W output and the color image is used only for the color output like below:

The overview:



The PCL file element: (Notice that it is disabled for color output)



The color image element: (Disabled for B/W output)



If you later should merge the overlay for color printing the color image will be used, so that will also work fine.

Dynamic selection of images

InterForm400 can insert a specific image depending on what text is found in the spooled file. You do that by installing the image in InterForm400 and use it in a conditioned overlay. That is the way to do it, if you want to select between a limited number of images, but some customers want to insert a specific image out of hundreds or even thousands and then it is not possible (nor a good idea) to install all of these images in InterForm400. But there is another way...

Have you checked '**Appendix H: Commands in the spooled file**' in the InterForm400 manual? This Appendix lists a lot of commands you can insert in the original spooled file before you merge it in InterForm400. During the merge these commands are interpreted, executed and the command texts are removed from the final output. With the &&IMG command you can select an image (during merge) directly from the IFS or from an external image server. The image type you insert in this manner can be: BMP, GIF, JPG or TIF.

It is VERY important that the syntax described is followed 100%. If you e.g. position any information wrong the command is not executed.

If we want to insert a JPG image named image.jpg placed in the IFS (for color output) we could include this line in the spooled file:

123456789012345678901234567890123456789012345678901234567890123456
&&IMG *COLOR 01120 02000 300 300 /APF3812HOME/IMAGE.JPG

The line of numbers is just to help you verify the positions. If you insert a '+' or '-' in position 17 the image will be placed in the relative position in the vertical direction depending on in which line this &&IMG is placed. Notice, that the measurements for the placement on the page are measured in inches and pels and **must be preceded with zeroes**. In the example above the image is placed 1½ inch from the top (same as 1 inch and 120 pels) and 2 inches from the left with 300 dpi resolution in both directions.

This color command will only be executed if you do a color merge (for PCL output it means either HP4500 or HP5C as the printer type). Please notice that using JPG files for PCL output in the &&IMG command includes a conversion into bmp, which takes a while, so only smaller JPG images should be used for PCL output with this command.

Create a virtual printer to create PCL files

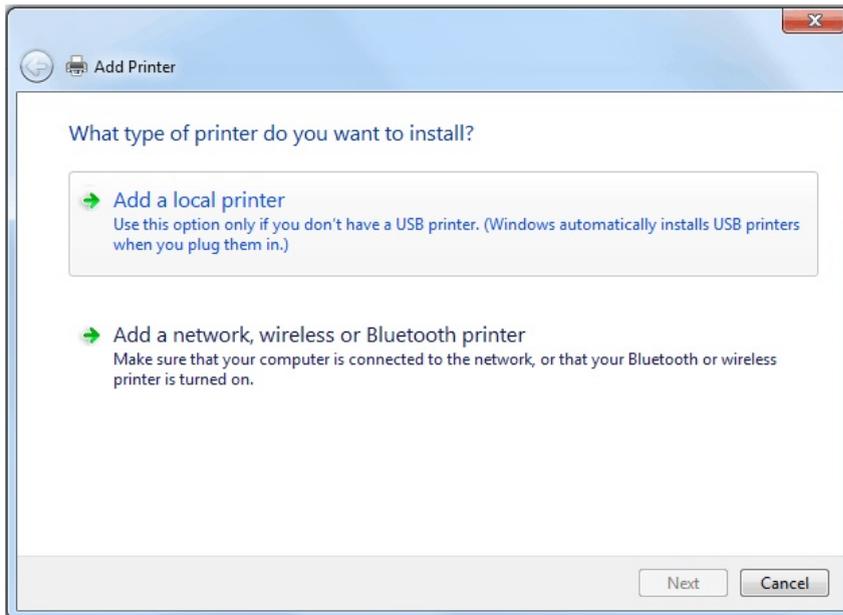
Normally you should avoid using PCL files as graphical resources in InterForm400 because of these facts:

1. They are not displayed in the graphical designer.
2. They can only be used for PCL output - not IPL, PDF or ZPL output.
3. Select only a simple HP Laserjet printer driver. If you don't there will be unpredictable print results..

If you really need to use a PCL resource you can install a 'virtual' printer on your windows PC to generate these PCL files. By 'virtual' I mean, that you install a printer, that only prints to file without a real, physical printer.

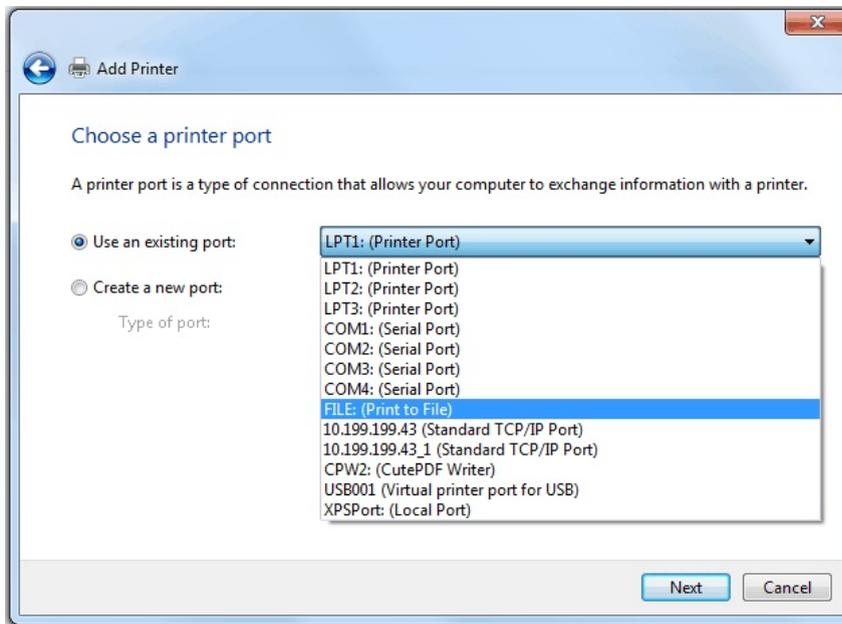
To install the printer you e.g. select 'Start' and 'Devices and Printers'. Right click anywhere and select 'Add a printer'.

For the printer type you should select 'Add a local printer':

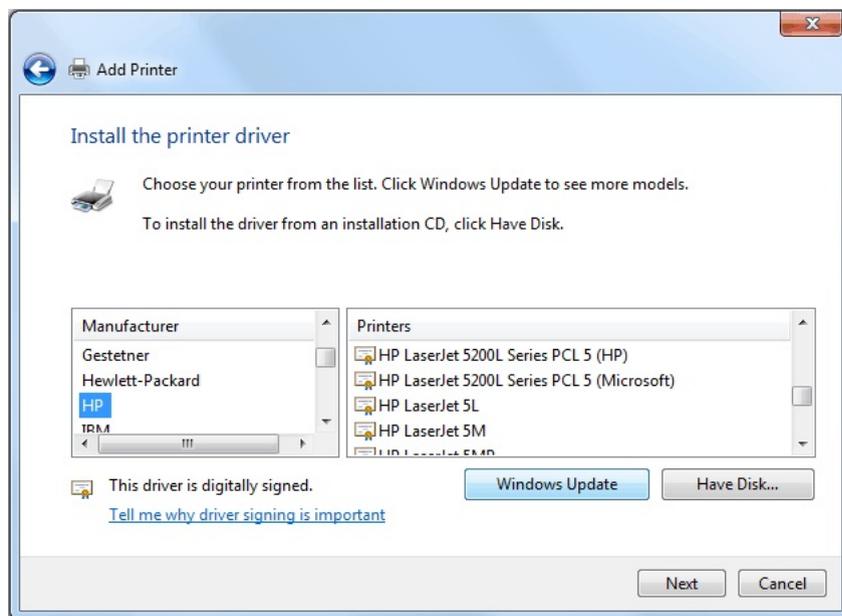


Select 'Next' and then this is displayed:

For the port you should select 'FILE:' to add a virtual (not physical) printer, that prints to a file:

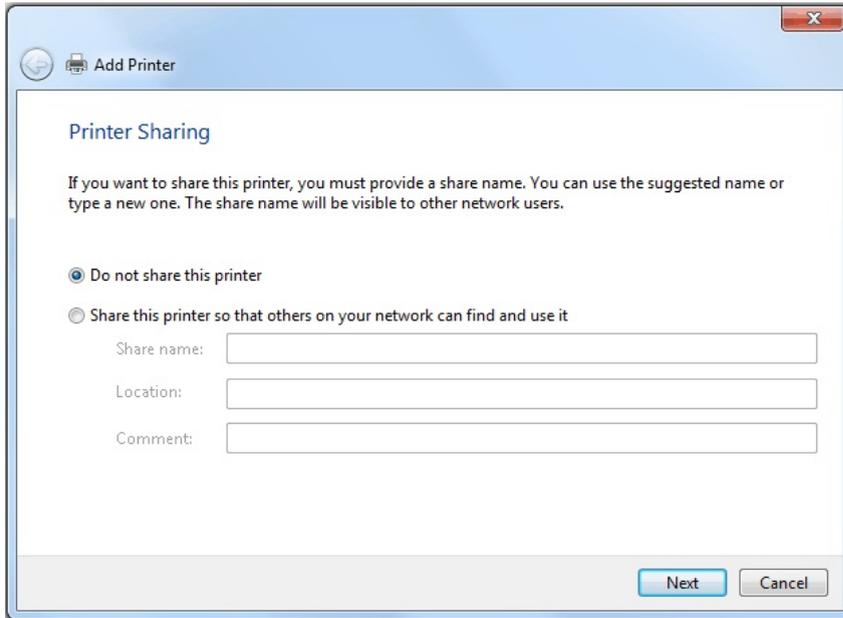


Click Next and this will be shown:

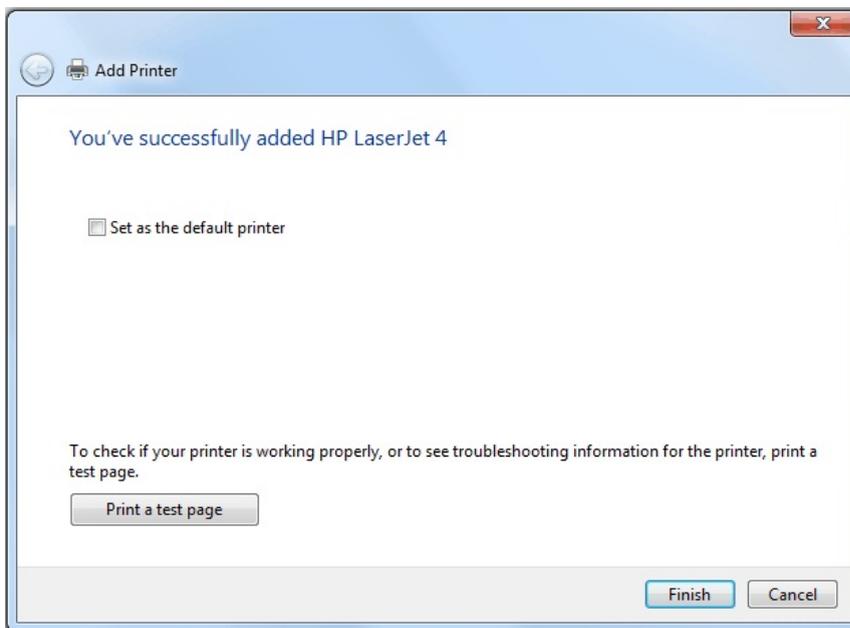


Here you should select 'HP' and select an older or a generic PCL5 printer driver. Printer drivers like e.g. HP Laserjet 4, HP Laserjet 5 or HP Laserjet 5si can be used. If these printer drivers are missing you can select 'Windows Update' and wait for a few minutes for additional drivers to be downloaded (be patient - it really does take a couple of minutes...)

You will see the screen below after you have selected the printer driver and clicked next:



Normally you should chose not to share the printer as indicated above. Click Next to get to the next screen:



The virtual printer is now ready to be used. Whenever you print to this 'printer' you are prompted for the file, that you want to print to. Copy this file onto the IFS in /APF3812Home/Work for installation in InterForm400.

Handling Font Challenges

Most of our customers are using simple font setup in InterForm400 defining the font numbers via option '1. Description of additional fonts' on the font menu. The nice thing about that is, that InterForm400 is using resident fonts on the printers making the print out smaller and more efficient. But for some situations the resident fonts will not do the trick.

Here are some of the issues you might hit considering fonts:
(Solutions are provided here).

Font challenges:

- a. Creating the first font
- b. Suggestion for a font naming standard
- c. The PDF output does not use the same fonts as the PCL output.
- d. A special company font must be used (How to use a TTF font).
- e. A narrow/condensed font does not print or right align correctly

Each of these challenges are solved below:

Creating the first font for PCL/PDF

It is not that difficult to create a new font number in InterForm400. You just select this in InterForm400:

- 80. Administering InterForm 400
 - 7. Work with fonts
 - 1. Description of additional fonts
- Press F6=Create

Type the number of the new font and fill out the parameters below:

Create font	APF370D
Font	6660 Other fonts
Description	Arial 12 normal
Spacing	1 0=Fixed, 1=Proportional
Pitch	1 0.10-49.99
Height	12 1.00-792.00
Style	0 0=Upright 1=Italic 4=Condensed 5=Condensed italic
Stroke weight	0 (-7 - +7) 0=Medium <0=Light >0=Bold
Typeface	16602 0-65535
Symbol set	blank=standard
Override spacing	blank=standard

The parameters are filled out like this:

- Description** Type in the font type and size for easier use.
- Spacing** Usually it should be **1=Proportional**. Use 0=Fixed only for fixed fonts like courier and letter gothic.
- Pitch** The size (in CPI) if you have typed 1=Fixed above. Else it is ignored, but it must be filled out. We type just '1'.
- Height** Proportional fonts are measured by the height as in any windows application.
- Style** We select 0 for a simple, normal font.

Stroke	Use either 0 for a normal font or 3 for a bold font.
Typeface	The typeface identifying the font type. Press F1 (Help) and <Page Down> to get a list of all possible typefaces:
	0 Line printer
	3 Courier
	4101 CG Times
	4102 Letter Gothic
	4113 Omega/Coronet
	4140 Clarendon
	4148 Univers
	4168 Antique Olive
	4197 Garamond
	4297 Marigold
	4362 Albertus
	16602 Arial
	16901 Times New Roman

If the printer also knows the combination of the style, stroke and typeface it will print the correct font.

If the graphical designer was open while the font number was defined you can select 'File' and 'Reload fonts and colors' in the designer to be able to use the font - or restart the designer.

Creating the first font for Zebra/ZPL Output

You create a new font number for use with ZPL output by selecting these options in InterForm400:

80. Administering InterForm 400
 7. Work with fonts
 11. Description of ZEBRA fonts
 F6=Create

If option '11. Description of ZEBRA fonts' is not visible on the fonts menu, you will need to create a Label (ZPL) file set via option 5 on the administration menu and assign the file set to your user profile. You can use option '9=User access' to give yourself access.

The only font types known by ZPL printers are '**CG Triumvirate Bold Condensed**' and '**Dot Matrix**' fonts, so without soft fonts you can only create different sizes of these fonts. Font numbers of these types are locked in the range **2000-2999** and **3000-3999**. If you want to use another font it is fairly easy to define such a font by installing a soft font and refer to the soft font here. You just create a font number in the range 5000-9999 and refer to the installed soft font. Refer to a section below for a description of how to install a soft font for ZPL.

If the graphical designer was open while the font number was defined you can select 'File' and 'Reload fonts and colors' in the designer to be able to use the font - or restart the designer.

Suggestion for a naming standard for font numbers

When you define new font numbers you should consider what numbers you use for the various fonts. The font range 5000-9999 is available for fonts that you define. InterForm400 is shipped with a few fonts in this font range, but you can delete or change them if you want.

The fonts are global for the complete InterForm400 installation, so it is a good idea to find a good naming standard of the fonts. This will help you to find the exact font to use in the overlays and it will also help you to avoid creating duplicates of the same font.

The font number are identified by a 4 digit number. I suggest that you use the 4 digits in this

way:

The first digit (from the left) identifies the typeface e.g. arial, courier etc..

The second digit identifies the style of the font i.e. normal, bold, italic, condensed.

As the size normally is lower than 100, I suggest that you use the least significant digits for the size.

The style could be setup in this manner:

Style digit	Normal	Italic	Bold	Condensed
0	X			
1		X		
2			X	
3		X	X	
4				X
5		X		X
6			X	X
7		X	X	X

If you then use the 5xxx range for arial typeface then these font numbers are given:

5112 Arial,italic font with the size 12.

5372 Arial, italic and bold font with size 72.

The important thing is not that you use this suggestion, but that you find a system that fits your needs and is somewhat logical.

The PDF output does not use the same fonts as the PCL output

PDF does not recognize the same array of fonts as it is the case for printers. The 3 fonts used by Acrobat Reader are: Arial, Times New Roman and Courier. This is a limitation of the Acrobat Reader. If you use other typefaces then the font will be converted into one of these unless you use a soft font. If you want to get the same result when using the same overlay you should either use one of these 3 fonts or use a soft font for PDF.

If you are using a font number with typeface 4148 (Univers) you will see a difference when comparing the PCL and PDF as Univers will be converted into Arial in Acrobat Reader when viewing the PDF file. You then need to either use a TTF (True Type Font) for PDF output or use Arial instead.

Size difference

You might also see a difference between the font size even when using one of the 3 fonts mentioned above. The reason is that the font sizes are free in PDF while PCL only change the font size in steps of 0.24 points. This means that if you want to have the exact same font size in PCL as in PDF you will need to specify a font size that is a multiplum of 0.24. (PCL will round of to the whole multiplum that is lower). This means e.g. that 12.00 is a perfect size, while a size of 11.00 will be rounded of to 10.8 in PCL. So instead of 11.00 you can select 11.04 instead to get the exact same size in PCL and PDF.

Barcode size difference

If you see a difference in the simple barcodes (like e.g. code128, interleaved 2 of 5 etc..) then

the reason most likely is that someone has changed the font number specifications, but not created a new soft font. If you need to resize these barcodes (not the 2D barcodes), then you will need to remove entries in autodownload, remove the soft font and font number and recreate the barcode from scratch.

If you need to use another font than the fonts: Arial, Times New Roman and Courier, then you will need to install a TTF (True Type Font) in InterForm400 for use with PDF.

Refer to the section below for a description of how to use a soft font for PDF output.

How to use a TTF for PDF output

If you want to use a special font for your PDF output or if the fonts in the PDF result does not look like the PCL output, then you should consider to install a TTF (True Type Font) for use with the PDF output. You can e.g. copy the TTF file from C:\Windows\Fonts\ onto the IFS in /APF3812Home/Work/. Just make sure that you are not violating any copyrights when copying the file.

If you want to use different versions of the same font (e.g. bold or italic) then you will need to copy a TTF file for each version. The copy is most easily done via a mapped network drive. Check another section in this document for a description of how to do that.

Installing the TTF in InterForm400

After the TTF file has been copied to the IFS you select this in InterForm400:

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7. Work with fonts

5. Work with TrueType font for PDF

Press F6=Create

Now press F4 to select the TTF file inside /APF3812Home/Work

The symbol set selection depends on the codepage(s) that you want to use the TTF with:

Symbol set:	EBCDIC Codepages
1 = Western	Any western codepage not mentioned below including euro codepages.
2 = Central European	Used for eastern europe: Codepage 870.
3 = Baltic	
4 = Turkish	
5 = Cyrillic	
6 = Greek	
7 = Arabic	
8 = Hebrew	
9 = Special	

State a internal name for the installed soft font to be used later for autodownload. This must be a new name of your choice.

If you want to use the TTF with DBCS or Unicode you will need to refer to the Codepage section in this manual for help.

Creating a font number to be used with the TTF

The font number to be used with the TTF has very few requirements and can be created as stated in the section above 'Creating the first font for PCL/PDF'. The most important is to remember that the font must be defined as the right type: Fixed or Proportional (most TTF are proportional) and the size must be correct. The size is for proportional fonts stated as the height. The typeface is not important, so you can e.g. select any number above 32767 to avoid using the same typeface as any resident font.

Linking the font number with the installed TTF

Before you can use the font number with the installed soft font you need to link them via Autodownload. Select this in InterForm400 to do that:

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7. Work with fonts

8. Auto download soft fonts

Select option '8=Update fonts' for the printer group '*PDF' and press F6=Add to add a new link between a soft font and font number:

```

                                Add Auto download Soft Font                                PGR332D
Printer group name . . . : *PDF
Font number . . . . . 6001           F4=List
Symbol set number . . . . 1           1 = Western
                                           2 = Central European
                                           3 = Baltic
                                           4 = Turkish
                                           5 = Cyrillic
                                           6 = Greek
                                           7 = Arabic
                                           8 = Hebrew
                                           U = UCS2 unicode
Font member name 0° . . . MYFONT       F4=List
When to embed font . . . . *ALWAYS     *ALWAYS *PRI *SEC *NEVER
```

Here you state the font number, the same symbol set as selected when installing the TTF and the name of the soft font (derived from the TTF). Normally select '*ALWAYS' to always use the soft font in the PDF files. If you can be sure that the TTF is installed on the PC's opening the PDF files you can also leave it out with one of the other values here.

How to use a TTF for PCL output

You might meet the requirement that InterForm400 should use a specific company font for the output. That is possible if you have the font available as a TTF font. Here it is described how you can install such a TTF font and use it for PCL output in InterForm400.

Installing the TTF in InterForm400

If you already have the font installed on your PC you may find it in C:\Windows\Fonts\.
Remember to make sure that you are not violating any copyrights when copying the TTF from the PC onto the System i. You need to copy the TTF file into the IFS in /APF3812Home/Work.
That is most easily done if you have mapped a network drive (or added it as a network place).
This document can also help you to do that.

Select this in InterForm400 to install the TTF file:

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7. Work with fonts

4. Work with soft fonts for PCL

Press F6=Create and select the TTF file via F4 and option 1=Select. You will see this screen:

```

          Install TrueType font to PCL from /APF3812Home/Work          FNT431D
PC file . . . . . : myfile.ttf
Font name . . . . . : My Font
Font name PCL . . . . . : My Font
Symbol set . . . . . : 1
                                     1 = Western w/o Euro
                                     2 = Central Europe w/o Euro
                                     3 = Baltic
                                     4 = Western with Euro
                                     5 = Cyrillic w/o Euro
                                     6 = Cyrillic with Euro
                                     7 = Turkish
                                     8 = Greek
                                     9 = Central Europe with Euro
                                     A = Arabic
Type Face . . . . . : 33333          (0 65535)
Member name in FONT file . MYFONT    F4=List

F3=Exit                                F12=Cancel
```

Now state the Symbol set to use. This depends on what codepage(s) you want to use this with:

Symbol Set:

1=Western w/o Euro

2=Central Europe w/o Euro

3=Baltic

4=Western with Euro

5=Cyrillic w/o Euro

6=Cyrillic with Euro

7 = Turkish

8 = Greek

9 = Central Europe with Euro

A = Arabic

EBCDIC Codepages:

Any non-euro western codepage not mentioned below e.g. 37, 273 etc.. (Latin1).

Used for eastern europe, codepage 870 (Latin2).

Baltic codepages e.g. 1112, 1122.

Western euro codepages e.g. 1141.

Codepages 880 and 1025 - without the Euro sign.

Cyrillic euro codepage(s).

Turkish: 1026.

Greek: 875.

Eastern europe (Latin2) with euro: 1153.

Arabic: Codepage 420.

If the true type font use a known typeface as listed on page [18](#), then you should select that number. If it is not know it is recommended to specify a typeface higher than 32767 to avoid any conflict with any resident fonts on the printers (choose freely).

