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# **PATH NOTICES**

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Server Side Operations

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## PATH NOTICES

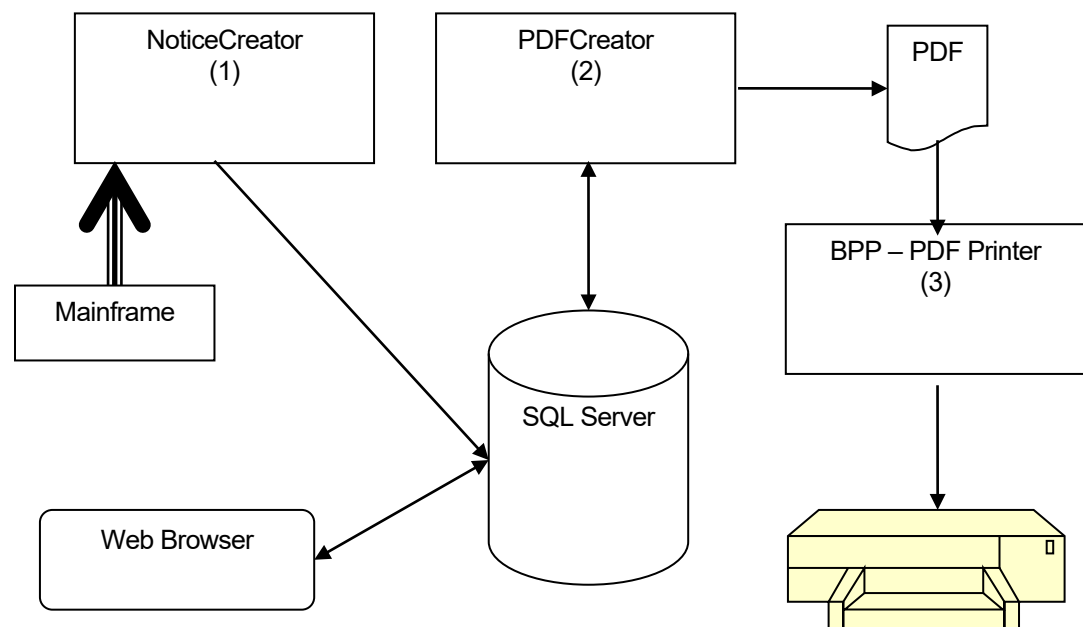
### Server Side Overview

This document will describe the processes on the server that are used in the creation and printing of Notices. This document will not discuss that mainframe side of the operation, it is sufficient to say that all Entire-X transactions come through a single mainframe program. This document assumes no technical knowledge.

The server side of the PATH Notices consists of four independent processes which are tied together by a SQL Server database. The four processes control the creation of the Notice, the viewing of the Notice on the Web, the creation of the printable version of the Notice and the actual printing of the Notice. Each one of these processes operate independently of each other, but because of the fact that for a Notice to be printed it has to go sequentially through each one of the steps with the exception of the Browser view, all three are required to be running for Notices to be printed.

For the user the first symptom that normally occurs is that the expected Notices are not being printed, but only looking at the printing process will not always solve the problem. There are various points along the way which can be checked to determine exactly what the problem could be. At the end of this document there is a problem solving table, this will show the most common complaints and the associated solutions.

#### Data Flow Diagram



#### Process Overview

The process is started by the NoticeCreator, this program checks the Mainframe every second to see if there any new Notices to be created. When it receives notification of a new Notice, then it creates a new row to be inserted into the SQL table.

The PDFCreator is next inline it checks the SQL table every two minutes for any new Notices to be printed. If it finds new Notices, this program will create the PDF for the Notice and place it in a specific folder.

BPP (Batch and Print Pro) is the next program in the process. BPP is a purchased program; no source code exists for this program. BPP checks all designated folders every 30 seconds for new PDF documents, when it finds new PDF it sends it to the identified printer for that folder.

The Web Browser can be invoked at anytime to view a Notice.

## PATH NOTICES

### NoticeCreator

#### Summary

This program checks the Mainframe every second to see if there any new Notices to be created. When it receives notification of a new Notice, then it creates a new row to be inserted into the SQL table.

