NUMENU

iSeries Dynamic Menu Driver

Version 7.4, Freeware

January, 2023

NUMENU (The Navan Menu Driver)
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http://www.navan.co.uk

VERSION 7.4

This edition applies to Version 7.4 of the NUMENU Navan Menu Driver Program Product.

Unless otherwise stated, all pages in this edition are to Version 7.4 and refer to the iSeries Operating System i/OS, Version 7.3 or greater.

Any references in this manual to Navan Utilities or NUTIL refer to standard Navan Utility products.

Any references in this manual to Language Translation Facility or LTF refer to standard Navan Utility products.

Most functions in this facility will work without the NUTIL or LTF program product being installed. Any product restrictions or limitations that do exist (where NUTIL and/or LTF is not installed on the same machine) are documented in this manual.

Information on these products can be obtained from your nearest Navan agent.

Revisions and Changes

May, 2000

Product reverts to Freeware status.

December, 2000

User grouping has been added. This new feature allows you to define the menu option authorities for a user group, instead of having to authorise each user individually. Minor corrections applied to MENU program relating to the optional NUMENUSYS library. Minor corrections to Menu driver *PSSR routines to avoid unnecessary program dump listings.

August, 2002

All commands set to ALWLMTUSR(*NO).

July, 2004

Addition of facilities for multiple end-user languages. Note that some portions of this new feature require the installation of the Navan LTF (Language Translation Facility) program product.

March, 2010

USRLOG corrected, ALWDLT is now set to *YES
The Menu Copy function enhanced, to copy both menu header and detail.
Various minor program corrections.

April, 2010

Application Identifiers Maintenance (previously Library Lists Maintenance) now allows full 250 library support. NUMENU now fully supports 250 libraries in the library list. Note that old data file MNULBL is no longer used; Library Lists are now stored in new file MNULIB.

NUMENU Installation Attributes display added to menu MNUDEV.

May, 2010

Compatibility with i5/OS V5R4 tested.

MNUPRT command enhanced.

July, 2010

Compatibility with i5/OS V6R1 tested.

Implementation of the MNUENV environment attributes data area. Corrections to the main menu panel (both local and remote) to support the environment attributes data area control.

February, 2018

Compatibility with i/OS V7R3 tested.

NUMENU Menu Driver facility

An Overview

The MENU Menu Development System is designed to simplify the creation of security conscious menus for an application. Menu Headings and options are stored on a data file. Menus can then be generated for specific users based on these file details. Once standard menus are defined, individually tailored user menus can be generated for those users allowed full or partial access to the application.

Prior to authorising users, all menus are available to all users. Once the menu driver is locked into the restricted state, only authorised users may access menu options.

For each user, you can request whether to log accesses to a particular menu option. The resulting report can be listed at any time, showing which users requested which menu options, in date time sequence.

A 'hold' facility is available for a specific menu option, so a temporary lock may be placed to stop all users accessing that option until the hold is released.

The design of the menu development system allows it to be moved into the actual application under development. Thus each application can have its own menu options files, allowing security throughout all user applications. Source code for all menu driver objects is (optionally, on a fee basis) supplied, so the application can be tailored to your own requirements.

A Menu Identifier is 10 characters long, must be a valid name (within OS/400 rules) and must be unique within the menu driver environment.

A menu option identifier is 3 characters long and is unique within a menu.

An example of a menu display

Menus created by the Menu Driver will take the format something similar to the following:

```
DEPT_NAME                   Order Entry User Menu
OEMENU                                                      System: NAVAN

Type choices, press Enter:

   1    Order Entry                  5    Current Orders List
   2    Order Maintenance            6    Current Backorders List
   3    Backorder Review             7    Customer Enquiry
   4    Release Backorders           8    Part Enquiry

 ENQ    Enquiries Menu

Selection or command
===>

F3=Exit  F4=Prompt  F6=Messages  F14=WRKSBMJOB  F9=Retrieve  F12=Previous

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```

The menu driver is available for access:

> ... Providing the menu driver is not 'locked' (meaning NO user may access it).

> ... Providing PWRDWNSYS or ENDSBS is not in progress.

> ... Providing a user defined delay time has not been exceeded between uses of the menu screen.

Menu display screen components

The screen can be broken up as follows:

The Workstation ID, current date and time

The Menu Header contains Menu Identifier ("OEMENU"), the Menu Title ("Order Entry Main Menu") and the column start positions (in this case 5 and 25) for the menu options.

The Menu Details are the menu options (options 1 thru 8) listed. When an option is requested by the user, an associated CALL is performed.

The command entry line, which can be used to enter one of the menu options shown. If the user accessing the menu driver does not have limited capabilities (LMTCPB = *NO defined on the user profile) the line can also be used to enter commands.

Command key functions, which are explained later in this chapter.

Example of a menu using only one option column

Any single menu can have up to 24 options, 12 in column 1 (the left side of the screen) and 12 in column 2 (the right side). If only one column is needed you can define column 1 only, then define the column start position (on the menu header) as 20, which will centre column 1 on the menu. For example:

```
DEPT_NAME                 Order Entry Main Menu
OEMAIN                                                 System: NAVAN
Select one of the following:

                       1    Order Entry
                       2    Order Maintenance
                       3    Backorder Review
                       4    Release Backorders

                     ENQ    Enquiries Menu

Selection or command
===>

F3=Exit  F4=Prompt  F6=Messages  F14=WRKSBMJOB  F9=Retrieve  F12=Previous

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```

Standard Command Function keys

The menu driver has standard command keys defined, which operate as follows:

F1	Display help information
F4	Prompt for command parameters (LMTCBP = *NO) if a command has been entered
F6	Display messages
F9	Retrieve the last command entered (LMTCPB = *NO)
F10	Display the menu request log for this session. An example of the session log display is shown below
F12	Return to the previous menu
F14	Work with submitted jobs
F18	Work with spool files
HELP	Display help information
ATTN	Display the 'Attention' menu associated with the menu currently being displayed

The normal 'escape' function keys are as follows:

F3	Exit from the menu driver
F12	Return to the previous menu

However, depending upon your installation, the keys that are used to provide these escape functions may be user-configured.

Example of the DSPLOG screen

```
 DSPLOG                   Menu Request Log

 Workstation: DSP010306
 User ID:    QPGMR                                      F12= Return
                                                           Submit
   Date       Time    Menu     Option  Description          /Call

  22/12/05   8:31:56  IM010      1     Parts Master File Maint      C
  22/12/05   8:38:53  IM020      2     Part Info - Specific Branch  C
  22/12/05   8:39:04  IM150     15     B/O Report By Order Type     S
  22/12/05   8:39:20  IM150      1     Backorder Maintenance        C
  22/12/05   9:03:57  IM010      1     Parts Master File Maint      C
  22/12/05   9:04:14  IM020      2     Part Info - Specific Branch  C
  22/12/05   9:04:34  MNUDEV     2     Menu Detail Maintenance      C
  22/12/05   9:04:45  MNUDEV     1     Menu Header Maintenance      C
  22/12/05   9:04:48  IM020      2     Part Info - Specific Branch  C
  22/12/05   9:04:55  IM020      1     Customers Enquiry            C
```

If the request logging control is switched on, all user requests from the menu driver are logged to an audit file. This file can be interrogated from the DSPLOG screen, or via report options supplied with the menu driver.

Menu 'pop-up windows' using the Attention key

An optional facility provided in MENU is the enabling of the 'Attention' key. If used, this allows a menu 'window' to appear *at any time*, on any program called by the menu driver.

At any time, the 'Attention' key may be pressed (top left-hand corner of keyboard), which will display a submenu at the top of the screen. The options on this menu may be taken at any time, providing you have security to run the option. So you can be entering a customer order, then press 'Attention' to obtain a part enquiry while still in the order.

Sample screen showing the use of the Attention key window

```
                              |
 DEPT_NAME            Menu Development |        Attention Key Options
 MNUDEV                        |
                              |
 Type choices, press Enter:            |   CMD Command Entry
                              |   C   Calculator
      1. Work with Menus               |
                              |
      3. Define Users to Menu system   |
      4. Define menus for secured user |
      5. Workstation Overrides Mtce    |  Option:
      6. Hold/Release Menu options     | F6=DSPMSG F14=WRKSBMJOB F18=WRKSPLF
      7. Print Menu Formats            | F12=Previous
                              |_____
      8. Work with Applications        24. Menu Security lock maintenance
                              25. Edit NUMENU program help
      9. Work with Languages           26. Display NUMENU install attribs


 Selection or command
 ===>

 F3=Exit  F4=Prompt  F6=Messages  F14=WRKSBMJOB  F9=Retrieve  F12=Previous
```

If an attention key menu is defined for the menu you are currently on, that menu will be displayed whenever the attention key is pressed. If no attention key menu is specified, nothing will happen.

The attention menu environment runs 'Group Jobs', so that a user request is processed as a TFRGRPJOB (Transfer to another Group Job). If the user exits the attention menu option using the normal exit method for that program, the group job will be ended and the screen will return to the function the user was performing prior to pressing the attention key.

If the user exits the attention menu option using the Attention key, the group job will remain open and the screen will return to the function the user was performing prior to pressing the attention key.

If the user exits the Attention menu window using the 'exit' function key, the window will be closed and the screen will return to the underlying task.

Attention menu standard options and function keys

The following options are pre-defined on any attention menu:

C - The C option displays a simple calculator in a window. The calculator can be used to add, subtract, multiply and divide to a 5 decimal precision. F3 will exit the calculator, but the value accumulated will remain, so that the next time you request the calculator within your work session, the retained value will be redisplayed. F12 allows you to reset the accumulated value.

D - The D option displays a calendar in a window. The first time show it will display the current month, with today's date highlighted. You may display any month/year by entering values in the input fields provided. F3 will exit the calendar display.

The following function keys are pre-defined on any attention menu:

    F6=Display messages
    F14=Work with submitted jobs
    F18=Work with spool files

Calling a menu option

In order to select an option, the user simply types the code (known as a 'menu option') shown highlighted against the appropriate option description. This code can be any 3 character identifier. It must be a unique code within a specific menu. So on the previously described Order Entry user menu, typing in option '1' will perform the call associated with the text 'Order Entry'.

