Modelling IBM iSeries Print Queues in FormTrap

Management Overview

iSeries deliver to individual printers, usually associated with a user and nominated at the time of printing. Printer name does not form part of the data, FormTrap assumes it from the delivery point.

We require FormTrap Queues as delivery points, one per printer, created using Work Station Customization Objects and equating to each of the AS/400 printers. Each Queue attaches the printer name to the front of each page. The data file is then passed to and processed by a single print queue which delivers using the printer name. Intervention in the FormTrap system is then limited to set-up of the new printer queue for both the AS/400 and FormTrap, as a one-time task good for the life of the system. The process is described in detail in this document.

Create iSeries Output Workstation Customizing Object and Print Queues

1. If not already present, create a QTXTSRC source file in the appropriate library.

2. Add the following member to create a standard type Workstation Customizing Object.

```
:WSCST DEVCLASS=TRANSFORM.
   :TRNSFRNTBL.
   :PRTDTASTRM
     DATASTREAM=IBMPPDS1.
   :SPACE
     DATA ='20'X
   :CARRTN
     DATA ='0D'X
   :FORMFEED
     DATA ='0C'X
   :LINEFEED
     DATA ='0A'X
   :CPI
     CPI=166
     DATA =''X
   :EWSCST
```

3. Create the Workstation Customizing Object by using the CRTWSCST command:

```
                  Create WSCST (CRTWSCST)

 Type choices, press Enter.

 Workstation customizing object       WSCST              FORMTRAP
   Library . . . . . . . . . . .                         OPERATIONS
 Source member  . . . . . . . .        SRCMBR            *WSCST
 Text 'description' . . . . . .        TEXT              Formtrap WSCST


                          Additional Parameters

 Source file  . . . . . . . . .        SRCFILE           QTXTSRC
   Library . . . . . . . . . .                           OPERATIONS
 Authority  . . . . . . . . . .        AUT               *LIBCRTAUT
 Replace object . . . . . . . .        REPLACE           *YES
```

4. Create the New Output queue with the CRTOUTQ command and use the newly created Workstation Customizing Object. You will require one of these per PRINTER to be used by FormTrap.

```
                        Create Output Queue (CRTOUTQ)

Type choices, press Enter.

Output queue . . . . . . . . . .    OUTQ            >    FORMTRAP
  Library . . . . . . . . . . .                     >      QUSRSYS
Maximum spooled file size:          MAXPAGES
  Number of pages . . . . . . .                          *NONE
  Starting time . . . . . . . .
  Ending time . . . . . . . . .
                        + for more values
Order of files on queue . . . .     SEQ                  *FIFO
Remote system . . . . . . . . .     RMTSYS          >    *INTNETADR


Remote printer queue . . . . . .    RMTPRTQ         >    'queue-name'        ——
Writers to autostart . . . . . .    AUTOSTRWTR      >    1
Queue for writer messages . . .     MSGQ                 QSYSOPR
  Library . . . . . . . . . . .                          *LIBL
Connection type . . . . . . . .     CNNTYPE         >    *IP
Destination type . . . . . . . .    DESTTYPE        >    *OTHER
Host print transform . . . . . .    TRANSFORM            *YES
User data transform . . . . . .     USRDTATFM            *NONE
  Library . . . . . . . . . . .
Manufacturer type and model  . .    MFRTYPMDL       >    *WSCST
Workstation customizing object      WSCST           >    FORMTRAP
  Library . . . . . . . . . . .                     >      OPERATIONS
Image configuration . . . . . .     IMGCFG               *NONE
Internet address . . . . . . . .    INTNETADR       >    '156.5.44.64'       ——
VM/MVS class . . . . . . . . . .     CLASS                A
Forms Control Buffer . . . . . .    FCB                  *NONE
Destination options  . . . . . .    DESTOPT              *NONE


Print separator page . . . . . .    SEPPAGE         >    *NO
User defined option  . . . . . .    USRDFNOPT            *NONE
                    + for more values
User defined object:                USRDFNOBJ
  Object . . . . . . . . . . . .                         *NONE

  Object type  . . . . . . . . .
User driver program  . . . . . .    USRDRVPGM            *NONE
  Library . . . . . . . . . . .
Spooled file ASP . . . . . . . .    SPLFASP              *SYSTEM

Text 'description' . . . . . . .     TEXT            >    'FormTrap Output
Queue'
                    Additional Parameters

Display any file . . . . . . . .    DSPDTA               *NO
Job separators . . . . . . . . .    JOBSEP               0
Operator controlled  . . . . . .    OPRCTL               *YES
Data queue . . . . . . . . . . .    DTAQ                 *NONE
  Library . . . . . . . . . . .
Authority to check . . . . . . .    AUTCHK               *OWNER
Authority  . . . . . . . . . . .    AUT                  *USE
```

The two circled items are what changes.

