Compute (Bridgend) Ltd

CBLi Reference and User Guide

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About CBL Interactive (CBLi)

System Environment

CBL Interactive (CBLi) is a full screen 3270 application which runs in the following environments:

- Under TSO/E in MVS, OS/390 and z/OS.
- Under ISPF in MVS, OS/390 and z/OS.
- As a VTAM application in MVS, OS/390 and z/OS. (See Disaster Recovery below)
- As a VTAM application in VSE/ESA.
- Under CMS in VM/ESA and z/VM.

Disaster Recovery

CBLi has the same functionality when executing as a VTAM application as it does when running under TSO. Therefore, the CBLIVTAM module and VTAM applid may be installed on a recovery volume to perform data editing, data set allocation and system navigation if ISPF is unavailable.

Couple this with SELCOPY, which is usually installed in the same load library as CBLi, the systems programmer is provided with a powerful set of tools to aid the data recovery process.

General Functionality

CBLi allows the user to generate, operate on and manipulate data within windows that may contain:

- DASD Volume lists.
- VTOC, Data set and member lists.
- Interactive SELCOPY execution.
- Interactive CBLVCAT execution.
- CBLe windowed text editor.
- DB2 SQL interface.
- Sequential file or VSAM object definition.

CBLi Environment

CBLi provides a full screen 3270 interface which supports the following windows style features:

- Drop down and popup menus.
- Resizable and movable windows.
- Multiple overlapped views of file and volume lists.
- Multiple overlapped Interactive SELCOPY execution windows.
- Multiple overlapped Interactive CBLVCAT execution windows.
- Access to services such as job submission and the ISPF or CMS editor.

Getting started with CBLi

Starting the CBLi program

Before you start CBLi you need a mainframe 3270 terminal session. Most people now use a 3270 emulation program from a workstation rather than a real 3270 terminal.

If you are using 3270 emulation we strongly recommend using the largest possible screen size. Screen sizes up to 62x160 for TSO ISPF (this appears to be the maximum permitted for ISPF) and up to 86x190 for TSO without ISPF, CMS and VTAM (MVS and VSE) are possible.

How CBLi is started depends on the environment in which it is to be run:

O/S	Environment	Command
MVS	TSO/E	Enter the command **CBLI** at the READY prompt.
	ISPF	Enter **TSO CBLiI** on the ISPF command line. ISPF screen management is used and so CBLi must have first been defined as an ISPF application by your systems programmer (as described in the CBL Interative installation Guide.) Otherwise enter **TSO CBLi** to execute using TSO 3270 screen management.
	VTAM	Enter **LOGON APPLID(CBLIVTAM)** on a VTAM USS screen. Your installation may have other ways of invoking a VTAM application. Refer to the CBL Interative installation Guide. **Note:** The CBLi VTAM session controller program (CBLIVTAM) must be running and the CBLi VTAM applid must be active.
VSE	VTAM	Enter **LOGON APPLID(CBLIVTAM)** on a VTAM USS screen. Your installation may have other ways of invoking a VTAM application. Refer to the CBL Interative installation Guide. **Note:** The CBLi VTAM session controller program (CBLIVTAM) must be running and the CBLi VTAM applid must be active.
VM	CMS	Enter the command **CBLI** on the CMS command line.

Window Concepts

Window types

All windows exist in a hierarchy. At the top of the hierarchy is the desktop window which is automatically created during initialisation. The desktop window covers the whole screeen and cannot be moved, resized or destroyed. All other windows, including the CBLi application (main) window, are dependents of the desktop.

When an application creates a window the new window has to be dependent on an existing window, the parent or owning window. If the application does not supply an existing window then the desktop window is used by default. This dependency relationship has 2 forms:

- Child window. The dependent window is a child of the existing window which is called its parent. The child window can only exist within the rectangle defined by its parent's client area. Typically, child windows are used for low level entities such as buttons and input fields.
- Owned window. The dependent window is owned by the existing window which is called its owner. The owned window can be moved all over the display surface but is always infront of (cannot be obscured by) its owner. Typically owned windows are used for more complex entities such as dialog boxes and help windows.

When a window is destroyed, so are all of its dependent owned and child windows.

Screen Sizes

The CBL 3270 screen manager can handle any 3270 screen size up to a total area of 16384 (16K) with a maximum width or depth of 255. This 16K area limit is imposed by the 14 bit address format of the 3270 data stream used by CBLi. The 255 width or depth limit is the result of some components using just 1 byte to store these dimensions.

Most 3270 emulation software packages allow the user to configure a 3270 session to emulate hardware terminal models 2/3/4/5 having rows x columns screen sizes of 24x80, 32x80, 43x80 and 27x132 respectively.
Some 3270 emulators also support the ability to define non-standard terminal sizes (IBM-DYNAMIC TN3270 terminals) that allow users to obtain 3270 screen sizes with dimensions much larger than the standard hardware models.

Note: To configure non-standard screen sizes, IBM-DYNAMIC TN3270 terminal definitions must first be defined to VTAM and then made available to users via the TN3270 server.

Whenever possible, users should use the largest screen size available to take full advantage of CBLi's ablility to display multiple overlapping windows containing a variety of data. At CBL, screen sizes of **62x160** are regularly used for TSO (maximum supported by ISPF) and screen sizes of up to **86x190** for CMS and VTAM (MVS or VSE).

A selection of popular 3270 emulator packages have been installed at CBL to determine whether support is included for IBM-DYNAMIC terminals as well as some other additional features considered useful for use with CBLi execution (Keyboard macros, etc.) The following link opens a page on the CBL web site that contains the results for each emulator tested to date.

http://www.cbl.com/cbli3270.html

Emulator configuration files and macros that are applicable to individual 3270 emulator packages, have been generated and published on the CBL web pages for use with CBLi. Please see the following:

http://www.cbl.com/cblidl.html

Manipulating Windows

Moving a window

If a window has a title bar it can be moved with the following procedure:

1. Place the cursor in the title bar of the window.
2. Press the enter key. The window border will be highlighted.
3. Move the cursor to a new position.
4. Press the enter key. The window will move by an amount equal to the displacement of the cursor.

Also see CBLi command MOVEWINDOW and CBLe command SET WINPOS.

Resizing a window

If a window has a border it can be resized with the following procedure:

1. Place the cursor in the border of the window. If the cursor is in the top or bottom border, the window will have its depth changed. If the cursor is in the left or right border it will have its width changed. If the cursor is in a corner of the border it will have its width and depth changed.
2. Press the enter key. The window border will be highlighted.
3. Move the cursor to a new position.
4. Press the enter key. The window will be resized by an amount equal to the displacement of the cursor.

Also see CBLi commands SIZEWINDOW, DRAGBORDERMINUS, DRAGBORDERPLUS and CBLe command SET WINSIZE.

Maximising a window

If a window has a maximise button it can be maximised by moving the cursor to the maximise button and pressing the enter key. The window will then take up the whole of the 3270 screen. The maximise button will change from a plus sign to a solid vertical bar (representing restore).
Also see CBLi command MAXIMISE and CBLe command WINDOW MAX.

Minimising a window

If a window has a minimise button it can be minimised by moving the cursor to the minimise button and pressing the enter key. The window will then be removed from the display and replaced by a small iconic window showing just a portion of its title bar near the botton of the CBLi main window. The minimise button will change from a minus sign to a solid vertical bar (representing restore).
Also see CBLi command MINIMISE CBLe command WINDOW MIN.

Restoring a window

When a window has been maximised or minimised, it can be restored to its former position and size by moving the cursor to the maximise button or the minimise button (which will now contain a solid vertical bar representing restore) and pressing the enter key.
Also see CBLi command RESTORE CBLe command WINDOW REST.

Closing a window

A window can be closed by moving the cursor to the close button and pressing the enter key.
Also see CBLi command CLOSE. CBLe command WINDOW CLOSE.

Window layout

CBLi windows have a standard layout which consists of the following components. Not all windows have all these components, but where present they occupy the same relative position in the window and have the same function.

The Title Bar
The title bar contains the title of the window.

The System Menu Button
The system menu button is at the left end of the title bar. If pressed the options of the system menu are displayed in a popup menu.

The Minimise Button
The minimise button is at the right end of the title bar. It is represented as a single minus sign in white reverse video. If the window is minimised then the minus sign is replaced by a solid vertical bar representing restore.

The Restore Button
The Restore button is displayed in place of the Minimise or Maximise button when a window is in a minimised or maximised state respectively. It is represented by a solid vertical bar in white reverse video.

The Maximise Button
The maximise button is at the right end of the title bar. It is represented as a single plus sign in white reverse video. If the window is maximised then the plus sign is replaced by a solid vertical bar representing restore.

The Close Button
The close button is at the right end of the title bar. It is represented as an x in red reverse video.

The Menu Bar
The menu bar occupies one or more lines below the title bar. It contains optional functions which can be invoked by moving the cursor to the menu item and pressing enter. Some menu items when activated display popup submenus. The menu items have the 3270 unprotected attribute so they can be selected by the tab key (which tabs to enterable fields). Any data entered into a menu item is ignored.

Menu items may be enabled or disabled. When enabled they are displayed in white. When disabled they are displayed in blue and selecting them will have no effect.

The Client Area
The client area of a window is the main body of the window and its contents vary depending on the class of the window.

The Command Line
The command line is an area of the window into which text commands may be entered. Most menu items have a command line equivalent text command.

Pressing buttons

The 3270 architecture is such that the host is only informed of user input when a certain class of key is pressed on the keyboard. These keys are those with attention identifiers and typically consist of the function keys, the enter key, the Program Attention (PA) keys and a few other specialised keys. Even when operating under the control of a workstation 3270 emulator, the 3270 host application is not sensitive to mouse movements (except in the case when the emulator allows the user to assign a particular 3270 function to the mouse buttons).

Because of this, 3270 window buttons cannot be "pressed" in the same way as work station window buttons. 3270 window buttons are "pressed" by:

1. Moving the cursor to the button and
2. Pressing the enter key.

Window Focus

The focus window is the window which contains the cursor when the 3270 screen is displayed. If the window has a title bar then the fact that it is the focus window is indicated by colouring the title bar area with blue reverse video. All other windows have a white reverse video caption bar.

Input fields

The focus window defines the input rectangle which is the only area of the screen where input is enabled. When the focus window is not a child window the input rectangle is the window itself.

When the focus window is a child window the input rectangle is that defined by its parent. Any input fields outside of the input rectangle are temporarily disabled. Each field in the input rectangle can be visited by using the cursor tab key (shift+cursor tab key to reverse the direction).

Changing the focus window

The user can change the focus window in the following ways:

- By placing the cursor in a window and pressing enter. This sets the focus to the window containing the cursor.
- By using the PREVWINDOW, NEXTWINDOW, MDIPREV or MDINEXT commands. These commands cycle through all windows in creation sequence. By default, PF9 is assigned to MDINext in MDI applications such as CBLe and SELCOPY Interactive, and Nextwindow elsewhere.
- By using the **Window** item of the CBLi main menu or the WINDOWLIST command to open the Window List window and then selecting a window by moving the cursor to the relevant entry and pressing enter. The selected window becomes the focus window.
- By using the SETFOCUS command to explicitly name the focus window.

Window Names

All the windows defined by a CBL3270 application have a name. The name is supplied by the application when the window is created and may be changed later during the window's life.

If the name is not supplied by the application then a default name is supplied by CBL3270 made up of the window class name suffixed with a three digit number which is incremented by 1 for each window of the class created during the CBL3270 session.

The main use of window names is to allow commands entered on the command line of a window to refer to other windows which are currently part of the application.

Viewing Window Names

The window name associated with each non-MDI window in the CBLi session may be displayed in that window's title bar (and subsequently hidden from view) via the following:

- Select 'Display/Hide Window Names' from the system menu belonging to any open window.
- Enter the CBLi command WINDOWNAMES on the command line of any window.

Either of these operations will display or hide the window names for **all** open windows in the CBLi session.

Display of all MDI window names (e.g. CBLe text editor window names) has been suppressed to avoid overcrowding the title bar.

Alternatively, the Window List window may be used to obtain a window's associated window name. The window list displays all open windows and their associated window names (including MDI window names.)

Window Class

All the windows defined by a CBL3270 application are members of a window class. A window class represents a set of windows with the same behaviour and appearance. Window classes are identified by a 1 to 8 character name.

CBL3270 uses the window class name to associate a processing module (called the Window Procedure) with the window.

All windows in the same class are managed by the same window procedure. The window procedure is called by CBL3270 whenever an event occurs which affects the window. It is the window procedure's responsibility to:

1. Paint the window client area.
2. Process any data entered into the window.
3. Respond to any commands issued from the window's menu or command line.

Window List

The Window List window may be opened via the following:

- Select 'Window' from the CBLi Main Menu.
- Enter the CBLi command WINDOWLIST on the command line of any window.

The Window List window displays all open windows and their associated window names and allows the user to place focus on a specific window. The ENTER key should be pressed with the cursor on the line containing the required window.

The hierarchy of parent/child windows is illustrated by indentation of the entries in the list.

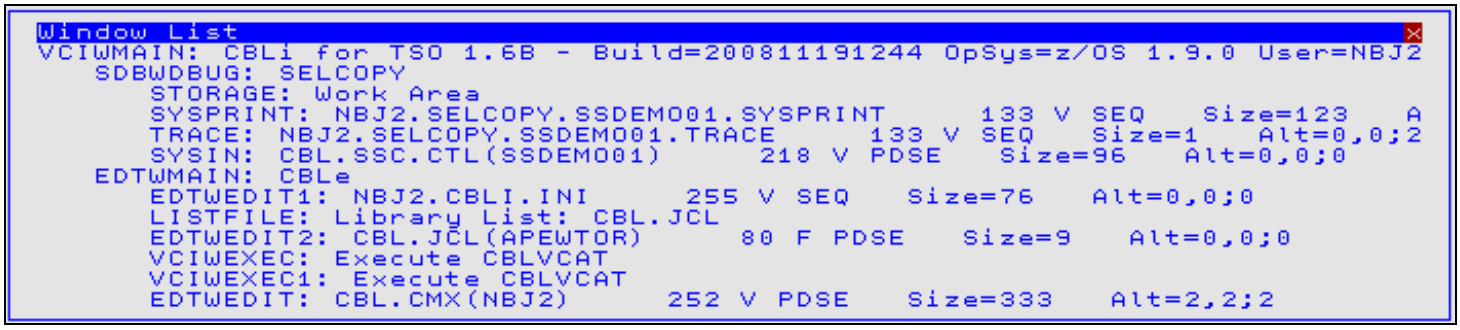


Figure 1. Window List window.

Function Keys

Function key command tables are maintained for keys F1-F24 at the following levels:

Window	For each window instance.
Class	For each window class.
Caption	One table for the caption area (title bar) of all windows.
Border	One table for the border area of all windows.
Default	One table of system defaults.

When a function key is pressed the command to process is selected as follows:

1. If the cursor is in the caption or border of a window then the appropriate function key table is searched.
2. If no command is assigned to the key then no command is processed (the default table is not searched).
3. The function key table of the window with the cursor is searched.
4. If no command is assigned then the class table for the window with the cursor is searched.
5. If no command is assigned then the default table is searched.
6. If no command is assigned then the search is repeated for the parent window of the cursor window and so on up the window hierarchy until the desktop window is reached.

Function keys settings may be displayed and updated using the Function Keys window or the KEYS command.

CBLi Main Window

On starting CBLi the main window is openend.

Figure 2. CBLi Main Window.

The main window contains:

- A title bar. Located at the top of the window, it includes:
  - A system menu button at the extreme left. This button accesses the system menu options.
  - The window name.
  - A minimise button as the third character from the right.
  - A maximise button as the second character from the right.
  - A close button as the first character from the right.
- The menu bar. Located immediately below the title bar, it lists the main menu options.
- The client area. Occupying the body of the window, it contains:
  - The CBLi logo, copyright notice and contact details.
  - The operating system name and version.
  - The user id.
  - The build level of CBLi. This information is useful for communicating with CBL when a query is raised about CBLi features or problems.
- The command line. This is the bottom line of the window.
  Commands may be entered at the **Command>** prompt to invoke CBLi facilities that duplicate or extend the menu facilities.

You can launch CBLi facilities by doing the following:

- Select a CBLi main menu option by moving the cursor over the option in the menu bar and press ENTER.
- Entering a CBLi line command.

System Menu

The system menu is a menu of functions which is available on all windows within a CBL3270 environment.

You access the system menu by pressing the system menu button at the top left of the main window (or any subordinate window that has a system menu button). The following options are available from the system menu:

Layout	Storage Display Windows only, displays the options popup menu. (As for SHOWPOPUPMENU.)
Restore	Restore a maximised or miminised window to its original size and position.
Minimise	Minimise the window with the system menu.
Maximise	Maximise the window with the system menu.
Close	Close the window with the system menu.
Quit	Quit the application.
Window List	Open a window showing the current list of windows. You can select a window from this list by placing the cursor on a list element and pressing enter. The selected window will be given the focus.
Next window	Give the focus to the next window in the hierarchy of open windows.
Prev window	Give the focus to the previous window in the hierarchy of open windows.
Command line	Open the command line dialog.
Function keys	Open the functions keys dialog.
Show/Hide window names	Toggle the status of the window names display. Window names are unique window identifiers which can be used in commands to identify a particular window. If displayed, the window name is displayed in the title bar as a prefix to the window caption.
Use ISPF/TSO	When running under TSO/ISPF, this menu command toggles the display from ISPF to TSO format.

Function Keys Window

The Function Keys window may be opened via the following:

- Select 'Function Keys' from the System menu belonging to the window for which function keys are to be displayed.
- Enter the CBLi command KEYS on the command line of the window for which function keys are to be displayed.

The Function Keys window displays the current PFKey table settings for a CBL3270 window.

CBLi maintains function key tables at 5 levels (i.e. Window, Class, Default, TitleBars and Borders). The function actioned by any PFkey is determined by these levels as discussed in the topic Function Keys.

The function key table for any of the levels may be displayed and updated by first selecting the desired level from the Function Keys menu.

All the displayed fields, other than the Key field, are enterable. Changes made to the table are only obeyed once the user has confirmed (saved) the changes on exit of the Function Keys window.

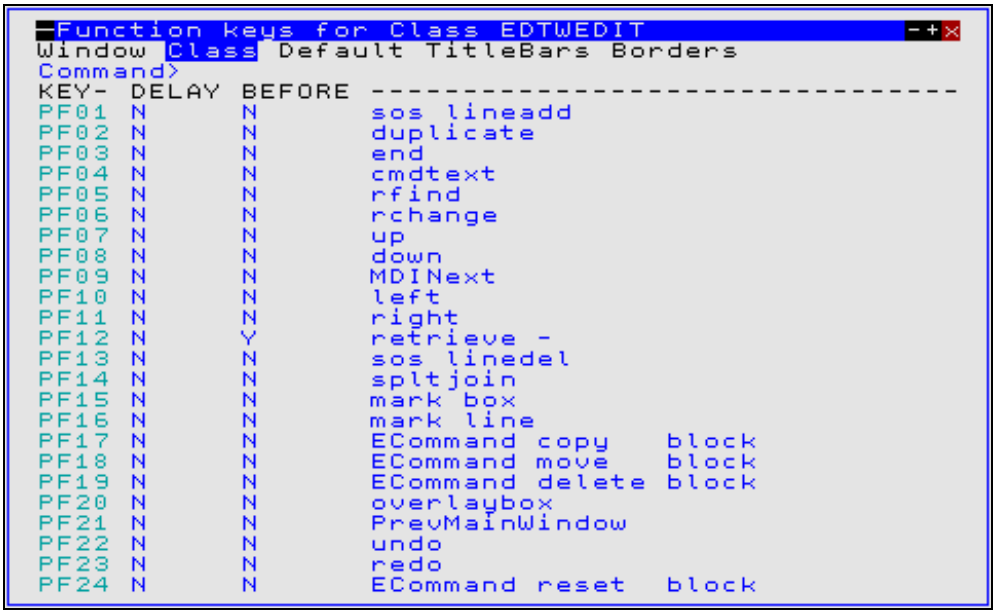


Figure 3. Function Keys Window.