Finally state a (new) name for the soft font, that you want to refer to in InterForm400. This name is used for a member name, so there are restrictions to the name e.g. it may not start with a number.

Creating a font number to be used with the soft font

You will need to create a font number that fits the soft font created above. You create the font number as described on page [17](#). However you need to make sure that the font number is defined to it fits the soft font.

Start out by making sure exactly what attributes the soft font has. Select this in InterForm400:

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- 7. Work with fonts
- 4. Work with soft fonts for PCL

Now use option 8=Dsp. Attributes to see the attributes of the soft font:

Font Member Name	MYFONT870
Font Member Text	TrueType My Font
Header Format	15 TrueType
Symbol Set	17U PC-852, Latin 2
Spacing	1 Proportional spacing
Pitch	2.10 CPI
Height	.00 Points
Style	0 Upright
Stroke weight	0 Medium
Typeface	65000

The symbol set tell for which codepages this can be used. The spacing must be duplicated to the font number as well as the style, stroke weight and typeface:

Create font	APF370D
Font	6500 Other fonts
Description	My Font size=12
Spacing	<u>1</u> 0=Fixed, 1=Proportional
Pitch	1 0.10-49.99
Height	<u>12</u> 1.00-792.00
Style	<u>0</u> 0=Upright 1=Italic 4=Condensed 5=Condensed italic
Stroke weight	<u>0</u> (-7 - +7) 0=Medium <0=Light >0=Bold
Typeface	<u>65000</u> 0-65535
Symbol set	blank=standard
Override spacing	blank=standard

The final part is to make sure that the soft font is linked with the font number in autodownload.

Linking the font number with the installed TTF

Finally we need to link the font number with the soft font and specify on what PCL output this is to be used (we assume it is for all output here).

To define the link you select this in InterForm400:

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7. Work with fonts

8. Auto download soft fonts

Now you need to verify if any of the printer groups are used for all PCL output. (The printer groups *IWPDF and *PDF are ignored here). To check that you use option '6=Update output queues' for each of the printer groups until you find one including the output queue *ALLPCL making it the one used for all PCL output. The printer group normally created for barcodes is called *PCL.

Now use option '8=Update fonts' for the same printer group and press F6=Add to add the link between the font number and soft font:

```

                                Add Auto download Soft Font                                PGR332D
Printer group name . . . . : *PCL
Font number . . . . . 6500           F4=List
Symbol set number . . . . 4           0=All symbol sets (barcodes only)
                                           1 = Western w/o Euro
                                           2 = Central Europe w/o Euro
                                           3 = Baltic
                                           4 = Western with Euro
                                           5 = Cyrillic w/o Euro
                                           6 = Cyrillic with Euro
                                           7 = Turkish
                                           8 = Greek
                                           9 = Central Europe with Euro
                                           A = Arabic
                                           U = UCS2 unicode
Font member name 0° . . . MYFONT     F4=List
Font member name 90° . . .             F4=List

F3=Exit           F4=Prompt           F12=Cancel
```

You do not need to state a font member for 90 degrees if you use the normal HP4 printer type for the merges.

A narrow/condensed font does not print or right align correctly

If you have defined a font as a narrow or condensed font number by stating 4=Condensed or 5=Condensed italic for the font number and the result is not as expected, then the most likely reason is, that the printer does not know the condensed version of the font. This can be the case with e.g. arial: A normal arial might print fine, while a condensed arial might look totally wrong.

If you do not need to use right adjustment you can consider to use helvetica condensed instead (typeface=24580), but this font cannot be right aligned in InterForm400.

If the suggestion above fails you will need to use a TTF font in InterForm400. It is described how to do that above.

How to use a TTF for ZPL output

If you want to print in a codepage other than western codepages or if you want to print in other fonts than the resident fonts: 'CG Triumvirate Bold Condensed' and 'Dot Matrix' then you will need to use TTFs (True Type Fonts) in InterForm400.

Installing the TTF in InterForm400

If you already have the font installed on your PC you may find it in C:\Windows\Fonts\.
Remember to make sure that you are not violating any copyrights when copying the TTF from the PC onto the System i. You need to copy the TTF file into the IFS in /APF3812Home/Work. That is most easily done if you have mapped a network drive (or added it as a network place). This document can also help you to do that.

Now you select this in InterForm400 to install the TTF:

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7. Work with fonts

12. Work with ZEBRA soft fonts

(If option '12. Work with ZEBRA soft fonts' is not visible you will need to create a Label file set and assign this file set to the current user profile via option 5 on the InterForm400 administration menu).

Now press F6=Create to install the TTF file. Press F4 and select the file with 1=Select.

State the symbol set for which this is to be used for and a name for the soft font. The new name for the soft font is used for a member name so it is restricted a bit it must e.g. not start with a number.

Creating a font number to be used with the soft font

Select this in InterForm400 to create a font number to use a soft font created like above:

80. Administering InterForm 400

7. Work with fonts

11. Description of ZEBRA fonts

Press F6=Create to create the font number and state a font number in the range 5000-9999:

```

                                Create zebra font                                ZEB370D
Font . . . . . 5555 Other fonts
Description . . . . . My Font
Height . . . . . 12.00 1.00-792.00
Relative width . . . . . 1.00 0.20-5.00
Special EBCDIC codepage . . _____
Soft font member name per symbolset
Western . . . . . MYFONT
Central European . . . . . _____
Baltic . . . . . _____
Turkish . . . . . _____
Cyrillic . . . . . _____
Greek . . . . . _____
Arabic . . . . . _____
Hebrew . . . . . _____
Special . . . . . _____
UCS2 unicode . . . . . _____
F3=Exit F4=Prompt F12=Cancel
```

Press Enter and the font works without any additional changes.

Handling Codepage Challenges

Here are most common challenges that our customers have in relation to codepages.

Codepage challenges:

- a. The euro sign is not shown in the output of InterForm400.
- b. The special signs of the codepage are not shown in the output
- c. How to print DBCS/unicode with InterForm400
- d. Inserting texts in different symbol sets in one overlay/output
- e. Making sure that the right codepage is selected for the merges

Each of these challenges are solved below.

The euro sign is not shown in the output of InterForm400.

If you are trying to print or output the euro sign (€) and you get another character instead the question is then how to solve that?

First of all you need to do the merge in InterForm400 with a euro codepage e.g. 1141 for germany. You can e.g. also check if the output is correct by previewing the resulting PCL spooled file in Swiftview. The euro sign should be shown. If the output in Swiftview looks correct the problem is to be found in the printer as it apparently does not know the euro sign.

NOTE

The printer can print the euro sign from windows even if it does not know the euro sign. The reason is that the fonts are downloaded when printing. This (and other things) does however also make the output quite large and slow to print..

The way to solve the euro sign problem is to install a TTF (True Type Font) for symbol set Codepage852 as described on page [22](#) and use a euro codepage for the merge.

The special signs of the codepage are not shown in the output

When trying to print in e.g. codepage 870 (eastern europe), 880 (Cyrillic) or other non-western codepages you may notice that many characters are outputted incorrectly. This is especially the case for PDF output and perhaps also for the printed result as some printers might have limited support for e.g. latin2 and other non-western codepages.

The way to solve the problem is to install and use TTF (True Type Fonts) for PDF and if needed also for PCL (and ZPL). The procedure to install and use TTFs in InterForm400 are described here:

For PDF output refer to page [20](#).

For PCL output refer to page [22](#).

For ZPL output refer to page [24](#).

This procedure can be used if you want to use one single codepage that is SBCS (Single Byte Character set) contrary to DBCS (Double Byte Character Set).

If you want to use more than one codepage on the same output or use DBCS you will need to refer to the next sections.

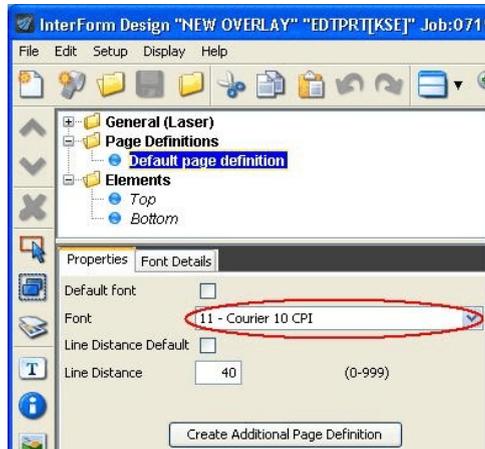
How to print DBCS/unicode with InterForm400

If you want to print DBCS or unicode spooled files with InterForm400 you will need to link ALL used font numbers in the used overlay with a unicode soft font in InterForm400 as shown below. 'All fonts' include the default font (and extended page definitions) on the overlay as defined here:

In the green screen designer:

Design InterForm 400 overlay		APF300D
Overlay name	DEMO	
Overlay text		
Line spacing	040	in 1/240 of an inch (*INPUT, 1-720)
Rotation	000	(*INPUT, 0, 90, 180, 270)
Extra left margin positions	0	(0-99)
Maximum number of print positions	378	(1-378)
Extra blank lines on top	0	(0-99)
Font	<u>0066</u> <---	*INPUT, fontnumber F4=List
Extended page def.	N	(Y N)
Drawer / Papertype	*PRINTER	(*INPUT, *PRINTER, 1-256, Name) F4=List
Paper Size	0	F4=List
Pages per side		
Copy management	N	(Y N)
Duplex print	N	(N=no S=short edge margin L=long edge margin)
Duplex margin	0	in 1/240 of an inch (1-720)
Back page overlay		Code for placement (B=back page F=front)
F3=Exit	F4=Prompt	F9=Copy from another overlay F12=Cancel
F13=Set view/print parameters		F14=PCL-view

In the graphical designer:



You need to change the default font or link the font with a unicode soft font. Below it is described how to create Unicode output - step by step:

Enabling unicode in InterForm400

Before we can install the TTF (True Type Font) in InterForm400 we need to be sure that unicode is enabled in InterForm400. Select this to enable it:

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2. Configure InterForm 400

Press Enter until you get to the screen below and state 'Y' to enable unicode:

Do you want to be able to use UCS2 (unicode) or DBCS (double byte) print.

Use UCS2 / DBCS . . . Y (Y N)

F3=Exit

F12=Cancel

Remember to press Enter several times again to return to the administration menu.

Installing the TTF in InterForm400

First you need to upload the TTF (True Type Font) containing all the characters used. If possible it is very good idea to find a real unicode TTF file like e.g. arialuni.ttf. You install it by first uploading the file onto the IFS in /APF3812Home/Work and select this in InterForm400:

80. Administering InterForm 400

7. Work with fonts

6. Work with TrueType font for UCS2 / DBCS

Press 'F6=Create', F4 to prompt and 1=Select to install the unicode TTF.

State a name for the installed soft font and press Enter. Notice that the name is used for a member so there are restrictions to the name. The name can e.g. not start with a number.

Creating a font number to be used with the TTF

The font number to be used with the TTF has very few requirements and can be created as stated in the section above 'Creating the first font for PCL/PDF'. The most important is to remember that the font must be defined as the right type: Fixed or Proportional (most TTF are proportional) and the size must be correct. The size is for proportional fonts stated as the height. The typeface is not important, so you can e.g. select any number above 32767 to avoid using the same typeface as any resident font.

Linking the font number with the installed TTF

Before you can use the font number with the installed soft font you need to link them via Autodownload. Select this in InterForm400 to do that:

80. Administering InterForm 400

7. Work with fonts

8. Auto download soft fonts

Select '8=Update fonts' for the *PDF printer group and add the link between the font number and soft font by pressing F6=Add:

```

Printer group name . . . : *PDF

Font number . . . . . 9999      F4=List
Symbol set number . . . . U      1 = Western
                                   2 = Central European
                                   3 = Baltic
                                   4 = Turkish
                                   5 = Cyrillic
                                   6 = Greek
                                   7 = Arabic
                                   8 = Hebrew
                                   U = UCS2 unicode

Font member name 0° . . . MYFONT  F4=List

When to embed font . . . . *ALLWAYS *ALLWAYS *PRI *SEC *NEVER

F3=Exit          F4=Prompt          F12=Cancel

```

Here it is very important that you select 'U' as the symbol set.

Finally for the merges you need to specify that you want a unicode output like below:

```

Seqnbr Function
3.0 1 Merge with overlay

Output queue for merged print . *DEFAULT
Library . . . . .
Printer type . . . . .
Unicode output . . . . . *YES <---- *INPUT, *YES
Merge overprint lines . . . . *NO *NO, *YES
Find overlay in form type table N (Y N)

```

Enabling the graphical designer for DBCS

The DBCS signs are not shown correctly in the designer with the default setup. In order to be able to see the DBCS characters correctly in the designer you will need to do 2 changes:

1. Setup the DBCS codepage to use in the graphical designer:

Chose these options in InterForm400 to setup the DBCS codepage to use in the designer:

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4. Work with InterForm 400 users

Select your user profile with 2=Change and set the DBCS codepage in the bottom:

```

Change InterForm user
APF102D

User profile . . . . . : KSE           Kim S Egekjär

Language of user . . . . . GB         DE, DK, ES, FR, GB, PT, ' '

Users output queue . . . . AFC_INPUT1 blank = system default
Library . . . . .         APF3812

Printer type . . . . . HP4           IBM4019 IBM4029 IBM4039 HPII HPIID
HPIIP HPIII HPIIID HPIIIP HP4 HP4D
HP4_PJL HP4D_PJL HP5C HP4500
HP4500D ZEBRA203 ZEBRA300

Designer options:
Code page . . . . . 870           blank = system default
When to use code page . *ALWAYS   *SPLFATR, *ALWAYS

DBCS code page . . . . . 935 <--- blank = system default
When to use code page . *ALWAYS *SPLFATR, *ALWAYS

F3=Exit  F12=Cancel

```

2. Change the fonts used in the designer to some that includes the DBCS characters:

You need to edit the configuration file of the designer. So open this file in Notepad:
C:\Documents and Settings\
In the file you will find these lines:

```

#####
## Font
#####
DefaultFontBarcode:   Free 3 of 9 Extended Regular      ## Default font
DefaultFontPDF:       PDF417Sample                    ## Default font
DefaultFontFixed:     Courier New                      ## Default fixed
DefaultFontProportional:SansSerif                    ## Default propo
DefaultSpoolFont:     Monospaced                       ## Default font

```

Here you can insert another font to use e.g. SimHei as shown below. The font must be installed on the PC:

```

#####
## Font
#####
DefaultFontBarcode:   Free 3 of 9 Extended Regular      ## Default font
DefaultFontPDF:       PDF417Sample                    ## Default font
DefaultFontFixed:     SimHei                          ## Default fixed
DefaultFontProportional:SimHei                        ## Default propo
DefaultSpoolFont:     SimHei                          ## Default font

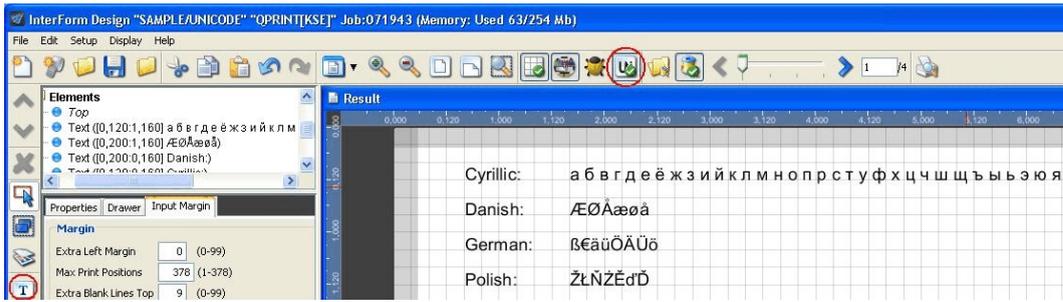
```

Save the changes and restart the designer to activate the new font selection.

Inserting texts in different symbol sets in the designer

If you want to print e.g. several different codepages on the same print out you will need to create an overlay, that is only possible using unicode fonts as shown above if you are creating PCL and/or PDF output.

If you stick to the unicode fonts you can then insert texts in any codepage directly by copy and paste in the graphical designer:



You insert texts by clicking the text element on the left and simply pasting the text into the input field. Remember to enable unicode output on the top if you want to preview the merged result as unicode. (Both icons are marked in red above).

Several codepages in ZPL output

If you want to create ZPL output and still want to insert texts in multiple codepages, then you can actually lock a font to a specific codepage. This means that whenever this font is used the text written is actually written in this codepage independent of the codepage selected for the merge.

You need to install a TTF (True Type Font) as described on page 24. The only change is, that you state the codepage for the font here:

```

Change zebra font                                     ZEB370D

Font . . . . . : 5008 Other fonts

Description . . . . . Arial 8pt Normal

Height . . . . . 8.00 1.00-792.00
Relative width . . . . . 1.00 0.20-5.00

Special EBCDIC codepage . . 870 <-----

Soft font member name per symbolset
Western . . . . . _____
Central European . . . . ARIAL _____
Baltic . . . . . _____
Turkish . . . . . _____
Cyrillic . . . . . _____
Greek . . . . . _____
Arabic . . . . . _____
Hebrew . . . . . _____
Special . . . . . _____
UCS2 unicode . . . . . _____
F3=Exit F4=Prompt F12=Cancel

```

Making sure that the right codepage is selected for the merge

Most merges in InterForm400 are done via Auto Forms Control so here we go through how to set the codepage to use for merges. If you select this in InterForm400 you set the EBCDIC codepage for the merge:

5. Work with Auto Forms Control

1. Functions attached to Output Queues

Select "2=Change" for the output queue in question:

```

Update Auto Forms Control Definition
AFC302D

Output queue . . . . . : AFC_INPUT1
Library . . . . . : APF3812

Type choices and then press Enter. Press F3 or F12 to exit.
Description . . . . . Polish merge for most spooled files
Autostart job . . . . . Y (Y N)
Code page . . . . . 870 Number, *SYSVAL F4=List
When to use code page . . *SPLFATR *SPLFATR, *ALWAYS

Default output output queue and printer type
Output queue . . . . .
Library . . . . .
Printer type . . . . .

Optional template AFC-definition to be executed after this definition
Template AFC-definition:
Output queue . . . . .
Library . . . . .

F3=Exit F4=Prompt F10=Additional parameters F12=Cancel

```

For the 'Code page' field you set the codepage that should be used for any merges in this output queue. Here it is set to 870 as it would be for e.g. poland. The next parameter 'When to use code page' is here `*SPLFATR`, which means that the code page 870 can be overridden if the original spooled files have a specific code page. You can check that via option 8=Attributes on a normal WRKOUTQ:

```

Work with Spooled File Attributes

Job . . . . . : QPADEV000B File . . . . . : QPRINT
User . . . . . : KSE Number . . . . . : 000004
Number . . . . . : 071935 Creation date . . . : 28/12/09
Job system name . . : C005DE34 Creation time . . . : 14:44:59

Character identifier:
Graphic character set . . . . . : *DEV
Code page . . . . . :
Page rotation . . . . . : *AUTO
Justification . . . . . : 0
Print on both sides . . . . . : *NO
Pages per side . . . . . : 1
Reduce output . . . . . : *TEXT
Unit of measure . . . . . : *INCH

```

Here you can see that the code page of the spooled file is `*DEV` meaning that code page 870 will be used for the merge. Alternatively we can also set the parameter 'When to use code page' to `*ALWAYS` to simply ignore the code page of the original spooled file.

If you want to merge using a DBCS code page you need to press "F10=Additional parameters" on the Auto Forms Screen above:

```

Additional parameters
Type additional info and press Enter. Press F12 to exit.
Job name AUTO_FORM job . . . AFC_INPUT1      *OUTQ, Name

Job description . . . . . *DEFAULT          *DEFAULT, Name
Library . . . . .
Library list option . . . . *JOBBD      *CURRENT, *JOBBD,
                               *SYSVAL, *NONE

Use spooled file code page
as job CCSID . . . . . *NO              *NO, *YES

Separator drawer . . . . . *NONE          *NONE, 1-9, 20-39

DBCS code page . . . . . 935           Number      F4=List
When to use DBCS code page *ALWAYS    *SPLFATR, *ALWAYS
F12=Cancel

```

Here we have defined, that whenever any DBCS character is found in the spooled file, then we will use code page 935 for the merge.

If you want unicode output you activate that on the individual merge functions in the output queue (also when you create PDF files):

```

Seqnbr Function
3.0 1 Merge with overlay

Output queue for merged print . IF400DEMO
Library . . . . . SAMPLE
Printer type . . . . .
Unicode output . . . . . *YES          *INPUT, *YES
Merge overprint lines . . . . *NO      *NO, *YES
Find overlay in form type table N      (Y N)

```

Mapping a network drive to the IFS

When you want to preview or install an image or TTF (True Type Font), then it a very good idea to map a network drive on your PC onto the APF3812Home directory in the IFS. This is just one way to get Netserver access to the IFS.

Before you do that you should make sure that you have identified the System i in InterForm400. Select this in InterForm400:

- 70. Configuration and licences
 - 2. Configure InterForm 400
- Press Enter until you see this screen:

```
Configure InterForm 400                                     APF101D
                                                            5/19

The Name that is used for this AS/400
under "Other computers" on PC's.

Networkname . . . . . 192.168.250.11 <-----
Sharename . . . . . APF3812HOME

Public authorisation to files created in the /APF3812Home/View directory.

          1  0 = *EXCLUDE
          1  1 = *ALL

Install SwiftView at drive

          C  A - Z

F3=Exit                                                    F12=Cancel
```

The easiest and most simple way is to state the **IP-address** of the System i as the Network name above. If you do not make sure that you can actually ping this name on the PC (to verify that the PC knows the System i by that name).

Use the share name suggested (APF3812HOME) as the APF3812Home directory is automatically shared.

The Netserver on the System i must be running. You can start it with the command: APF3812/STRNETSVR. The command will fail if the netserver is already running. You can also verify that the netserver is running via iSeries Navigator.

The MOST important thing is now, that you should map a network drive on the PC where you use the EXACT same name for the System i, as you have stated on the screen above:

You map a network drive in MS Explorer:



Now state the name of the System i and the shared directory as below:



Specify the folder as \\<System i Name>\APF3812Home. Again notice that I use the IP-address here as in the configuration of InterForm400 above. Next I also click 'Connect using a different user name' to handle a situation where the user and password of the PC is not the same as the one used on the System i.

Troubleshooting: Mapping a network drive

If you try to map a network drive like described above in Windows Vista and you get the error message 'Access Denied', then you can consider to do as described below. Follow the procedure at your own risk and remember what changes you have done so you can change them back if this does not help:

On your Vista PC do the following:

- 1) Click All Programs-Accessories-Run and type secpol.msc and click OK.
- 2) Verify if a dialog box appears.
- 3) From the Local Security Settings console tree, expand Local Policies then click Security Options.
- 4) In the right pane, scroll down to the setting called 'Network security:Lan Manager authentication level Properties' and double-click it.
- 5) Note the current value and change it to be 'Send LM & NTLM - use NTLMv2 session security if negotiated'.

You should now be able to access network shares on the System I.

Access denied trouble shooting

If this does not help IBM has what they call an 'IBM i5 NetServer Debug Checklist for 'Access Denied' Errors here:

<http://www-01.ibm.com/support/docview.wss?uid=nas8N1019406>

Enable a user for Nerserver use

When you try get Netserver access e.g. by mapping a drive, then your attempt to logon might fail - even though your user profile seems to be enabled. Unfortunately you cannot see that directly on the user profile via a 5250 session as the user may be disabled for Netserver use while still enabled for 'normal' sign on to the iSeries.

