HOLMES COUNTY DISTRICT PUBLIC LIBRARY

Printing Custom Horizon Receipts

Using Print Wizard SE
by Rasmussen Software, Inc.

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Customization of Horizon Receipts can be accomplished using a custom virtual printer.

The Problem

Libraries that allow patrons to place holds (aka reserves) on materials need to separate these items and identify them with the patron's personal information. Traditionally, these items would be hand labeled with the patron's name and a hold expiration date and held "behind" the circ desk where staff would retrieve them on request. This works fine when the volume of holds is low and staff resources are plentiful. The process quickly becomes unmanageable when the volume of holds increases and or the amount of staff that can be devoted to the process is reduced. The process also is problematic when patron self-service models are implemented in regards patron privacy.

As part of the process of migrating towards patron self-service models, the library will need to deal with allowing patrons to pick up their own holds or reserve items. There are many solutions that have been created to deal with this workflow in terms of policy and procedure; however, the details of those workflows almost always work out to some variation of this implementation:

1. Holds (reserves) are processed by staff as part of the checking-in of items.
2. Items are identified as holds – usually with a receipt – and separated for pickup by patron.
3. Depending on the degree to which privacy is a concern, hold items are masked in some fashion as to hide the title and thereby the nature of the content of the material.
4. Items are stored in a publicly accessible pickup area
5. Items are "coded" in a fashion that allows patrons to easily and privately retrieve their items from the storage location.
6. Items not picked up are retrieved by staff.

One way of implementing the coding (steps #3 & 5) process is to simply hand write the patron's information on the receipt slip and wrap that receipt around the spine of the item acting as both a masking and identification medium at the same time. This is a simple and easy to implement solution, however, since the items are no longer behind the circ desk and now in a publically accessible location, most libraries are hesitant to label the items with personal information or to display the information that is normally printed on the Horizon ILS Hold slip. This leads to some type of encoding of the patron's identification information, which can be time consuming to physically write and inconsistently formatted by different staff.

A better approach to this is to allow the ILS to print a receipt on-demand in the desired format with only the encoded identity information on the slip. This produces a consistently encoded identifier without the need for staff to have to physically pick up a writing utensil every time a hold is encountered.

Horizon receipts are customizable; however, the degree to which the patron's personal information such as name and barcode can be encoded and the amount of formatting can be applied is very limited. As a result, typical implementations of custom Horizon holds receipts require the use of a 3rd party program to intercept the receipt on its way to the printer. Upon interception, the information on the receipt is extracted and altered in the desired format.

Many of the 3rd party printing programs currently in use by libraries for these purposes are available both commercially and for free. Some of these are listed in the Resources section found at the end of this paper. The proposed solution that follows in the next section is an end-to-end example of one such implementation using Print Wizard SE by Rasmussen Software, Inc.

Solution

Print Wizard Basic Setup

PrintWizard acts as a programmable virtual printing device. Simply put that means that it can be customized to listen for print jobs just like any other printer in Windows and to act upon those jobs in many programmable ways to customize the final print out. Many modifications can be made to the text of the original receipt prior to printing the final print out. For example, text size and shape as well as orientation and position can all be adjusted or altered. The actual text of the receipt can be filtered, substituted and otherwise manipulated using a simple markup language written specifically for PrintWizard. This custom printout can then be forwarded to any number of outlets such as a physical printer, a file, an email or even fax.

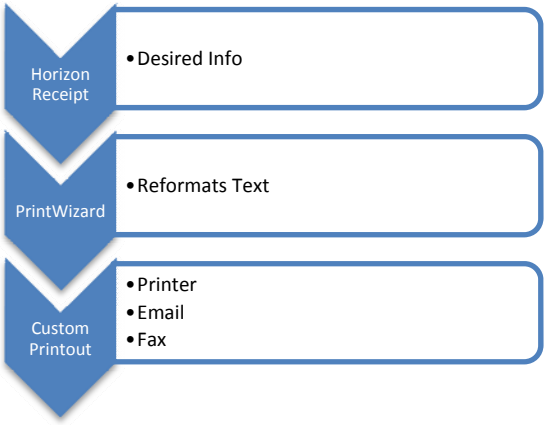

Figure 1: Basic Print Wiz Flow

Print Wizard Advanced Setup

The basic setup just described does not distinguish one Horizon receipt from another so additional programming is needed in the form of a script to allow for detecting which receipt Horizon is printing and to use a second instance of Print Wizard to print the appropriate slip. Any scripting tool that can manipulate text and create Windows text files should work, however, VB script is the built-in scripting tool for Windows so we chose to use it for our implementation.