Columns Displayed

Name	Description
KEY	PFKeys 01-24 (Non-enterable field)
DELAY	Determine whether the associated command is executed immediately when the function key is hit or merely placed on the local command line. Valid entries are Y or N.
BEFORE	Determine whether the associated command is executed before or after any other CBL3270 screen input. (e.g. a command line command or prefix area command.) Valid entries are Y or N.
untitled	The command(s) associated with the PFKey. For CBLe, a number of commands may be issued if separated by an appropriate separator character.

Default Function Keys

The CBLi **Window**, **Class** and **Borders** function keys are unassigned by default. The CBLi **Default** function keys are assigned to the following (unless overridden by the SYSTEM/USER CBLi INIFILE):

PF1	Top	Display data at the top of a scrollable window.
PF2	Bottom	Display data at the bottom of a scrollable window.
PF3	Close	Close the window in which the cursor is positioned. (N.B. not necessarily the current focus window)
PF4	CmdText	Issue command at the cursor position if prefixed by "<" (less than), otherwise place text on the command line.
PF5		
PF6		
PF7	Up Cursor	Scroll up the file so that the current focus line becomes the last line of the display.
PF8	Down Cursor	Scroll down the file so that the current focus line becomes the first line of the display.
PF9	NextMainWindow	Place focus on the next main window in the CBLi window list.
PF10	Left Cursor	Scroll the display to the left so that the current focus column becomes the last column of the display.
PF11	Right Cursor	Scroll the display to the right so that the current focus column becomes the first column of the display.
PF12	Retrieve -	Retrieve the last command issued and place it at the command line.
PF13		
PF14		

PF15		
PF16	CmdText Edit	Issue command at the cursor position if **not** prefixed by "<" (less than), otherwise place text on the command line.
PF17		
PF18		
PF19		
PF20		
PF21	PrevMainWindow	Place focus on the previous main window in the CBLi window list.
PF22		
PF23		
PF24		

The CBLi **TitleBars** function keys are assigned to the following:

PF1		
PF2		
PF3		
PF4		
PF5		
PF6		
PF7	MoveWindow by y=-1	Reposition window up 1 line
PF8	MoveWindow by y=+1	Reposition window down 1 line.
PF9		
PF10	MoveWindow by x=-1	Reposition window left 1 column.
PF11	MoveWindow by x=+1	Reposition window right 1 column.
PF12		
PF13		
PF14		
PF15		
PF16		
PF17		
PF18		
PF19		
PF20		
PF21		
PF22		
PF23		
PF24		

CBLi Main Menu

The CBLi main menu is listed in the menu bar at the top of the CBLi main window. You select a menu item by tabbing the cursor to the menu item and pressing the enter key. Menu items can also be activated with commands entered on the command line.

The main menu consists of the following items:

File	Execute SELCOPY debug	Open the Execute SELCOPY debug window.
	Execute CBLVCAT	Open the Execute CBLVCAT (VCI) window.
	Edit	Open the CBLe text edit window.
	DB2 Dynamic SQL	Open the DB2 Dynamic SQL window.
	Allocate NonVSAM	Open the Allocate NonVSAM dialog.
	Execute IDCAMS	Open the IDCAMS Command window.
	Define KSDS	Open the Define KSDS dialog.
	Define ESDS	Open the Define ESDS dialog.
	Define RRDS	Open the Define RRDS dialog.

	Define LDS	Open the Define LDS dialog.
	Define AIX	Open the Define AIX dialog. - **Not yet enabled**
	Define Path	Open the Define Path dialog. - **Not yet enabled**
	Define Alias	Open the Define Alias dialog. - **Not yet enabled**
	Define Catalog	Open the Define Catalog dialog. - **Not yet enabled**
	Execute POWER	Open the POWER Command Output window.
List	DASD Volumes	Open the DASD Volumes list window.
	Cataloged files	Open the Cataloged files list window.
	Dataset details	Open the Dataset details list window.
	VTOC files	Open the VTOC files list window.
	VTOC extents	Open the VTOC extents list window.
	Allocated files	Open the Allocated files list window.
	Library members	Open the Library members list window.
	Enqueues	Open the Enqueues list window.
	Job Enqueues	Open the Job Enqueues list window.
Utilites	File Search	Open the File Search window.
	Calendar	Open the Calendar window.
	Calculator	Open the Calculator window.
	SDSF	Under TSO or ISPF, call the SDSF JES2 spool access program.
	ISPF Dataset Utilities	Under ISPF, call the ISPF dataset utilities menu panel.
System	Operating System	Open the Operating System window.
	CBLi storage stats	Open the CBLi Stoarge statistics Block window.
	CBLi module list	Open the CBLi Module List window.
	CBLi SVC	Open the CBLi CBLVCAT SVC information window.
	CBLNAME	Open the CBLNAME storage display window.
Window		Open the Window List window.
SwapList		Displayed only if ISPF is the 3270 screen manager. Execute ISPF SWAPLIST command.
Help		Open the help top level window.

Storage Display Window

Storage display windows provide a view of an area of storage in dump format.

Supported items that utilise storage diaplay windows are:

- CBLNAME Window.
- SELCOPY Interactive Workarea windows.
- SELCOPY Interactive POS windows.
- CBLe HEX Windows.

Window Display Format

The length of storage data displayed may be restricted by the type of window opened. e.g. The amount of data displayed in a CBLe HEX window is restricted to be the length of the focus line.

Each row of a storage display window has the following format:

Field Width	Type	Description
8	Hex	Address in storage of the displayed data.
6	UInt	Displacement from the start address of the displayed data.
8,16,32 or 64	Hex	Data in storage in hexadecimal format. (4, 8, 16 or 32 bytes depending upon window size).
4,8 ,16 or 32	Char	Data in storage in character format. (Field width adjusts automatically to match hexadecimal display width.)

The format of the display may be updated using the options popup menu which may be opened using the SHOWPOPUPMENU command or via the system menu button of the storage display window. By default, the SHOWPOPUPMENU command is assigned to PF5 in storage display windows.

Window Sizing

User resizing of a storage display window's width will always be adjusted by CBLi to display one of the valid data display widths. i.e. 1, 2, 4 or 8 words of hexadecimal data plus its equivalent character representation if required.

If the window's width is increased or decreased by one column, the window's width is rounded up or down respectively to equal the next valid display width. e.g. When using DRAGBORDERPLUS and DRAGBORDERMINUS (assigned to PF8/PF11 and PF7/PF10 respectively) on either of the window's vertical borders.
If the window's width is increased or decreased by more than one column, the window's width is always rounded down to equal the next valid display width.

Navigating Data

The displacement field in the first row of a storage display window is an enterable field (highlighted in red by default.) This field may be overwritten with a displacement, from the start address, of the byte that should be displayed first in the storage window's display area.

CBLi commands UP CURSOR and DOWN CURSOR may be used to navigate the storage display window. By default, UP CURSOR is assigned to PF7 and DOWN CURSOR is assigned to PF8.

Manipulating Data

Some storage display window invocations allow the data to be updated simply by overtyping the existing character or hexadecimal representation and then, to commit the change, hitting <Enter>.

Security Considerations

VSE Systems

By default, the SYSTEM CBLiINI file has the System variable VSESMLogon=YES. This activates CBLi's VSE Security Manager (BSM or ESM) logon and resource checking.

In order to operate successfully with VSESMLogon=Yes, the VSE system must be running a security manager and the CBLi startup job submitted so that it provides the CBLi program with maximum user privilages. At CBL, the job that starts CBLi contains a JECL *** $$ JOB** statement with SEC=(SYSA,...).

Any user wishing to login to CBLi must have a logon id defined in the security manager's data base. Once logged in, CBLi will interrogate the security manager to establish the user's access privilage prior to performing any action on potentially protected resources. e.g. listing LIBR library contents and editing LIBR members. CBLi will then permit or restrict the user's access to the resource.

If VSESMLogon=OFF, then no logon password or security manager resource checking is performed.

With VSESMLogon=ON in effect, editing of VSE Power queue entries is possible if either the TO or FROM values match the current user's userids. However, if VSESMLogon=OFF a user may only edit a Power queue entry if it is password protected and the password is known to the user.

MVS Systems

On MVS systems, users login to CBLi using their RACF, or equivalent security package, login id. Under TSO, no CBLi login is performed as the user's TSO login id is used instead.

Thereafter, the user's access privilage is verified prior to performing any action on potentially protected resources. e.g. listing PDS(E) library contents and editing data sets.

In addition to this, the security administrator can restrict users' access to the following CBLi features using RACF profiles.

Resource Name	CBLi Feature
System	Access to the 'Operating System' information available via the 'System' menu item on the main desktop or via the commands: `SysI`, `SysLPA`, `SysLL`, `SysAPF`, `SysTask`, `SysStor`, `SysPqm` and `CBLNAME`.
UserTSO	Log on to CBLi under TSO and ISPF.
UserVTAM	Log on to CBLi as VTAM application.
SELCOPY	Use of the SELCOPY Interactive application.
CBLVCAT	Use of the CBLVCAT Interactive application.
DB2	Use of the DB2/SQL Interactive application.

Restrictions are implemented via options in the CBLi SYSTEM (site wide) CBLiINI file, and cannot be overridden by an individual's USER CBLiINI file. These options must be entered in the **(RACF)** section of the CBLiINI file and are as follow:

CBLiINI Variable	Description
ResourceCheck=NO|YES	Use RACF for CBLi resource access checking (default NO).
ResourceClass=ClassName	RACF general resource class (default FACILITY).
SuppressWTO=NO|YES	Suppress access failure WTO messages (default NO).
System=ResourceName	System commands resource name (default CBLI.SYSTEM)
UserTSO=ResourceName	TSO user access resource name (default CBLI.USER.TSO)
UserVTAM=ResourceName	VTAM user access resource name (default CBLI.USER.VTAM)
SELCOPY=ResourceName	Interactive SELCOPY resource name (default CBLI.SELCOPY)
CBLVCAT=ResourceName	Interactive CBLVCAT resource name (default CBLI.CBLVCAT)
DB2=ResourceName	Interactive SQL resource name (default CBLI.DB2)

With RACF.ResourceCheck=YES in effect, users without a minimum of READ access to the specific resource will be rejected.

In addition to these CBLiINI options, RACF, or an equivalent security package, must be active and a RACF profile must exist that includes the resource name. The resource name may be generic; for example the profile **CBLI.**** with **UACC(READ)** would permit all users access to all resources.

Note that MVS system symbols may be used in the resource names These will be resolved when reading the system CBLiINI file. e.g.

```
(RACF)
   DB2=CBLI.&SYSNAME..DB2      * Interactive SQL resource name
```

Please see the distributed CMX file &PREFIX..CBLI.CMX(RACF) for samples of commands useful in administering CBLi RACF resource restrictions.

CBLi Clipboard

CBLi supports a clipboard facility to allow users to Copy, Cut and Paste data between windows running in the CBLi environment that support clip board functions.

At this time, clipboard facilities are only supported in CBLe and SDE edit and browse views. e.g. Data copied to the clipboard from an edit view in the SELCOPY Interactive application may be pasted to an edit view in the CBLe text edit application.

Note that the CBLi clipboard is not associated with any other clipboard facility offered by the system.

Executing SELCOPY

Invoking SELCOPY Interactive

The SELCOPY Interactive application window is started via the following:

- Select 'Execute SELCOPY' from the File menu in the CBLi window main menu.
- Enter the CBLi command SELCOPY on the command line of any window.

See also the CBLe macro, JCLCMX , which is a pre-processor tool used to convert MVS JCL decks containing SELCOPY steps into a format suitable for input to SELCOPY Interactive. Simply edit the JCL deck using CBLe, then key in JCLCMX from the edit command line to generate command files containing ALLOC commands that correspond to the DD statements; CALL commands that correspond to EXEC statements; and SELCOPY commands that correspond to EXEC PGM=SELCOPY statements.

A control file name containing the SELCOPY source statements must be provided as SYSIN/SYSIPT input to the SELCOPY Interactive window either as a parameter on the SELCOPY command or via the "Run SELCOPY" dialog window. The control file may be specified as a complete fileid (DSN) or as a previously allocated filename (DD/FILEDEF/DLBL) which may be a concatenation of data sets. **e.g.**

```
selcopy  -ctl cbl.ssc.ctl(ssdemo01)
```

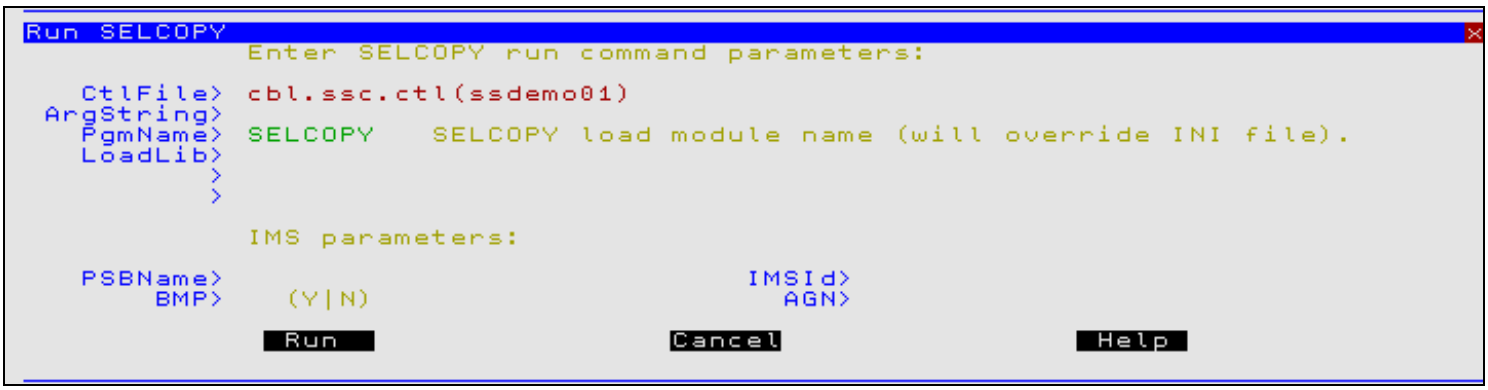


Figure 4. Run SELCOPY Dialog Window.

If the specified control file is empty or does not yet exist, then SELCOPY Interactive opens an empty SYSIN/SYSIPT CBLe text edit view and, on performing its initial control statement analysis, reports ERROR 14 "NO INPUT FILE" in the SYSPRINT/SYSLST view with pop-up message:

```
SDB002E SELCOPY has ended with control card errors. Return Code 52.
```

Having selected OK to continue, the user may proceed by adding SELCOPY control statement records to the control file SYSIN/SYSIPT window. When complete, the changes to the control file should be saved before executing RERUN to begin debugging the new SELCOPY statements. If the SELCOPY control fileid does not already exist, then for MVS systems, the Allocate NonVSAM dialog will be opened before the save is actioned.

When SELCOPY Interactive starts, the Execute SELCOPY main window is opened together with a CBLe edit view for the control statement SYSIN/SYSIPT input. If the SYSIN/SYSIPT file name was specified as an explicit fileid (DSN) which is not locked (ENQ'd) by another process and the user has sufficient authority, the file is edited Read/Write. Where the SYSIN/SYSIPT input file name was specified as a previously allocated filename (DD/FILEDEF/DLBL), then the data is edited Read/Only.

The SELCOPY program is then executed and stopped following control statement analysis but before actioning the first executable statement. The user may then begin debugging and stepping through the statements.

Note that interactive execution of SELCOPY using statement stepping and/or break points is not supported if the SELCOPY control file contains the SELCOPY option **NOPRINT**, **NOP** or **NOPCTL** to suppress print of the SELCOPY control statements. If any of these options are specified prior to the first control statement, then the job will run to completion without stopping.

Any required SELCOPY input or output files must be allocated before execution of SELCOPY Interactive. This excludes SYSIN and SYSPRINT which are handled by the CBLi window management software. See the CBLe ALLOCATE command and, where the SELCOPY statements form part of an MVS batch stream, use the CBLe JCLCMX REXX macro to configure the environment prior to starting SELCOPY Interactive.

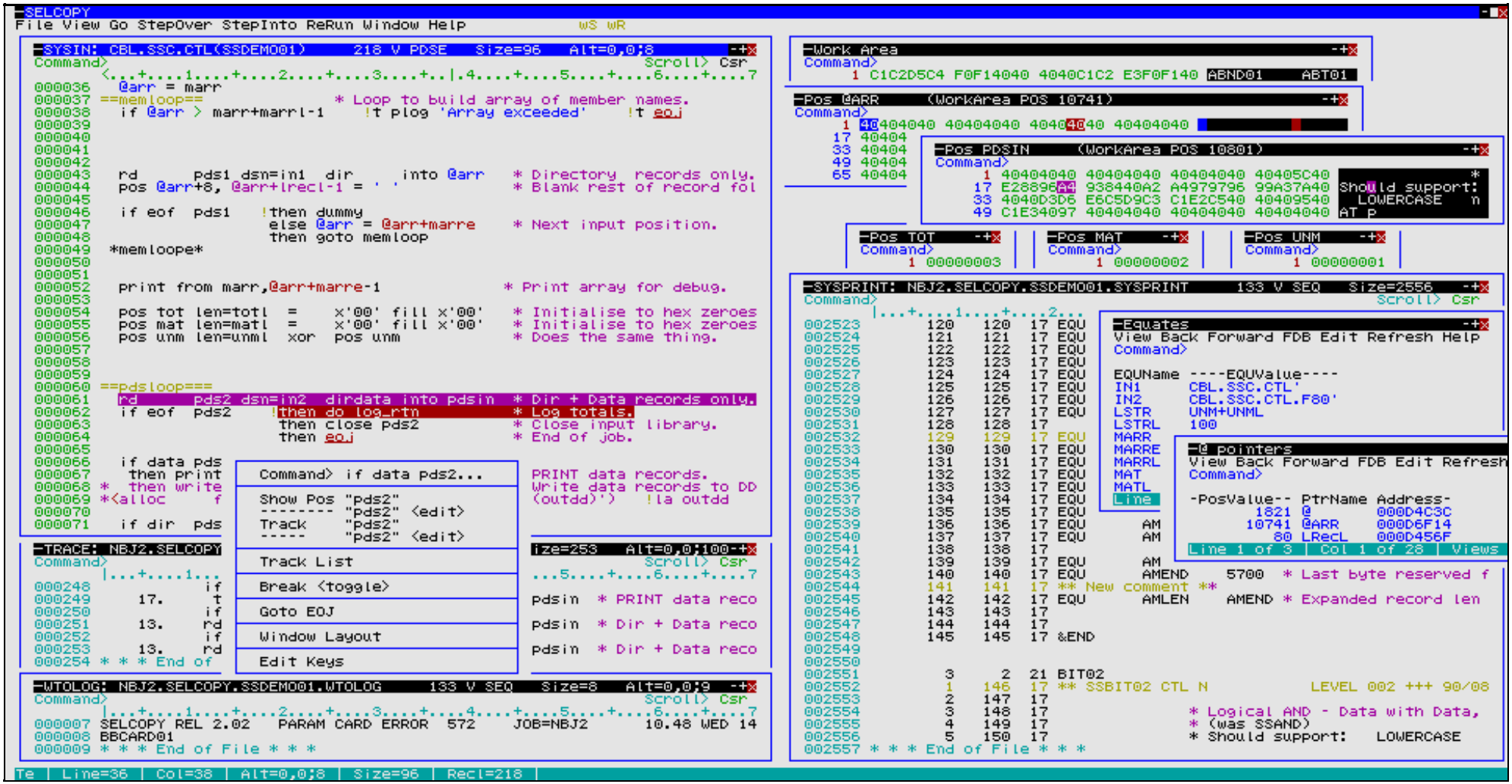


Figure 5. SELCOPY Interactive Debug in 62x160 3270 Session.

Under MVS, interactive execution of IMS SELCOPY programs in DLI and BMP region types is supported.
The following SELCOPY Interactive attributes relating to IMS SELCOPY programs may be specified as a parameter on the SELCOPY command or via the "Run SELCOPY" dialog window.