Verifying if a user has been disabled

If a user profile has been disabled for Netserver use, then you **cannot** see that on the user profile:

```
Change User Profile (CHGUSRPRF)

Type choices, press Enter.

User profile . . . . . > ANDERSON      Name
User password . . . . . *SAME      Character value, *SAME, *NONE
Set password to expired . . . . . *NO      *SAME, *NO, *YES
Status . . . . . *ENABLED      *SAME, *ENABLED, *DISABLED
User class . . . . . *SECOFR      *SAME, *USER, *SYSOPR...
Assistance level . . . . . *ADVANCED *SAME, *SYSVAL, *BASIC...
Current library . . . . . *CRTDFT      Name, *SAME, *CRTDFT
Initial program to call . . . . . *NONE      Name, *SAME, *NONE
  Library . . . . .      Name, *LIBL, *CURLIB
Initial menu . . . . . MAIN          Name, *SAME, *SIGNOFF
  Library . . . . . *LIBL          Name, *LIBL, *CURLIB
Limit capabilities . . . . . *NO      *SAME, *NO, *PARTIAL, *YES
Text 'description' . . . . . 'Mr. Anderson'
```

Bottom

F3=Exit F4=Prompt F5=Refresh F10=Additional parameters F12=Cancel
F13=How to use this display F24=More keys

The user profile may still be enabled like above and still be unable to sign on to the Netserver (disabled for Netserver use).

You can find out in these ways:

1. Via messages in the History log.
2. Via iSeries Navigator.

1. Via History log:

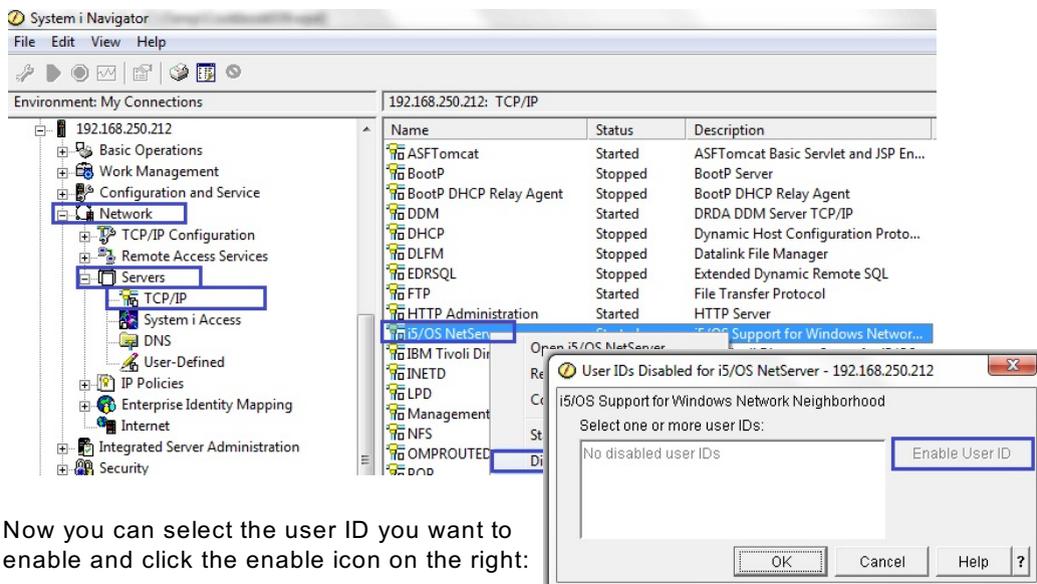
This is the fastest way - if you are lucky. You can search the log for relevant messages with this command:

DSPLOG MSGID(CPIB682)

2. Via iSeries Navigator

With some patience you will get there if you select:

Network, Servers, TCP/IP, and right click on i5/OS NetServer. Then you can find the disabled users via 'Disabled User IDs':



Now you can select the user ID you want to enable and click the enable icon on the right:

How to enable a user for NetServer use

There are these ways to enable a user for NetServer:

1. Dummy change of the user profile (CHGUSRPRF).
2. Enable via the APF3812/ENANETUSR command in InterForm400.
3. Via iSeries Navigator as mentioned on the previous page.
4. Via a 'GO NETS' IBM Menu.

Each of these options are described below:

1. Dummy change of the user profile (CHGUSRPRF)

The easiest way to enable a user is to do a dummy change of the user profile with the CHGUSRPRF command. This usually works unless either of these OS400 PTFs have been installed:

MF55657 (V5R4M0),
MF55658 (V5R4M5),
MF55659 (6.1.0),
MF55660 (6.1.1),
MF55661 (7.1.0)

If one of these PTFs has been installed you will need to do select one of the other alternatives below:

2. Enable via the APF3812/ENANETUSR command in InterForm400.

The second easiest is to use the APF3812/ENANETUSR command of InterForm400. This comes with 2015 (and future) versions of InterForm400:

```
Enable NetServer User (ENANETUSR)

Type choices, press Enter.

User profile . . . . . *CURRENT      Name, *CURRENT

                                                                 Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

For 2014 versions you can get the command with this PTF:

```
PTF number      4755
Description     Enable NetServer User command
Version 2014.M01 -2014.M999
Library
Symptom . . . . . :
Unable to enable NetServer users using the CHGUSRPRF / CHGPRF commands after
installing PTF: MF55657(V5R4M0), MF55658(V5R4M5), MF55659(6.1.0),
MF55660(6.1.1), MF55661(7.1.0).
Note: 1) *IOSYSCFG and *SECADM spc aut and 2) *OBJMGT and *USE aut to usrprf
being enabled are required to run the new APF3812/ENANETUSR command.
Cause . . . . . :
New feature.
Special instructions . . :
None.
```

Download link: <http://download.interform400.com/shares/PTFs/APF4755.ZIP>

To install the PTF you upload the file to the IFS inside /APF3812Home/PTFs and select this in InterForm400:

12. Service functions

50. Apply PTF from the /APF3812Home/PTFs directory

Select PTF number 4755 and press Enter and F10 to confirm the install.

4. Enable via a 'GO NETS' IBM Menu

If you have this menu from IBM then you can enable the users via:

GO NETS

and select option 12. Work with NetServer Users, where individual users can be enabled.

<http://www-01.ibm.com/support/docview.wss?uid=nas8N1019406>

Saving and restoring a Spooled File

If you need to save or restore a spooled file for support purposes you can use InterForm400 to do that. This procedure can be used for saving and restoring any spooled file no matter what type it is.

Saving a Spooled File in InterForm400

To save a spooled file you select this in InterForm400:

12. Service functions

6. Save spooled file to the /APF3812Home/Work directory

Place the cursor in the bottom of the screen and state the output queue on which the spooled file is placed. Select the spooled file with '1=Select' and press Enter.

Now the spooled file identification is copied to the screen:

```
Save spooled file to the /APF3812Home/Work directory          SAV100D

Spooled file:
Job name              QPADEV000B
User                  KSE
Job number            070122
File name             QPRINT
Spooled file no.     000004      Number, *ONLY, *LAST

Name of output queue to search if spooled file is unknown:

Output queue . . . .
Library . . . . .

Output PC file . . . . MySpooledFile.if1

F3=Exit              F4=Prompt              F12=Cancel
```

State the name for the file containing the saved spooled file. The extension '.if1' will automatically be added if you do not type it. The file will be created in the IFS within /APF3812Home/Work

If you have a mapped network drive you can now simply drag the file onto an e-mail and send it on.

Saving Spooled Files without InterForm400

If you are running OS400 version V5R4 or newer, you can save spooled files (or rather output queues including any spooled files) with a fairly simple procedure.

You can do that in this way:

1. Create a new output queue, to put the spooled files, that you want to save. You can e.g. do that with the command: **CRTOUTQ QUSRSYS/SAVOUTQ**
2. Move all the spooled files, that you want to save into a specific output queue. All spooled files on this output queue will be saved during the process, so it is a good idea to either create a new, temporary output queue or to delete/move any spooled files from this output queue, that you do not want to save. In the commands below I refer to the output queue

- as **SAVOUTQ** and the library of the output queue is **QUSRSYS**.
3. Now create a save file, that should be used for the saved output queue. The save file can e.g. be created in QGPL with this command:
CRTSAVF FILE(QGPL/SAVFOUTQ)
 4. Now we can save the output queue (including any spooled files inside) in this save file with this command:
**SAVOBJ OBJ(SAVOUTQ) LIB(QUSRSYS) DEV(*SAVF) SAVF(QGPL/SAVFOUTQ)
SPLFDTA(*ALL) TGTRLS(V6R1M0)**
You need to remember SPLFDTA(*ALL) - if you forget, no spooled files will be saved. You could also consider to specify the target release in TGTRLS, to make it possible to restore the save file on an earlier OS400 version, than the one you are saving on. In the command above I select V6R1M0 as the target release, but in general you could consider to use the earliest target version possible.
 5. If you want to send the save file to someone else (e.g. to InterForm A/S or one of our business partners), then you can copy the file to the IFS with this command:
**CPYTOSTMF FROMMBR('/qsys.lib/qgpl.lib/savfoutq.file')
TOSTMF('/apf3812home/work/savoutq.savf') STMFOPT(*REPLACE)
CVTDTA(*NONE)**
The TOSTMF is the destination stream file, you can of course choose another path and/or stream file name. You can copy the stream file to a PC e.g. for emailing via a mapped drive or via System i Navigator.
(You can also chose to FTP (binary) the file directly from QGPL).
 5. When you are done, you can delete the temporary save file in QGPL with this command:
DLTF FILE(QGPL/SAVFOUTQ)
 6. You can also consider to move the saved spooled files back to the original output queue (or delete them) and then delete the temporary output queue with the command:
DLTOUTQ QUSRSYS/SAVOUTQ
(You need to remove/delete the spooled files on that output queue before you can delete it).

Restoring a Spooled File in InterForm400

This procedure for restoring a spooled file only works if you have saved the spooled file via InterForm400 as described above. First copy the .if1 file onto the IFS in /APF3812Home/Work and then select this in InterForm400:

- 80. Administering InterForm 400
- 12. Service functions
- 7. Reprint SPLF from the /APF3812Home/Work directory

Now press F4 to select the .if1 file to restore. Hit Enter and state the output queue onto which the spooled file is to be restored.

Restoring Spooled Files without InterForm400

It is possible to save and restore all the spooled files on an output queue - if you are running OS400 V5R4 or newer. If you have saved an output queue including the spooled files like described above, then you can restore the output queue including the spooled file data with the procedure below:

1. First you need to get the save file into your IBM I. You can e.g. do that like this:
 - a. Create a temporary save file with this command:
CRTSAVF FILE(QGPL/SAVOUTQ)
 - b. Now copy the save file to the IFS and copy it into the temporary save file, that you just created:
**CPYFRMSTMF FROMSTMF('/apf3812home/work/savoutq.savf')
TOMBR('/qsys.lib/qgpl.lib/savoutq.file')
MBROPT(*REPLACE) CVTDTA(*NONE)**

2. Now you restore the output queue, but remember to specify that you also want to restore any spooled files included:

RSTOBJ OBJ(SAVOUTQ) SAVLIB(QUSRSYS) DEV(*SAVF) OBJTYPE(*OUTQ)

SAVF(QGPL/SAVOUTQ) SPLFDTA(*NEW)

You need to specify SPLFDTA(*NEW) to restore the spooled files.

3. Now you can delete the temporary save file:

DLTF FILE(QGPL/SAVOUTQ)

Exporting and Importing InterForm400 resources

For support cases it is sometimes required that you export the setup of InterForm400 (overlays, fonts, images, Auto Forms Control setup etc..), so the setup can be reconstructed elsewhere.

Exporting resources from InterForm400

Select this in InterForm400 to export resources:

- 12. Service functions
- 21. Export of InterForm 400 resources

If no one else is exporting it is best run this option now: '6. Delete export library APFEXPORT (including all distributions)' and if necessary confirm with F23. This will delete any old export, that may not be totally done.

Now run these options:

- 1. Create export library with empty files
- 2. Copy resources to export library

Now run through these options/decisions:

- 1. Do you want to export all the resources in InterForm400?
Yes: Goto **2** below.
No: Jump to **3** below.
- 2. Select option '1. Copy all resources' and jump to **4** below.
- 3. Select option '2. Copy selected resources' and select the exact resources to export. Then press F12 until you get to the screen with the lines:
 - 1. Copy all resources
 - 2. Copy selected resources
 - 3. Copy resources used in already copied overlays
 - 4. Copy auto download defs and soft font members for all copied fonts

Here you select the specific resources via option 2.

If you want to export overlays (with the referenced resources like fonts and images), then you should first export the main overlay(s) via option 2 and then run option **3. Copy resources used in already copied overlays** to export images, fonts and colors (and other overlays), that are referred to in the already exported overlays. After that you should run option **4. Copy auto download defs and soft font members for all copied fonts to also export any used soft fonts.**

Continue with **4** below:

- 4. Do you want to rename any resources before you ship them in the export file to avoid overwriting resources on the receiving installation?
Yes: Goto **5** below.
No: Jump to **6** below.
- 5. Press F12 to get back to the screen with this option '3. Work with resources in export library' and select it. Now select the resources you want to rename. You can also rename font numbers and the overlays using these fonts will then refer to the new fonts. Continue with **6** when done.
- 6. If not already on the screen press F12 to get to the screen with this option: '4. Work with distributions', select it and press F6=Create. State a 3 character suffix a description and select '2=Savefile and PC file'. Press Enter.

You have now created the file called EXPORT.xxx in the IFS in /APF3812Home/Work,

where xxx is the suffix you stated above. Continue with **7** below.

7. If you are using soft fonts e.g. for traditional non-2D barcodes like e.g. Code128 or Interleaved 2 of 5 or, then you will also need to copy the autodownload information if the complete setup is to be copied to another machine. Select this in InterForm400 to display this information: (Starting from the main menu)

80. Administering InterForm 400

7. Work with fonts

8. Auto download soft fonts

Now run both option 6 and 8 for all printer groups and copy the settings as text e.g. into the e-mail you are about to send. Continue with **8** below.

8. You can now copy the export file created in **6** above e.g. via a mapped network drive and send this with the autodownload information from **7**.

Importing InterForm400 Resources

To import an export file first copy the export file onto the IFS in /APF3812Home/Work, then run these options in InterForm400:

12. Service functions

22. Import of InterForm 400 resources

8. Start journaling

Journaling must be started - if it is not then start it now. You can e.g. use the default journal by pressing Enter.

Run option "5. Delete the APFIMPORT import library" to delete any remains of any old imports, that may not be fully done (Make sure that no one else is importing while doing this). If necessary confirm the delete with F23.

Run these options on the import menu:

1. Create APFIMPORT import library with empty files

2. Receive distribution into import library

3. Receive distribution from PC file in the /APF3812Home/Work directory

Select the export file with '1=Select' and press Enter. Now you are back to the import menu.

Continue with the procedure below:

1. Do you probably want to import the complete import file or just a part of it?
The complete import file: Jump to **3**.
Just a part of the import file: Continue with **2**.
2. Select option '3. Work with resources in import library' and select the exact resources you want to import (or rename before import). You rename with option '7=Rename' and copy the resources into production with '1=Transfer to production'. If you risk overwriting an existing resource with the same name, you will see the indication 'Exists' on the right next to it. Jump to **4** when you have copied all the resources you need.
3. To copy the complete import file select option '4. Transfer resources to production library'. If any resource has the text 'Exists' written under 'Notice', then this resource already exists and will be overwritten if you continue. If you want to rename the resource in the import file or just import a part of it, then press F12 and jump to **2**. If you are happy with the new resources, you can confirm the copy into production with F10 and continue with **4** below.
4. If you have any non-2D barcodes for PCL or are using any other soft fonts, then you also will need to setup the auto download specifications as on the machine on which the export initially was created on. This is done manually via these options (from the InterForm400 Main Menu):

80. Administering InterForm 400

7. Work with fonts

8. Auto download soft fonts

Create the necessary printer groups with F6, add the output queues with option '6=Update output queues' and add the font links via option '8=Update fonts'.

Tips for conditional Design/Overlays

InterForm400 contains a wide range of conditions that can help you to create overlays, that adapts to the spooled file contents. Below there are a few examples of what you can do and how.

The simple conditioned overlay

You can use very advanced conditioning in InterForm400 with very little effort. This section describes the most simple way you can insert extra elements in the overlay depending on the contents of the original spooled file.

Relative or absolute positioning?

You want to insert or change 'something' in the output depending on something.

Should the 'thing' that you are inserting or changing be placed in a fixed/absolute position (no matter if the condition is found to be true in line 1 or 60) or should the 'thing' be placed relatively to the line in which the condition was found?

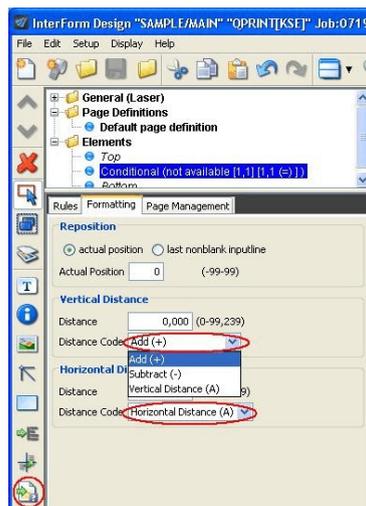
Relative positioning is in my point of view needed in at least 99 times out of 100, so that is the answer if you are in doubt...

So relative positioning should e.g. be used if you want to insert one or more elements like frames, lines, images, fixed texts or remapped/tabulated texts in a place in the output, that depends on where the condition was found: If the condition was found in line 1 you want to place the element(s) higher on the page, than if it was found in line 60.

The actual Design Process

If you just want to see a movie of how to do it, then click [here](#).

Lets imagine that the overlay is a portrait overlay and you have found out that the placement should be relative, then you can now fill out this in the conditioned element:
(These are actually the default values)

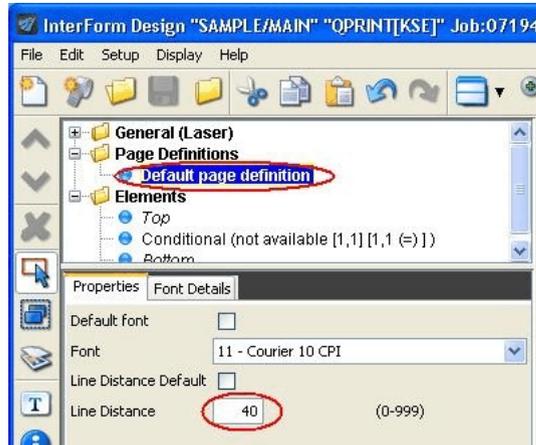


(The conditional element is marked on the lower left. The default settings for the positioning are here used.)

So for the 'Vertical Distance' you can now enter either a 'Add (+)' or 'Subtract (-)' as shown above. Here I just assume it is a 'Add (+)'. For the 'Horizontal Distance' you should NOT enter either 'Add (+)' or '-' as this will cause a nasty horizontal displacement in pdf output (and it is not logical to enter anything else anyway..).

So the only thing we have actually found out is, that you enter 'A' for the 'Vertical Distance' if it is absolute positioning and 'Add (+)' or 'Subtract (-)' for relative positioning... Lets still assume it is relative positioning then the next question is: Should it be a '+' or a '-???

To answer that first take a look at the default line distance of the main overlay which you merge the spooled file with:

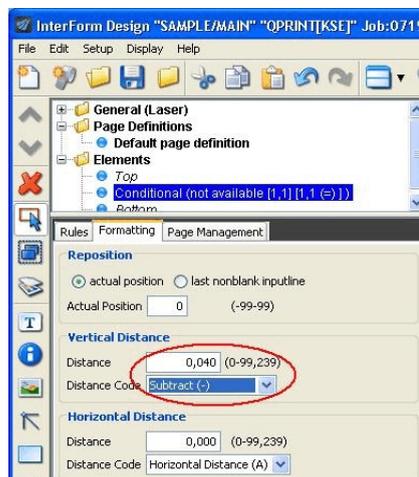


(Finding the default line distance of the main overlay.)

Please notice that we here have a line spacing. That is VERY important when you use relative positioning. If you merge your spooled file with an empty overlay with the same line spacing (and the same extended page definitions if used), then the point of reference in the vertical (and important) direction is the lower part of the letters in the line in question. You can print this result out and compare with the actual positions of the text in the merged spooled file if you want to be able to actually measure the distance you want to reposition.

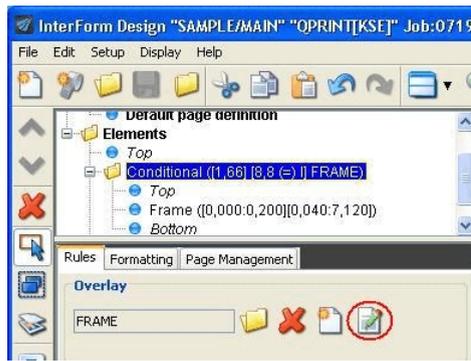
So find an example of a spooled file line, where the condition is true: Do you want to insert any elements above the point of reference? If you want to insert anything above this point the sign must be '-' i.e. we want to place the conditioned overlay ABOVE the reference point. That will be position 0 from the top in the conditioned overlay.

Lets imagine that you want to insert a frame around the spooled file text in question then you will need to reposition
Now the 'Add (+)' or 'Subtract (-)' is combined with the distance written as 'Vertical Distance' like below:



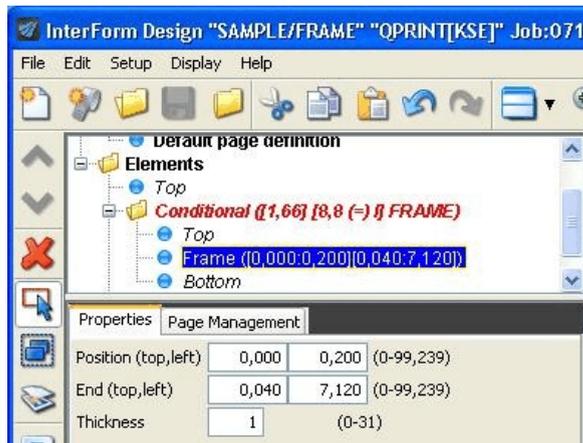
(Positioning the conditioned overlay a bit higher than the conditional text.)

Above we are placing the conditioned overlay 40 pels above the base of letters of the line in question (because the line distance is 40 pels and we want the frame to fit exactly the current line). This means, that if we want to place a small frame just around the line in question, then we can insert it in the conditioned overlay (e.g. called FRAME), that we are calling. We open the conditioned overlay by first saving the main overlay and then clicking this icon:



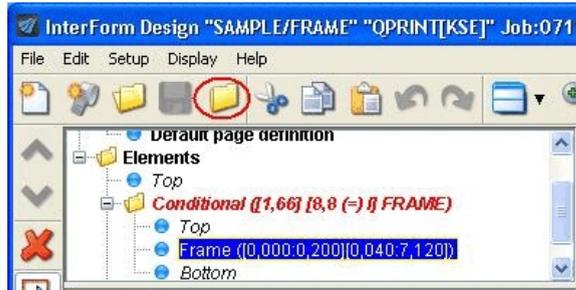
(Opening a conditioned overlay for editing.)

Now click 'Top' or 'Bottom' inside the conditioned overlay and insert the frame element:



(Inserting a frame in a conditioned overlay)

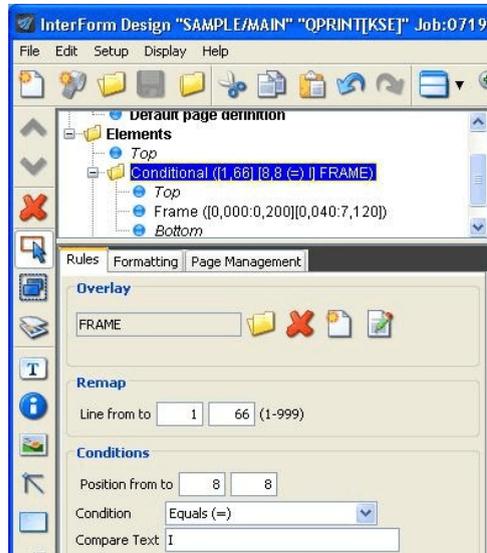
Close the conditioned overlay for editing and return to the main overlay by pressing this icon:



(Closing the conditioned overlay and returning to the main overlay).

So if we combine the line above in a conditioned overlay called FRAME with this line in the main overlay (e.g. called MAIN), then we insert a frame around every line with an 'I' in position 8:

(In the Spool view you can mark out the lines with the left mouse button and the positions with the right mouse button).



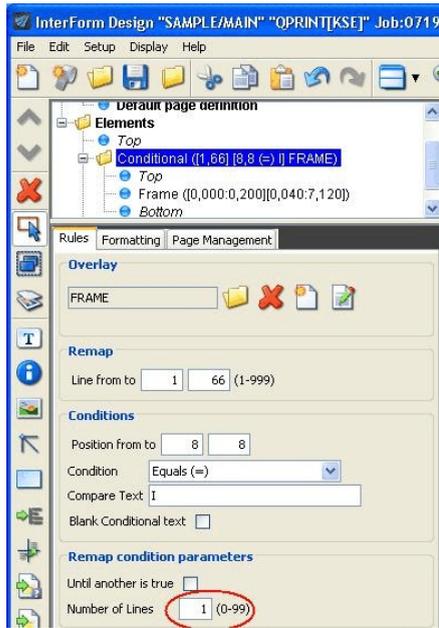
(Call `InterForm Design` the conditioned overlay when an 'I' is found in position 8)

So in this way we can now insert up to 66 conditioned frames with the two lines above. That is something that only very few InterForm400 competitors can do - if any...

It might be an idea to try it out with the demo spooled file of InterForm400. (Printed out via option 1 on the service menu).

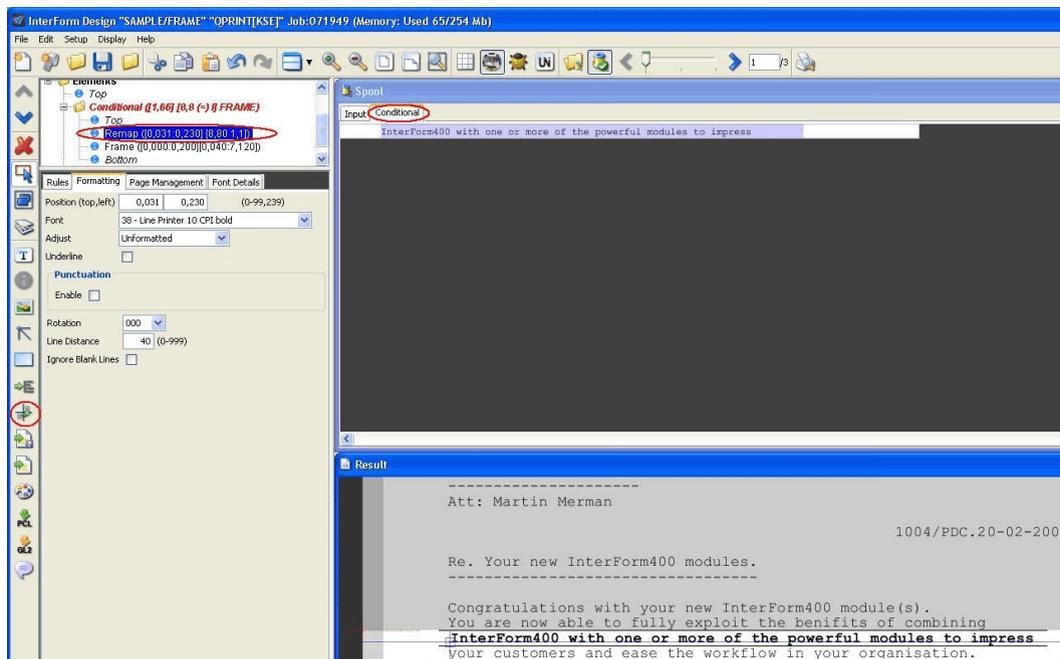
Just to explain how the frames will be positioned: Whenever the condition is met, then the conditioned overlay is called, but just before that the current position is noted e.g. 1 inch from the top of the page. The position is relative with a minus. This means, that the 0.040 inches (=40 pels) is subtracted from the 1 from the top. This adds up to 0.200 (or 200 pels from the top - remember that there are 240 pels to an inch...). Inside the conditioned overlay the top of the frame is set to 0, so 0 is added to the 200 pels meaning that the frame will in this case start 200 pels from the top. The frame is 40 pels high, so the bottom of the frame will be 1 inch from the top of the page. The same arithmetic is done each time the condition is true.

You want to present the current line in the spooled file (where the condition is met) in a special way e.g. in bold? If yes, then you will need to transfer not 0 lines, but at least one spooled file line onto the conditioned overlay. You state that in 'Nos. of lines to remap'. As default it is 0, but try to change it into 1:



(Transferring 1 spooled file line onto the conditioned overlay)

Now edit the conditioned overlay (FRAME) and insert e.g. a remap window line like this:



(Adding a remap window element in a conditioned overlay - remember to click the 'Conditional' tab in the Spool View as marked.)

In this way we are outputting the spooled file line in bold instead of normal.

We could of course go on and insert other elements (images, lines fixed texts etc.) in the conditioned overlay called frame.

Conditionally Push/Pull part of the Spooled file up or down

There are functions in InterForm400 that are not described fully in the normal training program as these are rarely used.

However if you meet VERY special requirements for the design you have this special ace up

your sleeve ;-)

So what can these hidden functions do? Well they can solve these 3 situations:

a) In special cases you want to remove or insert a line or more to remove/insert space in the output. (E.g. write something with a VERY large font - creating the need to push the rest of the page downwards).

b) In the original spooled file there are sometimes quite a few blank lines in the middle of the spooled file. You want to remove these lines (even though you do not know how many they are) and push the rest of the spooled file up to be placed one line (or a few fixed lines) below the previous non-blank line.

c) In a conditioned overlay you can now use e.g. a remap window with extended adjustment. With extended adjustment you let InterForm400 decide the line breaks after you have told InterForm400 the font to use and e.g. the width available. Now you can let the rest of the spooled file be moved up or down to fit the placement of the last element placed in the conditioned overlay (e.g. one line below).

Ok, so that is what you can do. The question is then how??

Green screen:

If you are running the green screen designer, you can activate the solutions when you state (on the ?=If..then line), that at least one spooled file line to be moved to the conditioned overlay. Then this window will pop up:

```
-----  
Vertical cursor repositioning  
before execute of sub overlay  
  
Position related to actual position  
  
Number of pels . . ____ ( -99 - 99 )  
  
Or reposition related to previous  
non blank input line  
  
Number of pels . . ____ ( 0 - 999 )  
  
Or reposition after execute of suboverlay  
related to highest Y-address used in any  
remap window in sub-overlay.  
  
Number of pels . . ____ ( 0 - 999 )  
  
F3=Exit          F12=Cancel  
-----
```

To solve a situation like a) above then you fill in a number of pels for the first parameter. This can be either a positive or negative value. If it is negative then the rest of the spooled file is moved up and a positive value will push the spooled file downwards.

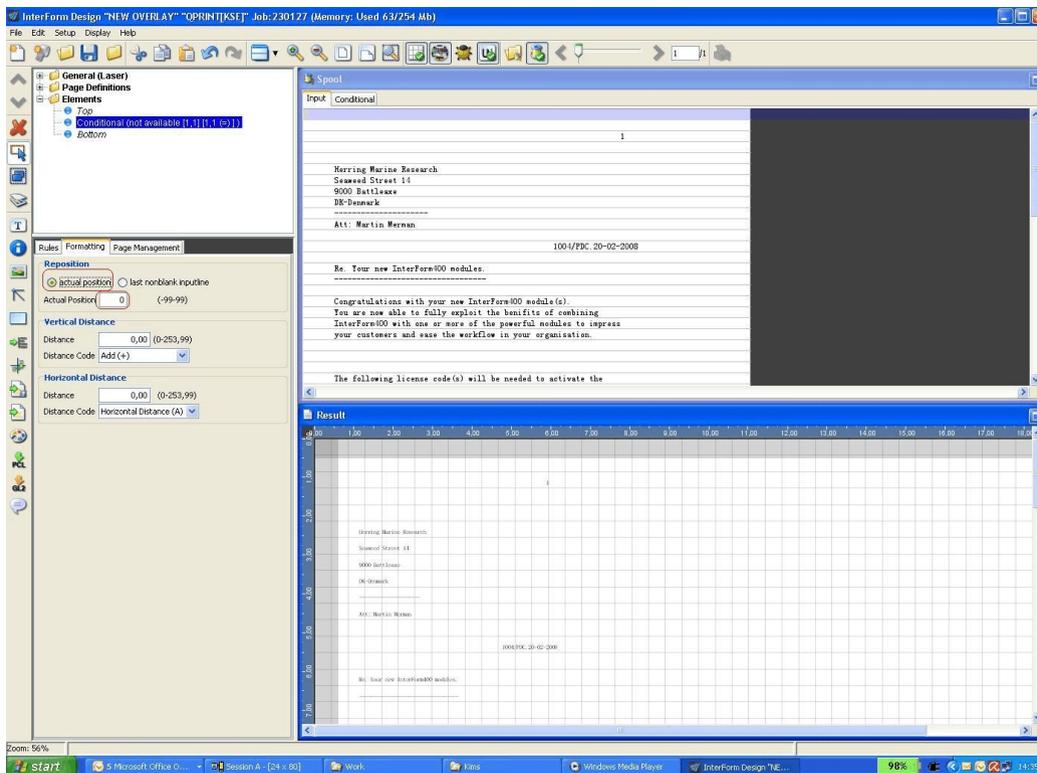
To solve a situation like b) you the number of pels from the last non-blank line (second parameter) down to where this conditioned overlay should be placed (and all subsequent spooled file lines will also be repositioned).

Situation c) is solved via the last parameter shown above. Please notice that this is not yet implemented in the graphical designer. This is a new (undocumented) feature/secret in InterForm400! You should fill out none or just one of the parameters on the screen above.

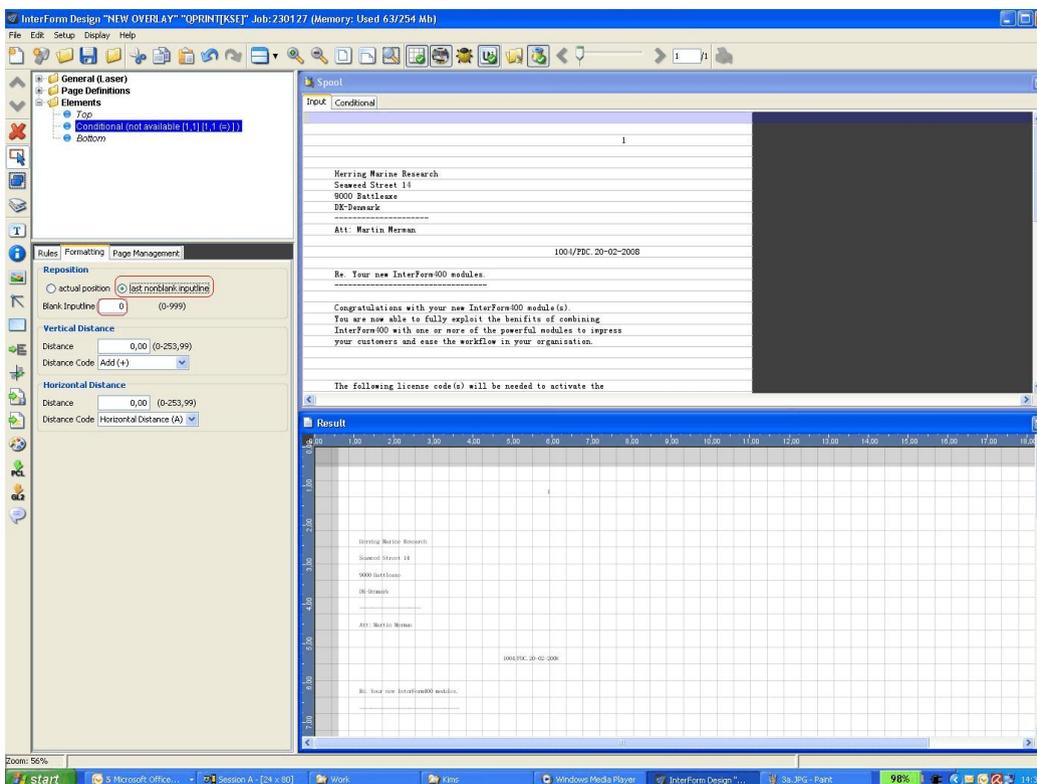
Graphical designer:

After you have inserted the conditional line you click on the 'Formatting' folder in the lower left window (attributes window). See the first image below (Image 1). Click on 'actual position' and the number of pels to reposition (which can be negative for moving the conditioned overlay up). In order to position the conditioned overlay relative to the last non-blank line (situation b) you do as shown in right image below (3b.jpg).

Situation c is not yet implemented in the graphical designer, so this you will have to do in the green screen if necessary.



(Image 1 above: Moving the rest of the spooled file up or down if the conditioned overlay is called.)



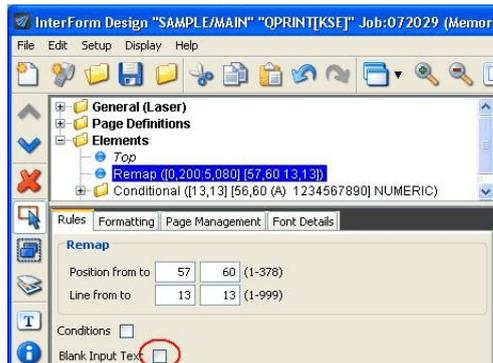
(Image 2 above: How to reposition a conditioned overlay relatively to the previous last non-blank line in the spooled file.)

Combining Remap Windows, Conditioned Overlays and Tabulators

When using remap windows, conditioned overlays and tabulators, the most important thing to remember is the sequence in which these functions are executed:

1. The remap window lines in the main overlay are executed first.
2. Secondly the conditioned overlays are called.
3. Finally the tabulators in the main overlay are executed.

This means that if you insert a remap window in the main overlay, you should take VERY good care not to remove any text, that you want to use for a condition later for a conditioned overlay (remember the remap window in the main overlay may be listed after the conditioned overlay that does not matter). So make sure this tick box is not ticked like so: (The tick box is ticked as default).



(Making sure that a remap window does not remove spooled file data from the input spooled file)

In fact if you are trying to call a conditioned overlay and it is NOT called, then the most likely problem is that you have forgotten this fact.. The second guess would be that you would need to activate 'Merge overprint lines' on the merge in InterForm400, if the first suggestion did not help...

For the complete details of the sequence please refer to the section called 'How the sequence lines in overlay design are executed' in the InterForm400 manual.

If you would need to combine a remap window in the main overlay with a conditioned overlay (if..then), then you must remember to state that the original should NOT be removed in the remap window. It is called 'Blank Input Text' in the remap window. You might then think, that you should simply insert a tabulator in the main overlay to remove this original text, and that is partially correct: If the conditioned overlay is not called (or if it is not getting the spooled file line in question), then that is enough. Please remember that if you transfer at least 1 line onto the conditioned overlay, then you will need to remove the text in the conditioned overlay e.g. with a tabulator.

Generally if you want to remove (not just reposition) text from the spooled file you should use the tabulator to do that, because of this:

- 1) You can always override any remove by using a remap window.
- 2) When you remove data with the tabulator it is really gone. If you use the remap window (and place the text outside the printable area), then the data is still searchable text in the resulting PDF files even though you cannot see it.

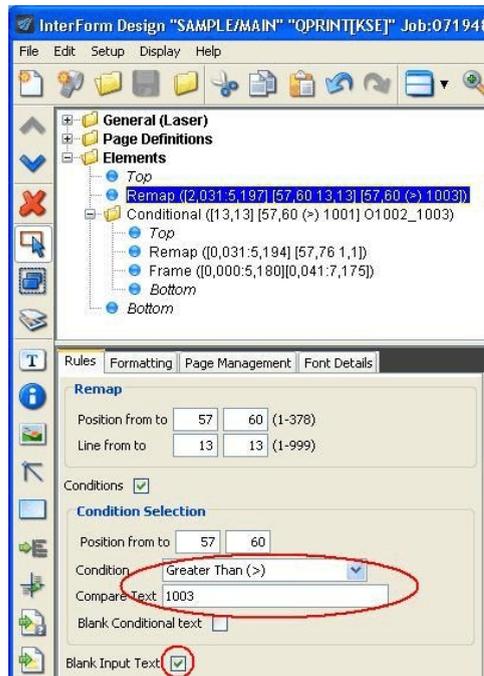
Creating a double condition like: If $1001 < x < 1004$ then call overlay

Keeping the functionality described above in mind (combining the conditioned elements), you can actually use this to build conditions that you might not think was possible...

If you want to insert a double condition like this: If a text in the spooled file is larger than something AND also smaller than another value THEN call a conditioned overlay.

To illustrate this I have created a simple setup for the InterForm400 demo spooled file. As You might remember that there in position 57-60 in line 13 is a 4 digit number, which is either of these values: 1001, 1003 and 1004. Just to illustrate a condition like above I imagine we would like to call a conditioned overlay if the found text is larger than 1001 AND also smaller than 1004. For this small interval it would not make sense to do it in this way, but this is just to illustrate the functionality.

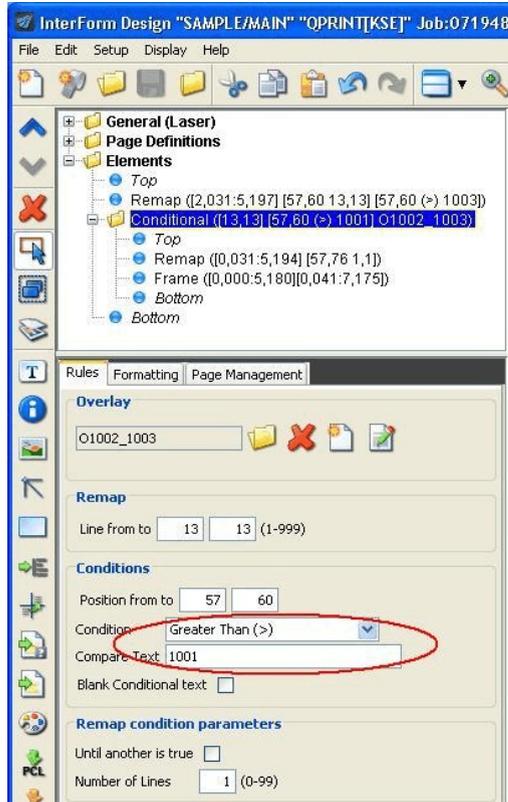
The solution is to use a conditioned remap window in the main overlay, that repositions the text and removes the original text in the input spooled file so that the conditioned overlay only 'see' 4 blanks:



(If the condition is true the text is removed from the input spooled file and printed)

So if the text found is larger than 1003, then it will be 'removed' from the input spooled file and printed. This means that the conditioned overlay only will see 4 blanks here if the value is larger than 1003.

The conditioned overlay is called with this setup:



(Calling the suboverlay if the conditioned text is greater than 1001)

So here the condition is that the found text must be larger than 1001. Remember that any value larger than 1003 was converted into blanks in the preceding remap window. So combined the condition will be as requested ($1001 < x < 1004$).

Searching for numeric texts

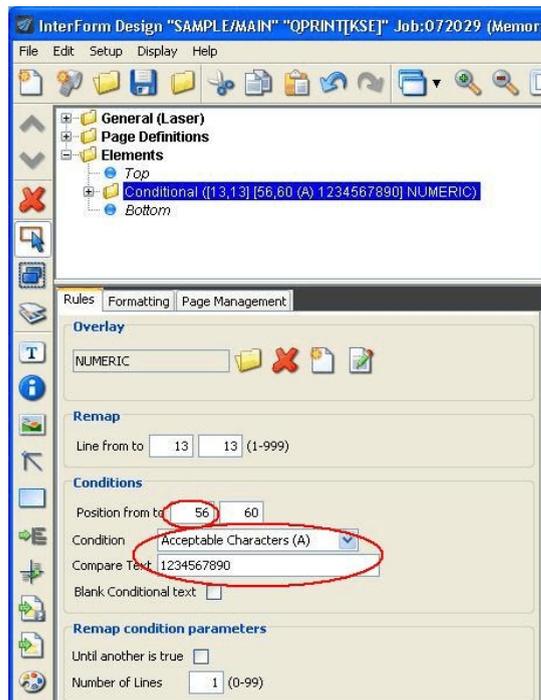
For a condition you can state the comparison operators:

Equals	(=)
Greater than	(>)
Less than	(<)
Not equals	(N)
Acceptable characters	(A)
Unacceptable characters	(U)

The top 4 are easy to understand, but the last two are a bit different. They were earlier unknown to most and I have once in a while used them as an extra 'Ace' to have up my sleeve, when getting a challenge for a design.

The classic situation, where the 'A' option can be used is shown below. We want to call an overlay if all characters in an interval of positions are all numeric.

Consider this condition to be used with the InterForm400 Demo spooled file :



(Calling a conditioned overlay if some text is numeric)

This is a classic way to use the 'A' condition meaning 'Acceptable characters'. This example is built for the InterForm400 demo spooled file, that you can print out via the service menu in InterForm400. The condition means that if all characters found in the spooled file in the specific line (here only line 13 is inspected) in the interval of positions (here 56-60) are found in the string specified, then the overlay is called. So it means that only if ALL the characters from position 56 to 60 are numeric, then the conditioned overlay is called. If you try the test above on the InterForm400 demo spooled file you might be surprised: The overlay NUMERIC is never called!!! What??? Am I just pulling your leg ;-). Why?.....

This would be an obvious test to check if you are awake..... You may think this:

Aha the character in position 56 in line 13 is NOT numeric, so that is why!

Answer: Yes, you are right. If you change the condition to scan the positions 57-60, then it works fine.

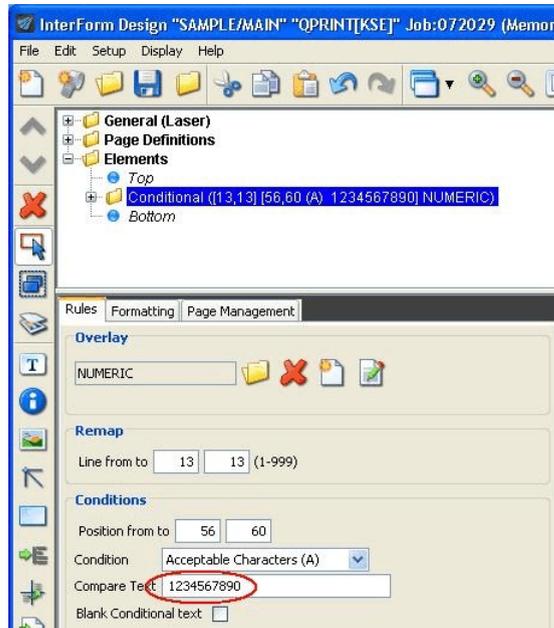
The tricky/funny questions are then:

a) The number written (0123456789) also include a trailing space, so it should have worked.. Why not?

b) Since it is not working: How on earth can we check for a space as well as the numbers above?

Answer to question a): The string entered above is simply trimmed of any trailing blanks, so that is why the space in position 56 is not accepted.

Answer to question b): You simply insert the space as the first character in the condition like this:



(Insert a blank e.g. as the first character. If you insert it as the last it will be trimmed and ignored).

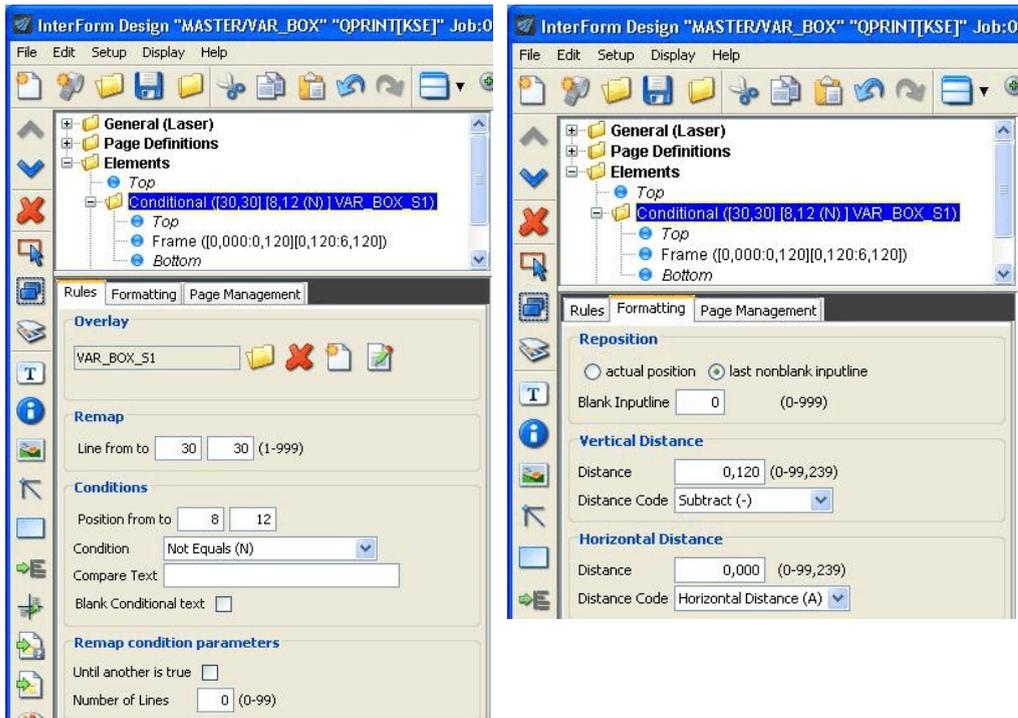
You see the difference? There is a very important space in front of '1234567890' and now it works fine...

That should explain the 'A' feature. I initially misunderstood the 'U' option (meaning unacceptable characters). To avoid that anyone else should also misunderstand this, I here will explain exactly what it does: It is simply the same as the 'A' option - negated. So if the 'A' condition is false, the 'U' will be true for the same setup (and vice versa). You could explain the 'U' option as: Call the overlay, if not all characters in the interval of positions are found in this list of characters.

Conditionally delete/erase areas (Creating a variable frame)

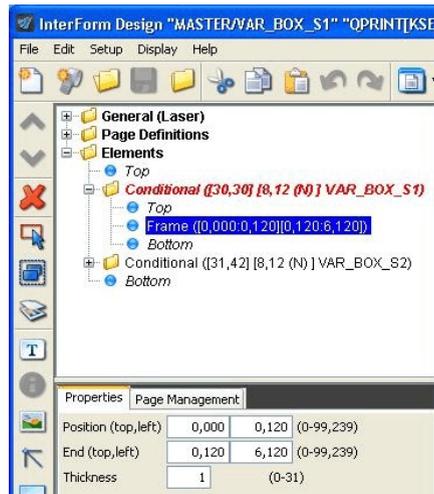
With InterForm400 you can insert a frame to delete graphics that was previously placed there. This can be used for creating a variable frame that fits to the flexible number of detail lines. You can do that for the InterForm400 Demo Spooled file (printed via option 1 on the Service menu in InterForm400) with the setup below:

Call a conditioned overlay to insert a frame if there is data for a frame. This overlay is only called if any text is found in line 30 in positions 8-12:



(Calling a conditioned overlay to insert a frame - if any text is found)

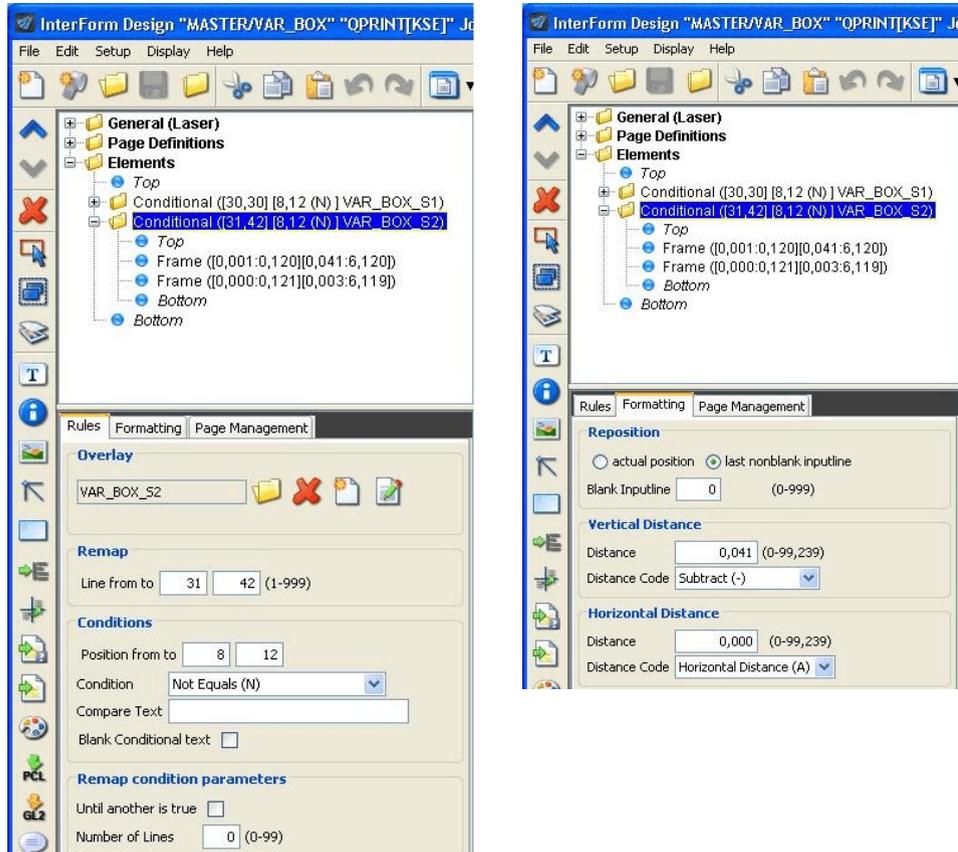
The frame is defined to be 120 pels high (0,120), which in this case equals the height of 3 lines:



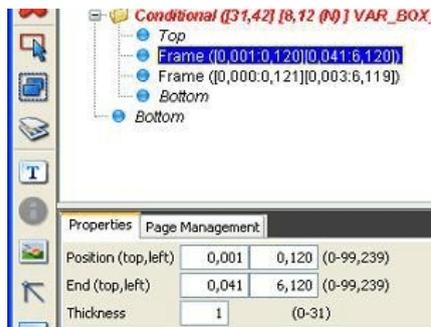
The resulting frame looks like this:

Product	Model	i-Group	Serial No.	License Code
Interword400	510	i300	44A2971	81 20 01 3A
PDF security	520	i100	44A9032	3F 78 66 99

Now we scan the rest of the lines where the frame can be (from line 31 to 42) and whenever we find text, we call another conditioned overlay:



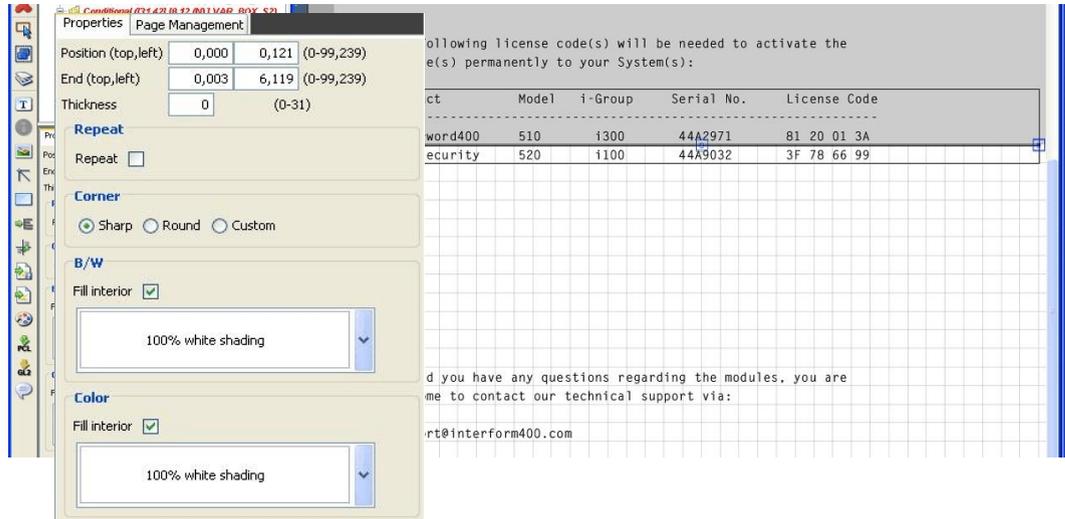
This other overlay first inserts a new frame with the height equal to the line height (40 pels), for which the top fits the bottom of the previous frame(s):



The following license code(s) will be needed to activate the module(s) permanently to your System(s):

Product	Model	i-Group	Serial No.	License Code
Interword400	510	i300	44A2971	81 20 01 3A
PDF security	520	i100	44A9032	3F 78 66 99

After that the top of the frame is deleted by inserting another (tiny) frame, that deletes the background (just covering the upper part of the frame):



In the final result the frame automatically fits to the number of rows found. That means that you will see the frames below on page 1 and 3, if you merge with the demo spooled file:

Page 1:

Product	Model	i-Group	Serial No.	License Code
Interword400	510	i300	44A2971	81 20 01 3A
PDF security	520	i100	44A9032	3F 78 66 99

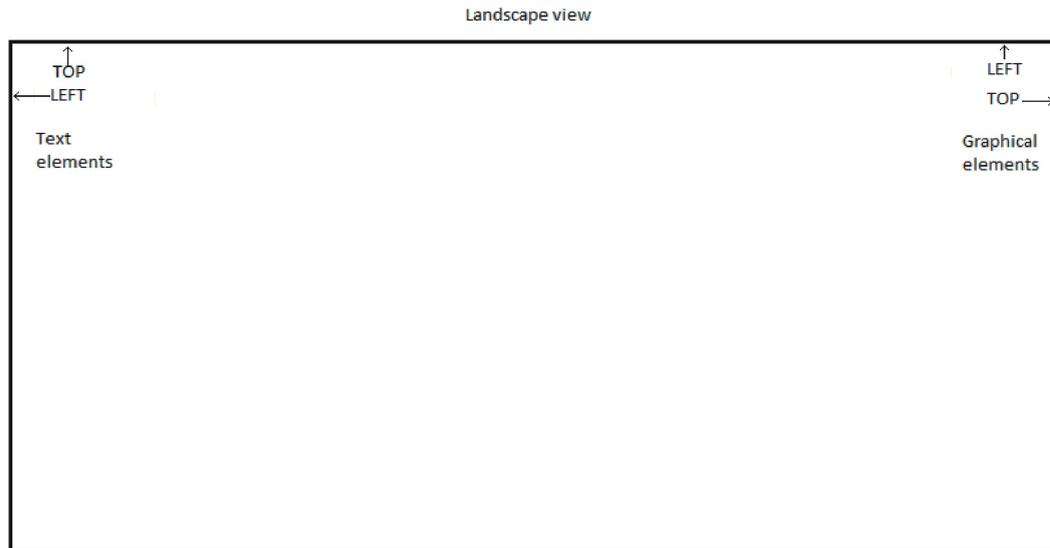
Page 3:

Product	Model	i-Group	Serial No.	License Code
InterForm400	515	i050	4449079	F2 E7 20 AA
InterForm400	810	i100	44B2031	AA BB 01 23
InterForm400	890	i600	44D3971	1A BC DE 44
InterForm400	520	i100	44A1460	79 10 22 F1
InterForm400	530	i400	44A3773	4E FF 01 33
InterForm400	270	i100	44A1597	D0 99 70 07

Handling conditional overlays for a landscape setup