Moving between Menus ('stepping')

Moving (or 'stepping') from one menu to another is usually achieved by taking an option with an underlying 'MENU' command. For example, the ENQ option on the OEMAIN menu shown above has an underlying 'MENU IM020' command associated with it (on the Menu Details file) and so when a user takes option 'ENQ', menu IM020 will be displayed.

Another method available to a user is to specify the name of the menu to be displayed. For example if a user types 'MENU IM020' on the command line (in the 'OEMENU' example) it would have the same effect as taking option 'ENQ'.

A further 'fast track' method is to go directly to a menu option on another menu, rather than displaying the menu first.

As an example, say the user is currently on menu OEMAIN and the next function to be performed is option 2 on menu IM020. Normally the user would first take the option to display menu IM020 and then, after that is displayed, take option 2 to call the function. 'Fast track' allows a user to type in '2 IM020' on the command entry line. The menu processor interprets this as meaning the user wishes to process option 2 on menu IM020 and will call the function directly. After the function has completed the menu processor will then display menu IM020.

Menu 'fast track' switching is available to a user accessing the remote version of the menu driver.

Menu Environments

User Environments

There are two different versions of the main Menu Driver menu panel; which one you should use will depend on how your users sign on to the iSeries:

The local menu driver is a full function menu panel. This is the standard menu panel that would normally be used by all locally attached users.

The remote menu driver is a 'reduced function' menu panel that is designed for faster access for users that normally signon from a remote (via a communications line) workstation.

The main differences between the two different types of menu panel is that a local user

1) has access to the command line (a remote user can only enter menu options)
2) can use attention key menus and
3) can use the 'fast track stepping' method for switching between menus

The determination as to which menu you see is controlled by the MENU command:

MENU ... **USRTYPE(*LOCAL)**   will access the local (standard) menu panel. This is the default version.

MENU ... **USRTYPE(*REMOTE)**   will access the remote version of the menu panel.

Security Environments

There are three internally controlled security environments in which the Menu Driver can operate; either Unrestricted, Restricted or Secured user access.

In *unrestricted* mode (this is how the system is shipped to you), all menus and menu options are available to any user that can access the Menu Driver.

In *restricted* mode a *PUBLIC user is defined, which allows general users access to certain, but not necessarily all, menu options.

In addition, if the user is specifically defined to the menu driver and the user definition contains User Menu definitions, then those specific definitions will override the public definition whenever the user requests those menus.

In *secured* mode every user must be defined to the menu driver in order to access it. In addition, each user must have unique User Menu definitions for **every** menu and menu option the user is allowed access to.

Using the Menu Driver

User profiles for direct menu users are created as follows

Local users	`CRTUSRPRF .....`	`INLPGM(NUMENU/INLPGM)`
Remote users	`CRTUSRPRF .....`	`INLPGM(NUMENU/INLPGMR)`

There are two Initial Programs supplied with the menu driver and the one you specify should reflect where the user will normally sign on:

For local workstation users (the workstation is attached directly to the iSeries), you should use the INLPGM initial program.

For remote workstation users (the workstation is attached to the iSeries via a communications line), you should use the INLPGMR initial program.

The initial programs supplied with NUMENU accesses the menu driver using the command MENU MENU(*USRDFT). The *USRDFT option tells the menu driver to open the user's initial menu, which is specified on the User Headers file USRHDR. If no header record exists for the user ID, menu access is not allowed.

If existing user profiles are being used, rather than call the initial program you can use the MENU command:

```
::   ADDLIBLE   LIB(NUMENU)
::   ADDLIBLE   LIB(QTEMP)    POSITION(*LAST)

::   MENU       MENU(*USRDFT)   USRTYPE(*LOCAL)
```

If you use the JOBD and OUTQ parameters on your user profiles, these will be the initial defaults for the menu driver, unless overridden in the User Header File, or the Workstation Overrides File.

The Menu Driver is supplied in unrestricted access mode, so you can try either of these functions as soon as you have restored the NUMENU library. However, you can only use the *USRDFT parameter on the MENU command if you have defined your users to the Menu Driver.

Library list requirements for the menu driver

The library list definition depends entirely on the application that the menu driver is applied to, but to ensure correct menu driver operation you must always include the libraries NUMENU and QTEMP.

User Instructions for Menu Driver

In all programs, function key 12 will step you out of a screen sequence. If the screen is an update function, the update will be ignored and the program will return to previous screen. The last screen will return to the menu.

Within the menu driver, a 'menu tracking' function remembers which menus the user has stepped through. Each time F12 is used on a menu screen, the user will be stepped back one menu.

Once the initial menu has been reached, the menu driver program will terminate. Your own program calls to initiate access to the menu driver should therefore ensure the user does not return to command entry.

If function key 12 is taken on the Attention menu window, you will return to the underlying task.

The HELP key has been enabled in all MENU programs. Use of the help key will retrieve a text member from the MNU_HLPTXT file, and display it on the screen. The facility is available for your own use, if you wish.

MNUDEV - the Menu Driver development menu

All maintenance functions within the menu driver system are available from the MNUDEV menu. To access it from a programmer menu, do the following:

```
::    ADDLIBLE  NUMENU
::    ADDLIBLE  LIB(QTEMP)      POSITION(*LAST)

::    MENU      MENU(MNUDEV)   USRTYPE(*LOCAL)
```

You will then be shown the MNUDEV menu:

```
 DEPT_NAME              Menu Development System Menu
 MNUDEV                                                   System: NAVAN


Type choices, press Enter:

     1. Work with Menus              13. System Title Maintenance
                                     14. Company name maintenance
     3. Define Users to Menu system  15. Change request logging switch
     4. Define menus for secured users
     5. Workstation Overrides Mtce   20. Print the Menu requests log
     6. Hold/Release Menu options    21. Print Menu Authorities Lists
     7. Print Menu Formats           22. List Undefined Authorities
                                     23. System lock maintenance
     8. Work with Applications       24. Menu Security lock maintenance
                                     25. Edit NUMENU program help
     9. Work with Languages          26. Display NUMENU install attribs



Selection or command
===>

F3=Exit  F4=Prompt  F6=Messages  F14=WRKSBMJOB  F9=Retrieve  F12=Previous

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```

Note that the MNUDEV menu functions should only be used by a local user.

Programs

MENU10 – Work with Menus

This program allows you to define/maintain menu information.

Menu Maintenance - Select

```
MENU10D1                 Work with Menus
Select
Type options, press Enter.
2=Change   3=Copy   4=Delete   5=Display   8=Language   12=Work with details
17=Display menu format


    Menu       Menu                                    Start Start  Attention
Opt ID         Title                                   Col 1 Col 2  Menu
    MNUATN

    MNUATN     Office Toolkit                             1    32
    MNUDEV     Menu Security System Menu                  1    35    MNUATN




F3=Exit   F6=Add   F17=Top   F18=Bottom
```

The first panel displays all of the menus currently defined.

To change the header details of an existing menu, type a '2' beside it and press ENTER.

To add a new menu, press F6.

You can display the format of the menu (as the user would see it from the menu driver) by typing '17' beside the menu required and pressing Enter.

Option 3 allows you to create a new menu header, by copying the details of an existing menu header to use as the basis for your new menu.

Option 8 allows you to enter the Menu header text in different languages, so that the text displayed to the user would be based on the users' language ID.

Work with Menu Headers - Change

```
MENU10D2              Work with Menus
Change

    Menu ID.........: ACCTS
    Menu Title......:              Accounts Main Menu

         Is this a standard menu?.......: Y    Y=Yes, N=No

         Start Positions: Column 1......:   1
                          Column 2......:   32

         Application ID.................: ACCOUNTS
         Attention key menu ID..........: ACATN         Menu ID,  NONE

         Is the menu currently available: Y    Y=Yes, N=No


   F3=Exit    F10=Accept    F11=Delete    F12=Return
```

Record MAINTENANCE

You will then be given a screen allowing you to define or delete a menu header. In the case of change, all previous entries will be displayed for you to alter (by typing over the existing entries).

The entries are:

STANDARD MENU?: For applications that are developed on one iSeries but installed on many machines, this flag gives you the capability of determining those menus that were supplied as a standard application menu (compared to those that were created at a specific installation of the application).

TITLE: What you wish displayed as the menu title. Whatever you enter will be automatically centred when you add the menu (Change function leaves the menu title as it is displayed).

COLUMN 1 START POSITION: The starting position for the first column of menu options. The default is 1.

COLUMN 2 START POSITION: The starting position for the second column of menu options. The default is 32.

Column two options will overlay any column 1 option that is too long. Take for example the case where:

        Col 1 Start Position 20
        Col 2 Start Position 32

        Option 1 in Col 1 is "Order Entry Main Driver Program"
        Option 20 in Col 2 is "Order Enquiry"

This will display on the menu as:

1 Order Entry Main Dr 20 Order Enquiry

This is easily corrected by going back and changing the column start positions on the menu header.

Column positioning is ignored if the menu is processed as an attention menu, as attention menus display all options in a single column list.

APPLICATION ID: An optional feature of the menu driver allows you to replace library lists between menus, based on an Application Identifier. An entry here will be checked against the library lists file for validation. Leave the field blank if no library list change is required.

When the menu driver is in use, a library list entry on the Menu Header will cause the library list to be replaced, based on the libraries defined on the library lists file for this library list identifier.

If the menu is being used as an Attention key menu, this field is ignored (the attention key will not replace a library list).

ATTENTION KEY MENU ID: This defines which 'window' attention menu will appear when the attention key is pressed by a user currently using this menu (when the menu driver is in use, the user has the option of pressing the ATTENTION key to receive a further menu in a small 'window' at the top right hand corner of the screen. This facility allows you to interrupt whatever you are currently doing in order to do something else). Any menu that has been defined to the menu driver may be used as an Attention Menu.

If no entry is made here, when in use the system will refer to the most recently defined attention menu (such as the one defined on the initial menu). If no previous definition was made, the attention key does nothing when it is pressed.

If the entry *NONE is used, the attention key does nothing when it is pressed.

MENU STATUS: This defines whether the menu is available for user access.

> If 'Y', users can access the menu.
> If 'N', an attempt by a user to access the menu will result in an error message 'Menu not currently available'.

This feature allows you to have menus under development prior to allowing users to access them.

Record DELETION

In the case of delete, you will be given a verification screen. If the header displayed is the one you wish to delete, press F11. The header will then be deleted. When you delete the menu header the detail lines for that menu will be automatically deleted.

Work with Menu Details - Select