- The PSB name.
- The IMS region (either DLI or BMP). Default is DLI.
- The Subsystem name of the IMS Region to which the connection should be made. **(Optional)**
- IMS Application Group name. **(Optional)**

For IMS DLI regions, IEFRDER, DFSVSAMP must either be allocated or included in the SYSTEM or USER CBLIINI file for dynamic allocation by SELCOPY Interactive at execution time.

Load Library Search Chain

The location of the SELCOPY program executed and any routines called by the SELCOPY operation, CALL, is determined by the standard search chain for the current environment.

Note: The SELCOPY CALL operation is used to pass control to an external Assembler, COBOL routine or any MVS program module developed using Language Environment.

For MVS systems only, SELCOPY Interactive provides users with the ability to include additional libraries to the start of the search chain. This gives the SELCOPY Interactive environment an equivalent to the STEPLIB JCL statement, which may occur in SELCOPY batch jobs.

The included library path may be entered in the "Run SELCOPY" dialog window or via the -LIB parameter on the CBLi CLI SELCOPY command, as one of the following:

- A DDname which has been pre-allocated to one or more load libraries.
- One or more load library DSNs separated by '`,`' (commas), '`;`' (semi-colons) or ' ' (blanks).

Note: If the DSNs are separated by blanks, quotes must also be used to delimit the list of DSNs, not the individual DSNs.

The following SELCOPY line command and "Run SELCOPY" dialog examples illustrate use of LibPath.

```
selcopy  -ctl INCTL  -lib "SYS3.TEST.LOADLIB    SYS3.NBJ.TEST.EXE"
```

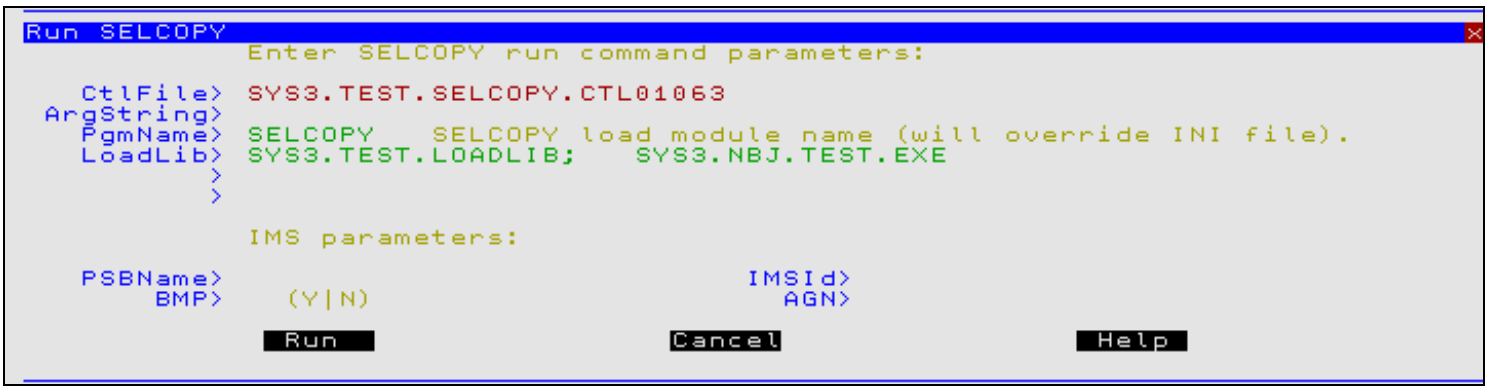


Figure 6. Run SELCOPY Dialog Window with Load Library Path.

This feature is exploited by the JCLCMX CBLe REXX macro which translates JCL statements from a batch job into the equivalent CBLi commands, thus setting up an environment suitable for interactive execution of a SELCOPY batch job.

Where STEPLIB JCL statements are found in EXEC PGM=SELCOPY steps, the library names are included on a -LIB parameter in the generated, equivalent SELCOPY command.

SELCOPY Loop Break-in

The nature of SELCOPY execution is such that statements are executed sequentially, or as directed by logic flow operations (e.g. GOTO, PERFORM), until either the last control statement of the SYSIN/SYSIPT input is encountered or a GOTO GET operation is executed.

When one of these conditions occur and at least one input (e.g. READ) and one output (e.g. WRITE, PRINT, UPDATE) operation exists, then processing is passed back to the first run-time control statement in the control deck.

This looping through the control statements will continue until one of the following occurs:

1. End-of-File condition is encountered following an attempted READ of the **prime** input file and no IF EOF condition exists for the file.
2. No further output operations are eligable for execution as a result of a explicit or implicit STOPAFT value. e.g. STOPAFT=50 is implied for LOG output operations and STOPAFT=1 is implied for operations executed based on a true IF INCOUNT condition for equality.
3. GOTO EOJ or GOTO CANCEL operation is executed.
4. A Selection Time Error is encountered.

If none of these conditions occur, then it is possible to introduce an infinite loop in SELCOPY control statement processing.

The SELCOPY Interactive debugger may be used to identify the cause of this situation or any sequence of statements that cause the control statement stream to loop. It is possible, however, that the user may not know that the loop condition exists until SELCOPY processing has been restarted without a break point in which case, since SELCOPY is executing in the foreground, the 3270 session becomes unresponsive.

It is for this reason that the SELCOPY default break-in facility exists to allow the user to pre-define a default number of times that any control statement within the SELCOPY job stream may be executed before a virtual break point is encountered and processing is paused.

This break-in threshold is controlled via the CBLiINI option **SELCOPY.LoopBreakIn** which has a default value of 1,000,000.

When the break-in threshold has been reached, a pop-up message window is opened and control is passed back to the user to continue debug investigation. This means that there is no need to forcibly end the CBLi session and restart the SELCOPY debug process.

Note that a loop break-in may occur even though a loop is not infinite. (e.g. the prime input file may have a number of records greater than the break-in threshold.)

SELCOPY Interactive Windows

SELCOPY Interactive Main window

Like the CBLe text editor, SELCOPY Interactive is an MDI (Multiple Document Interface) application. An MDI application comprises a parent (frame) window with a menu bar and a client area within which one or more MDI child windows are displayed. All MDI child windows are confined to the parent window's client area.

The SELCOPY Interactive Main (frame) Window supports all MDI child windows supported by the CBLe frame window (including SDE Edit). The SELCOPY Interactive frame window is actually a CBLe frame window with additional features and characteristics specifically relating to SELCOPY execution. These features are discussed in this section whereas details on CBLe frame window features may be found in the CBLe Text Edit documentation.

The SELCOPY Interactive Main window must always contain the Control Cards, Output Listing and TRACE Windows. Closing any of these windows will quit the SELCOPY main window and so end the Interactive session.

When a session is started, these 3 child windows are automatically opened, together with a work area storage window, at fixed locations within the main window client area. The position and size of each window have been pre-determined so that the contents of each window are easily visible when used with terminals of width greater than 80 bytes. Where the terminal display is of width less than 80 bytes, the SELCOPY Interactive child windows are opened in a maximised state, however, these may be subsequently restored, resized and repostioned as in Figure x.

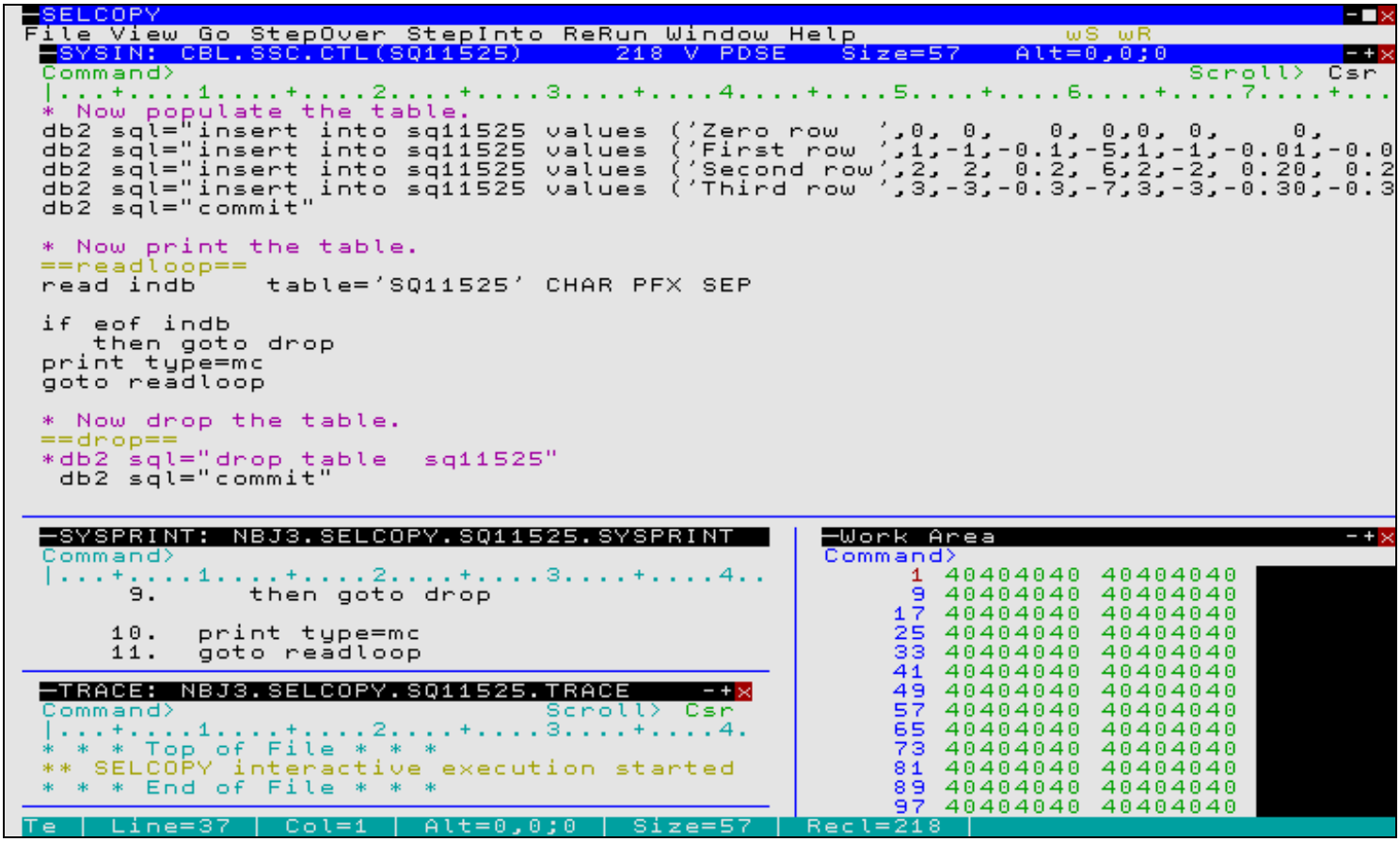


Figure 7. SELCOPY Main Window in 43x80 3270 Session - Resized Child Windows.

Note that the "Ws" (Window Save) button may be used to save a focus child window's size and location within the parent window so that it may subsequently be restored using the "Wr" (Window Restore) button. This enables the user to maintain preferred window size and location across invocations of SELCOPY Interactive.

All SELCOPY Interactive child windows, other than list and storage windows, are CBLe text edit windows (i.e. Control Cards, Output Listing, trace and log windows.) This allows the user to edit the data in these windows and to issue CBLe commands and macros such as ALL, LOCATE, CHANGE and SAVE.

In addition to the standard SELCOPY Interactive windows, the user can open a CBLe edit view for any other file (e.g. the input data sets, etc.), thus giving SELCOPY Interactive all the features provided by the CBLe text editor. Also, if MDILIST is ON (default), any LIST window opened from a SELCOPY Interactive child window will itself be a child window of SELCOPY Interactive.

By default, PF9 is assigned to CBLi CLI command MDINext and is used to pass focus between the SELCOPY Interactive child windows.

SYSIN Window

The SYSIN window is opened automatically when SELCOPY Interactive is started. It may also be opened via the following:

- Select 'Control Cards' from the View menu in the SELCOPY Main Menu.
- Enter the SELCOPY Interactive CLI command WINDOW CTL.

The SYSIN window is an edit view that contains the control statement source file as required for execution of SELCOPY Interactive. This window highlights the current operation and allows the user to set and unset break points.

By default, SELCOPY Interactive attempts to edit the SYSIN file read/write. If this is not possible, the user is prompted to continue the session with the file edited in read only mode. In either case, the edit profile macro is executed when the file is loaded. If the CBL supplied macro PROFILE is set as the default edit profile, then useful edit buttons are added to the menu bar. See the PROFILE and PROFIRST macros for a description of each button's use.

Note that SELCOPY analyses the control statements prior to execution and it is at this point that SELCOPY Interactive associates each operation in the SYSIN display with its appropriate selection id. Therefore, any alterations made to the SYSIN data during SELCOPY debugging must first be saved and the job re-started before any further statement execution can take place.

The contents of the window scroll automatically in order to display the current statement in the SELCOPY execution. As for any edit view, CBLe commands and macros may be used to manipulate, highlight and locate data in the view (e.g. LOCATE, TAG, ALL,

CHANGE, SET ZONE, etc.)

In addition to any CBLe edit highlighting, during the course of execution control statements are highlighted as follow:

1. Next executable SELCOPY statement. Default highlight - pink reverse video.
2. Break Point. Default highlight - red reverse video.

Closing the SYSIN window also exits SELCOPY Interactive.

SYSPRINT Window

The SYSPRINT window is opened automatically when SELCOPY Interactive is started. It may also be opened via the following:

- Select 'Listing' from the View menu in the SELCOPY Main Menu.
- Enter the SELCOPY Interactive CLI command WINDOW LIST.

SELCOPY Interactive intercepts output to SYSPRINT/SYSLST and displays it in the SYSPRINT window instead. For this reason, SYSPRINT or SYSLST does not need to be allocated and no output is written to the system spool.

The contents of the SYSPRINT window scroll automatically to display any new output to SYSPRINT/SYSLST. Data written to the SYSPRINT window is maintained until the SELCOPY Interactive session is closed. Therefore, so long as the SELCOPY Interactive session is not closed, the job may be re-run any number of times without loosing the SYSPRINT/SYSLST output from a previous run.

The SYSPRINT window is an edit view which supports execution of CBLe commands and macros. This allows the user to manipulate, highlight and locate data in the view (e.g. LOCATE, TAG, ALL, CHANGE, SET ZONE, etc.)

Unless SELCOPY options NOPRINT or NOPCTL are specified in the control statements, the input statements and their selection ids are also written to SYSPRINT. Similarly, unless SELCOPY options NOPRINT, NOPSUM or NOPTOT are specified in the control statements, the summary totals are written to SYSPRINT at end of job.

Figure 8. SELCOPY SYSPRINT Window.

SQL Log Window

The SQL log window may be opened via the following:

- Select 'SQL log' from the View menu in the SELCOPY Main Menu.
- Enter the SELCOPY Interactive CLI command WINDOW SQL.

A SELCOPY job that submits SQL statements to a DB2 data base, also writes detailed information about the SELCOPY SQL processing to a data set allocated to ddname **CBLSQLOG**.

SELCOPY Interactive intercepts output to CBLSQLOG and displays it in the SQL Log window instead. Because of this, CBLSQLOG does not need to be allocated to display this information.

The SQL Log window is an edit view which supports execution of CBLe commands and macros. This allows the user to manipulate, highlight and locate data in the view (e.g. LOCATE, TAG, ALL, CHANGE, SET ZONE, etc.)

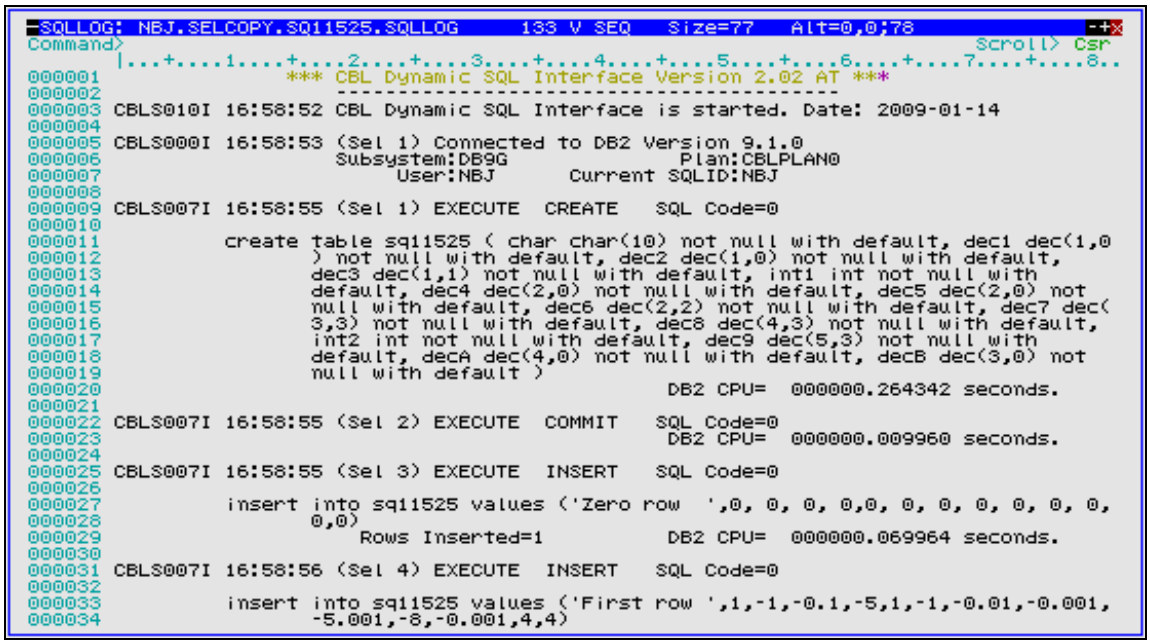


Figure 9. SELCOPY SQL Log Window.

WTO Log Window

The WTO log window may be opened via the following:

- Select 'WTO log' from the View menu in the SELCOPY Main Menu.
- Enter the SELCOPY Interactive CLI command WINDOW WTO.

SYSLOG output to the Operator's Console, TSO, CMS or ICCF user terminals is intercepted by SELCOPY Interactive and is displayed in the WTOLOG window instead.

The WTO Log window is opened automatically when SYSLOG output is received. This may be warning/error messages returned by SELCOPY, or output generated by a SELCOPY LOG operation.

The WTO Log window is an edit view which supports execution of CBLe commands and macros. This allows the user to manipulate, highlight and locate data in the view (e.g. LOCATE, TAG, ALL, CHANGE, SET ZONE, etc.)

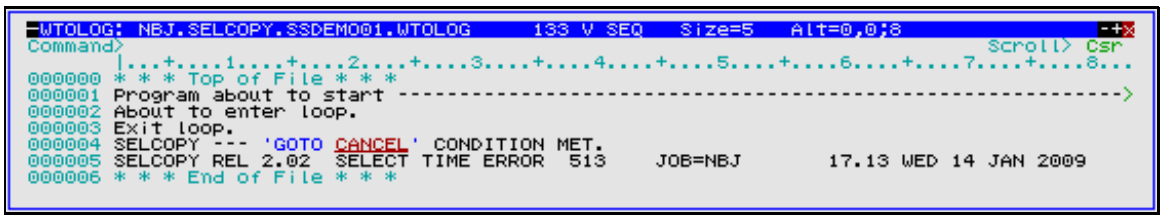


Figure 10. SELCOPY WTO Log Window.

Work Area/Current Input Record Window

A Work Area/Current Input Record storage display window is opened automatically when SELCOPY Interactive is started. Further storage display windows may also be opened via the following:

- Select 'Work area' from the View menu in the SELCOPY Main Menu.

- Enter the SELCOPY Interactive CLI command WINDOW WORKAREA.

The current status of the user work area (or input record buffer if no work area is allocated) is displayed in the Work Area window. A Work area window is a storage display window.

Note that, if WORKLEN is not supplied, the Work Area window has the title: Current Input Record.

Any number of Work Area windows may be opened and each window may be tailored to display different portions of the work area.

The appearance of the Work Area window may be updated using the storage window display options popup menu. The options available and methods used to display this menu are documented under the CBLi CLI command SHOWPOPUPMENU.

The work area position, in the first row of the Work Area window, is an enterable field (highlighted in red by default.) Here, you may enter the work area position from which data is to be displayed.