#### Source

<u>Executable Name</u>	<u>Module Type</u>	<u>Source Name</u>	<u>Source Language</u>	<u>Source Location</u>
NoticeService.exe	Windows Service	NoticeService.sln	Visual Basic	<a href="#">\\Notice1\\Notices\\VB</a> Applications\\Development\\NoticeService

#### Detail

During startup this program retrieves data from the following SQL tables; NoticeText, Districts, IVAPPrograms, Worker and NoticeTypes. These values are stored in memory to ensure that all lookups to the reference tables are as fast as possible. After the reference tables have been loaded the timers that control the frequency of looking for new messages are initialized.

The program will once a second look to the mainframe (Entire-X broker) for any new messages to be processed. The program also constantly monitors the folder where files are FTP'ed to from the mainframe. Whenever a new message is available for processing or a new file arrives in the FTP folder, this program will process the message(s) and store the results in SQL server.

Messages are processed in the following sequence;

- 1) Change the single message into chunks per paragraph
- 2) Extract each insert for each paragraph.
- 3) Merge the inserts into its proper paragraph, at the same time format the insert as required.

- 4) Store the newly created notice with its associated information.

If the input for the program came from a file that was FTPed, then the above 4 steps will continually be executed until all records in the input file has been processed.

### **Health Monitor**

To monitor the health of this program the following would give good indications;

- 1) During the day new Notices should appear in the Browser at least one every minute. This is based on the fact that during a normal workday (6 am to 6 pm) an average of about 1,200 Notices is produced. If new Notices are not appearing as expected check the following;
  - a. The NoticeCreator service is running. Use the "Services" utility on the server to check that the NoticeCreator is started.
  - b. NATURAL programs are working as expected. Some changes might have been made to some of the program modules on the mainframe. These changes could stop messages from being transmitted to NoticeCreator, the most likely candidate if **no** messages are being transmitted is ASUHEXS1.
  - c. GOVNET is available. If GOVNET is not running it normally manifests itself in that no networked resources are available.
  - d. SQL server is running. Check the Event log on the server where the NoticeCreator is running for any messages indicating that there might be problems communicating with SQL Server.
  - e. Entire-X Broker is running. Use the tools supplied by Software AG to verify that Broker is running.
- 2) There should only be entries in the Event Log of the PC on which this program is running, for when the program is started, every hour (to give a count of the notices done in the previous hour) and when the program is stopped.
  - a. Other messages will indicate that something has gone wrong with the processing of a message that the program was trying to turn into a notice. These messages contain enough information to determine what went wrong and which Case was involved. There are situations where the Case number would not be available, this normally happens when an error occurs before the message is split into its component parts.

## Section 3

# PATH NOTICES

## PDFCreator

### Summary

The NoticePrintControl program checks the “Notices” table on the SQL server every 2 minutes for any Notices that have been marked ready for printing. If it finds any Notices ready for printing it activates the NoticePrinting program that creates the actual PDF, with the name of the printer for which the PDF should be created.

The NoticePrinting program uses the printer name which is passed as a parameter to extract all Notices for the printer. From these extracted rows a single PDF is created.

### Source

<u>Executable Name</u>	<u>Module Type</u>	<u>Source Name</u>	<u>Source Language</u>	<u>Source Location</u>
NoticePrintControl.exe	Windows Service	NoticePrintControl.sln	Visual Basic	<a href="#">\\Notice1\Notices\VB</a> Applications\Development \NoticePrintControl
NoticePrinting.exe	Windows Application	NoticePrinting.sln	Visual Basic	<a href="#">\\Notice1\Notices\VB</a> Applications\Development \NoticePrinting

### Detail

NoticePrintControl. During the hours from 5am to 8pm this service queries the Notice table in the SQL server every two minutes for the names of all printers that has unprinted Notices which have been marked for immediate printing. The names of the printers found with this query are passed to the NoticePrinting program sequentially. During the 8pm and 3am hours this service queries the database for all unprinted Notices, this is also done by printername.

NoticePrinting. This program is activated by the NoticePrintControl service with the name of a specific printer. This program will query the database for all the rows of unprinted Notices for that printer, during the day this program will only scan for Notices with the immediate printing flag set. The rows returned by the query are processed sequentially and a single PDF is created for each invocation of this program for each printer. During the day the number of pages in a PDF varies between 1 and 4 pages. During bulk

processing hours (8PM and 3am), these documents can be as big as 800 pages. Special code is invoked when Notices are supposed to be printed on the CIT printers. CIT does not want more than 3,000 pages in a PDF, because the number of pages per Notice can vary, no more than 1,000 Notices are allowed per PDF. Because some of the requests for the CIT printers quite often exceed 1,000 Notices logic is incorporated to limit the size of the output PDF and also to control the name of the files to adhere to the format requested by CIT.