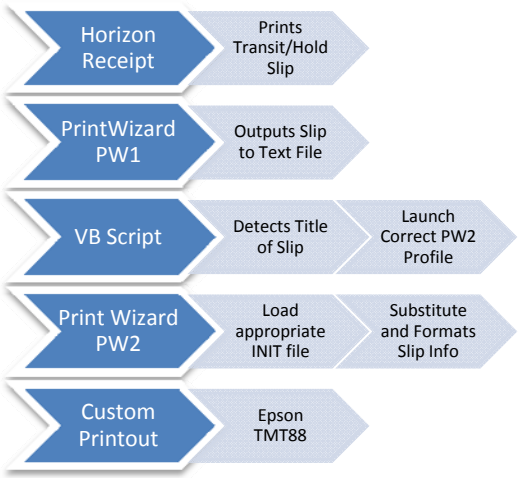

Figure 2: Advanced Print Wiz Flow

As visually explained in Figure 2, the first instance of Print Wizard (PW1) intercepts the receipt as it is printing from Horizon and the writes that receipt to a plain text file and then launches a VB script. The VB script checks the title text of the slip as it is printed from Horizon and depending on which title is found, it will launch a second instance of Print Wizard (PW2) which will handle the substitution and printing. PW2 is loaded with a unique profile for each type

of slip and will substitute and alter the information on that slip accordingly. The flow looks similar to the basic flow with the added steps of the script processing.

Custom Hold Slip

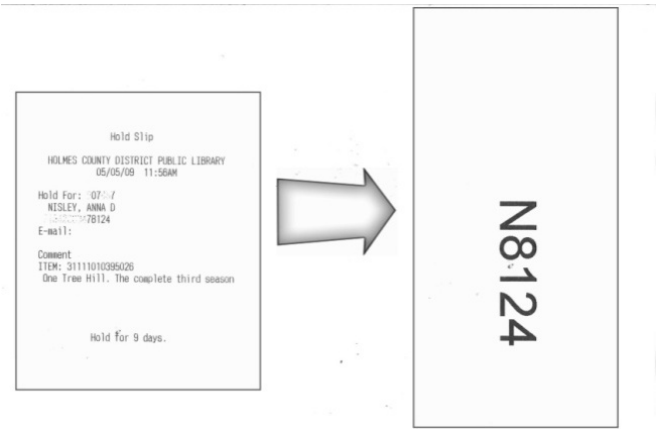

Figure 3: Custom Hold Slip

Process Details

As described in detail in Figure 4: Custom Hold Slip Process below, the process flow for printing a custom hold slip involves the following steps and processes.