CBLi commands UP CURSOR and DOWN CURSOR may also be used to navigate the Work Area window. By default, UP CURSOR is assigned to PF07 and DOWN CURSOR is assigned to PF08.

Data in the work area may be altered at any point during the run by overtyping text in either the character or hexadecimal display. A change to text in the one display will automatically be reflected in the other.

Figure 11. SELCOPY Work Area Window.

POS Expression Window

The POS expression window may be opened using the SELCOPY Interactive CLI command WINDOW POS expr. POS expression windows for special positions POS PARM, DATE, SQLCA, SQLDA and SQLMA may be opened by selecting the "Pos" sub-menu from the View menu in the SELCOPY Main Menu.

The POS window displays storage in the exactly same way as the Work Area/Current Input Record window with the exception that the start address of the displayed data is a position in storage evaluated by a valid SELCOPY POS expression instead of position 1 of the work area.

Like the Work Area window, the appearance of the POS expression window may be updated using the storage display window options popup menu. The options available and methods used to display this menu are documented under the CBLi CLI command SHOWPOPUPMENU.

The POS expression is re-evaluated at each break in the SELCOPY execution and the data at the new position displayed in the POS window.

The POS window title contains the POS expression and the evaluated position in the work area in parentheses. If the evaluated position falls outside the work area, then **(Not in WorkArea)** is displayed instead.

Any number of POS windows may be opened.

Figure 12. POS Window (inside work area)

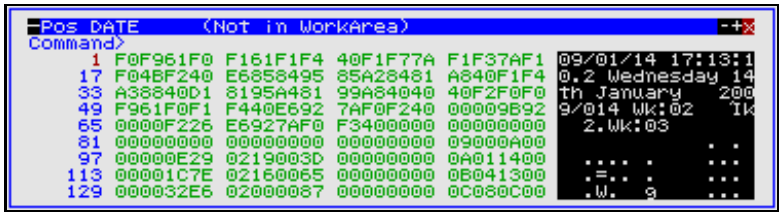


Figure 13. POS Window (outside work area)

@ Pointer Window

The @ Pointer window may be opened via the following:

- Select '@ Pointers' from the View menu in the SELCOPY Main Menu.
- Enter the SELCOPY Interactive CLI command WINDOW @.

The current status of the @ pointer, LRECL and of all the user @ pointers to be used in the current execution of SELCOPY, is displayed in the @ Pointer window.

The @ Pointer window has the same characteristics as a CBLi List window including selecting, sorting and filtering of row and column data and "point and shoot" sorting on column headers.

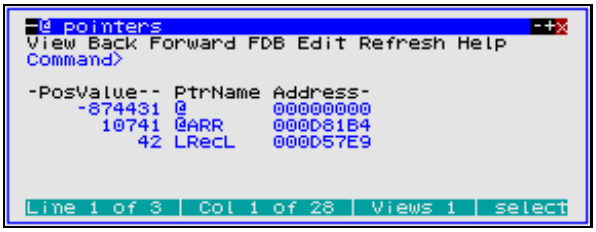


Figure 14. SELCOPY @ Pointer Window.

Columns Displayed

Name	Type	Description
PosValue	Int	Value as a position in the work area
PtrName	Char	Pointer Name
Address	Hex	Address in storage of position in work area

Equates Window

The Equates window may be opened via the following:

- Select 'EQUates' from the View menu in the SELCOPY Main Menu.
- Enter the SELCOPY Interactive CLI command WINDOW EQUATES.

All equated names and their values, set by the user via an EQU statement and subsequently allocated by SELCOPY during control statement analysis, are is displayed in the Equates window.

The Equate window has the same characteristics as a CBLi List window including selecting, sorting and filtering of row and column data and "point and shoot" sorting on column headers.

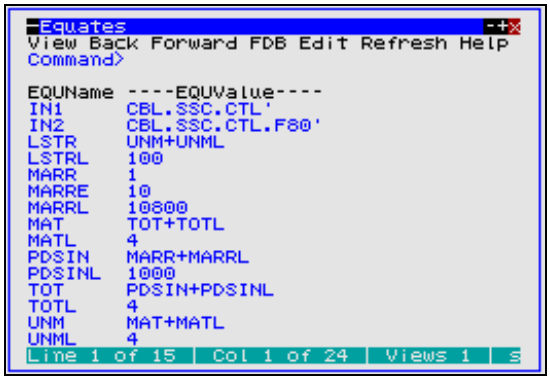


Figure 15. SELCOPY EQUates Window.

Columns Displayed

Name	Type	Description
EQUName	Char	Equated name
EQUValue	Char	Equated value

PCB Window

The PCB window may be opened via the following:

- Select 'PCB' from the View menu in the SELCOPY Main Menu.
- Enter the SELCOPY Interactive CLI command WINDOW PCB.

This window shows the PCB which was used to execute the most recent IMS call

The PCB displayed will change if different PCBs are used in the SELCOPY program.

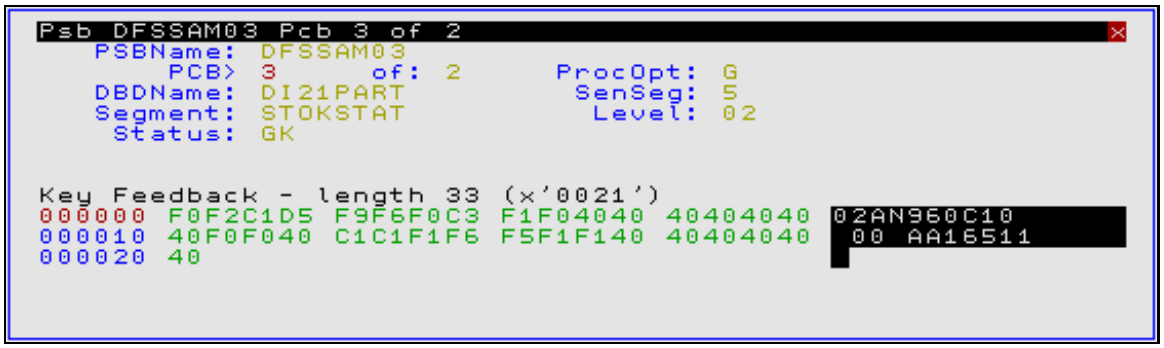


Figure 16. SELCOPY PCB Window.

TRACE Window

The TRACE window is opened automatically when SELCOPY Interactive is started. It may also be opened via the following:

- Select 'Execution trace' from the View menu in the SELCOPY Main Menu.
- Enter the SELCOPY Interactive CLI command WINDOW TRACE.

The TRACE window is a CBLe edit view that contains all the SELCOPY control statements at which processing has been stopped. i.e a break point was set and encountered. Each logged statement begins with the statement's selection id.

Note that the STEPINTO and STEPOVER commands dynamically set and unset break points to allow stepping through the SELCOPY job. The STEPINTO command sets a break point on the next control statement to be executed following the current control statement. Therefore, when repeatedly issuing STEPINTO or STEPOVER, the TRACE window displays a log of all the statements executed so far.

Prior to CBLi release 1.20, this trace information was displayed in the background of the SELCOPY Interactive parent window.

Figure 17. SELCOPY TRACE Window.

Point-and-Shoot Popup Menu

All CBLe type SELCOPY Interactive windows, including the SYSIN/SYSIPT and SYSPRINT/SYSLST windows, support the point-and-shoot options popup menu. The popup menu is opened using the SDBPOPUP edit macro defined on PF4 by default.

The cursor position within the edited data identifies the focus text to be referenced in items of the point-and-shoot menu when it is opened.

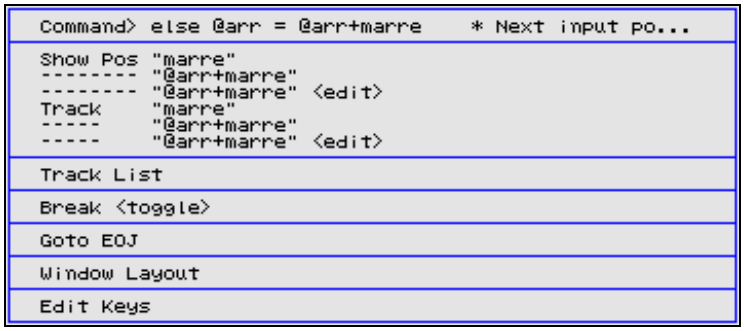


Figure 18. SELCOPY Point-and-Shoot Popup Menu Window.

The menu enables the user to quickly and easily perform the following, commonly used tasks:

CmdText
: Execute the CBLe CMDTEXT command against the command string text at the focus position.

Show Pos "*expression*"
: Execute the SELCOPY Interactive CLI command WINDOW POS expr to open a POS storage display window starting at the position defined by expression. Show POS entries exist for POS expressions determined by the token on which focus was placed when the menu was opened. Possible expressions are:
  1. The focus token that forms part of a larger positional expression.
  2. If applicable, the full positional expression containing the focus token.

Show Pos "*expression*" <edit>
: Same as the **Show Pos** entry but instead of executing the **WINDOW POS expr** command directly, it is placed at the edit command prompt ready for edit and submission by the user.

Track "*expression*"
: Invoke the **SDBTRACK** edit macro which issues the SELCOPY Interactive CLI command TRACK expr to start or stop tracking a position in storage referenced by the POS expression. Track entries exist for POS expressions determined as for "Show Pos".

  If a Track entry is selected, another popup menu is opened prompting the user to select the colour to be used for tracking this POS expression or, alternatively, to turn off tracking for this POS expression.

Figure 19. SELCOPY TRACK Colour Popup Menu Window.

Track "*expression*" <edit>
Same as the **Track** entry but instead the generated "SDBTRACK expression" macro invocation is placed at the edit command prompt ready for edit and submission by the user.

Track List
Open a popup menu displaying a list of all POS expressions that are being tracked. The user can then select an entry to switch off tracking for that POS expression or select **All** to switch off tracking of all the POS expression entries.

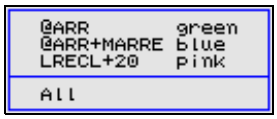


Figure 20. SELCOPY TRACK List Popup Window.

Break <toggle>
Toggle a break point on and off for the SELCOPY operation at the focus position.

Window Layout
Invoke the **SDBWINX** edit macro which opens a popup menu enabling the user to control the configuration of windows within the SELCOPY Interactive MDI environment.
The user can save and subsequently restore the characteristics of the current MDI child window or all currently open MDI child windows. Alternatively, the user can select the default configuration for the current, or all SELCOPY Interactive MDI child windows.

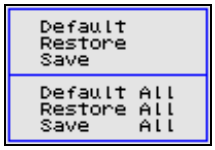


Figure 21. SELCOPY Window Layout Popup Menu.

Edit Keys/Debug Keys
Certain default PFKey assignments for CBLe text edit differ to defaults set up for the SELCOPY Interactive environment. This entry enables the user to toggle between the CBLe (Edit) default keys and SELCOPY Interactive (Debug) keys as follow:

PFKey	Edit	Debug
PF1	SOS LINEADD	STEPOVER
PF2	DUPLICATE	STEPINTO
PF13	SOS LINEDEL	GO
PF14	SPLTJOIN	BR ON CURSOR PERM

SELCOPY Interactive Commands

You can issue SELCOPY Interactive commands from the command line at the Command> prompt. Most SELCOPY Interactive main window menu options have a command line equivalent.

Command	Description	PF Key
BREAKPOINT	Set/unset temporary break points.	**PF14**
EOJ	Force SELCOPY End-of-Job.	**-**
GO	Continue processing.	**PF13**
RERUN	Re-run from the beginning.	**-**
STEPINTO	Step (Trace) Into sub-routines.	**PF2**
STEPOVER	Step (Trace) Over sub-routines.	**PF1**
TRack	Track a SELCOPY POS expression.	**-**
Window	Open a specified SELCOPY Interactive window.	**-**

See SELCOPY Interactive Function Keys for complete list of default PFKeys.

BREAKPOINT

Syntax:

```
>>-- BReakpoint ------------------><
```

Description:

Use the BREAKPOINT command to set or unset a permanent BReak point at the focus statement in the Control Card window. By default, BREAKPOINT is assigned to PF06.

If a break point is set at a particular control statement, then processing will be paused on the next attempt to execute that statement.

Any number of concurrent break points may be active during job execution.

Parameters:

BREAKPOINT has no parameters.

EOJ

Syntax:

```
>>-- EOJ -------------------------><
```

Description:

Use the EOJ command to force SELCOPY to immediately execute a "GOTO EOJ" operation.

The SELCOPY job will end without processing any further control statements and will generate its output summary in the SYSPRINT window.

Parameters:

EOJ has no parameters.

GO

Syntax:

```
>>-- GO --------------------------><
```

Description:

Use the GO command to continue processing of the control statements. By default, GO is assigned to PF04.

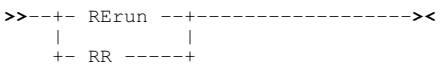
Processing will continue until a break point or End-of-Job is encountered at which point processing is paused or stopped respectively.

Parameters:

GO has no parameters.

RERUN

Syntax:



Description:

Use the RERUN command to Re-Run the job from the beginning. No further statements will be executed from the existing job run.

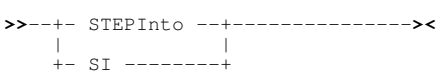
Storage is cleared and values and break points, set during control statement analysis, are re-initialised. All existing breakpoints are cleared.

Parameters:

RERUN has no parameters.

STEPINTO

Syntax:



Description:

Use the STEPINTO command to step through the SELCOPY control statements logically one at a time. By default, STEPINTO is assigned to PF02.

Any branch to a SELCOPY sub-routine via a **DO**, **PERFORM** or **GOSUB** operation will be Stepped Into. i.e. processing is paused on each control statement in the sub-routine.

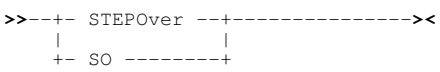
STEPINTO and STEPOVER set and then unset temporary break points in the SELCOPY control statements in order to pause processing.

Parameters:

STEPINTO has no parameters.

STEPOVER

Syntax:



Description:

Use the STEPOVER command to step through the SELCOPY control statements logically one at a time. By default, STEPOVER is assigned to PF01.

Any branch to a SELCOPY sub-routine via a **DO**, **PERFORM** or **GOSUB** operation will be Stepped Over. i.e. the sub-routine is executed and processing is paused again on the control statement following the sub-routine call.

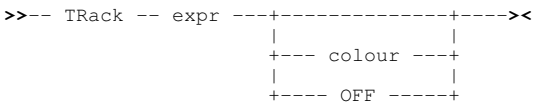
STEPINTO and STEPOVER set and then unset temporary break points in the SELCOPY control statements in order to pause processing.

Parameters:

STEPOVER has no parameters.

TRACK

Syntax:



Description:

Use the TRACK command to track the value of a valid SELCOPY POS expression as a position in storage.

The single byte, addressed by the POS expression, is highlighted in all open storage windows in which the position is displayed.

The POS expression is re-evaluated for every break in the SELCOPY execution.

Parameters:

`expr`
A valid SELCOPY POS expression. This may include EQUated names, @ pointers, LRECL special POS keywords (e.g. DATE, COMREG), integer values and arithmetic operators "+" (plus) and "-" (minus).

`colour`
The colour in which the evaluated position is highlighted. This is a two character code defining the colour and, optionally the extended highlighting, to be used.
Valid colour codes are:

B	Blue
G	Green
P	Pink
R	Red
T	Turquoise
W	White
Y	Yellow

Valid extended highlighting codes are:

B	Blink
N	None (No extended highlighting)
R	Reverse Video
U	Underscore

The default extended highlighting is **R** (reverse video), the default colour is **T** (turquoise).

`OFF`
Switch off tracking for the specified expression.

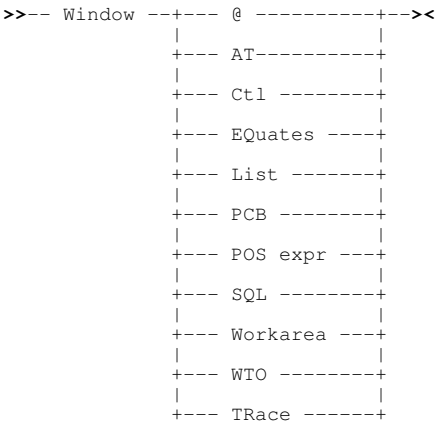
Examples:

`TRACK @A+10  R`
Highlight in red (default reverse video) the byte in all storage windows that is referenced by the expression @A+10.

`TRACK ARRAY+@X-1  GU`
Highlight in green with underscore the byte in all storage windows that is referenced by the expression ARRAY+@X-1.

WINDOW

Syntax:



Description:

Use the WINDOW command to open and place focus on the nominated window type.

Windows may also be opened via the Window menu of the SELCOPY Interactive main window menu bar.

Parameters:

`@`
`AT`
: Open and place focus on the @ Pointer window.

`CTL`
: Open and place focus on the Control Cards window.
Note that, closing the Control Cards window also exits SELCOPY Interactive.

`EQUATES`
: Open and place focus on the Equates window.

`LIST`
: Open and place focus on the Output Listing window.
Note that, closing the Output Listing window also exits SELCOPY Interactive.

`PCB`
: Open the PCB window.

`POS expr`
: Open a POS window. A valid SELCOPY POS expression must be specified to define the start address of the storage display.

`SQL`
: Open the SQL Log window.

`WORKAREA`
: Open a storage window (Work Area window.)

`WTO`
: Open the WTO Log window.

`TRACE`
: Open and place focus on the Trace window.
Note that, closing the Trace window also exits SELCOPY Interactive.

SELCOPY Interactive Function Keys

You can assign 3270 Program Function Keys (PFKeys) to CBLi and CBLe commands as applicable. The CBLi KEYS command may be used to display and globally assign Function key settings.

SELCOPY Interactive PFKeys have default functions assigned as determined by the window's class (i.e. Edit, Storage or List.) In addition to these, edit views and storage windows have the following PFKey definitions:

PF1	StepOver	Execute the next SELCOPY operation (step over a sub-routine.)
PF2	StepInto	Execute the next SELCOPY operation (step into a sub-routine.)
PF4	Macro SdbPopup	Invoke the SDBPOPUP edit macro to display a functions menu (edit views only.)
PF5	ShowPopupMenu	Open the storage display options popup menu (storage display windows only.)
PF13	Go	Continue SELCOPY processing.
PF14	BreakPoint	Toggle a break point on and off at the focus operation (edit views only.)

For edit views only, the default action of the PF1/PF2/PF13/PF14 keys may be governed via the SdbPopup macro which allows the user to select either "Edit" or "Debug" PFKey configuration.

Executing CBLVCAT

1. CBLVCAT Interactive Window
2. Raw Data Window

CBLVCAT Interactive Window

The Execute CBLVCAT window is used to execute CBLVCAT Interactive and may be opened via the following:

- Select 'Execute CBLVCAT' from the FILE menu item in the CBLi Main Menu bar.
- Enter the CBLi command VCAT on the command line of any window.
- Enter the "T" or "VC" prefix command in the prefix area of an existing Execute CBLVCAT window or certain other List type windows. "T" will generate a CBLVCAT Tune report and IDCAMS DEFINE deck for a VSAM file, "VC" will generate a CBLVCAT catalog and/or VTOC report for the list entry.

CBLVCAT is used to generate standard and customised reports on VTOC and ICF/VSAM catalog data. It also supports VSAM file tuning and generation of IDCAMS DEFINE job source.
Details on CBLVCAT output and control statement syntax is found in the CBLVCAT User Manual.

CBLi loads CBLVCAT and assumes control over its control statement input and report output functions. This allows the user to specify CBLVCAT input statements directly at the VCAT Command prompt or indirectly via a control statement file and view the output in a window.

In order to direct input from a control statement file, the fileid should be entered at the VCAT Command prompt and prefixed with a "<" (less than) symbol.

If you are using the LISTVCAT DEFINE option then the generated IDCAMS control statements are displayed in a CBLe text edit window and may subsequently be saved to a file.

After execution of CBLVCAT control statements (or control statement file), the SYSPRINT (MVS and CMS) or SYSLST (VSE) output is presented in the display area of the Execute CBLVCAT window.