It can be a bit of a challenge to use conditional overlays in a landscape setup. The point of reference is for landscape overlays different for graphical elements like frames, lines and images compared to the remap window. Notice however, that you should place any conditioned fixed text elements with the other graphical elements:

For the graphical elements the point of reference is the same as when designing a portrait overlay, but the text elements are changing the point of reference to the 'new' top left corner, when rotating the paper 90 degrees. See illustration below:



This means, that a conditional overlay inserting remap window/tabulators (texts) in a landscape overlay will need to be placed relatively in another direction than the graphical elements. This will normally require a call of two different conditioned overlays, if both types of elements are needed. The conditioned overlay inserting graphical elements should be called first and then the one inserting texts.

The **graphical conditioned overlay** should be placed like so:

The screenshot shows the "Page Management" tab in a software interface. It contains three sections: "Reposition", "Vertical Distance", and "Horizontal Distance".

- Reposition:** Two radio buttons are present: "actual position" (unselected) and "last nonblank inputline" (selected). Below them is a "Blank Inputline" field with the value "0" and a range "(0-999)".
- Vertical Distance:** A "Distance" field with the value "0,000" and a range "(0-99,239)". Below it is a "Distance Code" dropdown menu with "Vertical Distance (A)" selected.
- Horizontal Distance:** A "Distance" field with the value "0,020" and a range "(0-99,239)". Below it is a "Distance Code" dropdown menu with "Subtract (-)" selected.

Please notice, that we are here using an 'A' for the vertical Distance code and '+' or '-' to make the horizontal position relative to where the condition is met. (This makes sense since the graphical elements are gradually added from left to right). You can of course move the complete overlay up or down by changing the distance value (above it is 0,020).

Place conditioned lines, frames, images and even fixed texts in this overlay. (You can also place tabulators here if the text overlay below is not needed).

The **text conditioned overlay** should be placed like so:

The screenshot shows a software interface with three tabs: 'Rules', 'Formatting', and 'Page Management'. The 'Page Management' tab is active. It contains three sections: 'Reposition', 'Vertical Distance', and 'Horizontal Distance'.
- In the 'Reposition' section, there are two radio buttons: 'actual position' (unselected) and 'last nonblank inputline' (selected). Below them is a text input field for 'Blank Inputline' containing '0' and a range '(0-999)'.
- In the 'Vertical Distance' section, there is a text input field for 'Distance' containing '0,000' and a range '(0-99,239)'. Below it is a dropdown menu for 'Distance Code' with 'Subtract (-)' selected.
- In the 'Horizontal Distance' section, there is a text input field for 'Distance' containing '0,000' and a range '(0-99,239)'. Below it is a dropdown menu for 'Distance Code' with 'Horizontal Distance (A)' selected.

As you can see this is the opposite compared to the graphical conditioned overlay above.

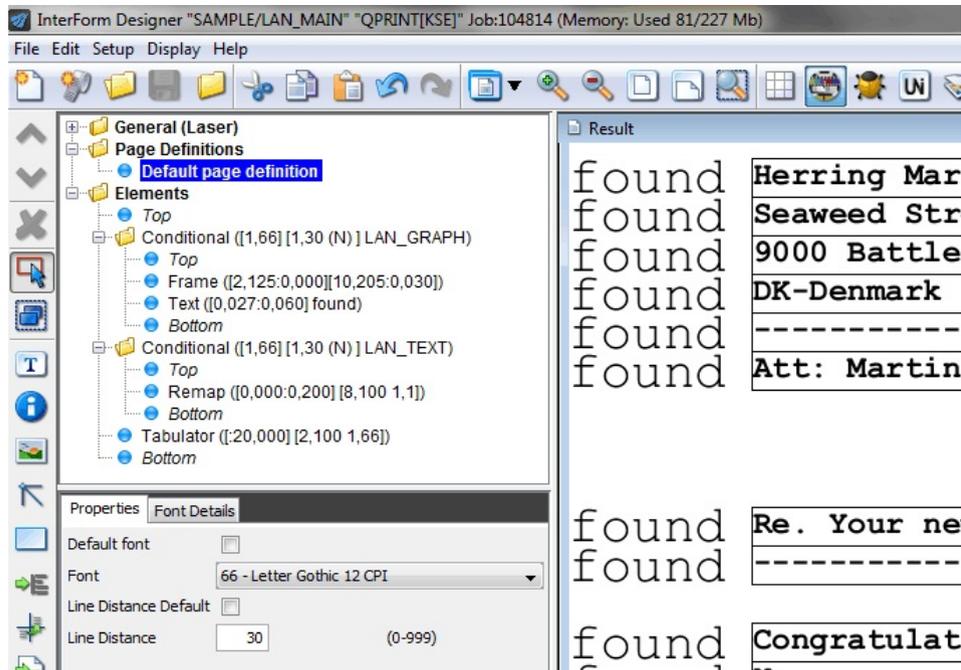
Place any remap window elements (that should be inserted via a conditioned overlay) here. If you also want to use tabulators (inside a conditioned overlay), then you can also place them here.

NOTE

Do not use either '+' or '-' for both the vertical distance and the horizontal distance as the PDF result will then use relative positioning in both directions and the result will be wrong. Such a problem is not visible in either the designer or in the PCL view - only when creating PDF files.

An Example

To illustrate how you can use this technique, an example setup is shown below. This is checking if the text from position 1 to 30 is not blank. If that is the case, then one conditioned overlay is placing a frame around the current line and 'found' is written on left next to the line. Another conditioned overlay is remapping the text in the spooled file line presenting the text in font 253 (which is a 16.66 bold courier). Please notice, that the line spacing have been set to 30 pels, which equals 8 lines per inch - as 240 pels makes one inch:

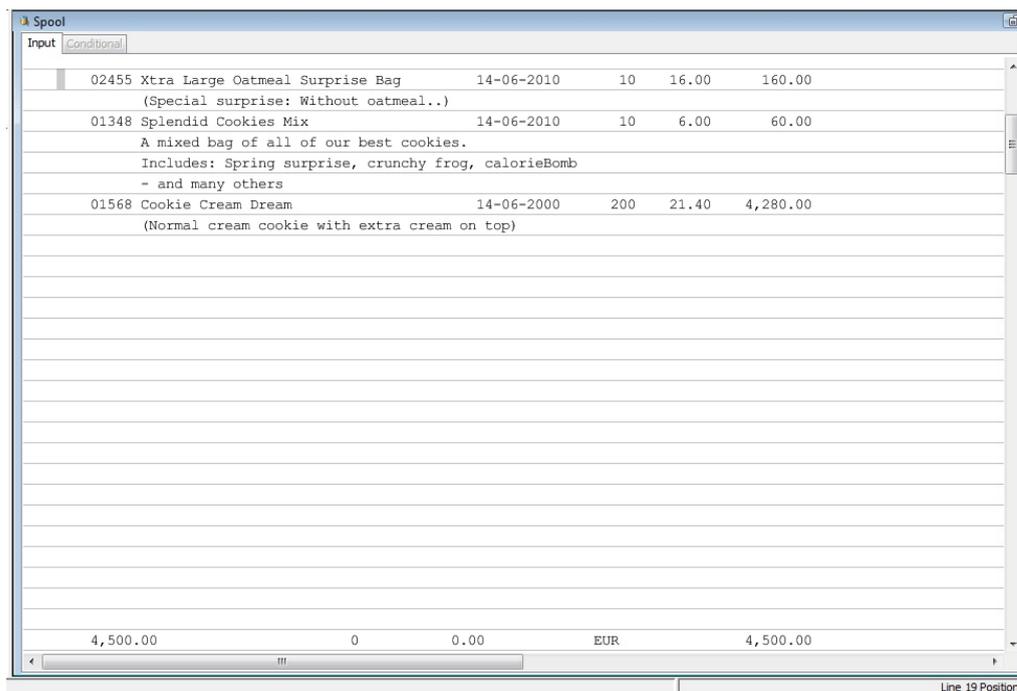


This example has been setup to work with the InterForm400 demo spooled file, which you can print out via the InterForm400 Service Menu.

Advanced Conditioned Overlay Design

This section has been written as a help for those InterForm400 customers, that are using very dynamic spooled files as input in InterForm400. This section identifies and solves some of the more difficult requests, that you might face in such situations. Here we focus on the ways you can handle very dynamic detail lines of a document. Especially we will solve situations, where you want to add or remove lines (or space) in the sequence of detail lines.

The document will use a special training spooled file as the basis for the challenges and solutions below. The spooled file contains these detail lines:



Item No.	Description	Date	Qty	Unit Price	Total Price
02455	Xtra Large Oatmeal Surprise Bag (Special surprise: Without oatmeal..)	14-06-2010	10	16.00	160.00
01348	Splendid Cookies Mix A mixed bag of all of our best cookies. Includes: Spring surprise, crunchy frog, calorieBomb - and many others	14-06-2010	10	6.00	60.00
01568	Cookie Cream Dream (Normal cream cookie with extra cream on top)	14-06-2000	200	21.40	4,280.00
Total					4,500.00

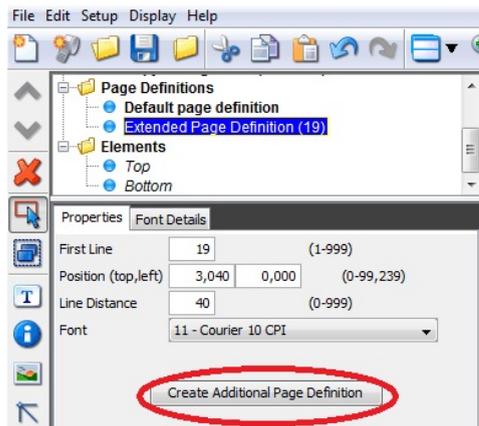
The detail lines start here in line 19 and a total is written in line 46 independently of the detail lines. In this section we will see, how we can present these detail lines in different manners. Before we do that, there are some general guidelines, that can help to ease the process of the design.

1. Making sure that the detail lines have the right start position and line distance in the output

If you already know (when you start the design), that this will call for some advanced functionality in regards to design, then you should try to do as much of your design as possible in the **header of the overlay**. Here you should focus on the dynamic detail lines if the header information (as usual) simply are printed in fixed lines and positions.

Placing the detail lines and setting the line distance

First you should make sure, that the detail lines are starting in the right position in the merged result - even without any remaps. You can do that with an extended page definition like this:



With this you can place your detail lines starting in a specific position from the top and left and also state a line distance, that the most of the detail lines should use. Later we will see that you can use a condition to push the remaining spooled file lines up or down.

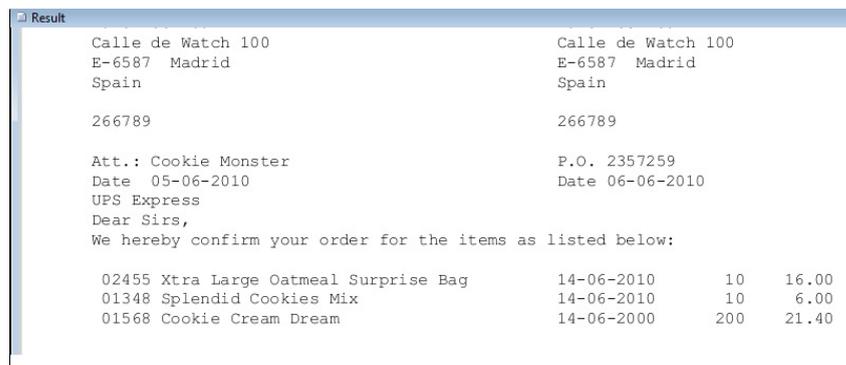
When using conditioned overlays later, that are positioned relatively to the found condition (this is the default setting, when you insert conditioned overlays via the graphical designer), then the point of reference is exactly what you will print if you printed out your merged result now - before you add any conditioned overlays or remap window elements.

The advantage by doing this is, that it is easier to check how far down on the page, that the detail lines might go, compared to if you had done a lot of remap windows and conditioned overlays, that are positioned higher/lower, than where the spooled file would normally print.

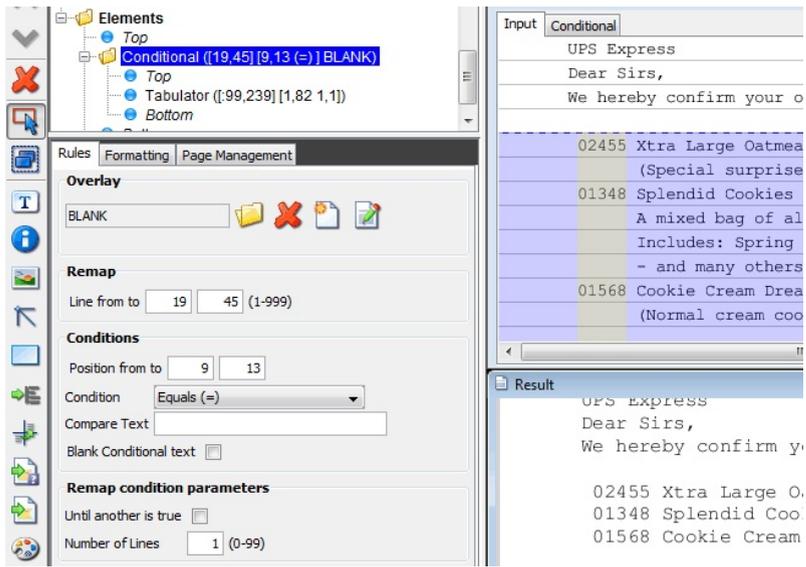
In the conditioned lines handling the detail lines you should also try first to use the tabulator to position the spooled file data. If not possible, then you should use the remap window. The advantage by doing it in this manner is, that you can use remap window elements later to 'override' any tabulator thus combining conditions in a more detailed manner.

2. Using a conditioned overlay to remove a spooled file line

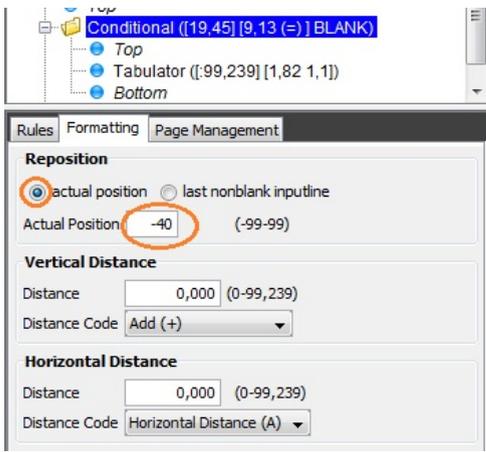
You might want to remove some of the detail lines. You can search for the specific lines and call an overlay to remove it and pull up the remaining spooled file lines like this:



Here you can see, that we have removed the extra description lines and pulled up the rest. That is done by adding a conditioned overlay, that gets the current detail line:



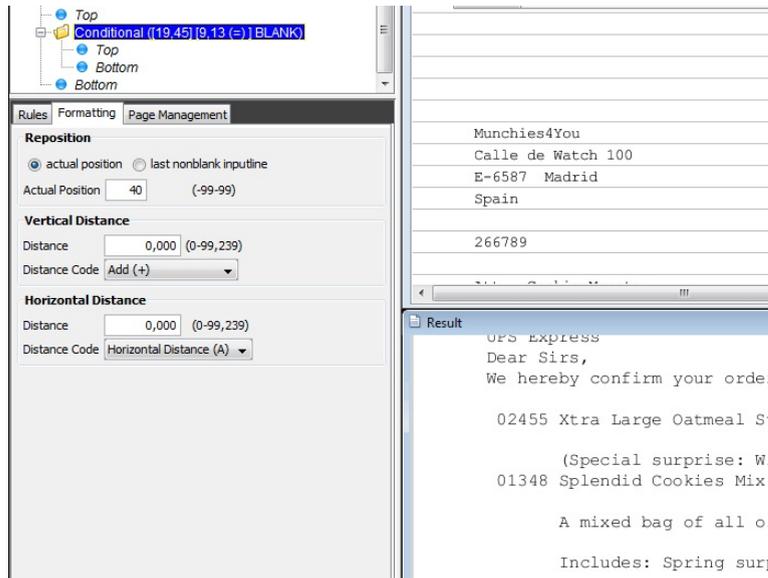
In the conditioned overlay we tabulate the current line outside the page. The trick to pull up the rest of the spooled file is done under the formatting tab of the conditioned overlay:



Here we activate 'Actual position' and state a displacement, that is negative and the same as the line height as stated earlier - in this case it is '-40'.

3. Push down the spooled file lines

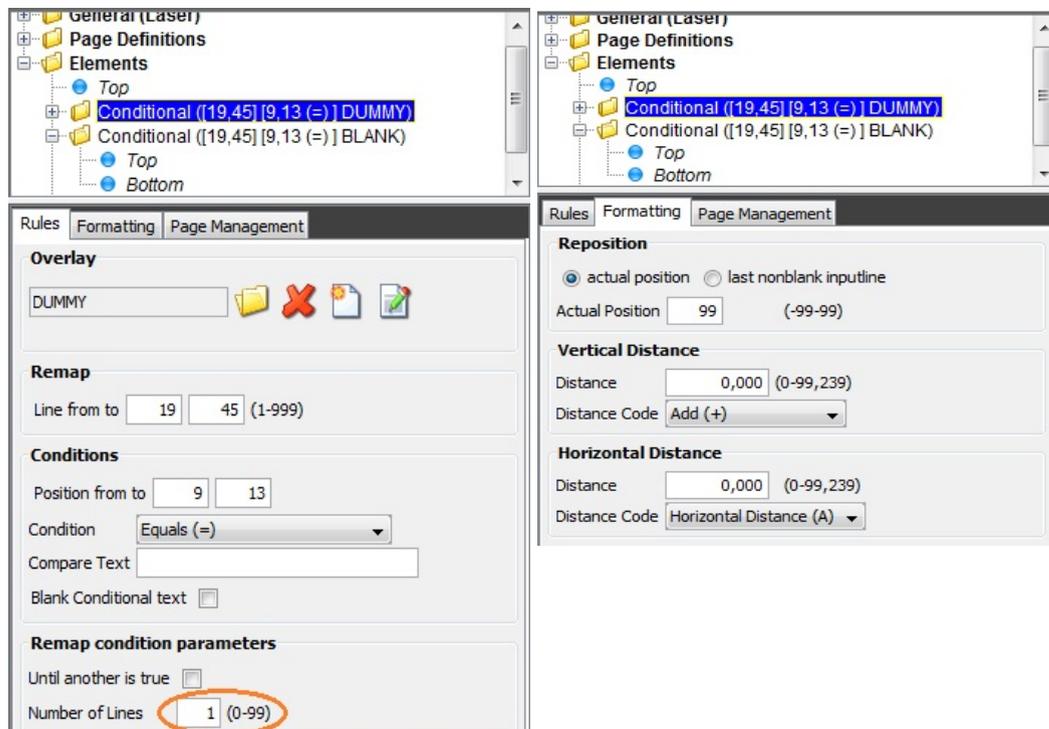
If you want to push down the spooled file instead of pulling it up as shown above, then you just do the same, but state a positive value for the displacement:



You can see the result in the lower right corner of the image above. The tabulator in the conditioned overlay has also been removed, so the text is now visible.

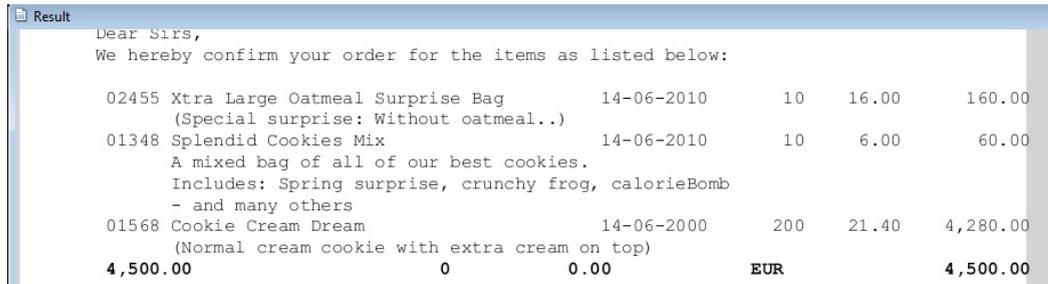
4. Pull/Push spooled file more than 99 pels

The technique used in the examples above can only handle a displacement of up to 99 pels. If you want to pull or push the spooled file up/down more than 99 pels, you need to insert additional call(s) to a conditioned overlay. This could be the same overlay, if it is not inserting any fixed elements, or a dummy overlay like shown below - which also should get a line of spooled file data. The displacements are simply added (remember, that only the last conditioned overlay called will get the spooled file data).



5. Remove an unknown number of empty lines in the middle

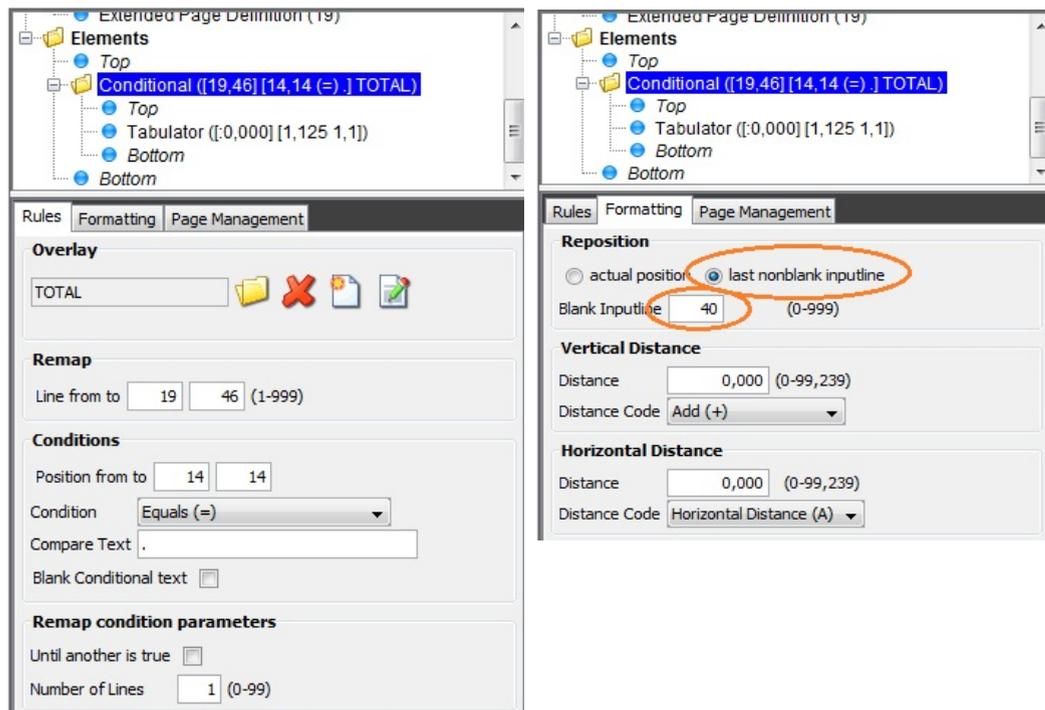
In our spooled file on page 63 the total is placed in the fixed line 46 and thus normally printed in a fixed position from the top in the result. You might want to move it, so it is repositioned to right after the last detail line like this:



Dear Sirs,					
We hereby confirm your order for the items as listed below:					
02455	Xtra Large Oatmeal Surprise Bag (Special surprise: Without oatmeal..)	14-06-2010	10	16.00	160.00
01348	Splendid Cookies Mix A mixed bag of all of our best cookies. Includes: Spring surprise, crunchy frog, calorieBomb - and many others	14-06-2010	10	6.00	60.00
01568	Cookie Cream Dream (Normal cream cookie with extra cream on top)	14-06-2000	200	21.40	4,280.00
4,500.00	0	0.00	EUR	4,500.00	

(Here the total line is written in bold).

You can do that by adding a conditioned overlay, that is searching in all the detail lines including where it is actually found for something that uniquely identifies the total line:



The screenshot shows the software interface for configuring a conditioned overlay. The 'Elements' tree on the left shows a 'Conditional ([19,46] [14,14 (=)] TOTAL)' element. The 'Rules' panel is open to the 'Page Management' tab, showing the 'Reposition' settings. The 'Reposition' section has 'last nonblank inputline' selected, and the 'Blank Inputline' is set to 40. The 'Vertical Distance' is set to 0,000 and the 'Horizontal Distance' is set to 0,000.

By activating 'Last nonblank line' and stating a displacement downwards (here it is 40 pels), we can achieve the result as shown above. In this way the total is always written directly after the last detail line. All other subsequent lines are also moved up, but any line that should be placed in a fixed position could of course still be remapped with the remap window.

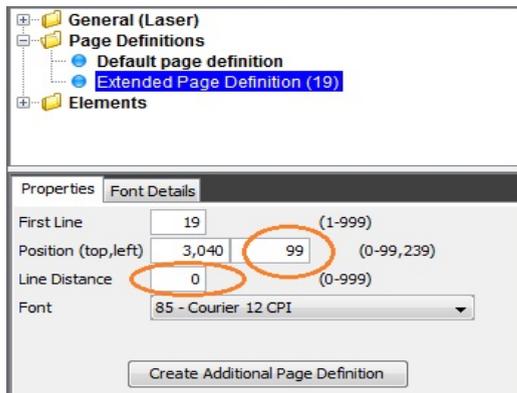
6. Only advance downwards for certain lines

This example shows a different way to solve the example in '2. Using a conditioned overlay to remove a spooled file line' on page [64](#):