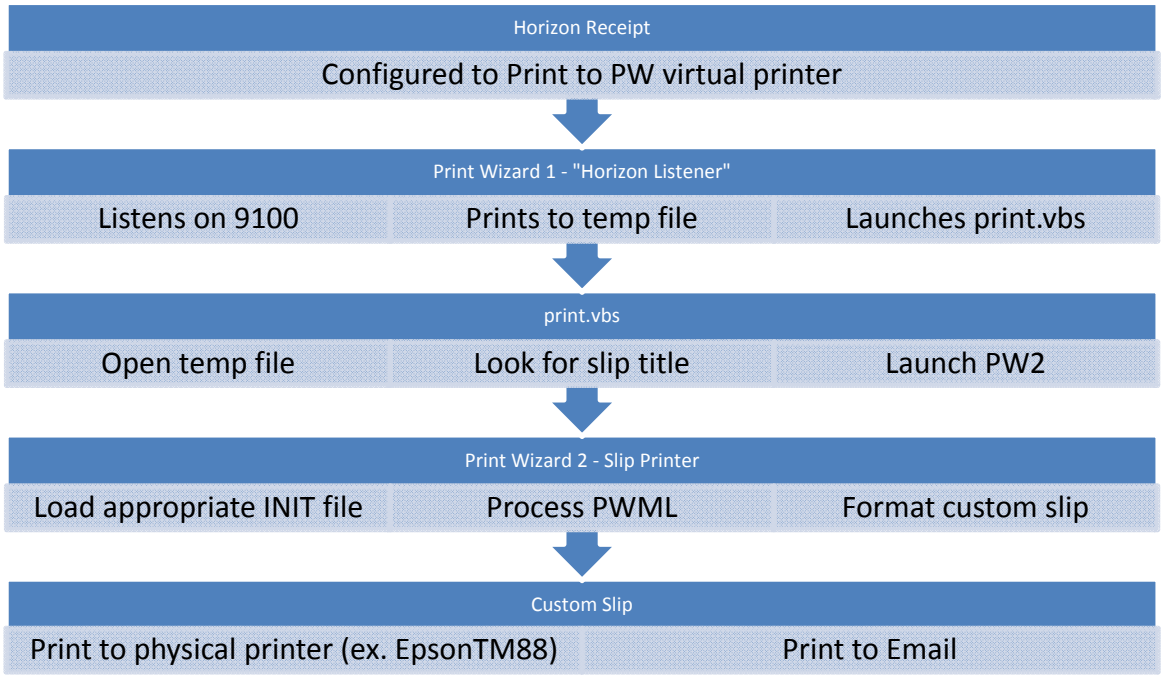

Figure 4: Custom Hold Slip Process Details

Detailed Setup Instructions

1. The first step in the process for creating a custom hold slip in Horizon is to decide on the desired output format. For our implementation, we decided to "code" the slip to simply contain the first initial of the patron's last name followed by the last four digits of their library barcode number. This particular format was chosen because it was felt that it offered the best balance of patron ease of identification while still providing adequate patron privacy.
2. Once the desired output was determined, the next step was to map out all the info that was available on the current receipt as it is printed by Horizon. In our case, we had to ask our ILS admins to replace the patron telephone number with the library barcode number in order to be able to use it on our custom hold slip.
3. Next, use the **Windows Add New Printer** wizard to install a printer with the following settings:
    a. Add local printer (uncheck plug and play option if presented)
    b. Choose Create New Port option and select type Standard TCP/IP Port
    c. Enter ***localhost*** as the host and port name
    d. If Additional Port Information required is displayed: Choose the Standard Generic Network Card option
    e. Choose Generic manufacturer
    f. Choose Generic / Text Only printer
    g. Optionally, rename the printer if the name is already in use
    h. Make this the default printer
4. In Horizon, go to the Tools | Change Receipt Options menu option
    a. At a minimum, check the Hold and Transit Slip options
    b. Check the Windows Printing option and click on the Setup button
    c. Choose the name of the printer as created in step 3.g
    d. Click OK to save
5. Install Print Wizard and copy the following files in to the installation directory (C:\Printwiz30\ by default)
    a. holdslip.init – determines the layout and formatting of the Hold slip
    b. transitslip.init – determines the layout and formatting of the Transit Slip
    c. standard.init – determines the layout and formatting of all other slips
    d. print.vbs – determines which receipt slip is being printed by Horizon
6. Next we will go to the Print Wizard software and open the Tools | Profiles | Add menu option and create a new profile that we will call "Capture". These are the settings that PW1 will use to process any print jobs that it intercepts.
    a. Under the Target tab choose: Use custom program
    b. Under General choose: *The name of the printer in step 3.g above* and *Overwrite*
    c. Under the Custom Print tab:
        i. Program to use: *wscript.exe*
        ii. Command line parameters: *"C:\PrintWiz30\print.vbs" %1*

d. Note that this assumes that you have placed all files in the Print Wizard installation directory.

7. Repeat Step 6 to create a second profile in Print Wizard called “Receipt” with the following settings. These are the settings that PW2 will use to print the physical custom receipt.
    a. Target tab: Printer
    b. General tab: *The name of the printer in step 3.g above* and *Overwrite*
    c. Print Wizard tab: Init File to Use should point to the holdslip.init file copied in Step 5.a above.
8. Set up the HorizonListener service
9. Ideally, the Print Wizard HorizonListener service would run as background Windows service loading the Capture profile by default. Depending on the exact setup of your Horizon PC, this may or may not be feasible. Optionally, you may set the service to load via the Windows Startup Folder. If PW is loaded in this manner, the program PwListen will be seen in the task bar. If this program is not running, no receipts at all, custom or otherwise will print.
10. The next step is to alter what Print Wizard refers to as INIT files if another format is desired besides the first initial last name / last four of barcode described in this implementation.