The Execute CBLVCAT window is essentially a List window with a single column (i.e. SysPrint) and has the same charactersitics as List windows. For example, the Execute CBLVCAT window supports Prefix Commands and filtering, to display new views of the data.

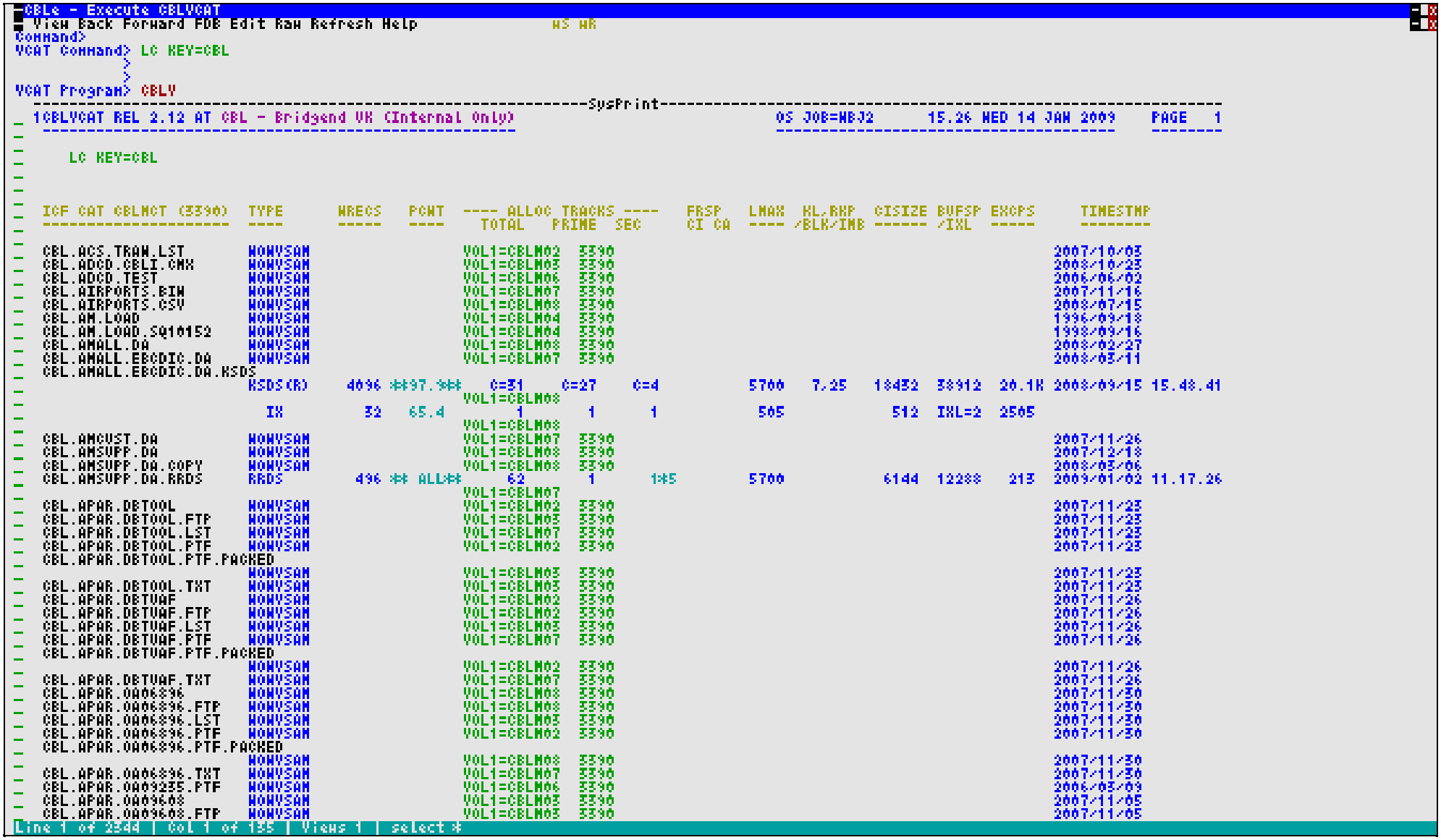


Figure 22. CBLVCAT Interactive in 62x160 3270 Session.

In addition to the standard List window menu items, the Execute CBLVCAT window includes the menu item **RAW** to open the CBLVCAT LISTVCAT or LISTVTOC Raw Data window.

CBLVCAT Log Output window is opened only if the CBLVCAT execution has generated SYSLOG output. This usually occurs if an error has been encountered in which case an information window is also displayed.

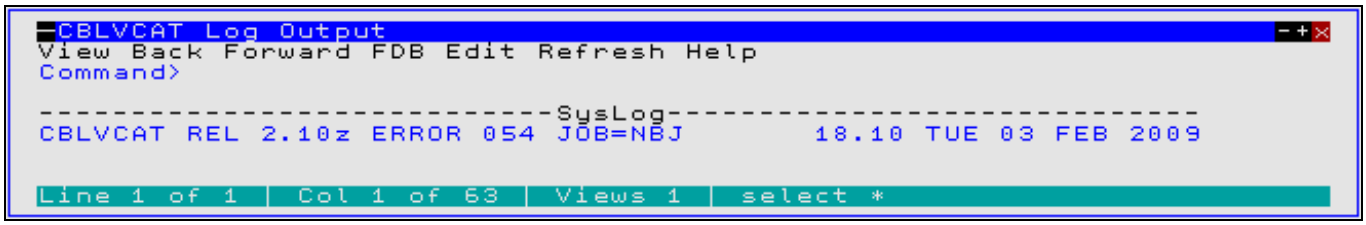


Figure 23. CBLVCAT Log Output window.

`VCAT Command>`
Enter one of the following:

◊ A CBLVCAT command, as you would code it on a CBLVCAT control statement.
◊ <filename, where filename is the name of a CBLVCAT control statement file.

The CBLVCAT command syntax is described in the CBLVCAT User Manual.

`VCAT Program>`
Specify the name of the CBLVCAT executable MODULE (MVS) or PHASE (VSE). By default, this field contains CBLV.

Prefix Commands

The following prefix area commands are available:

Command	Description
(blank)	See **Note 1** below. (The ENTER key must be pressed with the cursor on the line(s) belonging to the report entry).
B	Open the CBLe text editor to to perform SDATA BROWSE on the entry.
C	Copy the entry.
D	Delete the entry. User will be prompted to verify the deletion.
E	Open the CBLe text editor to edit this entry.
F	Open the FSU - File Search/Update Window to perform advanced file search and optionally update.
FO	Open an SDE view to display (browse) the entry as output from the FSU - File Search/Update Window.
FS	If the entry is a PDS/PDSE, open the file search window for the PDS.
I	Open an IDCAMS Command window and issue an IDCAMS LISTCAT for the entry. (default)
K	Delete (Kill) the entry without prompting for verification.
L	Open a Dataset List window for the entry.
M	If the entry is a PDS/PDSE, open a Library List window.
Q	Open a Dataset Enqueue List window for the entry (major name SYSDSN.)
R	Rename the entry.
SD	Open the SDE BROWSE/EDIT Dialog Window to browse or edit the entry's data within a Structured Data Environment window view.
T	Open another Execute CBLVCAT window and issue a LISTVCAT with TUNE DEFINE to generate tuned output for the entry.
V	Open the CBLe text editor to View (edit read/only) this entry.
VC	Open another Execute CBLVCAT window and issue a LISTVCAT and/or LISTVTOC operation (as appropriate) for the entry. See **Note 2**.
Z	Perform a compress of an MVS PDS library to reclaim disk space occupied by replaced (back-level) members. This action performs an IEBCOPY to itself. No action is taken for PDSE entries, however, the IEBCOPY dialog is opened with an error message if executed against any non-PDS(E) entry.
?	Open the volume statistics window for the volume containing the entry. Note that this command will only be successful for lines of a LISTVCAT report containing VOLn=volser.
>	Open a new window containing a zoomed vertical display of the entry's fields. Particularly useful for list windows that have a large number of displayed columns. Assigned to PF2 by default.

Notes:

1. The default action on hitting <Enter> on a SysPrint line depends on the contents of the report entry, as follows:
    1. If the entry contains the TYPE field "USERCAT" or "ALIAS OF", then prefix command "VC" is default.
    2. If the entry contains the TYPE field "PDS" or "PDSE", then prefix command "M" (Member List) is default.
    3. If the entry contains a fileid, then prefix command "E" (Edit) is default.

2. The "VC" prefix command performs LISTVCAT/VTOC operations based on the contents of the entry fields, as follow:
    1. If the entry contains the TYPE field "USERCAT", then a new report is generated for the entire contents of that catalog. Otherwise, only list the catalog entries that match the fileid.
    2. If the report entry also contains a "VOLn=volser" field, then generate a LISTVTOC report for entries that match the fileid in the volume's VTOC.

Columns Displayed

Name	Type	Description
SysPrint	Char	VCAT output report line

Raw Data Window

The CBLVCAT Raw window may be opened via the following:

- Select 'Raw' from the menu item of the Execute CBLVCAT window.
- Enter the CBLi command LVR on the command line of any window.

Where CBLVCAT arranges data in a printable report format, the CBLV Raw Data window provides a list of all report field data accumulated by CBLVCAT in order to generate the report.

The CBLVCAT Raw window has the same characteristics as a CBLi List window including selecting, sorting and filtering of row and column data and "point and shoot" sorting on column headers.

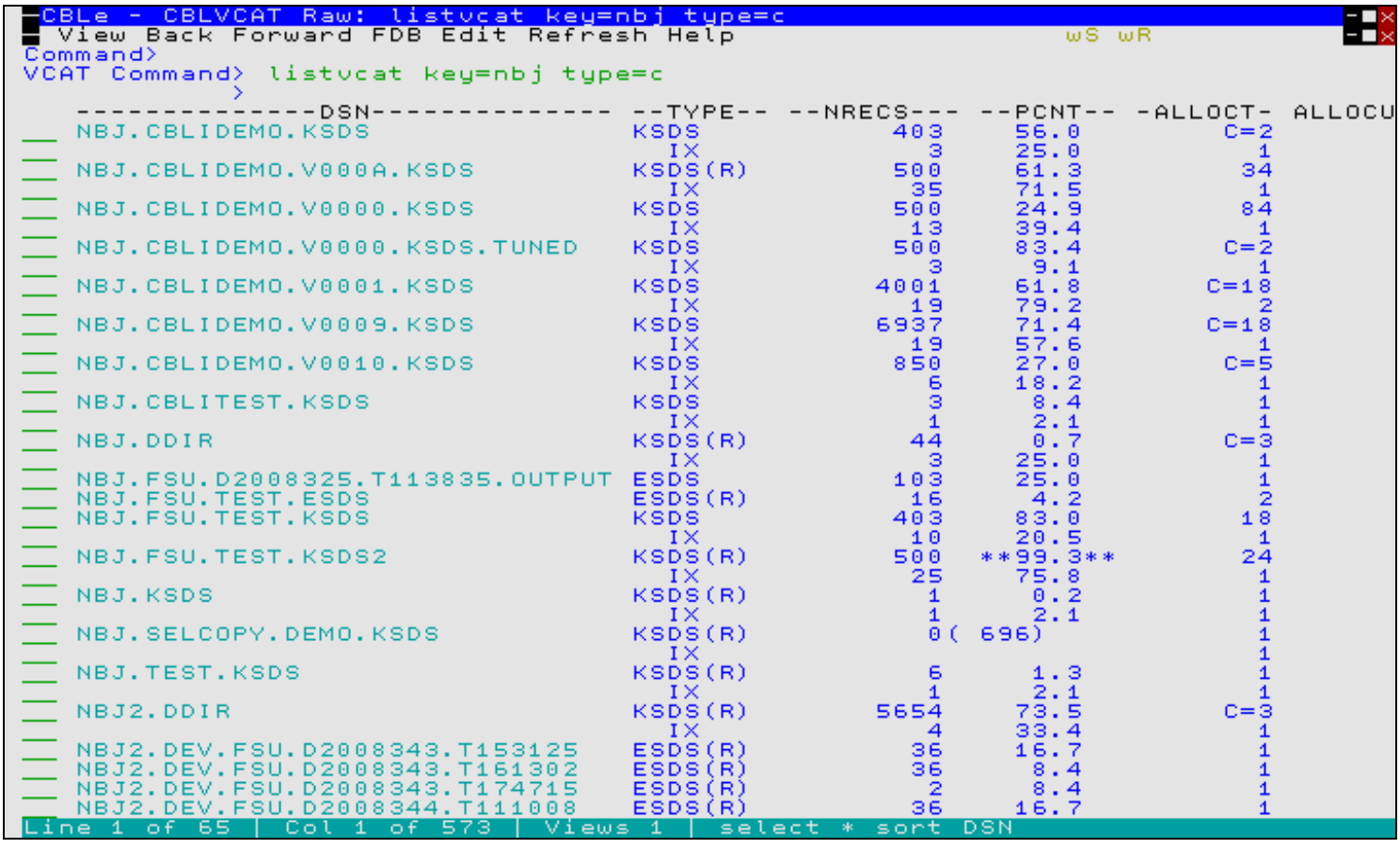


Figure 24. CBLVCAT LISTVCAT Raw Data Window.

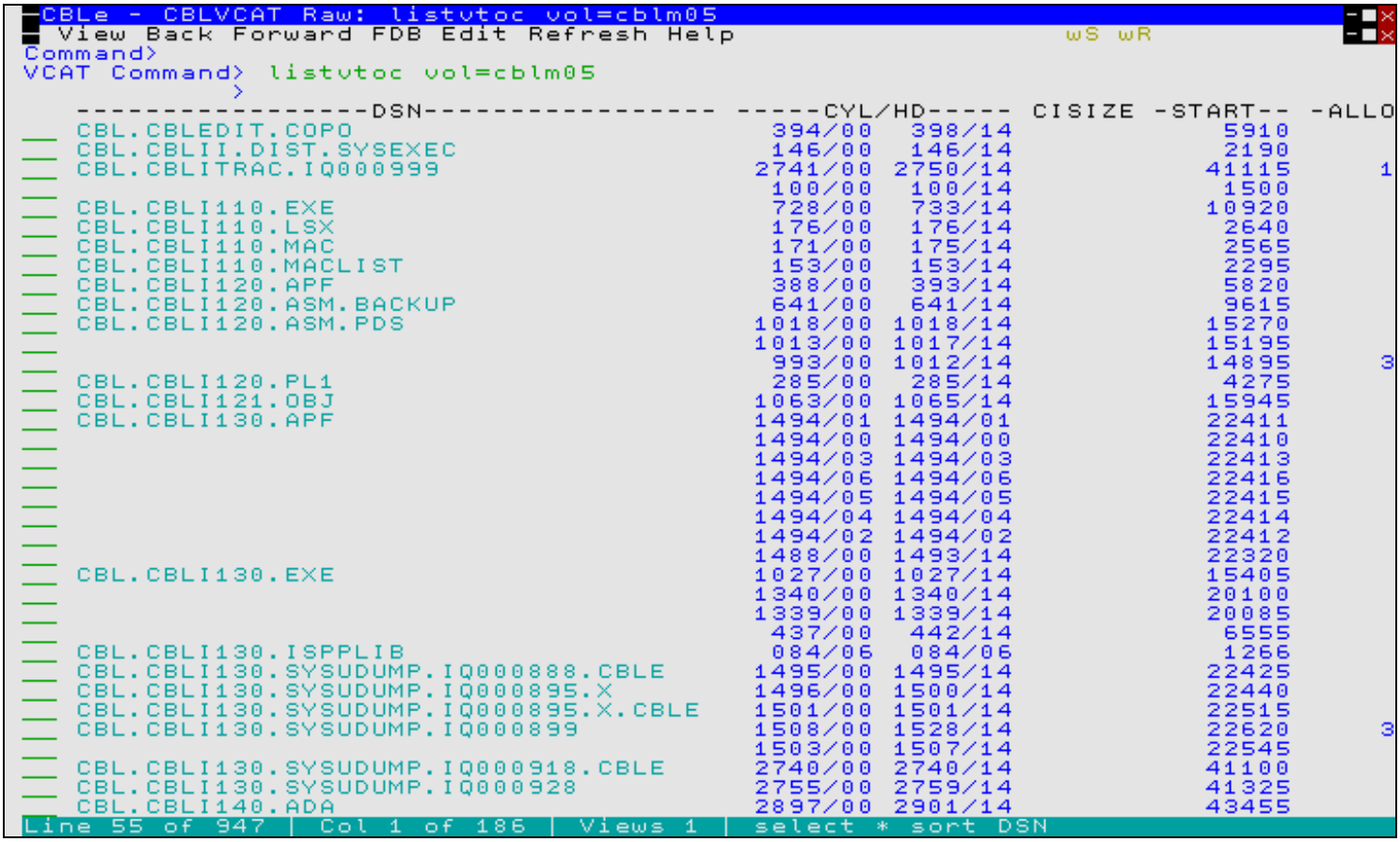


Figure 25. CBLVCAT LISTVTOC Raw Data Window.

Prefix Line Commands

The following prefix line commands are available:

Command	Description
(blank)	(Hit <Enter> with the cursor on a particular entry line). Prefix line command "M" if entry is a PDS/PDSE library, prefix line command "E" otherwise.
B	Open the CBLe text editor to to perform SDATA BROWSE on the entry.
D	Delete the entry. User will be prompted to verify the deletion.
E	Open the CBLe text editor to edit this entry. (Default for non-PDS/PDSE entries)
F	Open the FSU - File Search/Update Window to perform an advanced search and optionally update the contents of the entry.
FO	Open an SDE view to display (browse) the entry as FSU - File Search/Update Window output.
FS	Open the File Search window for the entry.
I	Open an IDCAMS Command window and issue an IDCAMS LISTCAT for the entry.
K	Delete (Kill) the entry without prompting for verification.
M	If the entry is a PDS/PDSE, open a Library List window. (Default for PDS/PDSE entries)
Q	List dataset enqueues (major name SYSDSN) for this entry.
R	Rename the entry.
SD	Open the SDE BROWSE/EDIT Dialog Window to browse or edit the entry's data within a Structured Data Environment window view.
T	Open an Execute CBLVCAT window and issue a LISTVCAT TUNE DEFINE operation for the entry.
UT	Opens the general file utilities menu to ultimately generate specific line commands in a temporary CMX file.
V	Open the CBLe text editor to View (edit read/only) this entry.
VC	Open an Execute CBLVCAT window and issue a LISTVCAT operation for the entry.

Z	Perform a compress of an MVS PDS library to reclaim disk space occupied by replaced (back-level) members. This action performs an IEBCOPY to itself. No action is taken for PDSE entries, however, the IEBCOPY dialog is opened with an error message if executed against any non-PDS(E) entry.
/	Open a drop down menu containing valid prefix command functions for the list window entry. Position the cursor on the required function and hit <Enter> to action the command. Assigned to PF4 by default.
>	Open a new window containing a zoomed vertical display of the entry's fields. Particularly useful for list windows that have a large number of displayed columns. Assigned to PF2 by default.