### **Health Monitor**

To monitor the health of this program the following would give a good indication;

- 1) Using the browser, do not set any search options; simply click on the “Retrieve Notices” button. The first 200 Notices will be retrieved. There should be entries in the “Date Printed” column for Notices created within the last 5 minutes as measured against the data in the “Date Created” column.
  - a. If no Notices were marked printed within the last 5 minutes. Logon to the server on which the NoticePrintController is running and making use of the “Services” application ensure that the print controller is active.
  - b. If the print controller is active, check that the NoticePrint program is installed in the correct folder.

## PATH NOTICES

### BPP – PDF Printer

#### Summary

BPP is a purchased program. It checks the folders where the PDF documents are stored after creation and prints and new document to the indicated printer where after it moves the document to a “Printed” folder.

#### Source

<u>Executable Name</u>	<u>Module Type</u>	<u>Source Name</u>	<u>Source Language</u>	<u>Source Location</u>
Batch and Print.exe	Windows application	No source	Unknown	No source. Vendor website is <a href="http://www.traction-software.co.uk">www.traction-software.co.uk</a>

#### Detail

This program checks the folders, as specified in the “*Options/Directory Monitor Setup*” menu choice, every 30 seconds (also changeable) for new PDF documents. When BPP finds a new PDF document it uses the values set in “Directory Monitor Setup” to determine to which printer this PDF should be routed. BPP makes use of Adobe Acrobat to print the document to the selected printer.

If new printers are added as additional targets for printing of PDFs, the following is the list of steps to follow;

- 1) Add the printer to the Printers folder of the server on which BPP is running.
- 2) Add the correct folders to the server. An example of such a folder is “D:\NoticePDFPrinting\BDO\BDO2”, remember to also add the “printed” folder. The name for the “printed” folder is exactly the same as described earlier but with “\Printed” added.
- 3) Add the printer to the DistrictPrinters, this has to be done in all environments. The columns and their contents are as follows;
  - a. District – The district where the printer is located. For CIT use “Z”.



- b. PrinterName – This is the name as the printer is known in the Access database on the mainframe. It must also be the same name used for the printer added in 1 above.
  - c. HoldPrint – Use a value of “N”. This column is not currently in use.
  - d. Comments – Add any information in this column to describe the printer.
  - e. FolderName – This is the name of the folder where the PDFPrinting program will store the PDF once it has been created. This is also where BPP will be setup to look for new PDFs.
- 4) Add the entries to the BPP “Directory Monitor Setup” according to the following steps;
- a. Click on “options” on the menu bar.
  - b. Click on “Directory Monitor Setup”.
  - c. Browse to and select the correct Folder, which is the one to be monitored.
  - d. Select the correct printer.
  - e. Select the correct folder to where the printed documents should be moved
  - f. Click on the “Add to List” button.
  - g. The folder will now be monitored and the documents printed. There is no need to stop and start any programs and/or services.

Once these steps have been followed the mainframe programs can start to send down messages for new Notices to go to the new printer.

### **Health Monitor**

To monitor the health of this program the following would give good indications;

- 1) PDF files are collecting the “waiting to print folders”. This could be an indication that BPP is not running.
- 2) PDF files are collecting the “waiting to print folders”. This could be an indication that the “Activate Monitor” switch have been turned off. This value is set in the “Directory Monitor Setup” screen of BPP.
- 3) PDF files are collecting the “waiting to print folders”. This could be an indication that the “Monitor every?? Seconds” value has been set very high. This value is set in the “Directory Monitor Setup” screen of BPP.