Custom Transit Slip

Process Overview

The process for printing custom transit slips is identical to the process for holds slips. The only difference is that print.vbs will instruct Print Wizard to use the transitslip.init file to create the custom transit slip. Setup is very similar as well and only the differences are noted below.

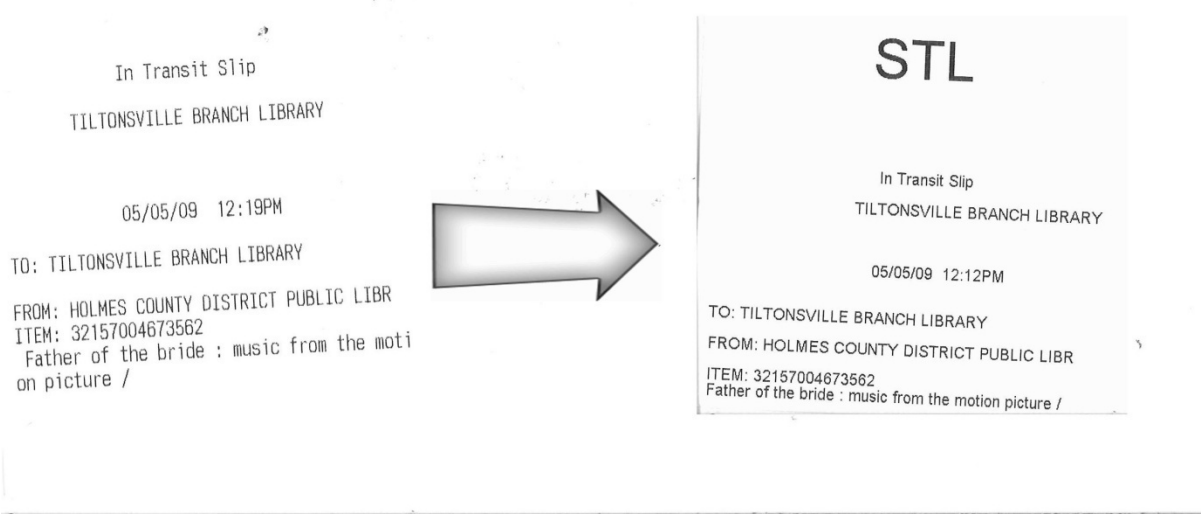

Figure 5: Custom Transit Slip

Detailed Setup Instructions

1. Setup for the printing of custom transit slips using the transitslip.init file is the same as described in step 5 above in the Custom Hold Slip detailed setup section.

Print Wizard INIT files explained

The INIT files used by PW contain a specific markup language appropriately known as PWML which basically tells PW what text to process and how to process it. It is also worth noting that the INIT files can be optionally stored on a web server and retrieved using a standard URL allowing for the central management of the file in a single location. In our implementation, we have 6 machines at 5 locations which access a single INIT file from our website. Any changes to that one file are read and cached by each machine the next time that it needs to print using the format.

holdslip.init

Figure 6: PWM L contains the markup that is used to remove the lines not needed in the final output of the custom Hold slip as well as markup that replaces the patron's full 14 digit barcode with a "coded" version that is reduced to just the last 4 digits.

```
1     <pwml><pagesize paper=letter orientation=portrait>
2     <tail><goto x=3in y=3 in></font>-A-</tail>
3     <!-- Get rid of the lines we don't want --!>
4     <Replace in=".*\r\l" out="\z" line=1>
5     <Replace in=".*\l" out="\z" line=2>
6     <Replace in=".*\r\l" out="\z" line=3>
7     <Replace in=".*\r\l" out="\z" line=4>
8     <Replace in=".*\l" out="\z" line=5>
9     <Replace in=".*\r\l" out="\z" line=6>
10    <Replace in=".*\r\l" out="\z" line=9>
11    <Replace in=".*\l" out="\z" line=10>
12    <Replace in=".*\r\l" out="\z" line=11>
13    <Replace in=".*\r\l" out="\z" line=12>
14    <Replace in=".*\l" out="\z" line=13>
15    <Replace in=".*\l" out="\z" line=14>
16    <Replace in=".*\l" out="\z" line=15>
17    <Replace in=".*\r\l" out="\z" line=16>
18    <!-- Handle the name line in general --!>
19    <Replace in="\s\s{....}.*,\s{..}.*\r\l" out="<goto x=1.75in y=1in>\1\2"
line=7>
20    <!-- Special case: last name is less than 5 characters --!>
21    <Replace in="\s\s{.*},\s{..}.*\r\l" out="<goto x=1.75in y=1in>\1\2"
line=7>
22    <!-- Handle SPACE as the name delimeter --!>
23    <Replace in="\s\s{....}.*\s{..}.*\r\l" out="<goto x=1.75in y=1in>\1\2"
line=7>
24    <!-- Special case: last name is less than 5 characters --!>
25    <Replace in="\s\s{.*}\s{..}.*\r\l" out="<goto x=1.75in y=1in>\1\2"
line=7>
26    <!-- Handle the barcode line --!>
27    <Replace in="..........{....}\r\l" out="\1" line=8>
28    <Body><font face=arial size=48pt pitch=0 rotation=270><pre>
```