Columns Displayed

For LISTVTOC Output, the data displayed is:

Name	Type	Description
DSN	Char	Data Set Name
CYL/HD	Char	Low and high Cylinder/Head Limits
CISIZE	Char	Control Interval Size
START	Char	Relative track/block start address
ALLOC	Char	Number of allocated tracks/blocks
USED	Char	Number of used tracks/blocks
TYPE	Char	Data set type
EXPIRES	Char	Expiry date
BLKSIZE	Char	Blocksize
LRECL	Char	Logical Record Length
RECFM	Char	Record Format
CREATED	Char	Creation date
INFO	Char	Informational messages
VOLUME	Char	VTOC volume id
ACCESSED	Char	Last Accessed date
UNIT	Char	Unit (cuu) of DASD volume

For LISTVCAT Output, the data displayed is:

Name	Type	Description
DSN	Char	Data Set Name
TYPE	Char	Data set type
NRECS	Char	Number of records
PCNT	Char	Percent of allocated space used
ALLOCT	Char	Total allocated tracks/blocks
ALLOCU	Char	Unused allocated tracks/blocks
ALLOCP	Char	Defined Primary allocation (tracks/blocks)
ALLOCS	Char	Defined Secondary allocation (tracks/blocks)
FRSP	Char	Defined Free Space per CI and CA
LMAX	Char	Defined Maximum Record Length
KL/RKP/IMB	Char	Duplicate of fields KL,RKP **or** BLKSIZE **or** IMB/REP
CISIZE	Char	Control Interval Size
BUFSP/IXL	Char	Duplicate of fields BUFSP **or** IXL
EXCPS	Char	Number of EXecuted Channel Programs
TIMESTMP	Char	Timestamp that file was last closed
NSEC	Char	Number of secondary extents
AVRL	Char	Defined average RECORDSIZE
PHYREC	Char	Physical Record Size
RECSTATS	Char	Records deleted, inserted, updated and read
KL	Char	Defined KEYS Length
RKP	Char	Defined KEYS Position
BLKSIZE	Char	Block size (VSE/VSAM SAM)
IMB/REP	Char	IMBED and/or REPLICATE flags
BUFSP	Char	Defined BUFFERSPACE
IXL	Char	Number of Index Levels
CI/CA	Char	Number of Control Intervals per Control Area
SHR	Char	Defined SHAREOPTIONS (local and cross system)
S/C	Char	Defined SHAREOPTIONS (local only) and USECLASS (primary only)

DEFINED	Char	Date on which file was defined
EXPIRES	Char	Date on which file expires
SPLITCI	Char	Number of Control Interval splits
SPLITCA	Char	Number of Control Area splits
SEVL	Char	Highest CBLVCAT severity message level
VOLUME	Char	Catalog Volume
GMAX	Char	GDG Maximum Level
GVER	Char	GDG Version number
GGEN	Char	GDG Generation number
STD1	Char	Reserved (blank)
STD2	Char	Reserved (blank)
HIUSERBA	Char	High Used Relative Byte Address
HIALLRBA	Char	High Allocated Relative Byte Address
FREEBYTES	Char	Number of unused allocated bytes
COMPONENT	Char	DATA or INDEX component DSN
ENTRY	Char	VSAM CLUSTER entry DSN
SMSS	Char	Defined SMS Storage Class
SMSD	Char	Defined SMS Data Class
SMSM	Char	Defined SMS Management Class
EXT	Char	Extended Attributes
CATALOG	Char	Catalog DSN

DB2 Dynamic SQL

The DB2 Dynamic SQL window may be opened via the following:

- Select 'DB2 Dynamic SQL' from the File menu in the CBLi Main Menu.
- Enter the CBLi command SQL on the command line of any window.

DB2 Dynamic SQL window may be used to submit SQL commands to a DB2 database and display the resultant messages and table views.

The DB2 Dynamic SQL capability is available only to MVS sites where **SELCOPY** is installed.

The SELCOPY DB2 interface, **SELCOPQL** load module is used to pass SQL statements to the DB2 data base and so must also be available in the SELCOPY load library.

On startup, the Dynamic SQL window connects the user to the DB2 subsystem using the DB2 subsystem name and plan specified in the **CBLNAME** load module.

The Dynamic SQL window has the same characteristics as a CBLi List window including selecting, sorting and filtering of row and column data and "point and shoot" sorting on column headers.

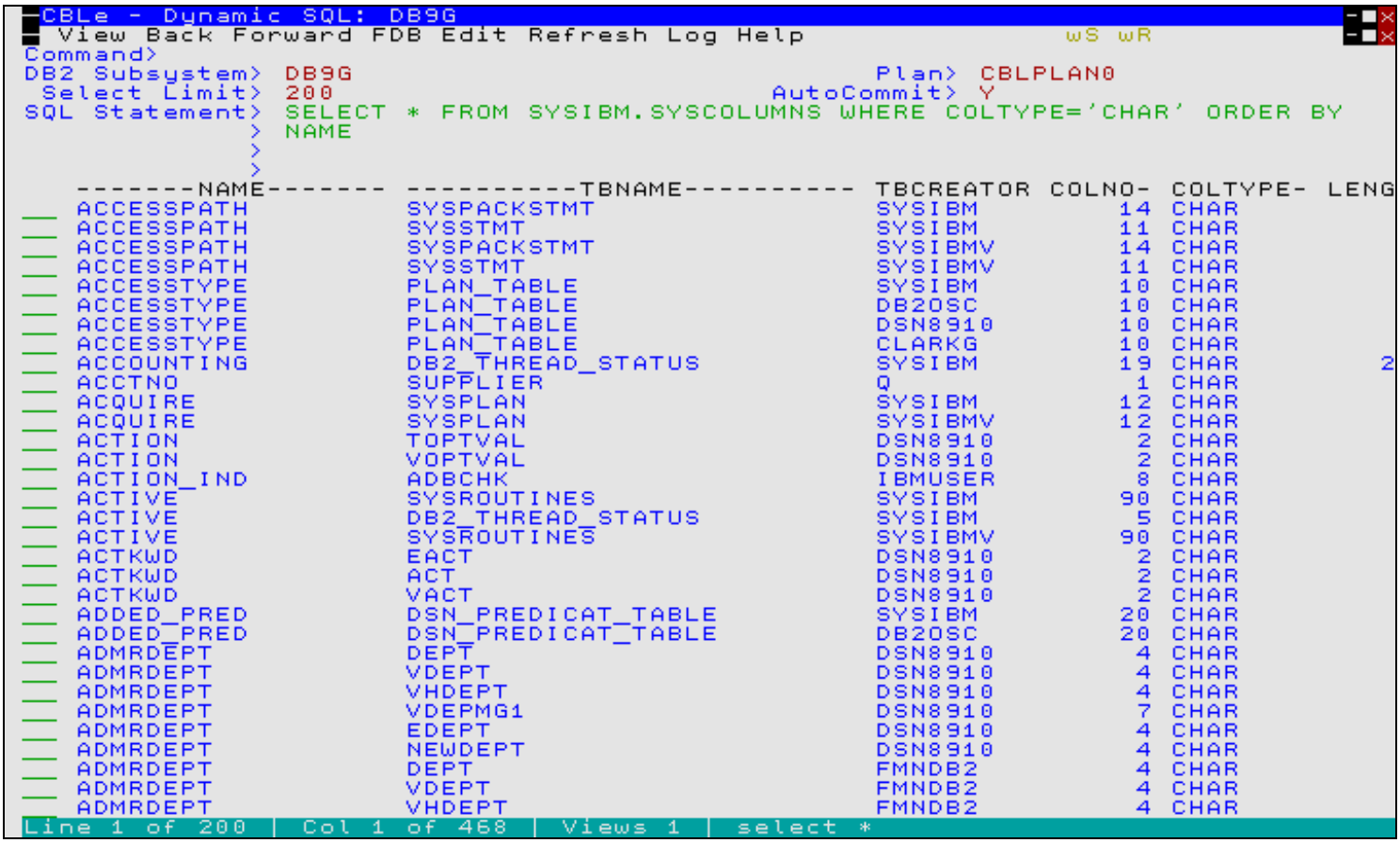


Figure 26. DB2 Dynamic SQL window.

`DB2 Subsystem>`
: Specify the DB2 sub-system name to be the target of the CONNECT.
Changing the Subsystem name will cause CBLi to disconnect the user from the current subsystem and reconnect to the new subsystem.

Default is that defined by the CBLiINI option, DB2.SSN, otherwise the sub-system name specified in the DB2SubSys field of the CBLNAME load module is used.

`Plan>`
: Specify the SELCOPY (SELCOPQL) DB2 plan name which has been bound to the DB2 sub-system.
This is the name assigned to the SELCOPY plan during the BIND to the DB2 subsystem.

Default is that defined by the CBLiINI option, DB2.Plan, otherwise the plan name specified in the DB2Plan field of the CBLNAME load module is used.

`Select Limit>`
: Limit the number of rows to be displayed in the Dynamic SQL window following a SELECT transaction. Once the limit threshold has been reached, a pop-up message window is displayed and no further attempt is made to retrieve selected

rows of data.
The *n_rows* value is placed in the "Select Limit>" field of the Dynamic SQL window.
The default limit is that defined by the CBLiINI option, DB2.SelectLimit, otherwise no limit is implied.

`AutoCommit>`
Determine whether a COMMIT is to be automatically issued following every transaction (AutoCommit). If COMMIT=NO, then the user should issue COMMIT manually to commit any changes made to the data. A commit is executed automatically when the Dynamic SQL window is closed, regardless of the AutoCommit field setting.
The commit value is reflected in the "AutoCommit>" field of the Dynamic SQL window.
The default is YES.

`SQL Statement>`
Specify valid SQL syntax to be executed.
The resulting data or messages are displayed in the window display area.

The contents of the display area may be edited in a new file using the CBLe text editor by selecting **Edit** from the window menu.

Select **Log** from the window menu to open the SQL Log output which displays the daignosis information and SQL return codes passed from the DB2 sub-system.

```
CBLe - SQL log
 View Back Forward FDB Edit Refresh Help                    wS wR
Command>

1              *** CBL Dynamic SQL Interface Version VI1.1.0 ***
                   ------------------------------------
 CBLS010I 17:03:38 CBL Dynamic SQL Interface is started. Date: 2009-02-03

 CBLS000I 17:03:38 (Sel 0) Connected to DB2 Version 9.1.0
                   Subsystem:DB9G                Plan:CBLPLAN0
                        User:NBJ       Current SQLID:NBJ

 CBLS004I 17:03:38 (Sel 1) OPEN  SELECT cursor SQL00001

          SELECT *
            FROM SYSIBM.SYSCOLUMNS
           WHERE COLTYPE='CHAR'
           ORDER BY NAME

 CBLS006I 17:03:42 (Sel 1) CLOSE SELECT cursor SQL00001
                   Note: End of SELECT not reached.
                            Prepare             DB2 CPU=  000000.104791 seconds.
                               OPEN             DB2 CPU=  000002.490252 seconds.
                         Rows  Fetched=200       DB2 CPU=  000000.283559 seconds.
                                           Total DB2 CPU=  000002.878602 seconds.

 CBLS007I 17:03:42 (Sel 2) EXECUTE  COMMIT   SQL Code=0
                                             DB2 CPU=  000000.008171 seconds.

No list view yet, enter parameters
```

Figure 27. DB2 Dynamic SQL LOG window.

Select **FDB** from the window menu to open the Field Descriptor Block which provides detailed information on each field displayed by an SQL SELECT statement.

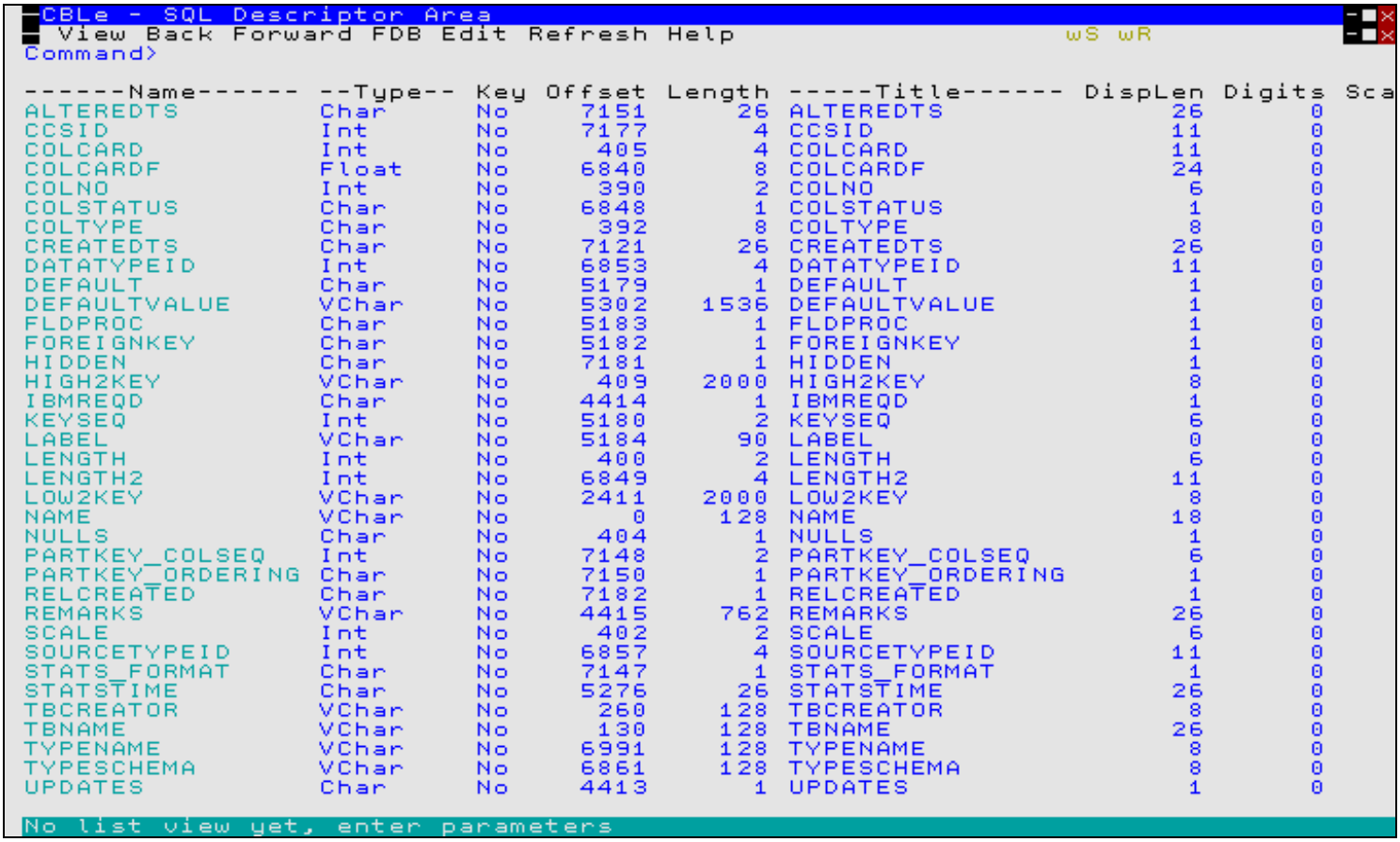


Figure 28. DB2 SQL FDB Window.

Executing IDCAMS

The IDCAMS Command window may be opened via the following:

- Select 'Execute IDCAMS' from the File menu in the CBLi Main Menu.
- Enter the CBLi command AMS on the command line of any window.
- Enter the CBLi prefix command "I" where supported by a List type window.

The IDCAMS Command window allows the user to enter any IDCAMS command and view the output in the the window display area.

The IDCAMS Command window is essentially a List window and has the same charactersitics as List windows. For example filtering is supported to display new views of the data.

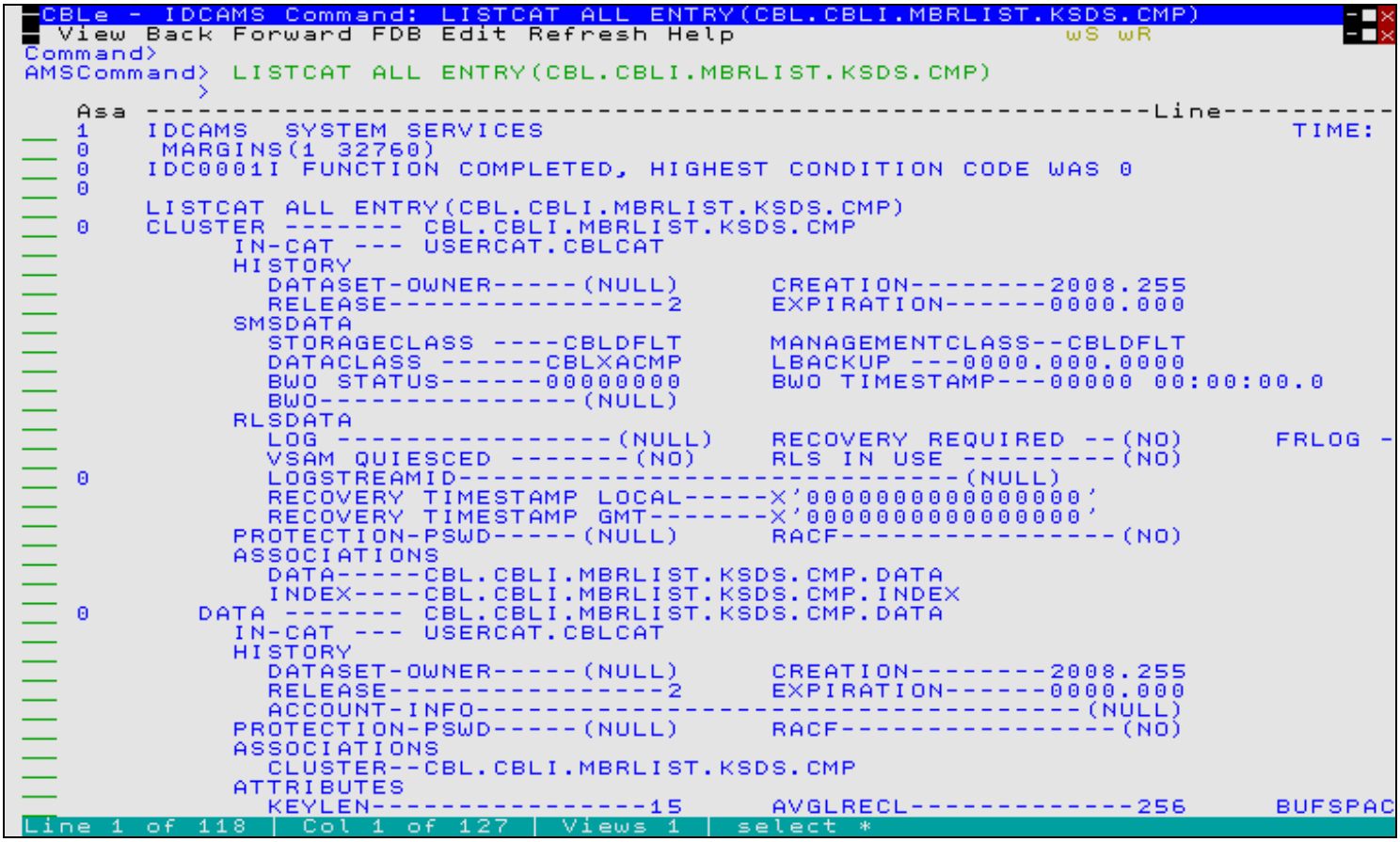


Figure 29. IDCAMS Command window.

AMSCommand>
: Specify valid IDCAMS command syntax.

Prefix Commands

No prefix line commands are supported for IDCAMS Command windows.

Columns Displayed

Asa	Char	ASA print control character
Line	Char	Print line

New File Definition

New files may be defined to the system from within the CBLi environment. Non-VSAM files and most commonly used VSAM elements can be defined by selecting the appropriate entry from the 'File' menu of the CBLi main window menu bar.

- Allocate NonVSAM
- Define KSDS
- Define ESDS
- Define RRDS
- Define LDS
- Define AIX
- Define Path
- Define Alias
- Define Catalog

Each selection opens a window containing enterable file characteristic fields.

Allocate NonVSAM

Note: Not yet implemented for CMS and VSE.

The Allocate nonVSAM window allows the user to supply the characteristics of the new data set prior to its allocation. Select Define from the menu to action the allocation and optionally populate the data set.

CBLe text editor also opens the Allocate nonVSAM window when attempting to save a file with a data set name that has not yet been allocated.