```
MENU11D1                Work with Menu Options
Change                         AC010

 Type options, press Enter.
   2=Change   3=Copy   4=Delete   5=Display   8=Language

   File Maintenance Menu

     Menu                                          Menu  Menu  Job
 Opt Opt  Description                         Hold  Group S/Grp Name

      1    Customer Maintenance
      2    Supplier Maintenance
      3    Accounts Interface definition
      4    General Ledger Account maintenance
      5    Print chart of accounts
      6    Print active account list



 F3=Exit   F6=Add   F12=Previous   F17=Top   F18=Bottom
```

Options MAINTENANCE

If menu options already exist for the requested menu you will then be given a screen showing you what has been currently defined. To change an existing entry, type a '2' beside the option and press ENTER. To add a new option to the menu, press F6.

Option 3 allows you to create a new menu option, by copying the details of an existing menu option to use as the basis for your new option.

Option 8 allows you to enter the Menu option text in different languages, so that the text displayed to the user would be based on the users' language ID.

Work with Menu Options - Change

```
MENU11D2              Work with Menu Options
Change                      AC010

                     File Maintenance Menu

   Column Number......: 1      (1, 2)
   Line Number........:    1   (1 - 99)
   Menu Option........: 1
   Menu Group.........: ACCTS    Menu SubGroup......: MTCE

   Option Description.:
    Customer Maintenance_____

   Command to Process.:
    CALL PGM(AC010M)_____

   Submit, Call or Schedule..........: C   (S, C, T)
   If submit or schedule, Job Name...: _____
   If schedule, Submit Time..........:    :00

   Is this a standard menu option?...: _   (Y=Yes)
   Hold option?......................: _   (Y=Yes)

F3=Exit   F4=Command Prompt   F10=Accept   F11=Delete   F12=Previous
```

You will now be prompted to enter the definition of the menu option.

COLUMN: This entry defines whether the option will display in column 1 or 2 of the menu, when it is displayed to the user.

LINE NUMBER: This entry defines where in the column the option will display when it is displayed to the user. The column and line number combination define the sequence and layout of the menu to the user, and must be unique within the menu definition for any option defined.

MENU OPTION: This is what the user enters in order to perform the option. It can be up to 3 characters long, and must be unique within this menu definition. It can be numeric, alpha or a mixture of both. A special menu option is a 'comment' menu option. See below for an explanation of menu comment lines.

When the menu is displayed to a user the menu option appears in high intensity (white).

To define menu 'comments', you can define options '**1' through '**9' anywhere in your menu details. These will be displayed on the screen, with no executable option beside them. For example:

        Option **1 in Col 1 is "Order Entry Functions"
        Option   1 in Col 1 is "Order Enquiry"

This will display on the menu as:

```
Order Entry Functions
            1       Order Enquiry
```

MENU GROUP/SUB GROUP: This feature allows you to group similar types of menus. One of the facilities available in the operation of the menu driver is the LOKMNUGRP (Lock a Menu Group/Sub Group) command, which can stop users accessing certain functions until the lock is removed. The entries made here determine which menus the LOKMNUGRP command can process.

OPTION DESCRIPTION: This is what the user sees beside the menu option. Up to 70 characters are available for each option, but what the user will see is dependent upon the column start positions. Descriptions will automatically be overlaid in order to fit the columns onto an 80 column screen definition.

COMMAND TO EXECUTE: This is what the menu driver will 'do' when a user takes the relevant menu option.

Function key 4 (prompt) is available to prompt you for command parameters. If you use the '?' prompt function (ie, place a question mark prior to the actual command entered), this will also be transmitted to the user, so command '?WRKJOB' will prompt the menu user to enter parameters for command WRKJOB.

The command you enter here will be tested to ensure it is valid, in two ways:

    a) Using QCMDCHK, the command will be tested for validity
    b) against a table of commands in the program. If it exists on the table it is invalid. As the system is shipped, the only invalid command is RETURN (which has no meaning in a menu driver environment).

SUBMIT, CALL OR SCHEDULE: This tells the Menu Driver what environment to run the option in.

C (Call) the option will be run interactively

S (Submit) the option will be submitted to batch

T (Time Scheduled) the option will be sent to the NUTIL Job Scheduler for processing at the time specified.

H (Hidden Call). This option functions the same as C above, but will not be displayed on the menu. This allows for the use of 'Hidden' options that the user cannot see, but can use if they know about them.

Notes on the creation of Attention menus: An attention menu does not process 'S' or 'T' options. A 'C' will be processed as a Group Job. An 'H' will be processed as a program call.

JOB NAME: For submit or schedule, the name the job will be run as. If an entry is not made then defaults will be used; for Submit, the default is QBATCH. For Schedule, the default is MNUSCH.

SUBMIT TIME: For schedule, this is the time the job will be scheduled to run (24 hour clock).

STANDARD MENU OPTION?: For applications that are developed on one iSeries but installed on many machines, this flag gives you the capability of determining those menu options that were supplied as a standard application option (compared to those that were created at a specific installation of the application).

HOLD OPTION?: This allows you to put a temporary hold on the menu option. If the hold is set to Y, any user attempting to take the menu option will be sent the message 'Menu Option not currently available'.

Function keys available

F4 will prompt you for the command parameters
F11 will delete the existing menu option.

Notes on Submitted and Scheduled Jobs:

Use of the NUTIL Job Scheduler requires the installation of the Navan NUTIL Program Product.

A schedule job will be loaded as a 'Non Standard' job to be run on today's date at the specified time. The text will be picked up from the first 30 characters of the menu option description.

In the case of both submitted and scheduled jobs, the current Local Data Area (*LDA) will be picked up and passed to the submitted job.

If you are running a System/36 procedure as the 'Command to Process', you should ensure the NUMENU version of the STRS36PRC (Start System/36 Procedure) command is used and not that standard OS/400 version. This ensures that the Files Library and Message Member is set correctly before the S/36 procedure is run. The example below is setting the current library to 'SALES' and then running S/36 procedure 'ORDENT':

```
MENU11D2                Work with Menu Options
Change                      OE001

                    Order Entry Menu

   Column Number......: 1     (1, 2)
   Line Number........:   1   (1 - 99)
   Menu Option........: 1
   Menu Group.........: OE    Menu SubGroup......: 001

   Option Description.:
    Order Entry_____

   Command to Process.:
    NUMENUSYS/STRS36PRC PRC(ORDENT) CURLIB(SALES)_____

   Submit, Call or Schedule..........: C   (S, C, T)
   If submit or schedule, Job Name...: _____
   If schedule, Submit Time..........:   :00

   Is this a standard menu option?...: _  (Y=Yes)
   Hold option?......................: _  (Y=Yes)

 F3=Exit    F4=Prompt Command    F11=Delete    F12=Previous
```

Please note that your system must be configured to run the System/36 environment in order to run System/36 procedures.

Working with language text

Taking option 8 from either the "Work with Menus" or "Work with options" selection panel will allow you to work with language text.

The text that the user sees displayed for the menu title and menu option description can be manipulated by a Language Code. So, with many codes you can have multiple versions of the text displayed. The user will see the text relating to the Language Code defined on the User Header control record.

Language text for menu headers is stored in the LNGHDR file

Language text for menu details is stored in the LNGDTL file

Language Text Maintenance - Select

The logic for the maintenance of Header Text and Option text is basically the same; this is the work panel for option text:

```
 MENU13D1                    Work with Menu Options
 Select                        Menu ID: MNUDEV

 Type options, press Enter.
   2=Change   3=Copy   4=Delete   5=Display

            Menu Security System Menu

    Lang Option
 Opt Cde Description

        Define menus for secured users


F3=Exit   F6=Add   F12=Previous   F17=Top   F18=Bottom
```

The first screen will display the text displayed for all language codes. To Change or delete, select the appropriate item on the list. F6 will allow you to define text for a language code not currently listed. Note that the language code must have been previously defined via the "Work with languages" menu option.

MENU20 – Work with Applications

This program allows you to define/maintain MENU Application Identifiers. The information in the file is used by the menu driver to switch application information between menu headers, when the Application Identifier changes.

Application Identifiers are stored in the MNULIB file.

Work with Applications - Select

```
MENU20D1                  Work with Applications
Select
Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display
                                                      Job
  Application                            Application  Accounting
  ID          Description                Available?   Code
  *INITIAL

  *INITIAL    NUMENU Initial Library List    Y            *NOCHG




F3=Exit   F6=Add   F17=Top   F18=Bottom
```

The first screen will display all Application Identifiers currently defined. To Change or delete, select the appropriate identifier on the list. F6 will allow you to create a Application Identifier.

Work with Applications - Process

```
MENU20D2                Work with Applications
Change


Application ID  . . . . :   *INITIAL
Description . . . . . . .   NUMENU Initial Library List

Application Available?  .   Y
Job Accounting Code . . .   *NOCHG
S/36 Files library  . . .   *NONE
S/36 MsgMbr Name  . . . .   *NONE
Initial Program . . . . .