Figure 6: PWM L in holdslip.init for formatting Custom Hold Slip

Here is a line by line explanation of the markup found in the holdslip.init file.

- Line 1 - Provides the basic setup of the page.
- Line 2 - The <goto> tag tells PW where to begin printing. The –A- is used as a PC identifier.
- Lines 3 to 17 – These commands replace line by line the text on the receipt with blank lines.
    - The "in" and "out"strings work like Regular Expressions – see page 92 of the PW manual.
        - ".*\r\l" = All characters on a given line including the return (\r) line feed (\l)
        - "\z" = Nothing. Essentially deleting the characters being replaced.
- Lines 18 to 25 – These lines handle various forms of the patron name as it appears on the Horizon slip
    - "\s" = matches a single space
    - "{.....} " = Includes the number of characters defined by the periods for replacement in the out string
    - "<goto x=# y=# >\1\2" = Display the replaced values in the "in" string at this location. Replaced values are those in the curly brackets {…} \1 = the first set of brackets, \2 = the second set, and so on.
- Line 28 – Prepares the body of the custom receipt print out with basic formatting.

transitslip.int

```
1     <pwml><pagesize paper=letter orientation=portrait>
2     <body topmargin=1in>
3     <font face=arial size=8pt pitch=0>
4     <Replace in="TO: WASHINGTON CO. PUBLIC LIBRARY" out="<font
size=28pt><goto save=x save=y y=0in x=1.25in >WCM</font><goto restore=x
y=2.0in>&" line=9>
5     <Replace in="TO: ST. CLAIRSVILLE PUBLIC LIBRARY" out="<font
size=28pt><goto save=x save=y y=0in x=1.25in >STC</font><goto restore=x
y=2.0in>&" line=9>
6     <Replace in="TO: MANCHESTER PUBLIC LIBRARY" out="<font size=28pt><goto
save=x save=y y=0in x=1.25in >ACM</font><goto restore=x y=2.0in>&" line=9>
```

Figure 7: PWML Code in transitslip.init for formatting of Custom Transit Slip

Here is a line by line explanation of the markup found in the transitslip.init file.

- Line 1 to 3 - Provides the basic setup of the page.
- Line 4 and on – Searches the slip for the "TO: Library XYZ Location" string and replaces with the appropriate 3-letter code for that location

Related Resources

“Advanced Receipt Printing Solutions for Horizon 7.3.” <http://homepage.mac.com/ckupec/iblog/C1161074488/E61619211/index.html>.

“Automations for Horizon.” <http://74.125.95.132/search?q=cache:7lo3suBW258J:extranet.spl.org/PNW-CODI/Meeting_20050805/Culp%2520-%2520TRL-custom-programs-for-horizon.doc+custom+holds+slips&cd=1&hl=en&ct=clnk&gl=us&client=firefox-a>.

“blyberg.net » Stick ‘em up! Easing the holds process.” <http://www.blyberg.net/2006/03/16/stick-em-up-easing-the-holds-process/>.

“Hold Slip Printer - Alpha-G Consulting, LLC.” <http://www.alphagconsulting.com/pages/buyT_hold_slip_printer.html>.

“Horizon Receipt Printer.” 4 May 2009 <http://www.mhl.org/region/receipts/>.

“Print Wizard Server Edition.” <http://anzio.com/products/printwizse.htm>.

“Python Version of Horizon Receipt Printer App.” <http://homepage.mac.com/ckupec/iblog/C1161074488/E1284413551/index.html>.