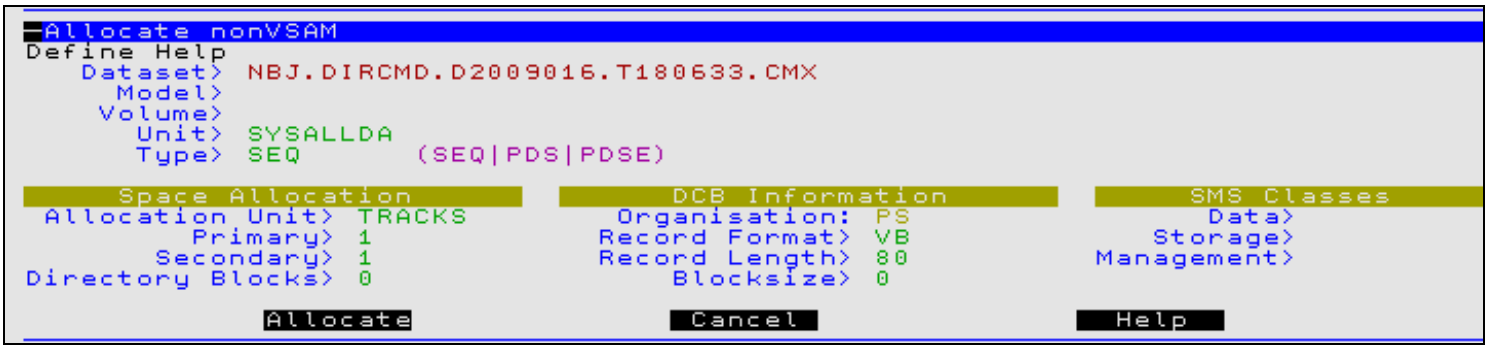


Figure 30. Allocate nonVSAM window.

The Allocate NonVSAM window has the following menu items:

Define — This is a popup menu containing the following items:

Foreground	Applicable to operation under TSO and CMS. Allocate the data set in the foreground (Control is temporarily passed to TSO or CMS).
Foreground+COPY	As for Foreground but also copy data from the data set specified in the Model field. **Not yet supported.**
Background	Applicable to operation on VSE and MVS. A CBLe view is opened to edit a temporary job containing batch JCL to allocate/define the data set. The job may be submitted to the batch system using the CBLe command SUB. **Not yet supported.**
Background+COPY	As for Background but also include JCL to populate the data set with data from the data set specified in the Model field. **Not yet supported.**

Help — Open the help window for data set allocation.

Define VSAM Elements

Note: Not yet implemented for CMS and VSE.
Define AIX, Path, Alias and Catalog are not yet supported.

The Define VSAM windows provide a method of defining VSAM objects simply by entering the required options in the appropriate fields of a form. Each Define VSAM window contains fields relevant to the object being defined.

The **Model>** field allows the user to model the new object's values on an existing VSAM data set. On entering a VSAM data set name in the Model field and hitting <Enter>, all other fields are updated automatically to reflect the inherited values.

Select the appropriate Define VSAM Menu bar item to to process the form.

CBLe text editor also opens the Defin VSAM window when attempting to save a VSAM file with a data set name that has not yet been defined.

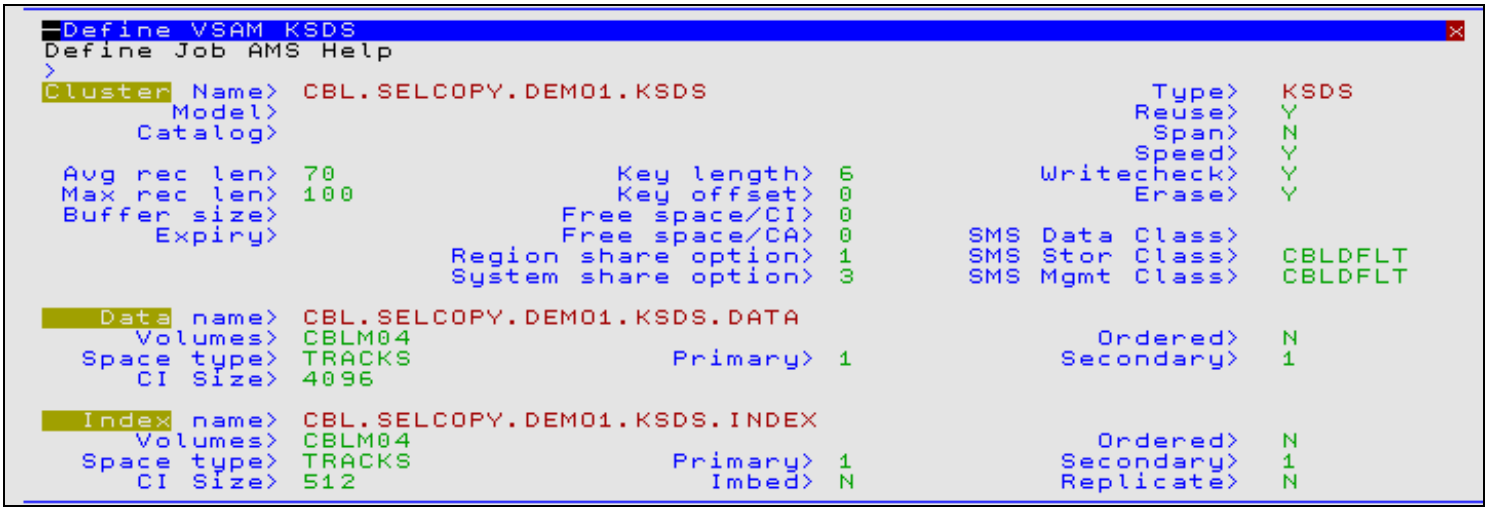


Figure 31. Define VSAM KSDS window.

All Define VSAM windows have the following menu items:

Define	Start the VSAM object definition. (Foreground)
Job	Creates and edits the IDCAMS DEFINE statement including job control ready for submission to batch (See CBLe command SUBMIT.) (Background)
AMS	Creates and edits the IDCAMS DEFINE statement only.
Help	Open the help window for VSAM elements definition.

Execute POWER

The POWER Command Output window may be opened via the following:

- Select 'Execute POWER' from the FILE menu in the CBLi Main Menu.
- Enter the CBLi command POWER on the command line of any window.

The POWER Command Output window allows the user to enter VSE POWER commands and view the output in the window display area.

If CBLIINI variables System.VSESMLogon=No (i.e. no Security Manager is active) and System.TrustedUser=No, then POWER commands are restricted to PDISPLAY operations only.

The POWER Command Output window is essentially a List window and has the same characteristics as List windows. For example select, sort and filter to display new views of the data are supported.

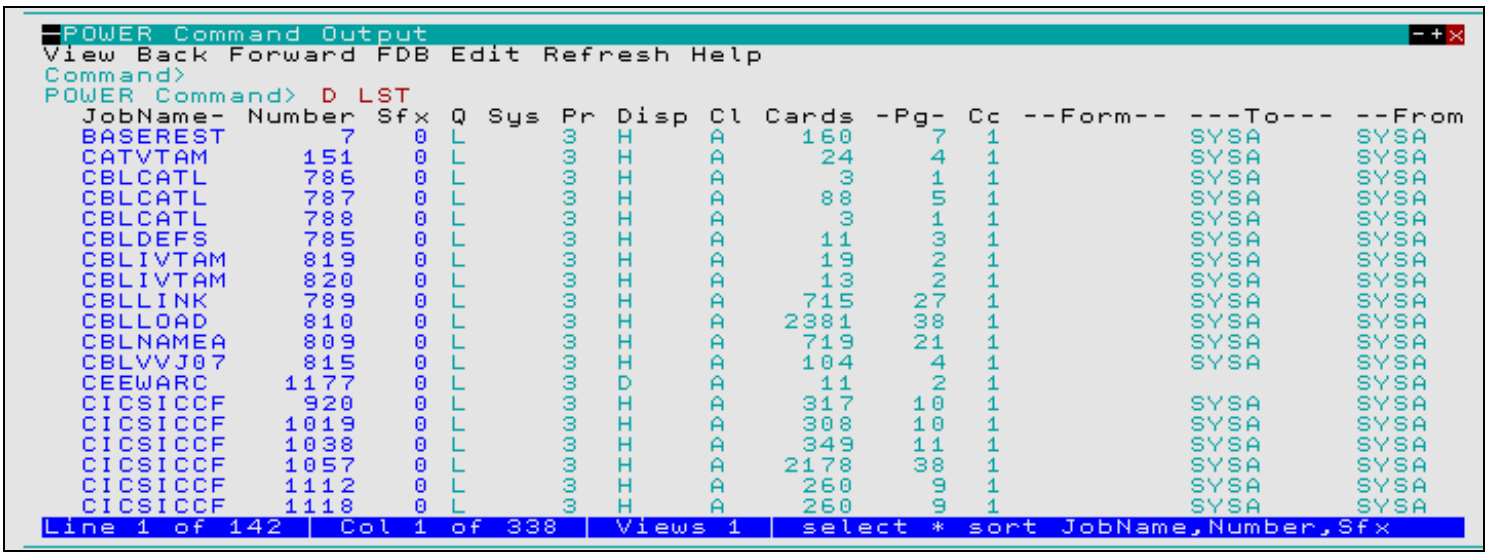


Figure 32. POWER Command Output window for PDISPLAY LST.

POWER Command>
Specify the VSE POWER command. Note that POWER commands relating to cross partition usage (e.g. PDISPLAY STATUS) are not supported.

Prefix Commands

The following prefix line commands are supported for **PDISPLAY** (RDR, LST or PUN) output only:

Command	Description
(blank)	Prefix Line command E. (The ENTER key must be pressed with the cursor on the line containing the required entry).
D	Delete the entry. User will be prompted to verify the deletion.
E	Open the CBLe text editor to edit this entry. If an entry is password protected, then it may be edited by any user so long as the password is supplied. A pop-up window will prompt the user for the password. Non-password protected entries may only be edited if either of the following are true: • System.TrustedUser=Yes in the CBLIINI file. • System.VSESMLogon=Yes in the CBLIINI file and the TO or FROM attributes match the current user's userid. Note that VSE Basic Security Manager (BSM) alone does not impose access restrictions on the VSE POWER queues.
K	Delete (Kill) the entry without prompting for verification.

Columns Displayed

The data displayed for PDISPLAY ALL/LST/PUN/RDR is:

Name	Type	Description
JobName	Char	JOB NAME
Number	UInt	JOB NUMBER
Sfx	UInt	JOB SUFFIX NUMBER
Q	Char	QUEUE IDENTIFIER (R, L, P)
Sys	Char	SYSTEM ID. (TARGET/PROCESS.)
Pr	Char	PRIORITY
Disp	Char	DISPOSITION (*..IN EXEC.)
Cl	Char	CLASS
Cards	UInt	NUMBER OF RECORDS SPOOLED
Pg	UInt	NUMBER OF PAGES SPOOLED
Cc	UInt	NUMBER OF COPIES
Form	Char	FORMS IDENTIFIER
To	Char	TARGET DESTINATION USER/REMOTE ID
From	Char	ORIGINATING USER/REMOTE ID
Cn	Char	CENTURY OF CREATION DATE
Date	Char	CREATION DATE OF QUEUE ENTRY
Start	Dec	START TIME (0HHMMSSF)
Stop	Dec	STOP TIME (0HHMMSSF)
PXFMRLEN	UInt	RECORD LENGTH
PXFMTYPE	Hex	RECORD TYPE
PXFMVOL	Hex	TAPE BAM VOLUME NUMBER
PXFMUSER	Char	USER INFORMATION
PXFMFLG1	Hex	CONTROL FLAG 1
PXFMRCFM	Hex	RECORD FORMAT
PXFMSTAT	Char	PAPER STATUS BYTE
PXFMLNE#	UInt	NUMBER OF LINES/CARDS SPOOLED
PXFMFLSH	Char	FLASH IDENTIFIER
PXFMCPYG	Hex	COPY GROUPINGS
PXFMFLG2	Hex	CONTROL FLAG 2
PXFMNSEP	UInt	NUMBER OF SEP. PAGES / CARDS
PXFMJBO#	UInt	ORIGINAL JOB NUMBER
PXFMCMPT	Char	COMPACTION TABLE NAME
PXFMNODE	Char	TARGET DESTINATION NODE NAME
PXFMORGN	Char	ORIGINATING NODE NAME
PXFMSUBS	Char	SUBSYSTEM NAME (EXTERNAL WRITER ID)
PXFMDDND	Char	NEXT DUE DATE
PXFMDDNT	Char	NEXT DUE TIME
PXFMQNUM	UInt	QUEUE ENTRY NUMBER
PXFMSECN	Char	QUEUE ENTRY SECURITY ZONE (SECNODE)
PXFMDIST	Char	OUTPUT DISTRIBUTION CODE
PXFMMACN	UInt	.. NON SHARED ACCESS COUNT
PXFMMAC1	UInt	.. SHARED SYSID 1 ACC. CNT.
PXFMMAC2	UInt	.. SHARED SYSID 2 ACC. CNT.
PXFMMAC3	UInt	.. SHARED SYSID 3 ACC. CNT.

PXFMMAC4	UInt	.. SHARED SYSID 4 ACC. CNT.
PXFMMAC5	UInt	.. SHARED SYSID 5 ACC. CNT.
PXFMMAC6	UInt	.. SHARED SYSID 6 ACC. CNT.
PXFMMAC7	UInt	.. SHARED SYSID 7 ACC. CNT.
PXFMMAC8	UInt	.. SHARED SYSID 8 ACC. CNT.
PXFMMAC9	UInt	.. SHARED SYSID 9 ACC. CNT.

The data displayed for other POWER commands is:

Name	Type	Description
Text	Char	Power Display Output

Create ALIAS

The Create ALIAS Dialog window may be opened via the following:

- Select 'Create Library ALIAS' from the FILE menu in the CBLi Main Menu.
- Enter the CBLi command ALIAS -DLG on the command line of any window.
- Enter the List window prefix command "A" against an entry in a Library List.

The Create ALIAS dialog provides a simple interface to create a new PDS or PDSE library member alias.

Note that aliases for load-library members are created using the binder to relink the module being aliased. This will result in an update to the module's **TTR**.

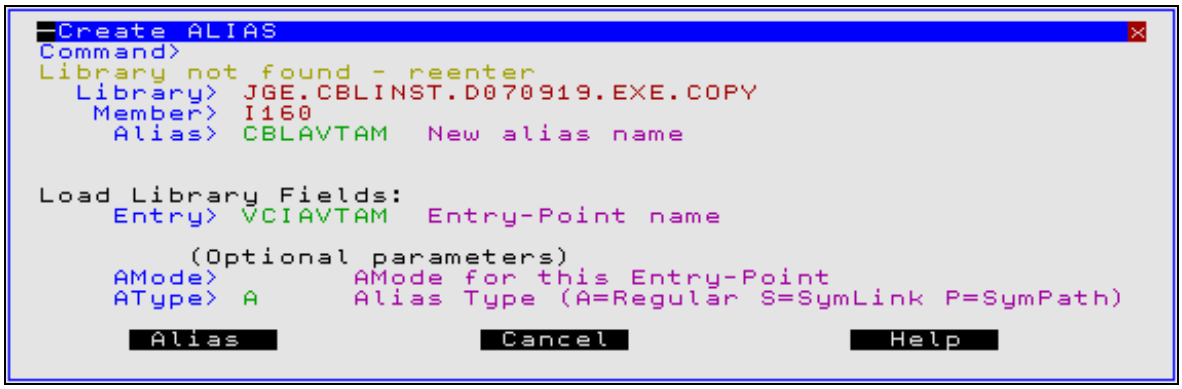


Figure 33. Create ALIAS Dialog window.

Library>
The DSN of the PDS(E) library. (This may be a LOAD Library.)

Member>
The library member name for which an alias will be generated.

Alias>
The new alias name to be generated.

Entry>
For load library aliases only, the symbolic name of the entry-point address to be used.

AMode>
For a load library aliasses only, the Addressing Mode for the entry point specified in Entry>. Valid arguments are 24, 31 and ANY.

AType>
For a load library aliasses only, the alias type to be generated. Valid arguments are A=Regular, S=SymLink, P=SymPath.

Execute IEBCOPY

The IEBCOPY Dialog window may be opened via the following:

- Select 'Execute IEBCOPY' from the FILE menu in the CBLi Main Menu.
- Enter the CBLi command IEBCOPYDIALOG on the command line of any window.
- Enter the List window prefix command "C" against a PDS(E) entry in a Dataset List or Catalog List, or any entry within in a Library List.

The IEBCOPY Dialog provides an intuitive interface to copy PDS(E) libraries or individual members to a new or existing target library.

Select "Copy" to perform the IEBCOPY in the foreground or "JCL" to generate a batch job stream in a CBLe text edit view. Having selected "JCL" the user can issue "JOBCARD" to insert a skeleton JOB statement, before executing SUB to submit the job to batch.

Note: Unless already positioned on one of the window buttons (Copy, JCL, Cancel or Help), <Enter> will first position the cursor on the "Copy" button, <Enter> a second time will select (press) the button to action the command.

Any non-zero return code encountered using the foreground "Copy" option will open the Execute IEBCOPY output listing displaying the SYSPRINT output.
Unless the Output> field value is "YES", if a zero return code is encountered, no output window is opened and a message reporting the number of members copied is returned.

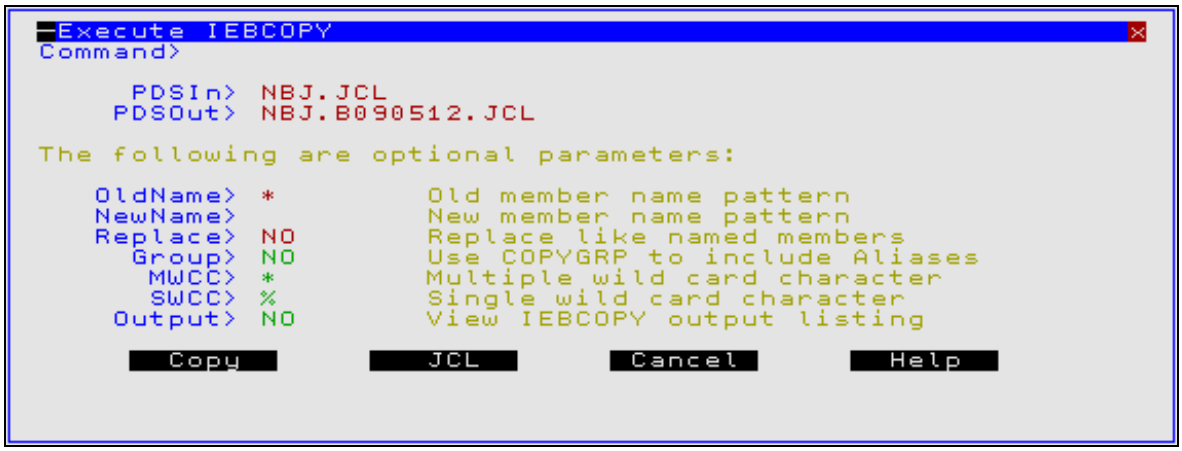


Figure 34. IEBCOPY Dialog window.

PDSIn>
Specify the DSN of the source PDS(E) library. (This may be a LOAD Library.)

PDSOut>
Specify the DSN of the target PDS(E) library. This may be the same library DSN specified for PDSIn.

Default is the value specified on the last invocation of the IEBCOPY dialog. Otherwise, the default is the PDSIn value.

OldName>
Source library member name mask identifying members to be copied.

Multiple character and single character wild cards, defined by the MWCC and SWCC values (see below) may be used in the member mask.

If no value is specified (i.e. unset), the entire library will be copied. This is different to simply specifying wildcard "*" (asterisk) which copies all members individually. To copy all members of a library, the process is quicker if the value is blank.

If invoked via the "C" prefix command, default is the value of the Library List "Entry" field or is unset if a Dataset or Catalog List. Otherwise, the default is the value specified on the last invocation of the IEBCOPY dialog.

NewName>
Target member name. The member name specified in OldName will be renamed to this new name.

This field must be empty if a wildcard character is used in the OldName member mask. Wild cards are not supported for NewName.
Default is the OldName value.

Replace>
Enter "YES" or "NO" to indicate whether existing members in the target library are to be replaced if the source and target member names match.
Default is the value specified on the last invocation of the IEBCOPY dialog, otherwise "NO".

Group>

Enter "YES" or "NO" to indicate whether any defined ALIAS entries for the selected library members are to be copied also. Note that this also applies to Load Library members.

MWCC>

Specifies the Multiple Wild Card Character which represents zero or more characters in the OldName library member mask.
Default is "*" (asterisk).

SWCC>

Specifies the Single Wild Card Character which represents one character in the OldName library member mask.
Default is "%" (percent).