   Seq  Library       Seq  Library       Seq  Library       Seq  Library
     10 NUMENU        110                210                310
     20 QTEMP         120                220                320
     30 QGPL          130                230                330
     40               140                240                340
     50               150                250                350
     60               160                260                360
     70               170                270                370
     80               180                280                380
     90               190                290                390
    100               200                300                400
                                                                More...
 F3=Exit    F10=Accept   F12=Previous
```

You will then be shown a screen allowing you to define Application information. In the case of change, all previous entries will be displayed for you to correct (by typing over the existing entries).

Application ID MAINTENANCE

The entries are:

APPLICATION IDENTIFIER: (Entry allowed in ADD mode only) A meaningful identifier for the library list. The only special value is *INITIAL which, if present, will be used to perform an initial library list replace before the menu driver program is called.

When the menu driver is in use, a library list entry (identified by this Library List ID) on the Menu Header will cause the library list to be replaced, based on the libraries defined on this library lists file.

APPLICATION AVAILABLE?: This flag determines whether users can access this application ID. If set to "N" (no), any menu which uses this application ID will not be available to users of the menu driver.

JOB ACCOUNTING CODE: The accounting code for a user that is accessing this menu. If set to *NOCHG, no change will be made. If an accounting code is entered, a user accessing this menu will have their job changed to this account code.

DESCRIPTION: Some meaningful information to assist you in identifying this Application.

INITIAL PROGRAM TO CALL: Once the user's library list is replaced the program specified here will be called. The purpose of this is to allow you to set up an environment before the user requests any menu option (such as user defined *LDA data, creating work objects in QTEMP etc). If no entry is made here, no initial program call will be made.

LIBRARY 1 thru 250: Up to 250 library names, the first column being libraries 1 thru 10; column 2 is libraries 11 thru 20 and column 3 is libraries 21 thru 25. Page down to add more than 25 libraries. The sequencing number beside the library can be used to alter the position of a library in the library list (in the same way as the IBM EDTLIBL command). To delete a library entry, use the field exit key to remove it from the list. All libraries defined must be valid libraries currently residing on the iSeries.

Libraries NUMENU and QTEMP must be specified in the library list you define.

System/36 Environment variables

S/36 FILES LIBRARY: This is the name of the current S/36 files library for the application. The system 36 environment searches this library for the applications data files. If you specify *NONE, there is no S/36 files library for this application (or the application does not perform S/36 functions).

S/36 MESSAGE MEMBER: This is the name of the message member used to retrieve first-level messages (USER1) for S/36 environment programs and procedures in the application. If you specify *NONE, there is no message member for this application (or the application does not perform S/36 functions).

Application ID DELETION

In the case of delete, you will be shown the library list for confirmation. Press F11 and the library list will then be deleted.

MENU15 - Work with Languages

This program allows you to define/maintain MENU library lists. Language codes are used by the menu driver to allow users to see the menu text in their own language.

Menu Language codes are stored in the MNULNG file.

Work with language codes - Select

```
MENU15D1                Work with Language Codes
Select
Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display

     Lang
Opt  Code    Description
     DEU
     DEU     German
     ENG     English
     ESP     Spanish
     FIN     Finnish
     FRA     French
     ITA     Italian
     NLD     Dutch
     NON     Norwegian
     SVE     Swedish




F3=Exit   F6=Add   F17=Top   F18=Bottom
```

The first screen will display all language codes currently defined. To Change or delete, select the appropriate identifier on the list. F6 will allow you to create a new language code.

USRMNT - User Header Maintenance

This program allows you to define/maintain users to the Menu Driver. In unrestricted mode, this is not necessary.

In restricted mode you may define specific users, or just PUBLIC (the public user profile). In secured mode, all users must be defined on this file if they are to access the Menu Driver.

User Headers are stored in the USRHDR file.

User Header Maintenance - Select

```
USRMNTD1                     Menu User - Maintenance
Select
Type options, press Enter.
 2=Change

                                   Group    Group       Initial   Key
  User ID    User name             Control  User ID     Menu      Style
  *PUBLIC    Public user profile      N                 MAIN      1
  BILL_H     Bill Harrison            N      WAREHOUSE   WHS01     1
  HARRY_J    Harry Johnson            N      WAREHOUSE   WHS01     1
  WAREHOUSE  Warehouse group          Y                 WHS01     1




Position list to:
   *PUBLIC



F3=Exit   F6=Add
```

The first screen displays all of the users currently defined. To change an existing user, type a '2' beside it and press ENTER. To add a new user, press F6.

User Header Maintenance - Maintain

```
 USRMNTD2                   Menu User - Maintenance
 Add

  User ID.................: BILL_H    Department................: WAREHOUSE
  User Name...............: Bill Harrison

  Group controlling user?..: N   Y=This is a grouping user
  Group reference user ID..: WAREHOUSE

  Language code...........: ENG       LTF Language library.......:
  Initial Menu to display..: WHSO1

  Function key style.......: 1    1=iSeries, 2=S/38, 3=Synon
  Default Output Queue:      *USRPRF
  Default Job Description:   *USRPRF
  User notes..............:

  User Defined Data
    1                           5                    9
    2                           6                    10
    3                           7                    11
    4                           8                    12

 F3=Exit    F12=Previous
```

User MAINTENANCE

For maintain, you will then be given a screen allowing you to define the user to the Menu Driver. In the case of changing a previously defined user, all previous entries will be displayed for you to correct (by typing over the existing entries).

The entries are:

USER ID: This is the user profile name that the user accesses the system by. For every user ID entered, other than *PUBLIC, a test will be made to ensure the User ID is a valid user profile on the system.

NAME: For reference purposes only. Enter the user's name.

GROUP CONTROLLING USER: This flag defines this user as a Group Control. A Group control user can be used to provide generic menu authorisations to a group of menu users, instead of having to define each user individually.

GROUP REFERENCE USER ID: This allows you assign the generic menu option authorities from a Group Controlling User to this user, instead of having to specify unique authority.

> Note that a user can be defined as either a Group Controlling user, or as a Group Reference User, but can't be both.

DEPARTMENT: For reference purposes only. Enter the relevant department. The information entered here will appear at the top of the user's menu panel.

INITIAL MENU: If defined, this is the menu that will first be displayed when the menu driver is accessed via the users initial program (either INLPGM or INLPGMR), or via command MENU MENU(*USRDFT). If an entry is made here it will be checked to ensure it is a valid menu.

FUNCTION KEY STYLE: The code entered here will determine which function keys will be used as 'escape' function keys on the menu and attention menu display panels, when accessed by this user. The valid styles and meanings are as follows:

Style Code		Exit from menu driver	Return to previous
1	iSeries style	F3	F12
2	S/38 style	F1	F2
3	Synon style	F15	F3

Note that function key style, relating to the exit function key, may be overridden by the MNUENV environment attributes control data area.

DEFAULT OUTPUT QUEUE: The output queue for printed output for this user. The default is the current value of data area OUTQ (factory set to *USRPRF). If *USRPRF, the outq defined on the user profile is used. An entry made here will be checked to ensure it is a valid output queue name.

DEFAULT JOB DESCRIPTION: The jobd to be used for submitted jobs for this user. The default is the current value of data area BJOBD (factory set to *USRPRF). If *USRPRF, the jobd defined on the user profile is used. An entry made here will be checked to ensure it is a valid job description.

> *Note: If a workstation override is available for a specific workstation that the user signs on to, the outq and jobd on the workstation override will take precedence over the users defaults.*

LANGUAGE CODE: The Menu Text Language code for this user. When a menu is displayed to the user, this code will be used to determine whether text has been defined in the menu for that language. If it has, it will be displayed instead of the base text.

LTF LANGUAGE LIBRARY: Where LTF is in use, this entry defines the Language Library for this user. The Language Library is placed at the top of the user's library list, so that Application Displays are seen in native language.

USER NOTES: For reference purposes only. You may enter any information in this field.

USER DEFINED DATA: Additional fields are available on the USRHDR file for your own use. These fields are not accessed by any of the standard menu driver functions; their purpose is to allow you an area for application specific information you may wish to keep concerning a specific user.

USPR1, 2, 3:	3 fields of 30 Characters (30A)
USPR4, 5:	2 fields of 10 Characters (10A)
USPR6, 7:	2 fields of 6 Characters (6A)
USPR8, 9:	2 fields of 1 Character (1A)
USPR10, 11, 12:	3 fields of 15 digits (15P0)

User DELETION

In the case of delete, you will be given a verification screen. If the detail displayed is the one you wish to delete, press F11. The header for that user will then be deleted. If any menu definitions exist for that user, they will also be deleted automatically.

Grouping user menu authorities

To simplify the control of menu authorisations, you can define one user that specifies the menu option authorities that are to be used by a group of users. To do this you

- Decide which user will be the "Group Controlling User" and enter a "Y" on the user header to signify this.
- Decide which users will be controlled in this group and enter the User ID of the Group Controlling User against each of the users in the group

You then assign specific menu option authorities to the Group Controlling User (in user menu maintenance, see next topic). These authorities are then used for all users in the reference group.

As an example:

User ID	Group Controlling User	Group Reference User ID
WAREHOUSE	Y	
HARRY	N	WAREHOUSE
JOHN	N	WAREHOUSE
SAM	N	WAREHOUSE

User menu authorities are specified for WAREHOUSE user ID. No specific authorities are specified for HARRY, JOHN, or SAM.

In the above case, when any of the 4 users are using the menu driver they will all be authorised to use the menu options authorised to user WAREHOUSE.

USMMNT - User Menu Maintenance

This program allows you to define/maintain user menus to the Menu Driver. In unrestricted mode, this is not necessary. In restricted mode you may define specific user menus, or just PUBLIC (the public user profile). In secured mode, all users must have menu options defined on this file if they are to access them on the Menu Driver.

User Menu details are stored in the USRDTL file.

User Menu Maintenance - Select

```
  USMMNT                  User Menu Maintenance



          Menu ID:           WHS01
          User ID:           *PUBLIC

          Maintenance type: M      Valid types: M- maintain user menu
                                                 D- delete user menu
                                                 C- copy user menu




 Press ENTER to continue     F12=Previous
```

The first screen prompts you for the User ID, and whether you wish to Maintain a user menu, create a new user menu based on an existing definition, or Delete an existing user menu. The default is maintain. In the case of a new user being defined, you are maintaining that users definition, so the appropriate option is 'M'.

If you take the Copy option, you will be prompted for the 'User to copy'. The menu definition for that user will then be copied and used as a base for this user's definition.

User Menu Maintenance - Maintain

