
The Progress Electronic Magazine

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Though intended for users of the software tools provided by Progress Software Corporation, this document is NOT a product of Progress Software Corporation.

Publisher's Statement:

You will see that the format of this document has changed from Microsoft Word into PDF. I have switched to a document format that is more open across multiple operating systems. By studying my web site statistics, I am seeing Linux, OS X, and Solaris creeping upwards and I want to create a document that can be read on those operating systems. MS Word is a proprietary technology and the world is moving towards open standards. The PDF document is far more open by being available on seven or more multiple operating systems, where as MS Word is proprietary and available on a max of two operating systems. Hopefully you will understand why I am not inclined to limit my readership base.

In this issue we explore some of the routines available in the Blue Diamond and Denkh applications that are available out there. They are generally portable to Webspeed and other Progress tools. Hope you enjoy.

To your success,

Scott Auge

Founder, Amduus Information Works, Inc.

sauge@amduus.com

Changes in software at Amduus Information Works, Inc.

There appears to be a GenPDF out there already, so I have renamed the software to Denkh.

Amduus continues to make available fully functional versions of Blue Diamond and Denkh for use in your company and software products for free and as open source.

The only license requirements are to keep the Amduus Information Works, Inc. and Scott Auge names as part of the product and that Amduus/Scott Auge is not responsible for how you use the software.

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However, these are previous versions of the software not including the features and fixes found in the current version. The manual for the current version is in the base directory of the freebie version of the software. With support contracts, I will continue to answer questions about using the freely available version.

I have made the version of software that is available for free because I think it is the right thing to do. Some of the software has the work of other people in it to supplement my own. They should be able to continue using that version of the software at no price. Also, I don't think it is a bad thing that the software get out there for use by other companies and that more people know about it and can use it! The whole goal was to get more value into Progress applications and programmers.

If you have any questions, please feel free to email me at sauge@amduus.com.

Coding Article: Useful Routines in Blue Diamond

Written by Scott Auge

License

Please include this license in all the source code you may copy and paste from this article. It is only fair that people know where it comes from. The code can be used in commercially sold and home brewed apps with no royalties – all I am looking for is accreditation.

/*

* Written by Scott Auge scott_auge@yahoo.com sauge@amduus.com

```

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*
*/

```

PostFix.i

This routine returns the postfix for a given file name. This can be helpful in Webspeed applications for determining the Content-Type: to send back on a file through the browser. I have also encountered the need to know the “type” of file in Blue Diamond, after all, given a postfix of .html lets Blue Diamond know it needs to convert it into a .p before compiling it.

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Creation of modules and products for re-sale as well customized Internet/Intranet programming for E-Business in the marketing/manufacturing/service and law enforcement industries.

```

&IF DEFINED (POSTFIX_I) <> 1 &THEN
&GLOBAL-DEFINE POSTFIX_I Y

```

```
DEF VAR RCSVersionPostFix AS CHARACTER INIT "$Header:
/home/appl/BlueDiamond/prgsrc/RCS/PostFix.i,v 1.3 2002/04/20 14:16:32 sauge Exp $" NO-
UNDO.
```

```
FUNCTION PostFix RETURNS CHARACTER (INPUT cFileName AS CHARACTER ):
```

```
  IF cFileName = "" THEN RETURN "".
  IF INDEX(cFileName, ".") = 0 THEN RETURN "".
  ASSIGN cFileName = SUBSTRING(cFileName, R-INDEX (cFileName, ".")).
  RETURN cFileName.
```

```
END. /* FUNCTION PostFix */
```

```
&ENDIF
```