```
Result
Calle de Watch 100
E-6587 Madrid
Spain
266789
Att.: Cookie Monster
Date 05-06-2010
UPS Express
Dear Sirs,
We hereby confirm your order for the items as listed below:
02455 Xtra Large Oatmeal Surprise Bag
01348 Splendid Cookies Mix
01568 Cookie Cream Dream
Calle de Watch 100
E-6587 Madrid
Spain
266789
P.O. 2357259
Date 06-06-2010
14-06-2010 10 16.00
14-06-2010 10 6.00
14-06-2000 200 21.40
```

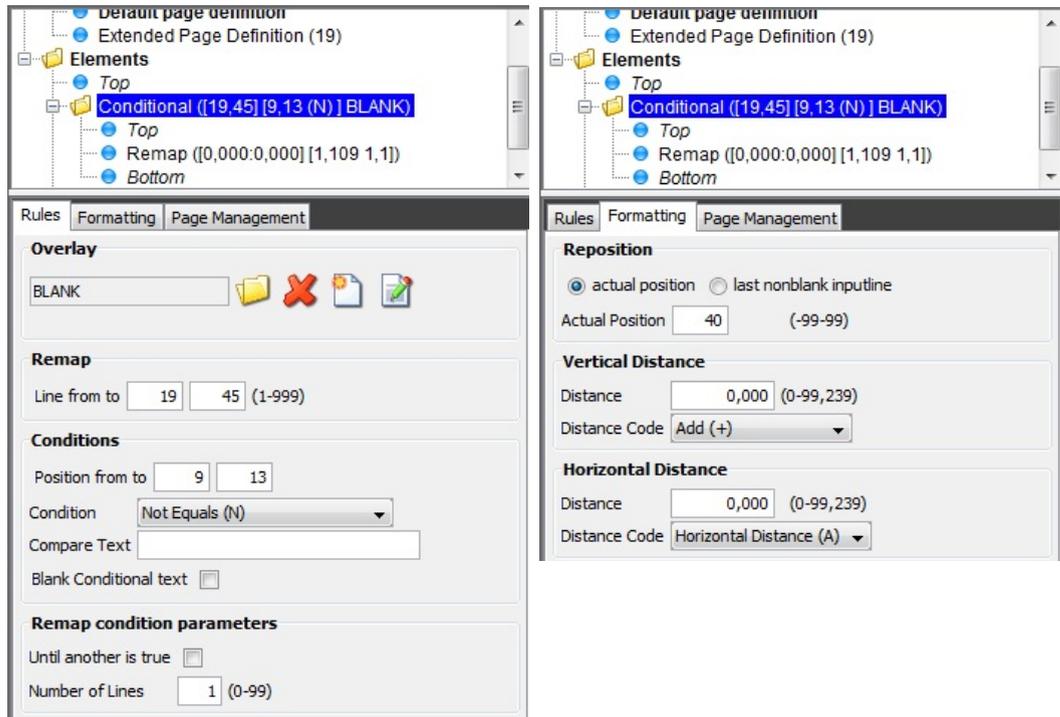
In the previous section we created a conditioned overlay, that are triggered by the lines, that should be removed, but it could be, that you would prefer to have a line distance of 0 (zero) and then only advance downwards when specific conditioned overlays are called.

To set the line distance for the detail lines, you can use the extended page definition of the overlay as shown on page [64](#):



All the detail lines are now printed on to of each other, but the spooled file text is positioned 99 inches from the left, so it is not visible in the output.

So now we need to tell InterForm400 to advance for each line we insert. If we just want to insert the lines as above we can do it like this:



Please notice, that any tabulator will be relative to the extended page definition and as we have already moved outside the printable area (99 inches to the right), we need to use a remap window in the conditioned overlay.

Distribution and splitting

If you want to split and distribute a spooled file, you do normally not need to split the spooled file first as InterForm400 offer functions, that does the splitting and distribution in one process. For those that does wants to do one or the other (or both) there are a few tips below:

Splitting spooled files per level break

If you simply want to split a spooled file you can use the split definition in InterForm400. You can do two kind of splitting:

- a) Splitting a spooled file comparing text in certain positions with fixed texts.
- b) Splitting a spooled file for each value found in certain positions.

The first kind of splitting is shown as an example in the InterForm400 manual. The second is more widely used, but also a bit more difficult, so such an example is shown here. So we want one spooled file for each unique value found in a spooled file.

The task

If we consider the InterForm400 demo spooled file (printed out by selecting options 80, 12 and 1 in the InterForm400 main menu), then there is a 4 digit number in position 57-60 in line 13. We want to create one spooled file for each different value found.

The solution

In order to handle the splitting we need to copy the value for the split into a spooled file attribute. We select here the form type as it is easy to use for further conditioning in Auto Forms Control. We first copy the demo source member SPLEXIT from the demo source file APF3812/APISRC. Now change the source to this:

```
/*-----*/
/* This is a sample program to be used as user exit program in */
/* split with parameter list format 01. */
/* */
/* When coding your own user exit programs, you have to have */
/* the same entry parameters as in this program. */
/*-----*/

PGM          (&ENTRYTXT1  &ENTRYTXT2  &ENTRYTXT3  &ENTRYTXT4  +
              &ENTRYTXT5  &OUTQ      &OUTQLIB   &WIDTH     +
              &LENGTH    &LPI       &CPI       &OVRFLW    +
              &FONT      &PAGRTT   &FORMTYPE  &SPLFNAME  +
              &USRDTA   &HOLD      &SAVE      &COPIES   +
              &RPLUNPRT &RPLCHR  &ALIGN    &DRAWER   +
              &RETURNTXT1 &RETURNTXT2 &RETURNTXT3 &RETURNTXT4 +
              &RETURNTXT5 &RETURNTXT6 &RETURNTXT7 &RETURNTXT8 +
              &RETURNTXT9 &RETURNTX10 &RETURNDFD)

DCL          &ENTRYTXT1  *CHAR      30
DCL          &ENTRYTXT2  *CHAR      30
DCL          &ENTRYTXT3  *CHAR      30
DCL          &ENTRYTXT4  *CHAR      30
DCL          &ENTRYTXT5  *CHAR      30
DCL          &OUTQ       *CHAR      10
DCL          &OUTQLIB   *CHAR      10
DCL          &WIDTH     *CHAR       6
DCL          &LENGTH    *CHAR       6
DCL          &LPI       *CHAR       6
DCL          &CPI       *CHAR       6
DCL          &OVRFLW    *CHAR       6
DCL          &FONT      *CHAR       6
DCL          &PAGRTT   *CHAR       6
DCL          &FORMTYPE  *CHAR      10
DCL          &SPLFNAME  *CHAR      10
DCL          &USRDTA   *CHAR      10
DCL          &HOLD      *CHAR       6
DCL          &SAVE      *CHAR       6
DCL          &COPIES   *CHAR       6
DCL          &RPLUNPRT *CHAR       6
DCL          &RPLCHR   *CHAR       1
DCL          &ALIGN    *CHAR       6
DCL          &DRAWER   *CHAR       6
```

```

DCL      &RETURNTXT1  *CHAR      50
DCL      &RETURNTXT2  *CHAR      50
DCL      &RETURNTXT3  *CHAR      50
DCL      &RETURNTXT4  *CHAR      50
DCL      &RETURNTXT5  *CHAR      50
DCL      &RETURNTXT6  *CHAR      50
DCL      &RETURNTXT7  *CHAR      50
DCL      &RETURNTXT8  *CHAR      50
DCL      &RETURNTXT9  *CHAR      50
DCL      &RETURNTX10  *CHAR      50
DCL      &RETURNUFD   *CHAR      255

```

```

CHGVAR      VAR (&FORMTYPE) VALUE (&ENTRYTXT1)

```

```

ENDPGM

```

Please notice the bold line indicating the only action done in this program. The formtype returned will be inserted into the form type of the new spooled files created by InterForm400. Please compile the program and change the owner to QSECOFR:

```

CHGOBJOWN OBJ(<PgmLib>/<Pgm>) OBJTYPE(*PGM) NEWOWN(QSECOFR)

```

Remember that you NEVER place any objects in the APF3812 library as they will not be copied over in future InterForm400 upgrades. You should also NOT place the changed member in any source file in the APF3812 library - not even APISRC.

The program above works only if the level break text is found on all pages of the spooled file. If the text is not found on all pages, but e.g. only on the first page of each document (within the spooled file) you can e.g. store the value in a data area and reuse it by inserting these lines instead of the bold lines above:

```

/* FIRST PAGE OF A DOCUMENT:*/
IF      COND(&ENTRYTXT1 *EQ ' 1') THEN(DO)
CHGVAR  VAR(&FORMTYPE) VALUE(&ENTRYTXT1)
CHGDTAARA DTAARA(QTEMP/STORE_DATA) VALUE(&ENTRYTXT2)
MONMSG  MSGID(CPF1015) EXEC(CRTDTAARA +
                           DTAARA(QTEMP/STORE_DATA) TYPE(*CHAR) +
                           LEN(30) VALUE(&ENTRYTXT2))
ENDDO