## Section 5

# PATH NOTICES

## Monitoring

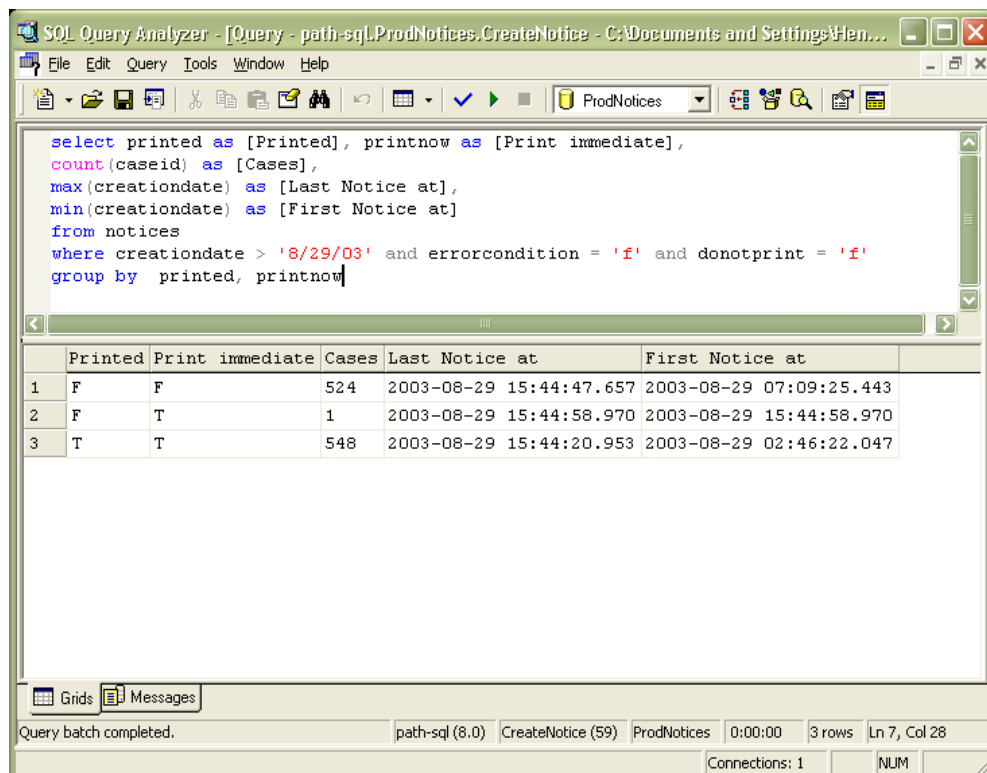
To constantly monitor the Notices system, the following can be useful.

In SQL Query Analyzer, run the following script against the ProdNotices database.

```
select printed as [Printed], printnow as [Print immediate],
count(caseid) as [Cases],
max(creationdate) as [Last Notice at],
min(creationdate) as [First Notice at]
from notices
where creationdate > 'NOW' and errorcondition = 'f' and donotprint = 'f'
group by printed, printnow
```

Replace the phrase NOW with the current date.

The above script will return the following result;



The screenshot shows the SQL Query Analyzer interface. The title bar reads "SQL Query Analyzer - [Query - path-sql.ProdNotices.CreateNotice - C:\Documents and Settings\Hen...". The menu bar includes File, Edit, Query, Tools, Window, and Help. The toolbar contains various icons for file operations and execution. The query editor displays the following SQL script:

```
select printed as [Printed], printnow as [Print immediate],
count(caseid) as [Cases],
max(creationdate) as [Last Notice at],
min(creationdate) as [First Notice at]
from notices
where creationdate > '8/29/03' and errorcondition = 'f' and donotprint = 'f'
group by printed, printnow
```

Below the query editor, a results grid is displayed with the following data:

	Printed	Print immediate	Cases	Last Notice at	First Notice at
1	F	F	524	2003-08-29 15:44:47.657	2003-08-29 07:09:25.443
2	F	T	1	2003-08-29 15:44:58.970	2003-08-29 15:44:58.970
3	T	T	548	2003-08-29 15:44:20.953	2003-08-29 02:46:22.047

The status bar at the bottom indicates "Query batch completed." and provides details about the connection: "path-sql (8.0) CreateNotice (59) ProdNotices 0:00:00 3 rows Ln 7, Col 28". It also shows "Connections: 1" and a "NUM" button.

The explanation of the columns is as follows;

- 1) Printed. Any Notice can be in only one of two states, "F" – Not printed and "T" – already printed.
- 2) Print Immediate. The worker can select certain Notices to be printed immediately. This column shows that value.
- 3) Cases. This show the number of cases in each possible combination of the previous two columns. The count in row 2 should every 2 minutes drop down to 0. If not see [item 4](#) below. The count in the other 2 columns should constantly go up.
- 4) Last Notice at. This column shows the last time that a Notice entered the state indicated by the first 2 columns. During a normal workday, this should never be more than 2 minutes. If it does exceed 2 minutes, follow the instructions in [item 3](#) below.
- 5) First Notice at. This column shows the time that the first Notice of the day arrived in the SQL database. This is normally used for information purposes only.