Remote printer queue is the queue name of the FormTrap Queue to direct the file to. This changes for each AS/400 printer.

Internet address is the FormTrap Server Computer's IP address and is normally constant (unless multiple FormTrap servers are in action).

## Print Queues in FormTrap and Additional Procedures

One **Printer Queue** per AS/400 Output Queue is required. That queue runs a **Replace** filter which replaces the iSeries **1** in column 1 (treated as a FormFeed) in two ways:

- First (one time only) to insert printer name and line feed prior to the initial character 1

- All subsequent 1s in the first position of a line, insert Line Feed, Form Feed, printer name, then line feed prior to the 1.

Replace filters are identical format, but each inserts a different printer name by including a different section from the **replace.ini** file, nominated in the command line. All files are then run through the **Western** (or other locale filter) and are redirected to the one common processing queue, where the printer is output as a delivery tag (where a lookup converts each iSeries printer name to the Windows equivalent).

These are the two queues of the types nominated above:
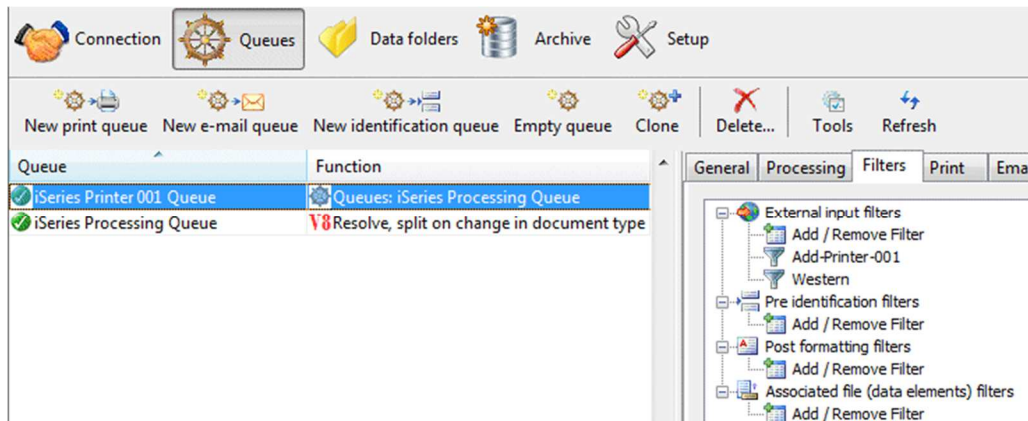
Printer Queues.

This is the archive for a Printer Queue, showing input, result of filter and result of Locale conversion:
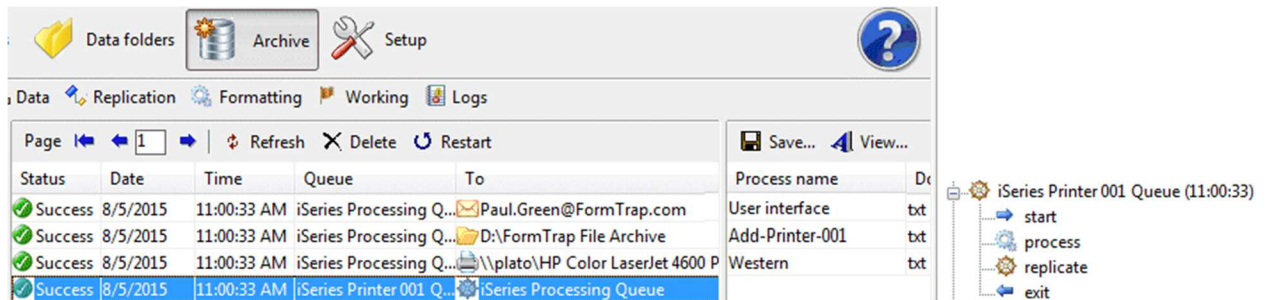
This shows the printer name pre-pended to the file:

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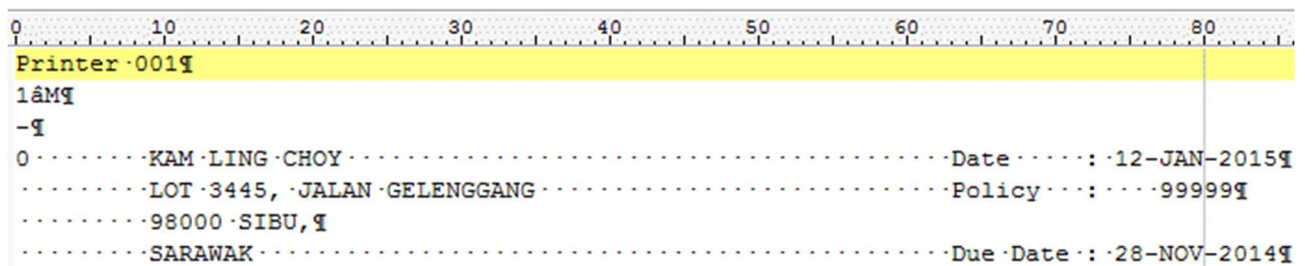
This is the filter definition in FormTrap Server's **Setup**, **Filters** window. One such filter is required for each printer queue, with different section names (in the picture, that is **Arguments:** "**insert printer 001**").
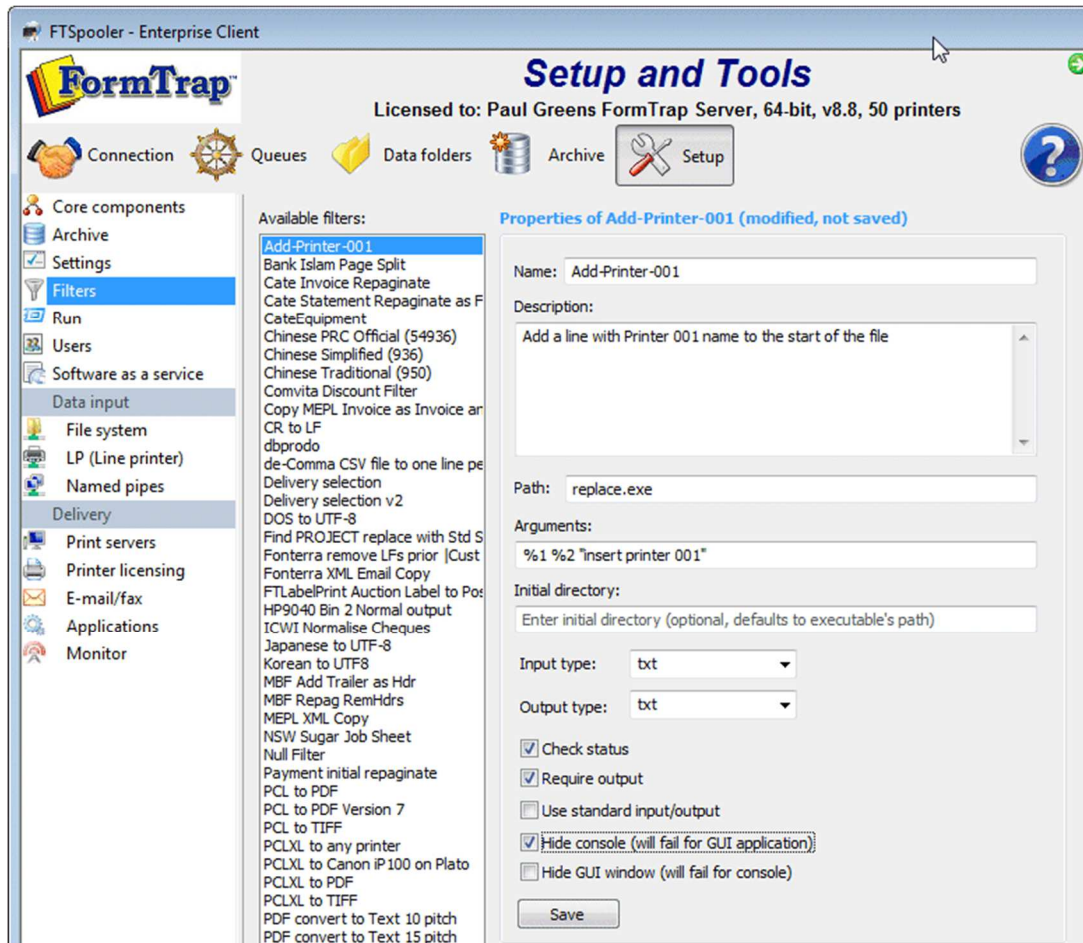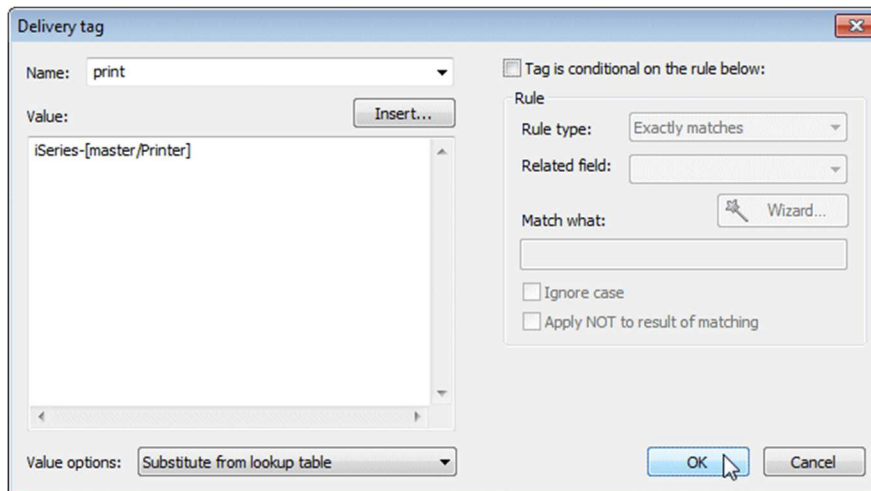

