ILE C/C++ Programmer's Guide

Source Code to Write an Audit Trail

The function `write_audit_trail` in module `T1520IC3` writes the audit trail for the ILE C program `T1520PG1`. Module `T1520IC3` is used to create service program `T1520SP1`, shown in Figure 52.

Use the following source:

Figure 58. ILE C Source to Write an Audit Trail

```
/* This function writes an audit trail. To write the audit trail the  */
/* file field structure is retrieved from the DDS file T1520DD1 and    */
/* the taxrate data item is imported from service program T1520SP2.    */
/* Retrieves the file field structure.                                 */
#pragma mapinc("myinc", "MYLIB/T1520DD1(*all)", "both", "p z","")
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <time.h>
#include <decimal.h>
#include <recio.h>
#include <xxcvt.h>

/* These includes are for the call to QWCCVTDT API to get the system */(1)
/* date to be used in the audit trail.                               */
#include <QSYSINC/H/QWCCVTDT>
#include <QSYSINC/H/QUSEC>
/* DDS mapping of the audit file, T1520DD1.                       */(2)
#include "myinc"
/* Tax rate is imported from service program T1520SP2.            */(3)
const extern decimal (2,2) taxrate;
void write_audit_trail (char            user_id[10],
                        char            item_name[],
                        decimal (10,2)  price,
                        short int       quantity,
                        char            formatted_cost[22])
{
    char  char_item_name[21];
    char  char_price[11];
    char  temp_char_price[11];
    char  char_quantity[4];
    char  char_date[6];
    char  char_taxrate[2];
 /* Qus_EC_t is defined in QUSEC.                                  */
    Qus_EC_t errcode;
    char    get_date[16];
    int     i;
    double  d;
 /* File field structure is generated by the #pragma mapinc directive. */
    MYLIB_T1520DD1_T1520DD1R_both_t buf1;
    _RFILE *fp;
 /* Get the current date.                                          */
    errcode.Bytes_Provided = 0;
    QWCCVTDT ("*CURRENT  ", "", "*MDY      ", get_date, &errcode);
    memcpy (char_date, &(get_date[1]), 6);


 /* Loop through the item_name and remove the null terminator.        */
    for (i=0; i<=20; i++)
    {
      if (item_name[i] == '\0') char_item_name[i] = ' ';
      else char_item_name[i] = item_name[i];
    }
 /* Convert packed to zoned for audit file.                          */
    d = price;
    QXXDTOZ (char_price, 10, 2, d);
    QXXITOZ (char_quantity, 4, 0, quantity);
    d = taxrate;
    QXXDTOZ (char_taxrate, 2, 2, d);
 /* Set up buffer for write.                                         */
    memset(&buf1, ' ',  sizeof(buf1));
    memcpy(buf1.USER,   user_id, 10);
    memcpy(buf1.ITEM,   char_item_name, 20);
    memcpy(buf1.PRICE,  char_price, 11);
    memcpy(buf1.QTY,    char_quantity, 4);
```

```
                            memcpy(buf1.TXRATE, char_taxrate, 2);
                            memcpy(buf1.TOTAL,  formatted_cost, 21);
                            memcpy(buf1.DATE,   char_date, 6);
                            if ((fp = _Ropen("MYLIB/T1520DD1", "ar+")) == NULL)
                            {
                              printf("Cannot open audit file\n");
                            }
                             _Rwrite(fp, (void *)&buf1, sizeof(buf1));
                             _Rclose(fp);
                            }
```

Notes:

1. This source requires two members, QUSEC and QWCCVTDT, that are in the QSYSINC/H file. The QSYSINC library is automatically searched for system include files as long as the OPTION(*STDINC) parameter (the default) is specified on the CRTBNDC or CRTCMOD command.

2. The include name myinc is associated with the temporary source member created by the compiler when it generates the type definitions for the **#pragma mapinc** directive. See Chapter 18, Using Externally Described Files in a Program for information on how to use the **#pragma mapinc** directive.

3. To write the audit trail, the tax rate is imported from the service program T1520SP2.

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