## Troubleshooting

Symptom	Possible Cause	Solution
1. E-mail from worker stating they did not receive overnight Notices	1) BPP missed printing the PDF document.  2) BPP is not active  3) The PDF creating process is not active  4) The NoticeCreator is not active  5) The data was not transmitted from the mainframe	Look in the folder for the printer for the user. Find any unprinted documents and change the last character of the name of the document to force it to print.  Restart BPP  Look in the "Service" application and restart the NoticePrintController.  Look in the "Service" application and restart the NoticeCreator.  Investigate the required mainframe modules and rerun the application.
2. E-mail from the worker stating that the document is printing garbled information	1) The user turned the printer off and than sometime later back on while a document was printing	Clear the printer queue for the user. Have the user turn the printer off and then back on again. Resend the PDFs that were garbled.
3. Now new Notices are being displayed in the Browser	1) The Notice Creator is not running	Logon to the server where the NoticeCreator is running. Check with the "Services" utility that NoticeCreator is running. If it is not running, right-click on the NoticeCreator service and select start. If it does not start follow the instructions supplied in the error message.

Symptom	Possible Cause	Solution
	<p>2) Entire-X broker is down.</p> <p>3) The NoticeCreator has problems communicating with the SQL database.</p> <p>4) The NoticeCreator are experiencing problems processing the Notices being transmitted from the mainframe</p> <p>5) Sub-program ASUHEXS1 on the mainframe is not transmitting the new Notices to the correct server.</p>	<p>Check with the mainframe operator on the status of Broker and start if required.</p> <p>On the server which is running the NoticeCreator, use the event viewer for applications and study any messages generated by the NoticeCreator to determine what type of errors are being created. If the error messages indicate a problem with the retrieval of data or the storing of data, do the following;</p> <ul style="list-style-type: none"> <li>i) Stop NoticeCreator</li> <li>ii) Check on the status of SQL server. If required, restart the database or Server, depending on the seriousness of the error.</li> <li>iii) Restart the NoticeCreator.</li> </ul> <p>Check the Event Log on the server where the NoticeCreator is running. The error and warning messages generated there will guide in the resolving of the problem.</p> <p>The values for the following data elements should match the values for the corresponding elements in the NoticeService.exe.config file which is located in the same folder from where the NoticeService is being executed; Boker ID, Server, ServerClass and Service. These four fields can be compared to the address of a person, thus if they do not match, the postal service (Entire-X Broker) can not deliver the mail to the correct address.</p>
4. Notices are not getting marked as "printed"	<p>1) The PrintController service is not running.</p> <p>2) The PDF creating program has been uninstalled.</p>	<p>Logon to the server where the PrintController is running. Check with the "Services" utility that PrintController is running. If it is not running, right-click on the PrintController service and select start. If it does not start follow the instructions supplied in the error message.</p> <p>Check that the program is installed in the correct folder – "C:\Program Files\PATH\Prodcuton\Printing\NoticePrinting". If it has been moved or removed, re-install the program.</p>

Symptom	Possible Cause	Solution
5. A physical Notice printer is out of commission.	Hardware failure.	<p>The target printer for documents stored in a folder for that printer needs to be changed. Follow these steps;</p> <ul style="list-style-type: none"> <li>i) Stop NoticePrintCotroller. This allow for making changes to the control file for BPP without any new files appearing on the scene before the changes are made.</li> <li>ii) Clear the printer queue for the printer that has a problem. Take note of the number of documents and their creation date and time before the queue is cleared.</li> <li>iii) Open the "Options" menu on the BPP menu bar.</li> <li>iv) Select the "Directory Monitor Setup" option.</li> <li>v) Browse in the "Monitored Directories" box for the folder on which changes have to be made. Select that row</li> <li>vi) Click on the "Delete From List" button. This does not delete it from the screen.</li> <li>vii) Change the name of the printer in the "Use Printer" box.</li> <li>viii) Click on the "Add to List" button.</li> <li>ix) Click on the "Save" button.</li> <li>x) Copy the documents that were waiting in the printer queue for the disabled printer, from the "Printed" folder to the "Waiting for Printed" folder of the original documents that did not print.</li> </ul>
6. PDF documents have an incorrect icon.	Adobe to PDF file association is lost.	Open any explorer window (any drive) – go to File/Associations – Associate PDF documents with Adobe Acrobat.