This is the **insert printer 001** section of the **replace.ini** file quoted in **Arguments**. There are two lines (plus section name), the first inserts printer as the very first line of the file, second is for all subsequent pages.
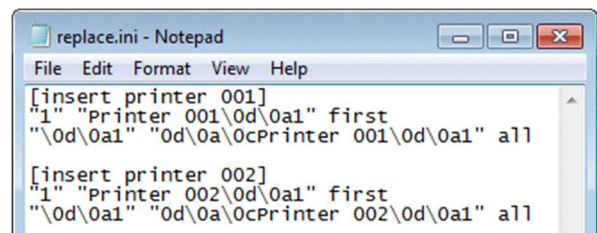
Lookup Table

One lookup entry (shown right) is required for each printer to convert from the iSeries printer name to Windows printer name. Below is the Delivery Tag definition (see FTForm Plus, Delivery Tags and Lookups).
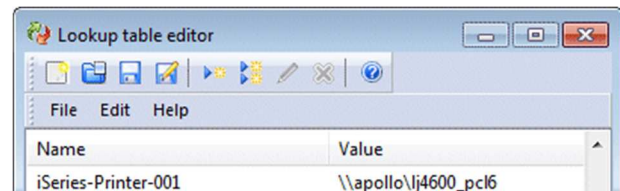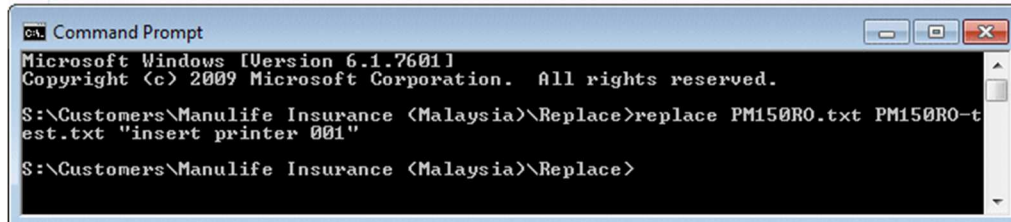
Test Files for FTForm Plus must be run through the Filter

Test the replace filter by convert iSeries output into what the FormTrap Server will see in production, and use this file for your form design using FTForm Plus. The filter can be run from a CMD prompt as shown.

Replace Filter

The "replace" filter operates on single byte files only (ie prior to the Western filter). The program looks for a string (you can specify characters as Hex values), and replaces them when found either once only or for all occurrences.

Cost is $500, no assistance, no warranty. This program is our "go to" solution for many other "fixes" with files (e.g. insert of stapling commands for laser printers) and runs in around 30 FormTrap sites to date.

As shown above, the filter comes with full instructions as both PDF and from the original programmer as a .txt file.

Your own program:

You may use filters of your own anywhere in FormTrap, provided multiple single copies will run at the one time. In the unlikely event work files are required, these must be independently named or collisions will occur.