/* FOLLOWING PAGES OF A DOCUMENT:*/

IF      COND(&ENTRYTXT1 *NE ' 1') THEN(DO)
/* RTVDTAARA must retrieve into a field that is 30 char long... */
RTVDTAARA DTAARA(QTEMP/STORE_DATA) RTNVAR(&ENTRYTXT2)
CHGVAR  VAR(&FORMTYPE) VALUE(&ENTRYTXT2)
ENDDO

```

Here you will need to define both the page counter in the first exit parameter as shown further below, but also the specific value used for the level break - as the second exit parameter.

The program above must exist before we can create the split definition to fit the program. Select this in InterForm400:

5. Work with Auto Forms Control

3. Split Definitions

Create a new split definition with F6=Add and type a name and description for the split.

Type in a sequence number e.g. '1' and press Field Exit. Now type a condition that is true for all the pages in the spooled file (the condition cannot be blank). You can e.g. use this:

Seqnbr.	Split detail description	AND/OR	Print line	Position	Oper	Compare value
1.0	All pages					
			<u>1</u>	<u>1</u> - <u>1</u>	<u>EQ</u>	_____
		<u>OR</u>	<u>1</u>	<u>1</u> - <u>1</u>	<u>NE</u>	_____
		_____	_____	_____	_____	_____
		_____	_____	_____	_____	_____
		_____	_____	_____	_____	_____
		_____	_____	_____	_____	_____

The condition can be translated into 'Either there is a blank in position 1 in line 1 - or there is not' - and this true..

Press Enter and you are asked for the program to call. Type the name and library and InterForm400 will ask for the parameters for the program call:

```

Create Split Definition                                     SPL310D

Split definition name . : DEMO
Description . . . . . : Demo Split
Split detail description : All pages
User exit program
  Program name . . . . . SPLEXIT          *NONE, name
  Library . . . . . APF3812             Name, *LIBL
  Parameter list format . 01           01, 02, 03, 04 (UCS2)
  When to call . . . . . 1             1=Every page
Exit parameter data                                     2=When exit parm changes
  1. Linenbr. 13 Position 57 - 60
  2. Linenbr. ___ Position ___ - ___
  3. Linenbr. ___ Position ___ - ___
  4. Linenbr. ___ Position ___ - ___
  5. Linenbr. ___ Position ___ - ___
Return data is to be printed in the following positions
  1. Linenbr. ___ Startposition ___    6. Linenbr. ___ Startposition ___
  2. Linenbr. ___ Startposition ___    7. Linenbr. ___ Startposition ___
  3. Linenbr. ___ Startposition ___    8. Linenbr. ___ Startposition ___
  4. Linenbr. ___ Startposition ___    9. Linenbr. ___ Startposition ___
  5. Linenbr. ___ Startposition ___   10. Linenbr. ___ Startposition ___
F3=Exit                                             F12=Cancel

```

So the definition of exit parameter 1 as line 13 positions 57-60 is the data, that will be in the &ENTRYTXT1 parameter of the program above.

Press Enter and InterForm400 will ask where to create the new spooled files and what attributes they should have:

```

Create Split Definition                                     SPL310D

Split definition name . : DEMO
Description . . . . . : Demo Split

Split detail description : All pages
Attributes to be used, when not returned from user-exit program.
Output queue . . . . . *INPUT          *INPUT, *NONE, Name
  Library . . . . . _____
Page size
  Length, lines per page . . . . . _____ *INPUT, 1-255
  Width, positions per line . . . . . _____ *INPUT, 1-378
Lines per inch . . . . . _____ *INPUT, 3, 4, 6, 7.5, 8, 9, 12
Characters per inch . . . . . _____ *INPUT, 5, 10, 12, 13.3, 15...
Overflow line number . . . . . _____ *INPUT, 1-255
Form ID . . . . . _____ *INPUT, *CPI, 3, 5, 11, 12...
Degree of page rotation . . . . . _____ *INPUT, *AUTO, *COR, 0, 90...
Form type . . . . . NEW                *INPUT, Character value, *STD
Spooled file name . . . . . _____ *INPUT, *USER, *JOBNAME, Name
User data . . . . . Splitted          *INPUT, *USER, *JOBNAME ...
Hold spooled file . . . . . _____ *INPUT, *NO, *YES
Save spooled file . . . . . _____ *INPUT, *NO, *YES
F3=Exit                                             F12=Cancel

```

You should take good care not to create a loop when adding a split definition in Auto Forms

Control.

I have stated *INPUT for the output queue to place the splitted spooled files on the same output queue as the original - keeping in mind that the resulting spooled file should not be able to trigger the split again as this would cause a loop creating a lot of spooled files. InterForm400 also requires that a value is entered for the form type above to reduce the risk of a loop. However that value will here be overwritten by the value returned from our program.

Setup Auto Forms Control

The final part is to setup Auto Forms Control. This could be done this way:

```
Update AFC-functions attached to output queues                                AFC305D
Queue:  AFC_INPUT1      Library:  APF3812
Seqnbr Funct  Form type  Save Jobname  Filename  Device file  Program
0001    B      DEMO
          Split, definition: DEMO
0002    *      Handle 1001 pages from the Split
0003    1      1001
          Merge, Overlay: IF400DEMO Fileset: SAMPLE

Seqnbr Function      Suspend
5.0

F3=Exit          F5=Service          F13=Fold/Unfold
```

The form type DEMO is the condition for the split, which creates the new spooled files on the same output queue.

The merge in line 3 merge the pages with the text '1001' with an overlay and print it on a specific printer. Simular lines could be added for other values. You can even also call a program via option '8=Call Program' to retrieve some spooled file attributes and let the program decide what to do..

Please notice: Do not use output queues in the APF3812 library for production as they are not copied over during future upgrades unless you are using a light version of InterForm400.

Move spooled file to specific outq depending on contents

The split definitions can not only be used for splitting up spooled files, but they can also be used for moving the spooled file to an output queue (or changing many other spooled file attributes) depending on the contents.

In the example below we have an output queue listed inside the input spooled file and we want to merge this spooled file with an overlay or overlay selector and print the result on that specific output queue.

There are several ways to achieve this:

1. We can use a split definition, that takes the information from the input spooled file, and adds a few extra characters at the end to build up the equivalent output queue, that InterForm400 is monitoring. If e.g. you already have a naming standard for output queues, so that InterForm400 is monitoring output queues ending with '_I' like e.g. PRT01_I and

- place the merge result on 'PRT01' - without the '_'', then you should consider to use a split definition, that calls a program to add the '_' to the output queue found in the spooled file and change the OUTQ (and OUTQLIB) parameters of the spooled file.
2. You can also create a hybrid of the first suggestion. If you cannot be sure, that InterForm400 is actually monitoring an output queue related to all printers, then you can also use the split definition above to move the output queue information into another spooled file attribute like e.g. USRDTA, FORMTYPE or even USRDFNDTA. The spooled file can then trigger a call to a function 8 program in AFC (based on demo source member FUNKT_8 in source file APF3812/APISRC), which can then retrieve the spooled file attribute and use the result as the target output queue in the command, APF3812/APF3812.
 3. You can also hardcode the merge directly in a program called by the split definition. If the split definition calls a program based on parameter list 3 or 4, then you will actually get the complete identification of the spooled file (Job name, job number, user profile, spooled file name and number), which can be used in the command APF3812/APF3812.

There are pros and cons for each of them:

The first option: Call a split definition to move the spooled file to a monitored outq.

- Pros:** Easy implementation - only a single, very small program is needed.
 No hardcoded merge in a user program.
 Use the normal merge process in Auto Forms Control.
- Cons:** The output queue stated in the input spooled file must be 'translated in the program to a related, monitored output queue.
 Only output queues monitored by Auto Forms Control can be used.

The second option: The hybrid with merge in a program.

- Pros:** Can handle any output queue found in the spooled file - also output queues, that are not monitored by Auto Forms Control.
- Cons:** Requires two user programs.
 Hardcoded merge in a user program, which is not flexible.
 Does not use the same merge process as others i.e. not transparent.

The third option: Merge directly in a split exit program

- Pros:** Only a single user program is used.
 The spooled file is only 'touched' once by Auto Forms Control with the split definition.
 Can handle any output queue.
- Cons:** A bit complicated to retrieve spooled file ID in split exit program.
 More complicated programming.
 Hardcoded merge.
 Not transparent for others.

Implementation

Below I will cover the first solution in a specific example:

The input spooled file has an output queue placed in line 1 positions 1-10. This is the output queue, where the merged spooled file is to be created. In this specific InterForm400 installation we are monitoring for new spooled files on output queues, that have an '_IN' after the normal output queue name i.e. in order to merge to the printer, PRT01, we would need to place the input spooled file on the output queue, PRT01_IN, which is monitored by Auto Forms Control.

First we need to create a program, that can take the output queue from the spooled file contents, concatenate it with '_IF' and change the spooled file attributes. In this case we take a copy of the demo source member, SPLEXIT in source file APF3812/APISRC. Remember to copy the source to another library.

The source could be changed to this:
 (While keeping all the DCL lines in the top).

```

CHGVAR      &OUTQ          VALUE(&ENTRYTXT1 *TCAT '_IN')
CHGVAR      &OUTQLIB      '*LIBL'

```

After the program has been compiled and placed in another library than APF3812 e.g. APFTOOLS, then we can create the split definition.

You should use a dummy condition, that is true for all pages in the spooled file e.g. like so:

```

Change Split Definition                                     SPL310D

Split definition name . . : MOVOUTQ
Description . . . . . : Move spooled file to outq

Seqnbr. Split detail description
0001 All: Get outq from splf

Seqnbr. Split detail description
1,0 All: Get outq from splf
AND/OR Print line Position Oper Compare value
      1 1 - 1 EQ
OR    1 1 - 1 NE
      -
      -
      -
      -

```

We also need to select the output queue data in the spooled file and call the program only once:

```

Change Split Definition                                     SPL310D

Split definition name . . : MOVOUTQ
Description . . . . . : Move spooled file to outq
Split detail description : All: Get outq from splf
User exit program
Program name . . . . . SPLEXIT          *NONE, *SQL, name
Library . . . . . APFTOOLS          Name, *LIBL
Parameter list format . 01
When to call . . . . . 3          3=First time the seqnbr is selected
Exit parameter data
1. Linenbr. 1 Position 1 - 10
2. Linenbr. Position -
3. Linenbr. Position -
4. Linenbr. Position -
5. Linenbr. Position -
Return data is to be printed in the following positions
1. Linenbr. Startposition          6. Linenbr. Startposition
2. Linenbr. Startposition          7. Linenbr. Startposition
3. Linenbr. Startposition          8. Linenbr. Startposition
4. Linenbr. Startposition          9. Linenbr. Startposition
5. Linenbr. Startposition          10. Linenbr. Startposition
F3=Exit                               F12=Cancel

```

Now we just need to call this split definition (Function B) in Auto Forms Control to move the spooled file to the right queue, and monitor for the spooled file in the destination queue to do the actual merge.

ZPL Printing

This section describes possible problems regarding ZPL printing and the solution for each. Please notice that you need to press Enter on all configuration screens before changes are stored!

Printer does not print

If a ZPL printer is not able to print after an upgrade to a 2014 version of InterForm400 or after a new install of a 2014 version (or higher):

- 1) First compare the command prefixes in the printer configuration e.g. found via a web interface with the ZPL command prefixes setup in InterForm400 in option 70. Configuration and licences followed by option 2. Configure InterForm 400.

These are the default values:

```
Configure InterForm 400 APF101D
14/18

Command prefixes and delimiter on Zebra printers.

- Control commands prefix      Hex 7E  Default = X'7E' (tilde)
- Format commands prefix       Hex 5E  Default = X'5E' (caret)
- Delimiter                    Hex 2C  Default = X'2C' (comma)

F3=Exit F12=Cancel
```

On many printers this setup is used instead:

```
Configure InterForm 400 APF101D
14/18

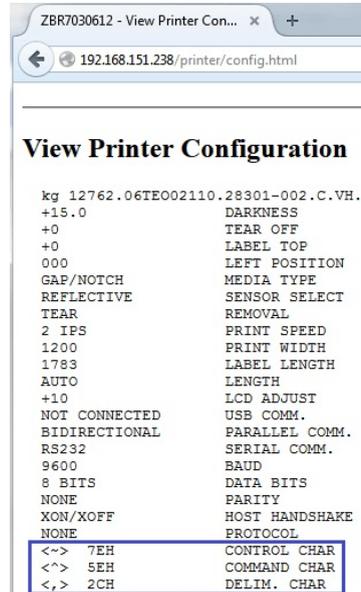
Command prefixes and delimiter on Zebra printers.

- Control commands prefix      Hex 10  Default = X'7E' (tilde)
- Format commands prefix       Hex 1E  Default = X'5E' (caret)
- Delimiter                    Hex 2C  Default = X'2C' (comma)

F3=Exit F12=Cancel
```

These values must fit all the printers, that you intend to print to from InterForm400. If they do not fit, then the printer may accept the print data stream, but nothing will print.

The prefixes set on the printers can be found by printing out the configuration or via the printers web interface:



- 2) It might also be needed to **power the printer off and on** before it understands the new data stream.

It is **VERY** important, that you go through all of the configuration screens and press Enter on the final screen. If you do not, then the changes **will NOT be stored**. It is therefore a good idea to re-enter the configuration option and go through all of the screens again to be double sure, that the changes have actually been stored.

Even though the default values of 7E, 5E and 2C are displayed on the InterForm400 configuration screen, these values are NOT stored until you press Enter on the final screen.

Handling of soft fonts in the new Zebra printers

The setup below must be done even if you are not using soft fonts. Newer printers accept UTF-8, which is not supported by older printers. So even if you are not using soft font the new print data stream may look wrong on older printers.

The handling of soft fonts in Zebra printers depends very much on the firmware of the printer:

For firmware nn.13.nn and older the printers only understand one kind of soft fonts (which is inefficient).

For firmware nn.14.nn and up to nn.17.nn the printers understand both the old kind of soft fonts and a new more efficient way of including soft fonts, and you do not need to do anything if these are the only printers you use.

For firmware nn.18.nn the printers only understand the new soft fonts.

So if you want to use soft fonts on newer Zebra printers, then you need to upgrade to version 2014M10 (or newest official version).

Description of the challenge: With the nn.14.nn firmware the Zebra printers understood another (better and more efficient) way of using soft fonts, but the old soft fonts were still supported.

With firmware nn.18.nn only the new way of using soft fonts is supported. The important thing here is to determine the firmware of the zebra printers. As default InterForm400 will assume, that all printers are running with an older firmware i.e. nn.13.nn or older, so the output should be unchanged after an upgrade. Unless you have newer zebra printers (with firmware nn.18.nn or

higher), then you do not need to do anything after an upgrade.

If you do have newer zebra printers, then you will need to state a 'Y' for nn.18.nn on this screen:

```
Configure InterForm 400                                APF101D
                                                        15/18

Do you have Zebra printers with firmware nn.13.nn or older?
                                                        Y (Y N)

Do you have Zebra printers with firmware nn.18.nn or newer?
                                                        Y (Y N)

This information is used to control format of soft fonts.

If you have both old and new versions of Zebra printers,
you will have to define which output queues uses the old firmware
in work with printer control options on the administration menu.
```

(The screen is found via selection 70. Configuration and licenses followed by 2. Configure InterForm400.)

If you have both older and newer printers like specified above, then you will need to select 'Y' for both - as above.

If you have not set a 'Y' for both firmware versions above, then option **5. Output queues with old Zebra firmware** is not visible/selectable.

The option can be found via these menu selections:

- 80. Administering InterForm 400**
- 8. Work with printer control options**
- 5. Output queues with old Zebra firmware**

If you select option 5 you will see this screen:

```
Work with output queues with old zebra firmware        ZFW300D

Start with . . . . . Output queue

Type options, press Enter.
  3=Copy  4=Delete  7=Rename

Opt  Outq      Library
-   ZEBRA      ZEBRA

End

F3=Exit  F5=Refresh  F6=Create  F12=Cancel
```

Here you should add all output queues, where older zebra printers are attached. Please notice this:

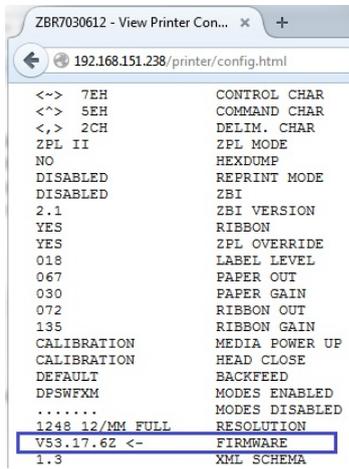
- 1) This is only necessary/possible if you have a combination of both older and newer zebra printers.
- 2) Please insert the output queue(s), that you are merging to (where the printers are

- attached)
- not the monitored output queues in Auto Forms Control.

How to determine the firmware of a zebra printer:

You can determine the firmware of a zebra printer in two ways:

1. The easiest way is to connect to the printer via a web browser. You simply type in the IP address and then select 'Display printer settings':



```

<-> 7EH      CONTROL CHAR
<^> 5EH      COMMAND CHAR
<,> 2CH      DELIM. CHAR
ZPL II      ZPL MODE
NO          HEXDUMP
DISABLED    REPRINT MODE
DISABLED    ZBI
2.1        ZBI VERSION
YES        RIBBON
YES        ZPL OVERRIDE
018        LABEL LEVEL
067        PAPER OUT
030        PAPER GAIN
072        RIBBON OUT
135        RIBBON GAIN
CALIBRATION MEDIA POWER UP
CALIBRATION HEAD CLOSE
DEFAULT     BACKFEED
DPSWFXM    MODES ENABLED
.....     MODES DISABLED
.....     RESOLUTION
1248 12/MM FULL
V53.17.62 <- FIRMWARE
1.3        XML SCHEMA
  
```

(This printer is running firmware nn.17.nn, which supports both data streams).

2. Alternatively you can see the firmware version via the printer display or by printing out the printer settings.

Label printer prints out extra empty labels

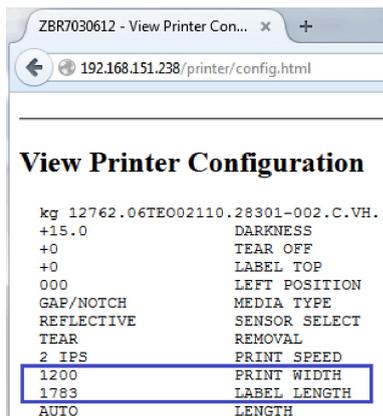
If the printer prints out extra empty labels, then the explanation most likely is one of these:

1. The length of the label is longer than what the printer thinks.
2. The length of the InterForm design (overlay) is too long compared to the actual label.

Verify label length

The length of the label can be measured manually - remember that the measured label can be slightly shorter than the label as the gap might be included in the length, that the printer is measuring.

The current label length according to the printer can be read if you print out the configuration or if you access the printer via the web interface (type in the IP address in a browser):



```

kg 12762.06TE002110.28301-002.C.VH..
+15.0      DARKNESS
+0         TEAR OFF
+0         LABEL TOP
000        LEFT POSITION
GAP/NOTCH  MEDIA TYPE
REFLECTIVE SENSOR SELECT
TEAR       REMOVAL
2 IPS      PRINT SPEED
1200       PRINT WIDTH
1783       LABEL LENGTH
AUTO      LENGTH
  
```

The label width and length are measured in dots in the same resolution, that the printer is using. The screen shot above is from a 300 dpi printer, so for that printer the label length is 1783 dots divided by 300 = 5.94 Inches = 15.10 cm.

If the label length registered in the printer is not the same as the physical length, then you should calibrate the printer to make the printer measure the length and update this in the configuration.

Calibrate the printer

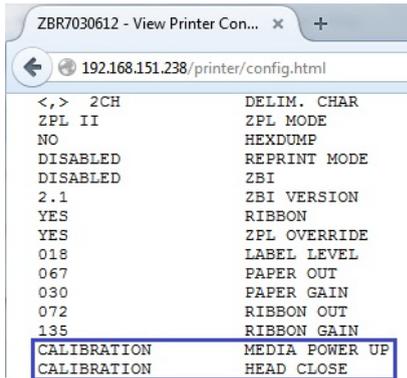
You can calibrate the printer in these ways:

1. Via the printer menu. (Depends on the printer model).
2. By opening and closing the printer head or by power the printer off and on (depends on the printers setup).
3. From InterForm400.

Option 2 and 3 are described below:

2. Calibrate by open/close of printer head or power off/on

Opening and closing the printer head or powering the printer off and on may force the printer to calibrate (and print out a couple of labels in the process). If that does not work, then you can check the properties for calibration via the printers configuration:



Above the printer is set to calibrate both when the printer head is closed and when the printer is powered on. You can change these settings either via the printer menu or via the web interface. The procedure for changing the configuration via the web interface is this:

First select **View and Modify Printer Settings**:

Zebra Technologies
ZTC S4M-300dpi ZPL

ZBR7030612

External Wired PrintServer

Status: **READY**

Printer Home Page

[View Printer Configuration](#)
[View and Modify Printer Settings](#) ←
[Directory Listing](#)
[Alert Setup](#)
[Printer Controls](#)
[Print Server Settings](#)

Now sign on to the printer. Password is default 1234:

<p>Zebra Technologies ZTC S4M-300dpi ZPL</p> <p>ZBR7030612</p> <p>External Wired PrintServer</p> <p>Home</p>
<p>ENTER PASSWORD</p> <p>.... </p> <p><input type="button" value="Submit Changes"/></p>
<p>Home: HTTP://WWW.ZEBRA.COM Support: HTTP://SUPPORT.ZEBRA.COM</p>

If you click a confirmation screen and select **Calibration** you will see this:

<p>Zebra Technologies ZTC S4M-300dpi ZPL</p> <p>ZBR7030612</p> <p>External Wired PrintServer</p> <p>Home</p>
<p>Calibration</p> <p>MEDIA POWER UP CALIBRATION ▾</p> <p>HEAD CLOSE CALIBRATION ▾</p>

Click **Submit Changes** in the bottom after enabling calibration for either Power up, head close or both. Then the changes are stored temporarily. To store them permanently you select **View and Modify Printer Settings** and **Save current configuration**.

If you then open and close the printer head (or do power off and on) the printer should calibrate according to the settings.

3. Calibration via InterForm400

On the QInnn+ printers you can use the InterForm400 command: APF3812/CALIBQL:

Calibrate QLnnn+ Printer (CALIBQL)

Type choices, press Enter.

Output queue	<u>*JOB</u>	Name, *JOB
Library	_____	Name, *LIBL
Form type	<u>*STD</u>	Character value
Hold output spooled file	<u>*NO</u>	*NO, *YES
Save output spooled file	<u>*NO</u>	*NO, *YES
Media type	<u>*GAP</u>	*GAP, *MARK

You need to specify the output queue where the printer is attached. This command will create a spooled file which must be printed on the printer(s) in order to do the calibration.

How to select the correct Drawer/Tray

This section describes how to select the correct drawer/tray on the printer. The drawer is the paper drawer containing the specific kind of paper you want to use for a specific document. Various drawers could e.g. contain paper in different colors or paper with a preprinted color logo. First drawer selection is described for Windows and IBM i (Host Print Transform) and finally for InterForm400.

Two ways of selecting the drawer

There are (at least) two ways of selecting the drawer in the data stream, that is sent to the printer:

1. By Drawer number

If you use this option, then a specific number is included in the data stream. This number is **not** the physical drawer, but a numeric PCL code for the drawer on the specific printer. The number is in the range 1-255, but the specific number depends on the printer manufacturer, printer model and installed options, so you cannot use the same number for different printers and expect to select the same physical drawer.

The relation between the physical drawer and the PCL drawer number can be like this (For a generic HP PCL5 printer driver):

Physical drawer	PCL drawer number
Tray 1 (manual feed)	2
Tray 1	4
Tray 2	1

But for other printers the PCL drawer number can e.g. be in the range 250-255..

2. By Paper type

Instead of referring to a specific drawer via a number you can also specify the drawer indirectly as a paper type (on most middle sized and large) laser printers. Then it is up to the printer to select a drawer with the specified paper type. The paper type for each drawer can be set via the printer display/menu or via a browser accessing the printer. This is recommended for use with InterForm400, but this is unfortunately not supported for all printers - but fortunately there is a hybrid workaround in InterForm400 for such printers.

Selecting the drawer in windows

When you print from windows you can on the printer driver normally select the drawer via both methods (via a drawer number or via a paper type). As the specific printer driver knows the relations between the physical drawer and the PCL code the user will only need to refer to the physical drawer number.

Find the relation between the physical drawer and the PCL drawer

If you have a PCL5/PCL5e/PCL5c printer driver you can however chose to 'print to file' either when you print or when you install the printer driver.

(When you install the driver you can select 'Add printer', 'Add a local printer', select port 'FILE:' - if you do that, then you are prompted for the output file.)

If you open a small document in Notepad and print to file while selecting a specific drawer, then you can open the resulting .prn file in e.g. Notepad or Notepad++ and here you can actually find the PCL code for the selected drawer. You just need to search for the sequence: <esc>&l#H,

where <esc> is a specific escape character (hex 1B) and # is the number your are searching for. This is an example:

```
%-12345X@PJL JOB NAME="Untitled - Notepad"
@PJL SET STRINGCODESET=UTF8
@PJL SET RESOLUTION=600
@PJL ENTER LANGUAGE=PCL

E *t600R&u 600D* r0F&l 00 &l26A &l14H&l 0S &l1X& l8c1E *p0x0Y*c 0t5611x8178Y*b 0M
&b 1M
*p 0Y (19U( s4099t0b0s15.00h0P&d @* v0o0T *p544Y*p 2178XUntitled
*p 0Y *p615Y*p 330Xdrawer=1
*p 0Y *p6306Y* p2218XPage 1*p 6815Y
E %-12345X@PJL EOJ
%- 12345X
```

So in the example above Tray=1 is selected when printing, but the PCL code is actually 4.

Drawer 4 would be the number to select in InterForm400.

Selecting the drawer on the IBM i

If you are printing e.g. normal *SCS spooled files (not merged InterForm400 spooled files), then the spooled files can select a specific drawer via the DRAWER field. This can e.g. also contain a number in the range 1-255, which normally 'should' be physical drawer number on the printer. This is however translated by Host Print Transform into a PCL number. This translation is setup either via a selected manufacturer type model (MFRTYPMDL) or a workstation customisation object (WSCST) on the used printer device or printer output queue (Output queue when printing via a remote writer without a printer device).

So OS/400 (or whatever the operating system is called this week) is translating the selected drawer into the PCL drawer code in this manner via Host Print Transform and you need to select a WSCST or MFRTYPMDL that exactly fits the printer you are using to make this work.

For those putting InterForm400 into production you might expect that a change of, the DRAWER parameter on the spooled file, WSCST or another MFRTYPMDL will select another drawer also for the InterForm400 merged spooled files, but that is not the case..

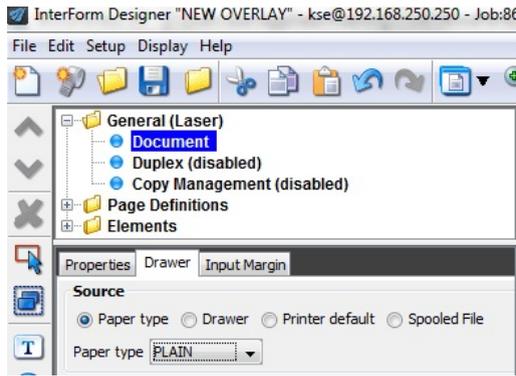
Selecting the drawer in InterForm400

Merged spooled files created by InterForm400 does not select the drawer as normal *SCS spooled files. *SCS spooled files are converted into the PCL5 datastream by Host Print Transform at the time when the spooled file leaves the IBM I and is sent to the printer. For InterForm400 the merged spooled files are of the type *USERASCII, which means that InterForm400 has created the full PCL5 printer data stream and it is not altered in any way by Host Print Transform on its way to the printer.

This means e.g. that you cannot change the drawer selected by InterForm400 by changing the DRAWER field of the **merged** spooled file nor via the WSCST nor MFRTYPMDL of the used printer device/output queue. This is simply ignored for the InterForm400 spooled files.

The drawer option on the overlay

For InterForm400 you select the drawer to use on the used overlay here:



If you want to use the same overlay to print on multiple printers with different drawer layout, then you need to select the drawer as either a **paper type** or '**Spooled File**' (=INPUT), where paper type is recommended. It is even possible to define a kind of hybrid, if you are not able to select the drawer by paper type on all of your printers.

Below the paper type, the hybrid and the 'Spooled File' options are described:

Drawer selection by Paper Type

You can select between various paper types listed in a drop down list. This list is shown in the language you have selected in the designer, but the actual paper type in the data stream is language independent, so you do not need to worry about that when selecting this.

Drawer selection by Paper Type (Hybrid)

A prerequisite for selecting the drawer by paper type is of course, that you can do that on the actual printers, that you are using. Most printers do actually support this, but it is possible to use the paper type to select the drawer for most printers, while having an alternative for the few of your printers, that are not able to select the drawer in this manner. This is setup via these options in InterForm400:

80. Administering InterForm 400

8. Work with printer control options

1. Papertype to PCL-drawer conversion

If the output queue where you are merging **TO** (= where the merged spooled files are created and where the physical printer is attached) is not listed, then you can add the new output queue with F6=Create and update this screen:

```

                Create paper type to pcl-drawer conversion                                PAPER305D
Output queue . . . . . PRT01
Library . . . . . QUSRSYS

Paper Type          PCL-drawer   or   Macro number
PLAIN . . . . .      1
PREPRINTD . . . . .  2
LTRHEAD . . . . .    3
TRNSPRNCY . . . . .  4
PREPUNCHD . . . . .  5
LABELS . . . . .     6
BOND . . . . .       7
RECYCLED . . . . .   8
COLOR . . . . .      9
CARDSTOCK . . . . . 10

F3=Exit   F12=Cancel

```

The numbers above are just examples and are probably not what you want. Instead of a PCL drawer number you can also refer to a printer macro.

Drawer selection via 'Spooled File' (= *INPUT)

If you select the drawer via the paper type as described above, then there is one downside: The drawer of the original input spooled file is ignored. If you want to be able to select a specific drawer via the input spooled file, then you should select the value 'Spooled File' (or *INPUT in the green screen 'designer'). As default the drawer number of the input spooled file will then also be used as the PCL drawer number, which is NOT the same as the physical drawer on the printer.

To help you to use this option you can setup a table which does about the same as a WSCST or MFRTYPMDL is doing in Host Print Transform for *SCS spooled files: To translate a drawer number on the spooled file into a PCL drawer number in the output print data stream. This is setup in InterForm400 via these options:

80. Administering InterForm 400

8. Work with printer control options

2. SCS to PCL drawer conversion

If the output queue where you are merging **TO** (= where the merged spooled files are created and where the physical printer is attached) is not listed, then you can add the new output queue with F6=Create and update this screen:

```

                                Create scs to pcl drawer conversion                                DRW310D
Output queue . . . . . PRT01
Library . . . . . QUSRSYS
Printer description . . . IT Department

SCS-drawer      PCL-drawer
  1              4
  2              1
  3              _
  4              _
  5              _
  6              _
  7              _
  8              _
  9              _
 10              _
 11              _
 12              _
 13              _
 14              _
                                                    +
F3=Exit   F12=Cancel
```

The setting above set the same translation as listed on page [83](#):

If the drawer on the input spooled file is 1, then the PCL drawer number in the merged spooled file will be 4 and the physical drawer selected will be 1 - logical isn't it?... If the input spooled file has drawer=2, then the PCL drawer will be 1 and the physical drawer should be 2.

How to print a .prn file

In some cases it is useful to be able to print a .prn file generated by either InterForm400 or InterFormNG on an installation, where the products are not installed. A .prn file contains the print data stream, that is inside a merged spooled file generated by InterForm400.

This can e.g. be used in these scenarios e.g. to proof/verify if a specific printer works with InterForm400 or InterFormNG.

How to generate a .prn file

A .prn file can be generated with InterForm400 by printing to file. You can e.g. do that with the commands in InterForm400:

Command	Print data stream
APF3812/APF3812	PCL
APF3812/MRGSPLFIPL	IPL
APF3812/MRGSPLFZPL	ZPL

(With InterFormNG you can activate 'Save print' on the printer configuration in the web interface).

The .prn file can be created in the IFS, where you e.g. can drag it to a windows PC via a mapped network drive.

Prerequisites

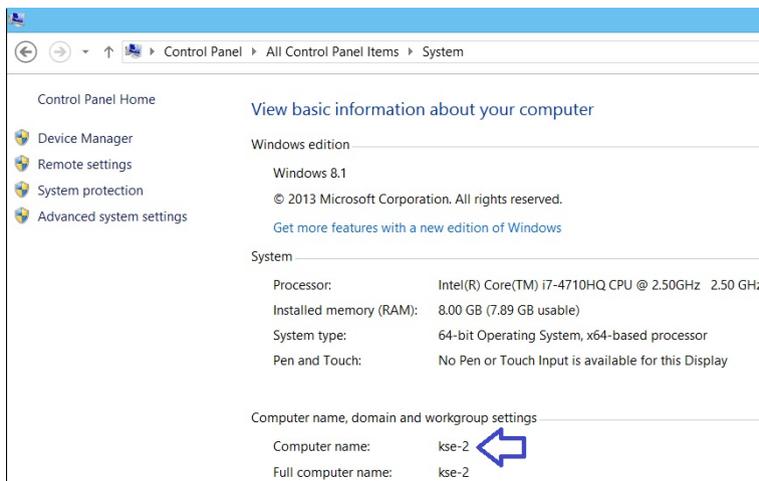
In order to print a .prn file via the method described here, you first need to prepare a few things:

- You need to have access to the .prn file from a Windows PC.
- The printer must be defined on a machine/server, that is also reachable from the same PC. You need to know the name of the machine/server.
- The printer must be shared.

Find the machine/server name

If you do not know the name of the machine/server, you can find it in this way:

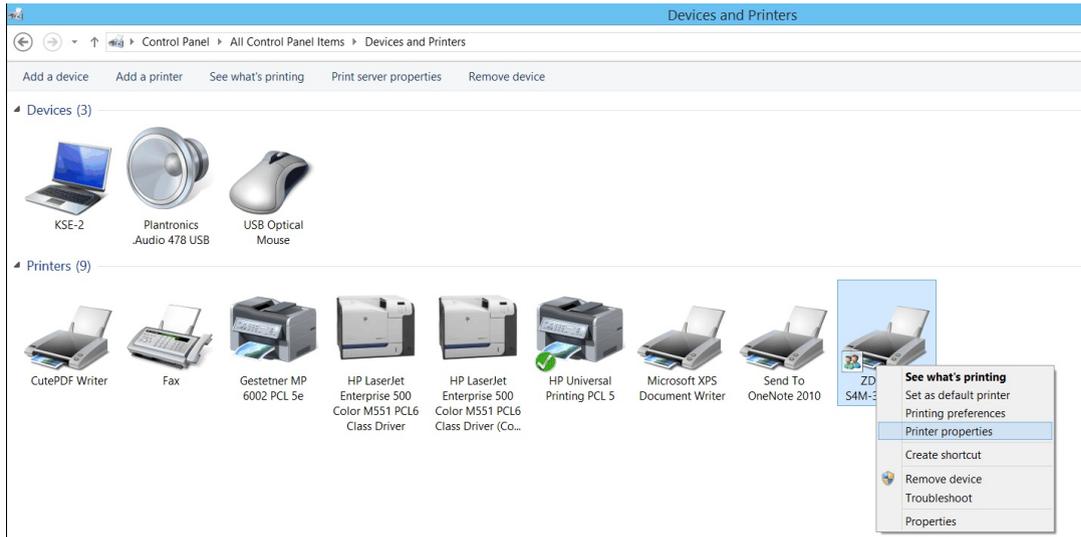
Sign on to the server and go into the control panel and search for System:



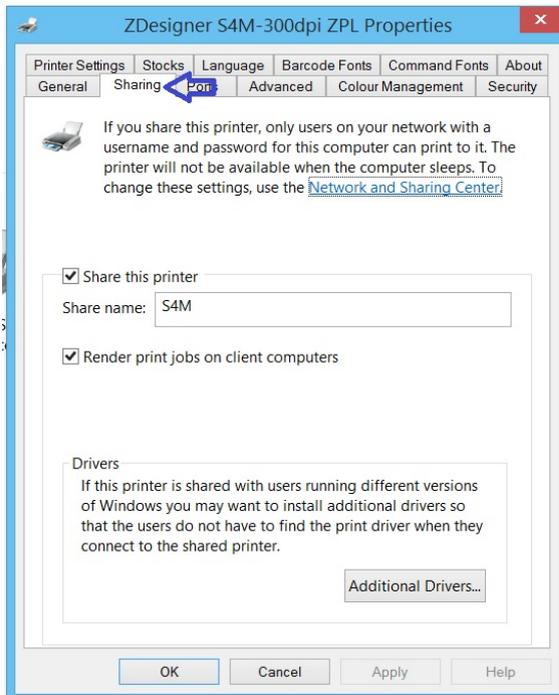
In the example above the system name is 'kse-2'.

Share the printer and note the name

The printer in question must be shared. You can do that via control panel and Printers. Right click on the printer and select 'Printer properties':



Select the 'Sharing' tab:



You need to activate 'Share this printer' and specify a share name – preferable a simple name without spaces. In this example I have shared the printer as 'S4M'.

Copy the .prn file to the printer

With the prerequisites in place we can now copy the .prn file to the printer with this command from a Command prompt on the Windows PC:

Now you can copy the .prn file to the printer in this way:

```
COPY /B <file name> \\<server_name>\printer_share
```

With the values above this will e.g. work:

```
COPY /B C:\temp\file.prn \\kse-2\S4M
```

(Assuming the .prn file is called file.prn and placed in C:\temp).

Finishing definitions

This section contains examples of how to setup specific finish definition and how to solve specific challenges concerning these definitions.

PDF file naming definitions

The PDF file naming definitions can be used for creating PDF files from an input spooled file. This section includes procedures and setup related to these definitions.

Replacing invalid characters in variables.

With the PDF file naming definition you can use variables to pick up text from the contents of the PDF file and use these as a part of the path and or file name. It might however occur, that text found in the spooled file contains unwanted characters e.g. '/', which InterForm400 of course will use to create a new directory, which perhaps was not intended.

So you need a technique to convert or remove special characters in variables. That can be done via a user exit program. As an example we can use the InterForm400 demo spooled file. It as the character '/' in line 13 position 61:

```
Herring Marine Research
Seaweed Street 14
9000 Battlease
DK-Denmark
-----
Att: Martin Merman
```

1004/PMK.20-02-2013

In our PDF file naming definition we define a variable to pick up that information from the spooled file. Below that is done with variable, *V3:

```
Change Variable Definition                                PNM325D
Definition name . . . . . : PDF_LAST
Description . . . . . : PDF files with Information from first/last page

Type choices and then press Enter. Press F3 or F12 to exit.
Variable . . . . . : *V3                *VA-*VZ, *V1-*V9
Description . . . . . : String with /
Max. outputlength . . . . . : 8                1 - 42

Variable type . . . . . : 1 Spooled printinfo

Spooled printinfo
Input length . . . . . : 8                1 - 42
```

```

Change Receipt Keys and Spoolvariables                                PNM357D
Definition name . . . . . : PDF_LAST
Description . . . . . : PDF files with Information from first/last page
Sequence number . . . . . : 001
Description . . . . . : all

Enter where to find key(s) and variables in the print.

Var.      Description          Length      Page
          DocNo                4           1=First
          First Contact Person 40          9=Last   Printline  Startposition
*KEY1    DocNo                4           13       57
*V1      First Contact Person 40          1        11       13
*V2      Last Contact Person  40          9        11       13
*V3      String with /        8           13       57

```

The trick is now, that the variable *V3 is not used directly in the PDF file path and name, but instead it is used as input for a call to a user exit program, which is here used by variable, *V4:

```

Change Variable Definition                                          PNM325D
Definition name . . . . . : PDF_LAST
Description . . . . . : PDF files with Information from first/last page

Type choices and then press Enter. Press F3 or F12 to exit.
Variable . . . . . : *V4          *VA-*VZ, *V1-*V9
Description . . . . . : Substitute / with _ in *V3
Max. outputlength . . . . . : 8          1 - 42

Variable type . . . . . : 7 User exit

User exit

User exit program . . . . . : PNMEXIT      Name, *NONE
User exit program . . . . . : MYLIB       Library, *LIBL

Exit fields variables
Parm 1 - 5 . . . . . : *V3              *KEY1-3, *VA-9
Parm 6 - 10 . . . . . :

```

And we also use variable *V4 in the PDF path and file name:

```

Change PDF Filename Composition                                    PNM330D
Definition name . . . . . : PDF_LAST      PDF files with Information from first/

Type choices and then press Enter. Press F3 or F12 to exit.

PDF output path/file . . . . . : /apf3812home/PDF/File_*V4_*V1.pdf      >
                               Composition, *USEREXIT

Create directory . . . . . : Y      Y=Yes, N=No
Replace file method . . . . . : 1    0=Never, 1=Always, 2=Append: .nnn
                               3=Generate: File-nnn.ext (nnn = 000-999)

Available variables
Var.  Type      Description          Len  Info
*KEY1 Keydef.    DocNo                4    Alfanum. lowercase, Allow blanks=Y
*V1   SpoolVar  First Contact Pe    40   Inputlen.: 40, Position 11 (13-52)
*V2   SpoolVar  Last Contact Per    40   Inputlen.: 40, Position 11 (13-52)
*V3   SpoolVar  String with /       8    Inputlen.: 8, Position 13 (57-64)
*V4   UserExit  Substitute / wit    8    APF3812/PNMEXIT Parms(*V3)

```

Variable. *V4 is calling a user program. The program must be based on the demo source, PNMEXIT in the source file APF3812/APISRC. Here are the changes/additions to the demo source:

```

      Dcl &Count          *INT  4
/*-----*/
/*
/*  Replace any '/' with '_' in the variable for a PDF file naming
/*  definition to avoid an invalid path.
/*
/*-----*/
      CHGVAR      VAR(&RtnParm1) VALUE(&EntryParm1)
      DOFOR      VAR(&Count) FROM(1) TO(40)
      IF         COND(%SST(&RtnParm1 &Count 1) *EQ '/') +
                  THEN(CHGVAR VAR(%SST(&RtnParm1 &Count 1)) +
                       VALUE('_'))
      ENDDO

EndPgm

```

Remember to change the object owner of the compiled program into QSECOFR. You also need to create the program before you can fully define variable, *V4.

Uninstall and remove of InterForm400

Below is a description of how to remove InterForm400 and all InterForm400 related resources. (Make sure, that no other resources are placed in the directories, folders or libraries used by InterForm400 - they will be deleted if you follow the procedure below). As a precaution it is recommended to backup the objects prior to deleting them.

Disclaimer: InterForm A/S will not have or accept any liability, obligation or responsibility whatsoever for any loss, destruction or damage (including without limitation consequential loss, destruction or damage) however arising from or in respect of any use or misuse of the description in this document.

If in doubt you should contact InterForm A/S or your local InterForm400 support before proceeding.

Please note:

The procedure below removes any object inserted by InterForm400 during installation including any created emails. Apart from this InterForm400 is also adding a data queue for each output queue, that is monitored. These data queues are created in the same library as the output queues, that InterForm400 is monitoring. They should be deleted manually if needed. Please notice, that you may have added extra objects in the referred libraries and directories and the user profiles created by InterForm400 might own objects, that you could delete when deleting the user profiles (for that you can chose to change the owner of these objects). If that is the case, then you should make sure, that you are not deleting these objects during the suggested procedure below.

Enter InterForm400 with the command: APF3812/APFMENU.

a) Stop all journaling and delete journal receivers:

Go into InterForm400. Choose option 12. Service functions, 9. Journal menu, 2. End journaling files in InterForm400 library APF3812. Press F10 to confirm end of journaling. Choose 3. Delete journal and receivers in InterForm400 library APF3812.

b) Stop the Output Schedule Control subsystem (if started): From InterForm400 main menu choose:

6. Work with Output Schedule Control , 11. End OSCCTL subsystem and server.

Choose 12. Work with OSCCTL subsystem to make sure, that the subsystem has been stopped.

c) Stop Auto Forms Control: From InterForm400 main menu choose:

5. Work with Auto Forms Control, 11. End AUTO_FORM subsystem, write *IMMED and press Enter.

Choose 12. Work with active subsystem AUTO_FORM to make sure, that the subsystem is stopped.

Other subsystems, that also should be ended (if started) are:

APF3812/MAILINTER
APF3812/ SIGNINTER
APF3812/WINPRINT

All subsystem names and libraries are configurable. You can check the actual names in the InterForm400 configuration.

d) You might have inserted the validity program for the commands: STRPRTWTR and STRRMTWTR. You can remove them this way: Choose 70. Configuration and licences, 2.

Configure InterForm 400, Press Enter until this is displayed:

```
Do you want to use the APF3812/STRWTRCHK program as validity checking program
for the STRPRTWTR and STRRMTWTR commands, to avoid a writer to be started with
FORMTYPE(*ALL) on one of the output queues defined in Auto-Forms-Control, and
if yes, what formtype has to replace *ALL when a writer is started on one of
these output queues.
```

```
Use APF3812/STRWTRCHK as a validity checker  N  (Y N)
```

```
Formtype to replace *ALL . . . . . _____
```

```
This option is especially useful, if you are using the same output queue
for both input to AFC-functions and for output to a printer, as a writer
never should be started with FORMTYPE(*ALL) on such an output queue.
```

Make sure, that state 'N' is stated. Press Enter to make the change.

Now exit InterForm400.

e) Clear any output queues in the APF3812 library with the commands:

```
CLROUTQ OUTQ(APF3812/AFC_INPUT1)
CLROUTQ OUTQ(APF3812/AFC_INPUT2)
CLROUTQ OUTQ(APF3812/AFC_OUT1)
CLROUTQ OUTQ(APF3812/AFC_OUT2)
```

(If you have added any other outq's in library APF3812 you need to clear them as well.)

f) Remove the APF3812 from your library list (if inserted):

```
RMVLIBLE LIB(APF3812)
```

g) Now check if any job has object lock on the APF3812 library:

```
WRKOBJLCK OBJ(APF3812) OBJTYPE(*LIB)
```

Stop all jobs having this lock.

When no job has lock on the library you can delete the APF3812 library:

```
DLTLIB LIB(APF3812)
```

You can also delete the import/export libraries if found:

```
APFIMPORT and APFEXPORT.
```

h) Other resources, that are created by InterForm400 are:

User profiles: (Remember to consider if you want to delete the objects owned by these users or transfer the objects to another user profile)

```
AFCOPER
APFUSRPRF
MAILINTER
OSCOWNER
SIGNINTER
TERMINTER
WEBINTER
```

The APF3812 folder (if an older InterForm400 version was ever installed). Can be deleted this

way (including everything within..):
DLTDLO DLO(*ALL) FLR(APF3812)
Delete InterForm400 directories and content:
RMVDIR DIR('/APF3812Home') SUBTREE(*ALL)
RMVDIR DIR('/APF3812Mail') SUBTREE(*ALL)

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