```
   USMMNT                   User Menu Maintenance

Maintain Menu WHS01

        for user WAREHOUSE Warehouse group

         Warehouse Operations main menu                          Log
Reqd?       Option Description                                    Rqs ?
 Y  1  Pick list Release Selection                                 Y
 Y  2  Pick Confirmation                                           Y
 Y  3  Delivery Maintenance                                        Y
 Y  4  Package Specification                                       Y
 Y  5  Package Maintenance                                         Y
 Y  6  Shipment Entry                                              Y
 Y  7  Bin Location Maintenance                                    Y
 Y  8  Stocktake                                                   Y
 Y  9  Warehouse Reprints                                          Y
 Y 10  Order Entry Reprints                                        Y
 Y 13  Warehouse work in progress                                  Y
 Y 14  Part Enquiry                                                Y

 Press ENTER to continue   F12=Previous
```

User Menu MAINTENANCE

For maintain, you will then be shown a list of options on the menu requested. In the case of changing a previously defined user, all previous entries will be displayed for you to correct (by typing over the existing entries). The entries are:

REQD?: Whether this option is available to the user. 'Y' will display it and allow the user to access it. 'N' or blank will not display or allow access to the option when the menu is displayed to this user. The default is ' '.

LOG RQS?: Tells the Menu Driver whether or not to write a log record to the request log when the user accesses the menu option. 'Y' will write a log entry (if request logging is switched on), 'N' or blank will not. The default is 'Y'.

User Menu DELETION

In the case of delete, you will be given a verification screen. If the detail displayed is the one you wish to delete, press F11. The menu details for that user will then be deleted.

WKSMNT - Workstation Overrides Maintenance

This program allows you to define/maintain a workstation to the Menu Driver. This function is not necessary, but it is very useful when output for a specific workstation should always come out on a specific printer, no matter who is using the workstation. Where defined for a workstation, this override will take precedence over any other output queue/job description request on the Menu Driver.

Workstation Override details are stored in the WKSOVR file.

Workstation Overrides Maintenance - Select

```
 WKSMNTD1         Workstation Overrides - Maintenance
 Select

  Type options, press Enter.
   2=Change

  Workstation                                    **Overrides**
     ID           Workstation Name          Out Queue    Job Desc

    DSP01         System Console 1          PRT01        *USRPRF
    DSP02         System Console 2          PRT01        *USRPRF

  Position list to:


 F3=Exit    F6=Add
```

The first screen displays all of the workstations currently defined. To change an existing workstation override, type a '2' beside it and press ENTER. To add a new workstation override, press F6.

Workstation Overrides Maintenance - Maintain

```
 WKSMNTD2            Workstation Overrides - Maintenance
 Maintain

         Workstation ID..........: DSP01____
         Workstation Name........: System Console 1_____

         Override Output Queue...: PRT01____
         Override Job Description: *USRPRF__


   F3=Exit    F11=Delete     F12=Return
```

Workstation override MAINTENANCE

For maintain, you will then be given a screen allowing you to define the workstation to the Menu Driver. In the case of changing a previously defined workstation, all previous entries will be displayed for you to correct (by typing over the existing entries).

The entries are:

WORKSTATION ID: This is the device description name as defined to your system. A check will be made to ensure the workstation ID is a valid device description on the system.

DESCRIPTION: For reference purposes only. Enter the relevant workstation description.

OVERRIDE OUTPUT QUEUE: The output queue for printed output for this workstation. The default is the current value of data area OUTQ (factory set to *USRPRF). If *USRPRF, the outq defined on the users User Profile is used. An entry made here will be checked to ensure it is a valid output queue.

OVERRIDE JOB DESCRIPTION: The jobd to be used for jobs submitted to batch from this workstation. The default is the current value of data area BJOBD (factory set to *USRPRF). If *USRPRF, the jobd defined on the users User Profile is used. An entry made here will be checked to ensure it is a valid job description.

Workstation override DELETION

In the case of delete, you will be given a verification screen. If the detail displayed is the one you wish to delete, press F11. The override for that workstation will then be deleted.

HLDMNT - Menu options lock maintenance

This program allows you to place a temporary 'lock' on a menu option. If a hold is placed on a menu option, that option will not be available to a user until the hold is released.

Menu Option locks are stored in the MNUDTL file.

Menu Option lock Maintenance - Select

```
 HLDMNT                      Menu Development
                      Menu option lock maintenance

    System: ---------Test System----------

             Menu ID:          MNUDEV


   Press ENTER to continue  F12= Previous
```

The first screen will prompt you for the menu ID. A valid menu ID must be entered (ie., the menu must be defined to the Menu Driver system).

Menu Option lock Maintenance - Select

```
   HLDMNT                      Menu Development
                        Menu option lock maintenance

                       ---------Test System----------           F12= Previous

 Maintain locks on menu MNUDEV

                             Main Menu - Menu development

 Hold?    Option Description

   _   HLP Edit HELP screen text
   _   1   Menu Header Maintenance
   Y   13  System Title Maintenance
   _   14  Company name maintenance
   Y   15  Change request logging switch
   _   2   Menu Detail Maintenance
   _   20  Print the Menu requests log
   _   21  Print Menu Authorities Lists
   Y   22  List Undefined Authorities
   Y   23  System lock maintenance
   Y   24  Menu Security lock maintenance
   _   3   Define Users to Menu system
```

The screen will list all of the options as defined on the menu. By placing a 'Y' beside any option, you are locking the menu option to prevent use. If a user attempts to take an option which has a lock on it, a message will be displayed: *'Menu option not currently available'*.

To release a previously held option, change the 'Y' to a ' ' (blank out the 'Y').

See also the definition of command CHGOPTLOK, which allows lock/release of menu options from a command (useful in CL programs).

SYSMNT - System ID Maintenance

This program allows the user to change the system identification.

The System ID is stored in data area SYSTEM.

System ID Maintenance - Maintain

```
 SYSMNT                    System ID Maintenance



         System ID:    ---------Test System----------




    F12= Previous
```

The screen will display the existing identifier, as defined in data area SYSTEM. If you enter a new identifier, the screen will be returned for verification. If acceptable, press Enter again and the data area will be updated.

Should you wish to use this data area within your own programs, the following code will access the system identifier:

```
  *System ID
 ISYSTEM    E DSSYSTEM


  *
  * ...Get system ID...
 C          *NAMVAR   DEFN          SYSTEM
```

The name will be retrieved into program variable SYSID. The code uses the external definition of the data area.

CMPMNT Company Name Maintenance

This program allows the user to change the company name.

The Company ID is stored in data area COMPNY.

Company ID Maintenance - Maintain

```
CMPMNT                        Company Maintenance


      Company Name: ------------ Test Company --------------



   F12= Previous
```

The screen will display the existing name, as defined in data area COMPNY. If you enter a new name, the screen will be returned for verification. If acceptable, press Enter again and the data area will be updated.

Should you wish to use this data area within your own programs, the following code will access the company name:

```
   * Company name
  ICOMPNY     E DSCOMPNY


   *
   * ... Get Company Name...
  C           *NAMVAR   DEFN          COMPNY
```

The name will be retrieved into program variable CONAME. The code uses the external definition of the data area.

LOGMNT - Log Requests Switch Maintenance

This program allows the user to switch request logging on or off.

The Logging Control switch is stored in data area LOGCTL.

Logging Control switch Maintenance - Maintain

```
LOGMNT                    Log requests maintenance


   The entry here will determine whether the menu driver will log menu
   requests to the menu log file.


        Log menu requests?: Y      Y- Requests will be logged
                                   N- Requests will not be logged

 F12= Previous
```

When the program is called, the current status of the switch will be shown. Correct it if necessary, verify the correction and press enter to update the switch.

    If Y, request logging is enabled
    If N, request logging is disabled

The switch can be set/reset whenever. So you can choose to log requests during certain times of the day, certain days, etc.

The requests log can be displayed for the current user by using the DSPLOG program (which is also F10 on the menu driver) or a printed form is available from the LSTUSRLOG command.

LOKMNT - System Lock Maintenance

This program allows the user to stop all access to the Menu Driver system. Once locked, it can only be unlocked from the CHGMNULOK command, or by CALLing this program from a command entry screen.

The System Lock switch is stored in data area SYSLCK.

System Lock switch Maintenance - Maintain

```
LOKMNT                 System lock maintenance


    The entry here will determine whether the menu driver is currently
    available for access.

           Is the system available for access?: *YES    *YES or *NO

           Last maintenance by:  QPGMR
                            on:  15/12/10
                            at:  11:27:59

 F12= Previous
```

When the program is called, the current status of the switch will be shown. Correct it if necessary, verify the correction and press ENTER to set the switch.

> If *YES, the system is available for access
> If *NO, the system is not available. No new users will be able to log on to the Menu Driver, and any users currently on the system will be logged off when they return to menu.

The switch can be set/reset whenever. So you can use the menu lock to get users out of the system at restricted times, then reset later to allow them back on.

SECMNT - Menu Security Lock Maintenance

This program allows the user to secure the Menu Driver system to a 'restricted' or 'secured' state. Once locked, users will only be allowed to performed options defined to them, either by *PUBLIC access (restricted state) or by specific user access (secured state).

The Menu Security Lock switch is stored in data area SECURE.

Menu Security Lock switch Maintenance - Maintain

```
SECMNT                 Menu Security Lock Maintenance


    The entry here will determine whether the menu driver is secured.

          Is the menu system secured?:  *NO      *YES or *NO

          Last maintenance by:  QPGMR
                          on:  15/12/10
                          at:  11:25:27


    F12= Previous
```

When the program is called, the current status of the switch will be shown. Correct it if necessary, verify the correction and press ENTER to set the switch.

> If *NO, the system is not secured, and any user able to get to the menu driver will be able to perform every option defined.

> If *YES, the Menu Driver is secured. If this is the case, one of the following must be available for a user to access the menu driver:

- A *PUBLIC user defined (restricted state), which will allow any user to perform any function that user ID *PUBLIC has available to it.

- All users defined individually (secured state), which will allow a user to only perform those options that have been specifically granted to them.

To reset the lock if it was set unintentionally, you can call this program from a command entry screen.

NM9000 – Display NUMENU Installation Attributes

This program allows the user to display the attributes for the installed version of NUMENU. This information will assist Navan in problem resolution, should you require assistance.