SetPostFix.i

With Blue Diamond's processing of html files into p files, well, one has to reset the .html to a .p and this routine will allow one to do so. It accepts a path/filename and sets the post fix to a desired one.

```
&IF DEFINED(SETPOSTFIX_I) <> 1 &THEN
&GLOBAL-DEFINE SETPOSTFIX_I Y
```

```
FUNCTION SetPostFix RETURNS CHAR (INPUT cFileName AS CHARACTER,
                                INPUT cPostFix AS CHARACTER):
```

```
  DEF VAR iOffset AS INTEGER NO-UNDO.
```

```
  ASSIGN iOffset = R-INDEX(cFileName, ".").
```

```
  /* If there is no . in the file name, then concat the two together */
```

```
  IF iOffset = 0 THEN RETURN cFileName + cPostFix.
```

```
  /* Otherwise, pull in up to the LAST . and cat new postfix in */
```

```
  ASSIGN cFileName = SUBSTRING(cFileName, 1, iOffset - 1) + cPostFix.
  RETURN cFileName.
```

```
END. /* FUNCTION SetPostFix */
```

```
&ENDIF
```

FilePath.i

There are times when one needs the file path portion of a path/filename value.

```
&IF DEFINED(FILEPATH_I) <> 1 &THEN
&GLOBAL-DEFINE FILEPATH_I YEP

DEF VAR RCSVersionFilePath_i AS CHARACTER INIT "$Header:
/home/appl/BlueDiamond/prgsrc/RCS/FilePath.i,v 1.2 2002/05/17 23:23:49 sauge
Exp sauge $" NO-UNDO.

/* A is the full path and file name */

FUNCTION FilePath RETURNS CHARACTER ( INPUT a AS CHARACTER ):

    DEF VAR b AS CHARACTER NO-UNDO.

    IF a = "" THEN RETURN a.

    IF OPSYS = "UNIX" THEN ASSIGN b = "/".
    ELSE ASSIGN b = "~\".

    RETURN substring(a,1, r-index(a, b)).

END.

&ENDIF
```

FileName.i

This routine will pull the filename from a path/filename value.

```
&IF DEFINED(FILENAME_I) <> 1 &THEN
&GLOBAL-DEFINE FILENAME_I YEP

DEF VAR RCSVersionFileName_i AS CHARACTER INIT "$Header:
/home/appl/BlueDiamond/prgsrc/RCS/FileName.i,v 1.2 2002/05/17 23:23:49 sauge
Exp sauge $" NO-UNDO.

FUNCTION FileName RETURNS CHARACTER ( INPUT a AS CHARACTER ):

    DEF VAR b AS CHARACTER NO-UNDO.

    IF a = "" THEN RETURN a.

    IF OPSYS = "UNIX" THEN ASSIGN b = "/".
    ELSE ASSIGN b = "~\".

    RETURN substring(a,r-index(a, b) + 1).

END.
```

&ENDIF

About the commercial version of Blue Diamond

The commercial version of Blue Diamond includes routines that help the programmer create web applications composed of E4GL code used in Webspeed. It provides a transaction server as well as a development tool. It also includes routines and DB tables not found with the base Webspeed product, making it a bit faster to put out code. This code can be also used in Webspeed applications, so a purchase can get you a head start on your web application. It is priced per machine install.

The commercial version of Blue Diamond can be redistributed with a royalty payment per machine install.

Support contracts are available, as well as Progress licenses from Amduus Information Works.

Contact Scott Auge, sauge@amduus.com, for more information.

About the author: Scott Auge is the founder of Amduus Information Works, Inc. He has been programming in the Progress environment since 1994. His works have included E-Business initiatives and focuses on web applications on UNIX platforms.

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Coding Article: Creating a PDF report with Denkh

Written by Scott Auge sauge@amduus.com

The open source version of Denkh (aka GenPDF) is very powerful, but some understanding of the notation to groff/troff is required to create the embedded 4GL program. As you will see with this program, much of the groff/troff notation has been encoded into functions that can be called upon to make nearly a pure 4GL report. *Even if you do not have the commercial version of Denkh, you should get something out of the article by reading it for the open source version of Denkh.*

Creating a EAGL report program using the Denkh Tools

The following program shows how to code a report using Denkh routines. Some of the new routines included are *Italics()*, *Bold()*, *EnglishDay()*, *EnglishMonth()*, *PageHeader()*, *PageFooter()*, as well as *TableHeader()*, and *TableEnd()*.