```
NM9000D1                 NUMENU Installation Attributes
Display


        System name..............:  SYSNAME
         Serial number...........:   12A456B
         Model number............:    520
         Processor feature.......:  7450
         OS/400 Release level....:  V5R3M0

        NUMENU Version/Release..:   V7R4M6
         Release Date............:  2010/07/15






F3=Exit
```

The program can be accessed from menu MNUDEV, option 26.

MNUDEV Option 26 - Maintain Help Text for menu driver

Menu driver help text is kept as text source members in file MNU_HLPTXT. To maintain them, just use the IBM WRKMBRPDM command. If you take the 26 option from menu MNUDEV, it will prompt the WRKMBRPDM command at the member list screen:

Menu Help Text - The WRKMBRPDM document list

```
                      Work with Members Using PDM

 File  . . . . . .    MNU_HLPTXT
   Library . . . .      NUMENU                  Position to  . . . . .

 Type options, press Enter.
  2=Edit        3=Copy  4=Delete 5=Display       6=Print      7=Rename
  8=Display description  9=Save  13=Change text  14=Compile  15=Create module..

 Opt  Member     Type        Text
      CMPMNT     HELP        Company Name Maintenance
      DSPLOG     HELP        Display User Requests Log
      DSPMFM     HELP        Display menu format
      DTLMNTD1   HELP        Menu Details Maintenance - Select
      DTLMN1C1   HELP        Menu Details Maintenance - Select Option
      DTLMN1D2   HELP        Menu Details Maintenance - Process
      HDRMNTC1   HELP        Menu Header Maintenance - Select
      HDRMNTD2   HELP        Menu Header Maintenance - Process
                                                                 More...
 Parameters or command
 ===>
 F3=Exit        F4=Prompt          F5=Refresh          F6=Create
 F9=Retrieve    F10=Command entry  F23=More options    F24=More keys
```

Just use option 2 to alter the displayed help text for the relevant NUMENU program.

@MNUDFU - Define Menu User API

This is a programming interface that allows your user programs to define a user to the menu driver, by using a CALL to this API program. It is functionally equivalent to using the USRMNT program (option 3 of menu MNUDEV) and can allow you to add and change user details. If you wish to delete a user, you must use the USRMNT program.

```
The parameter list for calling the program is as follows:

     Parameter    Size     Description

     @USER         10A     User Profile
     @NAME         30A     User name
     @GUSER        10A     Group Controlling User Profile
     @DEPT         10A     Department name
     @INMNU        10A     Initial menu to call
     @FNKST         1A     Function key style
     @OUTQ         10A     Default output queue
     @JOBD         10A     Default job description
     @NOTES        30A     User notes
     @SPR1         30A     User defined field 1
     @SPR2         30A     User defined field 2
     @SPR3         30A     User defined field 3
     @SPR4         30A     User defined field 4
     @DFNRQ         1A     Define request (C=Change, D=Delete)
     @ERRCD         1A     Error code
```

Notes

For detailed notes, refer to the DFNMNUUSR and DLTMNUUSR command descriptions.

@USER - this must be a valid user profile on the iSeries. If a record already exists of this user, the program will switch to *CHANGE mode, otherwise it will be set to *ADD mode.

@FNKST - either '1'=iSeries, '2'=S/38 or '3'=Synon style.

@DFNRQ - Normally this would be set to 'C' when adding or changing a user. When it is set to 'D', the specified user will be deleted.

@ERRCD - If an error is detected by the API program while processing the data, the @ERRCD parameter will be returned as '1'. If no errors were encountered when processing the user, it will be returned as '0'.

Commands

DFNMNUUSR – Define a menu user

This command allows you to define a user to the menu driver, from an iSeries command entry line. It is functionally equivalent to using the USRMNT program (option 3 of menu MNUDEV) and can allow you to add and change user details. If you wish to delete a user, you must use the DLTMNUUSR command.

The command calls the @MNUDFU API program.

```
                         Define Menu User (DFNMNUUSR)

 Type choices, press Enter.

 User profile . . . . . . . . . . USRPRF           _____
 User name  . . . . . . . . . . . NAME             *SAME_____
 Group user profile . . . . . . . GRPUSR           *NONE
 Department name  . . . . . . . . DEPARTMENT        *SAME_____
 Initial menu to display  . . . . INLMNU            *SAME_____
 Function key style . . . . . . . KEYSTYLE          *SAME_____
 Default output queue . . . . . . OUTQ              *SAME_____
 Default job description  . . . . JOBD              *SAME_____
```

Parameter definitions:

USRPRF: Enter the user profile to define. This must be a valid iSeries user profile. Other values are

> *CURRENT (definition is for the user requesting the command) and
> *PUBLIC (define the general access user).

If the user is not yet known to the menu driver, the program mode is automatically set to *ADD.
If the user is already defined to the menu driver, the program mode is set to *CHANGE.

NAME: For references purposes only. Enter the users name.

GRPUSR: This is the user ID of Group Controlling User for this user. The Group Controlling User is used to determine the menu option authorities for this user.

DEPARTMENT: For reference purposes only. Enter the relevant department. The information entered here is displayed at the top left of the menu panel when the user is accessing the menu panel.

INITIAL MENU: If defined, this is the menu that will first be displayed when the menu driver is accessed via the users initial program (either INLPGM or INLPGMR), or via command MENU MENU(*USRDFT). If an entry is made here it will be checked to ensure it is a valid menu.

FUNCTION KEY STYLE: The code entered here will determine which function keys will be used as 'escape' function keys on the menu and attention menu display panels, when accessed by this user. The valid styles and meanings are as follows:

```
                         Exit from     Cancel/Return
    Style                menu driver   to previous


    *AS400   iSeries style    F3             F12
    *S38     S/38 style       F1             F2
    *SYNON   Synon style      F15            F3
```

DEFAULT OUTPUT QUEUE: The output queue for printed output for this user. The default is *USRPRF, which means the outq defined on the user profile is used. An entry made here will be checked to ensure it is a valid output queue name.

DEFAULT JOB DESCRIPTION: The jobd to be used for submitted jobs for this user. The default is *USRPRF, which means the jobd defined on the user profile is used. An entry made here will be checked to ensure it is a valid job description.

ADDITIONAL PARAMETERS: By pressing F10, you can also access the 'User Notes' and four 'User Defined Data' fields. These are additional text data fields that can be used for storing you own information about the user. These additional data fields are not used by the menu driver.

DLTMNUUSR - Delete a menu user

This command allows you to delete a user from the menu driver, also from an iSeries command entry line.

The user header record will be deleted as well as all menu options that have been previously defined for the user.

The command calls the @MNUDFU API program.

```
                           Delete Menu User (DLTMNUUSR)

  Type choices, press Enter.

  User profile . . . . . . . . . . USRPRF      _____

```

Parameter definitions

USRPRF: Enter the user profile to delete. This must be a valid iSeries user profile. Other values are

> *CURRENT (definition is for the user requesting the command) and
> *PUBLIC (define the general access user).

CPYUSROPT – Copy a user menu definition

This command allows you to define the menu options for a menu driver user, based on the options already defined for another menu user. It is similar to the USMMNT program (Menu option 4 of MNUDEV), but with the added advantage that it can copy *ALL menu definitions to the new user. This is extremely valuable when first setting up a new user.

```
                    Copy User Menu Options (CPYUSROPT)

 Type choices, press Enter.

 From User ID . . . . . . . . . . FROMUSER      _____
 To User ID . . . . . . . . . . . TOUSER        _____
 Menu to copy . . . . . . . . . . MENUID        *ALL_____
```

Parameter definitions

FROMUSER: Enter the name of the user to copy from. The user must already be defined to the Menu Driver.

TOUSER: Enter the name of the user to copy the menu definition to. The user must already be defined to the Menu Driver.

MENUID: Enter the menu ID you require the options copied for.
If you specify *ALL, the entire menu option definition of the 'From' user will be copied to the 'To' user.

If this menu ID is already defined for the 'To' user, the existing definition will be replaced.

CHGMNUOPT - Change a menu option

This command allows you to either alter the characteristics of a menu option, or move a menu option to another menu, or do both at the same time. If the menu option is moved, the user authorities to the menu option are moved at the same time.

```
                    Change Menu Option (CHGMNUOPT)

 Type choices, press Enter.

  Menu ID  . . . . . . . . . . . . MENU          _____
  Menu Option  . . . . . . . . . . MENUOPT       ___
  New Menu ID  . . . . . . . . . . NEWMENU       *SAME
  New Menu Option  . . . . . . . . NEWMENUOPT    *SAME
  New description  . . . . . . . . NEWDESC       *SAME_____
       _____
  New command to call  . . . . . . NEWCMD        *SAME_____
       _____
  New processing method  . . . . . NEWSBMCL      *SAME
  New menu line number . . . . . . NEWLINE       *SAME
  New menu column  . . . . . . . . NEWCOLUMN     *SAME
  New job name . . . . . . . . . . NEWJOB        *SAME_____
  New schedule submit time . . . . NEWSBMTM      *SAME
```

Parameter definitions

MENU; MENUOPT: Enter the name of the existing menu option.

NEWMENU; NEWMENUOPT: If you are moving the menu option, enter the target location. This new menu option must not yet exist in the menu driver. If you leave both entries as *SAME, then you are just changing the attributes of the existing menu option (user authorities will not be affected).

NEWDESC: Enter the new description to display to the menu user.

NEWCMD: Enter the new command to process.

NEWSBMCL: Enter the new processing method; either *CALL, *SUBMIT or *SCHEDULE.

NEWLINE/NEWCOL: Enter the new line and column number to display the menu option on.

NEWJOB: For *SUBMIT or *SCHEDULE options, enter the name of the job that will be submitted.

NEWSBMTM: For *SCHEDULE options, enter the time to schedule the job for processing via Scheduler (24 hour clock).

MNUPRT - Print menu information

This command is a facility to allow you to document your menus once they are defined. It can list the details of commands that are processed when each option is requested by the user. It can optionally print what the screen display will look like to the user.

```
                    Print Menu Display (MNUPRT) Prompt

 Type choices, press Enter:

Menu to print  . . . . . . . . . MENU            *ALL
Listing type . . . . . . . . . . TYPE            *DETAILS
Print command options? . . . . . OPTIONS         *NO
Menu option sequence . . . . . . SEQUENCE        *OPTION
```

Parameter definitions

MENU: Enter the Menu ID, or *ALL to print all menus defined.

TYPE: The type of listing to print, either *DETAILS (menu option text and command information or *FORMAT (menu display layouts)

OPTIONS: For listing type *DETAILS, if you want to print the commands behind the options, enter *YES. If not, you can reduce the size of the resulting printout by entering *NO.

SEQUENCE: For listing type *DETAILS, you can choose to print the report in either *OPTION (menu option) sequence, or *LINE (column/line) sequence.

LSTUSRLOG - List user requests log

This command allows you to print the user requests log, and optionally reset (remove) entries once they are printed.

```
           List User Requests Log (LSTUSRLOG) Prompt

 Type choices, press Enter:

  User ID                        USER            *ALL
  From Date                      FROMDATE        *TODAY
  To Date                        TODATE          *FROMDATE
  Remove detail after print?     RESET           *NO
```

Parameter definitions

USER ID: If you only want to list a specific user's requests, enter the User ID. *ALL will print requests for all users.

FROMDATE/TODATE: Allows you to define the limits of the print. The defaults are FROMDATE(*TODAY) TODATE(*FROMDATE), which will print only today's log.

RESET: Whether to delete the log entries as they are printed. *YES will delete, *NO will not.

CHGMNULOK - Change Menu Lock Status

This command performs a function similar to the LOKMNT program.

> If *OFF, the system is available for access
>
> If *ON, the system is not available. No new users will be able to log on to the Menu Driver, and any users currently on the system will be logged off when they return to menu.

```
            Change Menu Lock Status (CHGMNULOK) Prompt

 Type choices, press Enter:

   Lock Status                      STATUS        *OFF
```

The switch can be set/reset whenever. So you can use the menu lock to get people off the system at restricted times, then reset later to allow them back on.

CHGOPTLOK - Change Menu Option Lock Status

This command performs a function similar to the HLDMNT program, but where the program works on an entire menu at a time, this command works on a specific option on a menu.

It is useful for stopping access to an option whilst dedicated functions are being run. For example, Item master maintenance may not allow order entry to be running, so the Item Maintenance CL program could set a hold at the start of the program, then release it at end of program.

```
           Change Menu Option Lock Status (CHGOPTLOK) Prompt

 Type choices, press Enter:

   Menu ID                          MENU
   Menu Option Number               MENUOPT
   Lock Status                      STATUS        *OFF
```

Parameter definitions

MENU: The menu ID of the requested menu

MENUOPT: The menu option that is to be held/released on the requested menu

STATUS: *ON will hold the option; *OFF will release it.

Menu options held via the HLDMNT program may be released using this command, and vice versa.

LSTMNUAUT - List Menu Authorities

This command will provide a printout showing what users are authorised to what menu options, where security has been defined.

```
          List Menu Authorities (LSTMNUAUT) Prompt

Type choices, press Enter:

  User ID                      USER          _____
  Menu ID                      MENU          *ALL
  Report Sequence:             RPTSEQ        *MENU
```

Parameter definitions

USER: The user ID for which authorities are to be printed. May be *ALL for all users.

MENU: The menu ID of the requested menu. May be *ALL for all menus.

RPTSEQ: The sequence the report is to be printed in, either

*MENU, which will print in menu sequence (menu ID, Menu option, then a list of users authorised to the option), or

*USER sequence (User ID, Menu ID then authorised options on the menu).

SETMNUDLY - Set Menu Timer Delay

The menu driver screen has a 'timeout' capability. This means that if the menu screen has been left unused for the time specified via this command, the menu driver will automatically terminate (timeout). This is great for those users that leave the menu up, then go to lunch.

The command can only be performed when no users are accessing the menu driver.

```
          Set Menu Timer Delay (SETMNUDLY) Prompt

 Type choices, press Enter:

   Menu time delay (in seconds)     DELAY      P    300__
```

Parameter definitions

DELAY: This is the timeout delay. After this time, if the menu has not been used the menu driver will automatically terminate. The default is 300 seconds (5 minutes). If you do not wish to use this function, you may specify *NOMAX.

This delay will only work on the Menu Driver panel, so if a user currently has an Order Entry screen up the delay is not considered. The iSeries has better features to control this situation, by the setting of two OS/400 system values:

QDSCJOBITV: This is the time limit that the system will use to disconnect a job that has not been active within the time limit specified.

QINACTITV: This is a time interval that the system will use to 'do something' if the job remains inactive for the specified time interval. The default action is to end the job.

For further information, refer to the appropriate iSeries reference manual.

Description of main system objects

The following lists define the main objects in the NUMENU Menu Driver system. Module programs whose names start with an @ character (or the equivalent character for keyboard/language sets other than English) are NUTIL system modules, and are not mentioned in this document.

Files

MNUHDR *Menu Headers File*
This is the menu 'titles' file. Each menu created must have a header which defines the menu to the system.

MNUDTL *Menu Details File*
This is the menu 'options' file. Each menu created must have options which perform functions within the application. This file contains the option descriptions, but not the user accessibility to those options.

MNULIB *Menu Library Lists File*
This file contains any library lists defined. A pointer on the menu header is used to access this file, in order to perform a Library List Replace before the menu is displayed.

GRPLOK *Menu Group Locks*
This file contains any current Menu Groups/Sub Groups currently locked. If an entry exists in this file for a Menu Group or Sub Group, no user access will be allowed to that Group/Sub Group.

Group locks are set and reset via the LOKMNUGRP command.

USRHDR *User Headers File*
This file defines users to the application. Each user must have a user header record, which defines the users job environment (output queue, batch job description)

In restricted or secured mode, all users must be defined on this file, if Menu Driver access is to be expected.

USRDTL *User Details File*
This file defines what menu options specific users are allowed to perform, as well as whether to log requests for specific options.

In secured mode, every user will have options defined in this file as to what options can be performed on what menus.

USRLOG *User Menu Requests Log File*
If request logging is switched on, this file keeps a history of menu requests that have been performed.

It is important to note that if logging is switched on, every request by a menu user will create a record in this file. There is no facility included in the menu driver to clear this file and you will need to create your own procedures to keep this file down to a manageable size. It is suggested that the CLNPFM (Cleanse physical file member) command, which is supplied in the NUTIL program library could be used to remove records older than a specified date.

WKSOVR *Workstation Overrides File*
This file stores any override Output Queues or Job Descriptions that are used when a specific workstation is used by any user.

MNUMSGS *Menu Error Messages File*
This file contains all error messages that are used by the Menu Driver program.

Data Areas

All data areas within the system are externally described.

SYSLCK *System Signon Lock*
This data area is used to determine whether the menu driver can be accessed. This determines whether users are allowed to access the system. If *NO, users are 'logged off', thus providing a system lock.

Once set to *NO, the only way to reset the menu driver is through the use of the CHGMNULOK command.

SECURE *Menu Security Lock*
This data area is used to determine whether the system is in a restricted or secured state.

BJOBD *Default batch job description*
This is the name of the default job description that will be used to submit jobs with, if no other job description is defined for the user within the menu driver. The shipped value in the data area is '*USRPRF' (use the job description defined on the user profile for this user).

OUTQ *Default output queue*
This is the name of the default output queue to send spooled output to, if no other output queue is defined for the user within the menu driver. The shipped value in the data area is '*USRPRF' (use the output queue defined on the user profile for this user).

COMPNY *Company name*
This is the name of the company used on menus and menu related programs. The shipped value in the data area is 'Test Company'.

LOGCTL *Request logging control*
This is a switch value that determines whether request logging is to be used. If 'Y' then request logging will be available. If 'N' it will not. Logging will only occur if the switch value is 'Y' and the menu option 'log request' switch is 'Y'.

SYSTEM *System (application) name*
This is the name of the application (e.g. Order Entry, General Ledger etc) used by menu related programs. The shipped value in the data area is 'Test System'.

LDA *Local Data Area*
The LDA is used by the system to retain current job information, user workstation ID etc. It is also used to pass parameters to jobs submitted for batch processing. In an attempt to ensure no previous usage of the LDA is overwritten, the Menu Driver's use of the LDA starts in position 701.

GDA *Group Jobs Local Data Area*
The GDA is used by the system to pass current job information to the Attention key handler. In an attempt to ensure no previous usage of the GDA is overwritten, the Menu Driver's use of the GDA starts in position 248.

The data areas COMPNY and SYSTEM could also be used within the development of the user application, to allow the printing of company name and application name on reports and screens.

Programs - CLP

INLPGM *Initial program to call (local users)*
This program is the one that will be called by 'local' user profiles signing on to an application. It may be necessary to tailor this program for a specific application.

INLPGMR *Initial program to call (remote users)*
This program is the one that will be called by 'local' user profiles signing on to an application. It may be necessary to tailor this program for a specific application.

MENU   *Menu CL Driver Program*
This program is processed by the MENU command and sets up the menu environment and calls the Menu Driver program.

MNUERR *Error Message Handler - Menu messages*
This program passes any error messages back to the Menu Driver program message queue. This may also be used by your application programs to advise the menu user of error conditions.

ATNERR *Error Message Handler - Attention Menu messages*
This program passes any error messages back to the Attention Menu Driver program message queue. This may also be used by your application programs to advise the menu user of error conditions.

MNUCALL *Call a menu option*
This program calls a menu option.

MNUSBTM *Scheduled job submit program*
This program submits a menu option for time schedule processing by SCHEDULER, where installed.

MNUSBMT *Batch job submit program*
This program submits a menu option for batch processing.

MNUSRCV *Batch job receiver program*
This program receives a batch job submission, creates the user environment and runs the menu option.

MNUTFRV *Process an Attention Menu Group Job*
This program process attention menu functions.

MNUTFR *Transfer to an Attention Menu group job*
This program handles the transfer between existing group jobs.

MNUCLBL *Check Library List*
This program checks a library list for validity.

MNUCLV *Check Library List entry*
This program checks a specific library entry in a library list for validity.

MNURLBL *Replace Library List*
This program is used to set the library list for a specific menu and, optionally, to call an initial program for the menu.

Programs - RPG

MENU1   *Menu Driver Program (local users)*
This is the main Driver program for local users of the menu facility. It must not be called directly, but via the MENU command (USRTYPE *LOCAL) or via the INLPGM user initial program.

MNURMT   *Menu Driver Program (remote users)*
This is the main Driver program for remote users of the menu facility. It must not be called directly, but via the MENU command (USRTYPE *REMOTE) or via the INLPGMR user initial program. The program is similar in looks to the standard MENU1 menu program, but has been optimised for use via a remote (communications line) user.

MNUATN   *Menu Attention Key Driver Program*
This is the main Driver program for the attention key menu.

MNUATNOPN   *Menu Attention Key Open Program*
This program sets up the attention key display window prior to use.

MNUCLC   *Menu 'popup' Calculator*
This program provides the user with a simple calculator.

MNUCLD   *Menu 'popup' Calendar*
This program provides the user with a calendar.

LOKMNT   *Menu Signon Lock Maintenance*
This program allows the user to update the Menu Signon lock data area.

SECMNT   *Menu Security Lock Maintenance*
This program allows the user to update the Menu Security lock data area.

CMPMNT   *Company Name Maintenance*
This program allows the user to change the company name.

SYSMNT   *System Name Maintenance*
This program allows the user to change the system (application) name.

LOGMNT   *Request Logging Switch Maintenance*
This program allows the user to change the value of the request logging switch.

HDRMNT   *Menu Headers Maintenance*
This program allows the user to add, change or delete menu headers (titles)

LBLMNT   *Library Lists Maintenance*
This program allows the user to add, change or delete menu library lists.

DTLMNT   *Menu Details Maintenance   - Select*
DTLMN1   *- Process*
These programs allow the user to add, change or delete standard menu options.

HLDMNT   *Menu option hold Maintenance*
This program allows the user to place or release a hold on menu options.

USRMNT   *User Maintenance*
This program allows the user to add, change or delete application users.

USMMNT *User Menu Maintenance*
This program allows the user to defined menu options for specific users. This is optional when the menu driver is in 'restricted' state and mandatory when the menu driver is in a 'secured' state.

LOKMNT *System Lock Maintenance*
This program allows a user to specify whether the system is available for user access.

LOGRPT *User Requests Log Report*
This program prints the contents of the Log Request File and clears the file as details are reported.

MNUPRT *Menu Layouts Print Program*
This program prints menu layouts as requested.

MNUSTK *Menu command stack processor*
This program controls the processing of the F9=Retrieve function on the menu driver main panel.

Commands

MENU   *Direct Menu Request*
Allows a user already signed on to the iSeries to access the menu driver. It may also be used as a menu option.

CHGMNULOK *Change the status of the menu signon lock*
Allows a user or a program to set/remove the menu driver signon lock.

CHGOPTLOK *Change the status of a menu option lock*
Allows a user or a program to set/remove a lock on a specific menu option.

LOKMNUGRP *Lock/Unlock a menu Group/Sub Group*
Allows a user or a program to set/remove a lock on a specific group of menu options.

RTVGRPLOK *Retrieve the lock status of menu Group/Sub Group*
Allows a program to determine the current lock status of a menu Group/Sub Group.

LSTMNUAUT *List Menu Authorities*
This command will print a list showing which users are allowed to access which menu options.

LSTUSRLOG *List the User Requests log*
This command will print a list of all options processed by the menu driver (where logging is active).

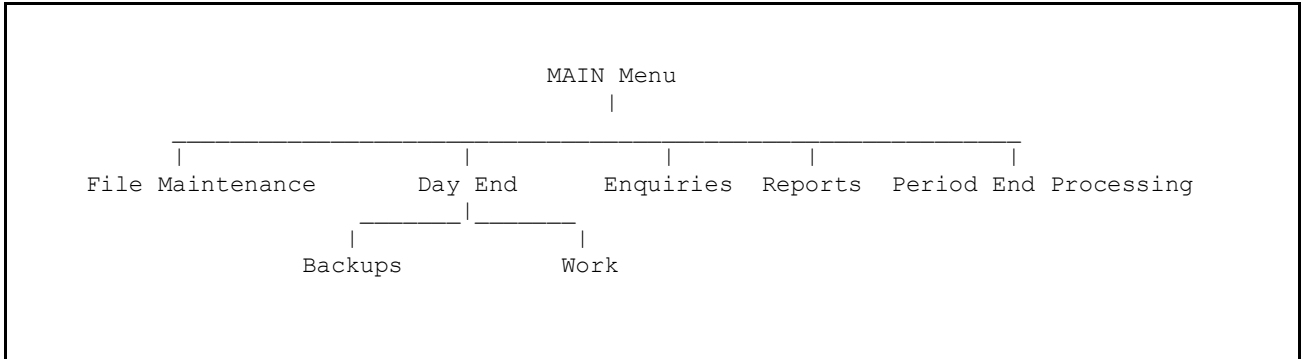SETMNUDLY *Set the menu timer delay*
Changes the delay time for the menu panel. This command can only be processed when no users are accessing the menu driver.

MNUPRT *Menu Layouts Print*
This allows the user to print menu layouts, with the related commands as an option.

Setting up a menu structure

A menu structure usually takes the following approach:

```
                        MAIN Menu
                            |
        _____
        |                 |              |           |             |
   File Maintenance     Day End      Enquiries    Reports   Period End Processing
                     _____|_____
                     |               |
                  Backups          Work
```

The same approach may be used in a menu driver system. The only real difference is the commands used to pass between menus.

In a CL approach, the first menu would be CALLed, which would then CALL the sub menus. Each sub menu would then RETURN to previous menu.

A Menu Driver does not use the OS/400 invocation stack approach. Menus are directed by the MENU command (similar to a CALL function). So the menu MAIN would have an option that used the command MENU ENQUIRY to get to the enquiries menu, rather than a CALL ENQUIRY. This MENU command simply reformats the screen, so that the user sees the new menu options.

Similarly there is no RETURN command within the menu driver. To return to previous menu, the user presses F12. The menu driver has a 'menu tracking' function (in effect, its own invocation stack) that remembers all MENU requests directed. By using F12 the Menu Driver simply tracks back one menu on the stack.

To exit the Menu driver completely, the user may press F3 to exit, or F24 to sign off from the system.

NUMENU Appendix

Modifying NUMENU

The source code for NUMENU is not supplied within the FREEWARE product; however for a modest fee the source code will be provided to you should you wish to make any changes to the function of the product to suit your own requirements. Information on obtaining the source code can be found at the Navan website.

Installing NUMENU objects in another library

While it is possible to install the Menu Driver in a library other that NUMENU, we do not recommend it. This is mainly because we offer no guarantee that the library name isn't implicitly defined within a program. However, please be assured that we have no design intention or directive to do this.

Therefore, *with reservations*, we say that the Menu Driver can be installed in a library other than NUMENU. The only pre-requisites for this should be as follows:

1) You need to alter the product library name on the menu driver command:

        CHGCMD new-library/MENU PRDLIB(new-library)

        where new-library is the name of the library you have installed the menu driver objects in

2) You should check all library lists defined in the Library Lists control file MNULIB, so ensure none reference the NUMENU library name (and use your library name instead).

Menu driver reports

As supplied, all Menu Driver printed output will be to a page size of 66 lines, with page overflow occurring at line 60.

Should you wish to alter this to conform to a different standard you should use the CHGPRTF FILE(NUMENU/*ALL) command, specifying your own definitions as required.

Object ownership

Unless there are special processing considerations, objects in NUMENU are owned by QPGMR and are freely accessible to all users on the system (all users have free public access). Where a command performs an operation that is not normally allowable by a 'low' authority user, the program will adopt sufficient authority in order to ensure the function works correctly. All NUMENU command objects are set to ALWLMTUSR(*NO), so that limited capability users can not request them from the command line on a menu.

Using NUMENU in a System/36 environment

If you are running System/36 environment OCL procedures via the menu driver, there is an additional installation requirement that you should be aware of.

The standard IBM STRS36PRC command uses a special library list when processing a procedure, namely

Current library
#LIBRARY
User library list

We have included a special version of the STRS36PRC command with NUMENU that will allow you to make this a bit more flexible. You should restore the NUMENUSYS library (stored in savefile NUMENU/NUMENUSYS) and then put that library in the user portion of the user's library list (above NUMENU).

This will enable the S/36 Files library and message member information (that is stored on the current menu library list) to be used when processing the procedure specified. Refer to the section 'LBLMNT - Library Lists Maintenance' earlier in this manual on how the S/36 processing information is assigned at menu header level.

Support Contacts

This program product is supplied as Freeware and, as such, no warranty is implied or expressed. The following contacts (preferably done via email) are provided to assist you in resolving initial installation difficulties.

We are interested in receiving your feedback and comments on the product, which can be sent to either of the addresses mentioned below.

Ideas, additions and enhancements to the product are always welcomed. If you have developed functions that you think may benefit other installations we would be happy to host them for distribution at our website - provided the function (both source code and object code) is released as freeware by the author. But fear not, authoring credit will be given where credit is due!

Europe, Middle East and Africa	*Rest of the World*
Navan (UK) Limited	Navan Australia Pty Ltd
The Courtyard	22 Torrington Road
Brooklands Broughton	Maroubra
Milton Keynes MK16 0HU	NSW 2035
England	Australia
Email: helpdesk@ navan.co.uk	Email: helpdesk@navan.com.au

The latest version of this product, can always be downloaded from the Navan Internet Website, which can be found at

http://www.navan.co.uk