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What we are trying to accomplish is a multi-page report with inputs that can effect the type of data placed into the report. That data would be tabulated in a table with different alignments and a header on each page containing tabular data. The report will have headers and footers. The lines highlighted are explained below the listing:

```
<!--TS
/* This is a report file made from the commercial routines found in Denkh */
/* Available from Amduus Information Works, Inc. www.amduus.com */
/* The syntax used is similar to that found in the Webspeed SpeedScript. */
/* See documentation for more information. */

/* This is a simple report to examine the XRef information found in the */
/* tools for the commercial version of Blue Diamond. */

{StdFmt.i} /* Includes all the commercial version functions and procedures */

/* Our inputs to this report */

DEF INPUT PARAMETER cObjType AS CHARACTER NO-UNDO.
-->
`PageHeader("", "XRef Report", "")`
`PageFooter("", "Page %", "")`
`TextCenter(1)`
`Bold("Date of Report " + EnglishDay(TODAY) + " " + EnglishMonth(TODAY) + " " +
STRING(DAY(TODAY)) + ", " + STRING(YEAR(TODAY)))`
`TextCenter(2)`
Object Type: `Italics(cObjType)`
`CR(2)`
`TableHeader("center tab(,)", "c c-nl c", "Program, Include~n_,_")`
<!--TS
FOR EACH XRefBreakDown NO-LOCK
WHERE XRefBreakDown.ObjType = cObjType
AND XRefBreakDown.ParentFile = XRefBreakDown.ChildFile
BY XRefBreakDown.ParentFile BY XRefBreakDown.ObjKey:
-->
`XRefBreakDown.ParentFile`, `XRefBreakDown.ObjKey`
<!--TS
END.
```

```
-->
`TableEnd()`
```

As you can see from the line:

```
DEF INPUT PARAMETER cObjType AS CHARACTER NO-UNDO.
```

a parameter is passed into the program so that the report filtering/parameter program used by the user can be used to pass in some parameters to the program that will generate the PDF. In this example, an ObjType from an XREF system being implemented in the commercial version of Blue Diamond is being passed in as an argument. Other items under different reports might be Customer Number, Start/End Dates, Parts Numbers, etc.

The input parameter ties into the FOR EACH described below:

```
<!--TS
FOR EACH XRefBreakDown NO-LOCK
WHERE XRefBreakDown.ObjType = cObjType
  AND XRefBreakDown.ParentFile = XRefBreakDown.ChildFile
BY XRefBreakDown.ParentFile BY XRefBreakDown.ObjKey:
-->
`XRefBreakDown.ParentFile`, `XRefBreakDown.ObjKey`
<!--TS
END.
-->
```

You can see, that just as under Webspeed, the 4GL code is delimited with <!--TS and --> and that within the report text, the fields and functions are delimited with the ` back tic character. If need be, normal text could be inserted into the program, just as “Object Type:” is placed in the report.

Notice the FOR EACH has a match condition on the cObjType input parameter presented at the top. It is here that the correct database data will be retrieved, and sorted by the BY clause to present a usable report (included in the ZIP file that contained this issue or at the www.amduus.com web site under Free Publications.)

Some niceties of the report include page header and footer information near the beginning of the report:

```
`PageHeader("", "XRef Report", "")`
`PageFooter("", "Page %", "")`
```

The Denkh provided functions PageHeader() and PageFooter() to this with left, center, and right wording placed in the appropriate argument. Use of the % symbols allows page numbering! It is best if these are used at the top of the report.

Next is dealing with the tables the report has. These are accomplished with TableHeader() function and the TableEnd() function. The TableEnd() function is simple, place it at the end of the code used for generating data for the table.

Using the TableHeader() function is exceptionally powerful, but is composed of only three arguments:

- Options about the table layout
- Format of the table information
- Data that should be present on each page listing the table (ie, the table headers)

It's power denotes from the flexibility of the arguments given. Here is our call of the table:

```
~TableHeader("center tab(,)", "c c~n1 c", "Program, Include~n_,_") ~
```

The options are words delimited with a space. The "center" option is used to center the table on the page, else the default of having it aligned to the left will be used. Note there is another option tab() which has a comma as the tab delimiter¹ for the data presented to the table. You can change it to other characters if your data needs to use a comma.

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The next argument is the format of the data. In simple terms, the letters represent the alignment in the column the data should be in, l = left, c = center, and r = right. A table can have multiple lines for it's headers, so a ~n is used to denote the end of formatting instructions for that line. The last line is used for all other lines of data presented in the table after the TableHeader() function.

The final argument is the data that should be present in the table headers for each page of the table. Note they are comma delimited (as specified in the options argument) and have multiple lines separated by the ~n delimiter. The first line is composed of the words Program and Include.

¹ Note there are no " marks around the comma even though it is surrounded by (). This is not a typo.

The next line has `_` which denote there should be a line presented under the words for that column header.

There on out, we present the data with the line:

```
`XRefBreakDown.ParentFile`, `XRefBreakDown.ObjKey`
```

which you can see is comma delimited, and then we end the table listing with:

```
`TableEnd()`
```

Don't let this very, very simple example fool you on the complexity of the table to be presented. It can include rows that are composed of differently formatted text complete with lines around some cells and not around others, as well some cells having tables inside tables.

Converting the program using Denkh

Once the programmer has this program written, it is time to translate it into a Progress 4GL program that can be conveniently called to by other 4GL programs. The command provided by Denkh is simple (commercial and open source):

```
troffprs.ksh t5.troff t5.p
```

The first argument is the file name of your Embedded program (as listed above.) The second is the file name of your 4GL procedure program. The resulting program is readable by the programmer, it is not encrypted.

Running the program

So now that we have this program, how do we use it? This is accomplished by two RUN calls. One is to the program you developed, and the other is to a Denkh² program that performs additional processing resulting in a PDF.

```
run examples/t5.p("/tmp/1.groff", "INCLUDE").  
run groff2pdf.p("/tmp/1.groff", "/tmp/1.pdf").
```

Note that the troffprs.ksh processing results in a program with an additional input argument as the first argument. Then the following would be your coded input parameters. So INCLUDE is sent in the cObjType variable of the above routine.

² This program is available in the open source and commercial versions.

This first argument is a temporary file that is needed to pass into the groff2pdf.p command. Be sure to have a naming convention so that one can insure it won't be stomped on under a multi-user system or by multi-instances of the program run by the user. It maybe useful to delete this file after the PDF file has been generated by the groff2pdf.p procedure.

After executing groff2pdf.p, the PDF file will be available at the location specified in the second argument to this program for viewing by the user.

About the commercial version of Denkh

The commercial version of Denkh includes routines that help the programmer create reports easier, such as the functions discussed above. It is priced per machine install.

The commercial version of Denkh can be redistributed with a royalty payment per machine install.

Support contracts are available, as well as Progress licenses from Amduus Information Works.

Contact Scott Auge, sauge@amduus.com, for more information.

About the author: Scott Auge is the founder of Amduus Information Works, Inc. He has been programming in the Progress environment since 1994. His works have included E-Business initiatives and focuses on web applications on UNIX platforms.

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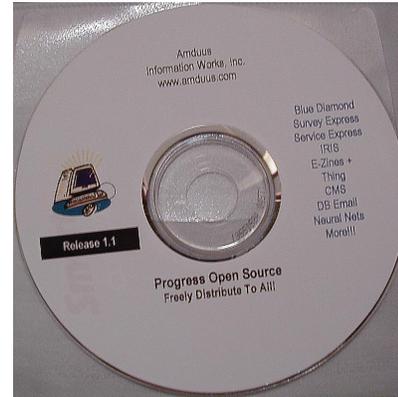
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- Service Express – Web based Help Desk.
- The Progress E-Zines, books on learning to program in Webspeed (PDF/Word/HTML)
- THING – simple tool to manipulate database records with
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