Output>

Enter "YES" or "NO" to indicate whether the IEBCOPY SYSPRINT output is to be displayed.
Default is "NO".

List Windows

A list window is a window which displays information as a table of rows and columns. The columns are described by data elements which have a name and data type. The list of columns which make up the table are defined in a Field Descriptor Block (FDB).

All list windows support common functions as well as those specific to the type of list. The common functions are described in the following.

The List Window Menu

All list windows have the following menu items:

View	This is a popup menu which lists all the views which have been made of the current list. You can select a view from this menu.
Back	Select the previous view.
Forward	Select the next view.
FDB	Display the Field Descriptor Block for the list.
Edit	Open a CBLe text edit window containing a text version of the list.
Refresh	Refresh the contents of the list window so that all column fields reflect the current status.
Help	Open the help window for the list.

View List Display

A SELECT clause and/or WHERE clause, executed as a CLI command, creates a new view of the list data. On each execution of one of these CLI commands, the command stream is recorded as a single entry at the end of the list window's View List Display.

This allows the user to select and filter list columns and rows and then easily recall any previous view of the data.

The View List Display is a drop down menu available by selecting the "View" List menu bar item. Any previous view may be selected by positioning the cursor on the required SELECT or WHERE clause entry and hitting <Enter>.

Alternatively, the display's view of the data may be switched to view immediately prior to or following the current view by selecting "Back" or "Forward" respectively from the List menu bar.

Field Descriptor Block (FDB)

The FDB window may be opened using the following:

- Select 'FDB' from the list window menu bar.
- Enter the CLI command **FDB** on the list window command line.

Information about the data displayed under each column of a List window is referenced via an internal CBLi data structure. This structure includes, or addresses, fields that define the column data attributes. e.g. column name, column data type, column data length, etc.

The Field Descriptor Block (FDB) maps this internal structure and so provides information for all fields in the List window.

FDB is primarily used as an aid to performing List window SELECT, SORT and WHERE clause commands.

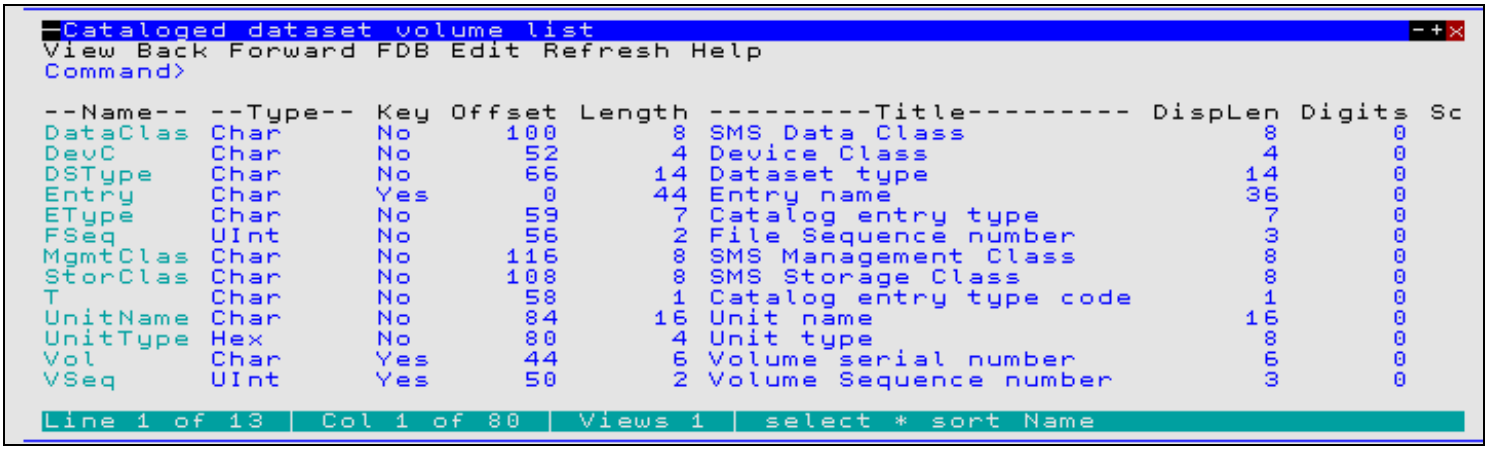


Figure 35. FDB for Catalog List window.

Name
Specifies the field names that constitute the List window column headers. These entries are used when selecting columns and sorting/filtering rows to generate new list views.

Type
The data format in which data for that column is stored.

Key
Identifies whether or not the column is a key column. If the column is a key column and is either the first column in the list or immediately follows another key column, then it is always in view even when scrolling the list view left or right.

Offset
The offset within the structure of the column data.

Length
The length of the column data field within the structure. Note that if one or more levels of indirection to the column data field exist, then the structure contains an address field length 4.

Title
Descriptive name for the field column.

Displen
The length of the longest entry displayed in the column.

Digits
The number of decimal digits (precision) displayed for column data of numerical data type.

Scale
The number of scale digits (fraction digits) displayed for column data of numerical data type.

Because the FDB window is itself a List window with its column data attributes referenced by an internal data structure, it too may be described by an FDB and is subject to all supported list window functions (SELECT, SORT WHERE, etc.)

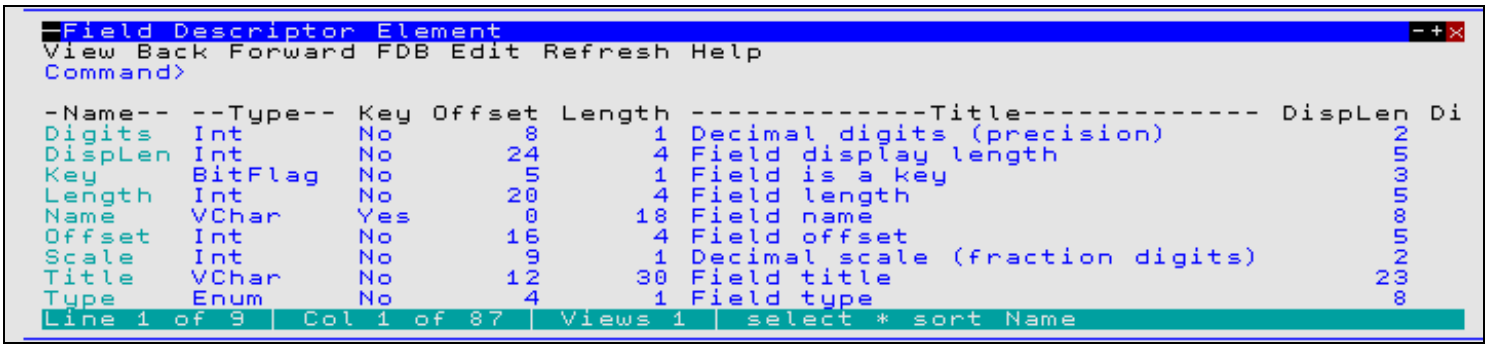


Figure 36. FDB for FDB window.

Edit View

The contents of the current list view may be edited and saved to disk.

- Select 'Edit' from the list window menu bar.

- Enter the CLI command **EDIT** on the list window command line.

A CBLe text editor window is opened, the list is loaded into CBLe storage and edited. The edited view is given a generic title "UNTITLED". On saving the text for the first time, the user is prompted to provide a valid "Save as" fileid.

Note that if INSTANCE=SINGLE is set in the (Edit) section of the CBLIINI file and a CBLe editor window is already open, then the list will be edited in a new document window of the existing CBLe window.

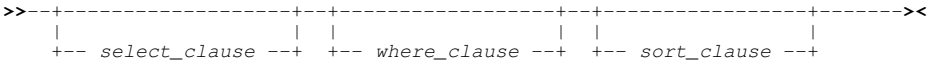
Selecting, Sorting and Filtering

Each list has a basic set of column data which is defined by the Field Descriptor Block (FDB) associated with the list. You can view the list of columns by selecting the FDB menu option or entering the FDB command on the list window command line.

You can modify the display by selecting your own list of columns from this basic list, specifying a filter to restrict the rows displayed and specifying a sort order. You do this by entering the select command on the list window command line. The select command syntax is similar to the SQL SELECT statement. It consists of one or more of the following:

- A select clause which determines the columns displayed.
- A where clause which filters the rows displayed by imposing a condition on the values in one or more columns.
- A sort clause (ORDER BY in SQL terms) which displays the rows in an order determined by the values in one or more columns.

Unlike SQL, these clauses can be given in any order, and any of them can be ommitted. The general syntax is:

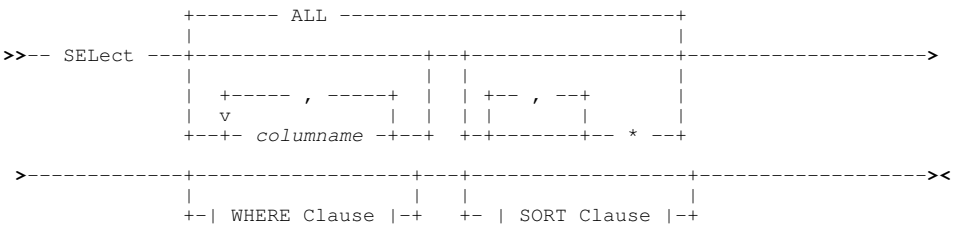


Each time you issue a select command with a select or where clause you create a new view of the list. If you issue only a sort clause no new view is created, but the sort order is changed for the current view.

The set of views which you have is listed in the View menu option, from which you can select a view from the ones you have created with the select command.

The Select Clause

Syntax:



Description:

Specified as a CLI command or as a parameter on WHERE or SORT, the SELECT clause is used to identify field columns for display and the order in which they appear.

Use of a SELECT clause is not cumulative and so will replace those columns currently selected for display. It also resets any prevailing WHERE and/or SORT clause specifications.

Note that the last execution of a SELECT clause CLI command is stored and applied to any new List window of the **same type** (e.g. Library List window). This occurs whether the list window is opened within the same CBLi session or opened after the current CBLi session is ended and a new session started.

Executing a SELECT clause will add a new entry to the View List Display drop down menu.

Parameters:

`ALL`
: ALL returns all columns.

columnname
: Name of the list window column to select.

  Multiple column names must be separated by commas and/or one or more blanks. Column names may be specified in any order and any number of times.

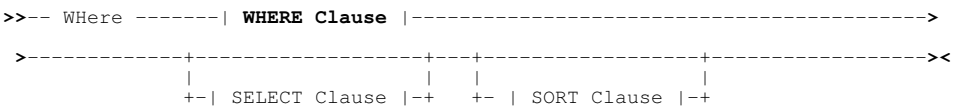
*
: Display all remaining column names that have not already been selected, in their default order of display. This is the same as ALL if no other column names are specified.

WHERE Clause
: Any valid WHERE clause used to filter list rows.

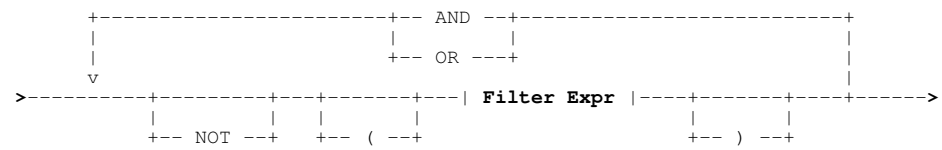
SORT Clause
: Any valid SORT clause used to sort list rows.

The Where Clause

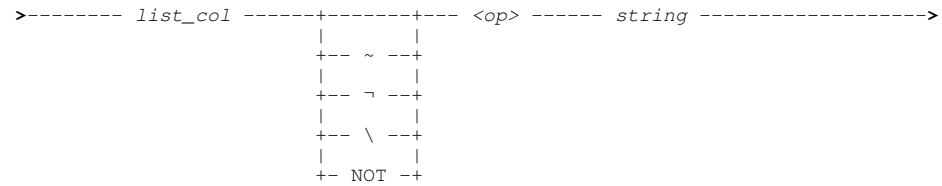
Syntax:



WHERE Clause:



Filter Expr:



Description:

Specified as a CLI command or as a parameter on SELECT or SORT, the WHERE clause is used to restrict the rows displayed in the list.

Only those rows which satisfy the where clause are displayed in the view of the list.

Use of a WHERE clause is not cumulative and so will replace any prevailing filter of rows in the display. It also resets any prevailing SORT clause specification. Columns displayed by the prevailing SELECT clause, are unchanged.

Executing a WHERE clause will add a new entry, which includes the prevailing SELECT clause, to the View List Display drop down menu.

Parameters:

WHERE Clause
: A logical combination of one or more simple filter expressions that define search criteria used to select the required list rows. This logical combination uses the following literal logical operator names or their equivalent symbols to make a complex compare expression:

( )	Left and Right Brackets (parentheses).
AND	& (ampersand)
OR	¦ (broken bar),	(vertical line)
NOT	~ (tilde), ¬ (not sign), \ (backslash)

Notes:

1. To avoid confusion, it is recomended that parentheses be used where more than two filter expressions are specified in order to establish logical AND/OR precedence.
2. Parentheses must be balanced so that there are an equal number of left and right parentheses exist in the where clause.

Filter Expr

Filter test on a single column within the list display.

The contents of *list_col* are tested against a test value specified by *string* to establish a TRUE or FALSE condition. Only if all filter expressions test TRUE will the list row be selected for display.

list_col

The name of list column whose contents will be tested in this *filter_expr*.

Where *list_col* is a numeric field, *string* must be numeric and an arithmetic compare is performed. Similarly, if *list_col* is a character field, then *string* is treated as a character string with blank padding on the right. Check the field Type in the FDB to determine whether the field contains numeric or character data.

If the data type of the test value is not compatible with *list_col* then an error will be returned.

~ ¬ \ NOT

The symbols (~) tilde, (¬) not sign and (\) backslash represent the logical NOT operator and reverses the TRUE or FALSE condition established by the comparison operator <op>.

<op>

Comparison operator specified as one of the following:

=	**Equals**.
<>	**Not Equals**.
<	**Less than**.
>	**Greater than**.
<=	**Less than or equals**.
>=	**Greater than or equals**.
<<	**Contains**. This operator applies to character columns only and returns TRUE if *string* is a sub-string of *list_col*.
>>	**Begins**. This operator applies to character columns only and returns TRUE if *string* is a sub-string at the start of *list_col*.

string

The string argument to be tested against the contents of *list_col*.

string is always case insensitive and need only be enclosed in (') apostrophes or (") quotation marks if it is the same as a list column heading or if it contains any of the comparison operators or blanks.

SELECT Clause

Any valid SELECT clause used to select column headers.

SORT Clause

Any valid SORT clause used to sort list rows.

Example:

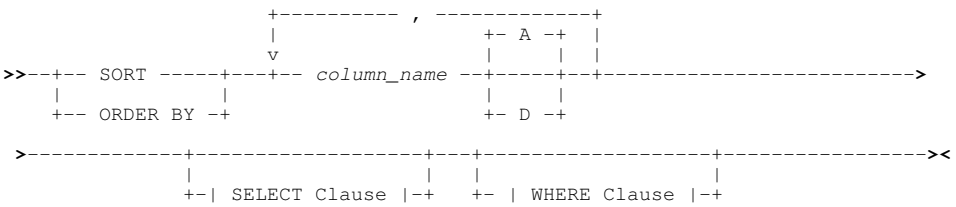
```
where    col1 = 'A'   and   (col2 << 'C' or col3 > 4)
```

List only those rows for which col1 is equal to A and either col2 contains C as a substring or col3 is greater than 4.

Note: the quotes around the literal strings are not needed unless there are columns in the list with name A or C and that the blanks separating the elements of the expression are optional.

The Sort (Order By) Clause

Syntax:



Description:

Specified as a CLI command or as a parameter on SELECT or WHERE, a SORT clause is used to modify the order in which the rows are displayed in the list.

Use of a SORT clause is not cumulative and is based on the list's default sort order. Therfore any prevailing sort order is ignored. The prevailing SELECT and WHERE clauses are unchanged.

Unlike SELECT and WHERE, a SORT clause specified as a CLI command is not added to the View List Display drop down menu.

Parameters:

column_name
: Name of the List Window column on which to sort.

  Column names must be supplied in the order in which they appear in the list heading (or in the FDB).

A D
: The sort order is specified with a list of column sort specifications which consist of a column name followed by a sort direction. The sort direction is given as A for ascending or D for descending.

  If the sort direction is not provided, it defaults to ascending.

  Commas must be used to separate multiple column sort specifications whereupon intervening blanks are permitted.

SELECT Clause
: Any valid SELECT clause used to select column headers.

WHERE Clause
: Any valid WHERE clause used to filter list rows.

Sorting with the Cursor

A quick way of sorting a list view is to place the cursor on the heading of the column on which you want to sort and then press the <Enter> key.

For fields that contain timestamps and/or datestamps, the first time the sort is actioned on the column header, the data is arranged in descending order. For all other column fields, the data is initially arranged in ascending order.

Subsequent sorting on a column header using this method will reverse the order in which data in that column was last sorted.

List Entry Location

A list may be scrolled to display rows beginning at a particular entry simply by overtyping the first column of the first row in the list display area with a string appropriate to that particular field.

Partial strings may be entered but residue from the overtyped field should be deleted or blanked over, otherwise it is included as part of the typed string. Similarly, strings entered in lower case are automatically upper cased.

Each field entry within the first column, starting at the row following the the first row of the current display, is checked in turn until one is found which is greater than or equal to the entered string.

The display is scrolled so that the row containing the field entry equal to the entered string, otherwise the entry immediately less than the entered string, is made the first row of the list display.

This technique is only successful if the first column of the list display meets the following requirements:

1. The column is keyed. (Key=Yes)
2. The column contains character data. (Type=Char)
3. The column's fields are sorted in ascending order.

This information is available from the FDB.
Unless a SELECT clause has been executed which changes the first column of the display, these criteria are usually always met by standard list windows.

Location of list entries is also achieved using the following:

- FIND/RFIND Command
- LOCATE Command
- S Command

FIND Command

Syntax:

```
>>-- Find -------- string ----------------------------------------------------><

>>-- RFIND ---------------------------------------------------------------------><
```

Description:

Find is used to scroll the display to the **next** list entry to contain the specified search string **anywhere** within a field in the the first column of the display. If no match is found for **string** then no scrolling occurs.

Following a successful FIND operation, `RFIND` (assigned to PF5 by default) may be used to repeat the search for the remaining list entries.

FIND *string* is only valid if the first column in the display is defined as being a character key field. (Check the FDB for Type=Char and Key=Yes).

Note that key fields area highlighted and remain at a fixed position within the display when scrolling left and right. If multiple key field columns exist within the list, then changing the order of the key fields using a SELECT clause, will allow the user to execute FIND/RFIND on the contents of an alternate key field column.

Parameters:

string
: A character search string used in the compare against data within fields in the first column of the display.

LOCATE Command

Syntax:

```
>>-- Locate ------ string ----------------------------------------------------><
```

Description:

Starting at the first entry and proceding downwards, LOCATE will compare *string* against data at the **start** of each field in the the first column of the display until either a match is found or the field data is greater than *string*.

If the strings are equal, then the display is scrolled so that this list entry becomes the first row in the display. Otherwise, if the list entry field data is greater than *string*, the display is scrolled so that the first row in the display is that which immediately precedes this list entry.

`LOCATE` *string* is appropriate only if the first list column is in ascending sort order and is only valid if the first column in the display is defined as being a character key field. (Check the FDB for Type=Char and Key=Yes).

Parameters:

string
A character search string used in the compare against data at the start of fields in the first column of the display.

S Command

Syntax:

```
>>-- S ----------- member ------------------------------------------------><
```

Description:

Supported as a CLI line command for Library Lists only, S *member* will perform the default operation (i.e. Edit) on the specified library member.

S is also supported as a List window prefix command which applies to all types of List window. In this case, S will execute the default operation for the particular list entry type (the same as placing the cursor on the list entry and hitting <Enter>.)

Parameters:

member
The library member name.

Prefix Commands

The prefix area is a two character enterable field occupying the first 2 columns of any Execute CBLVCAT window, List window, or File Search window. The field is displayed with underscore characeters to indicate that it is enterable.

The following table identifies all Execute CBLVCAT window, List window, or File Search window prefix commands and their equivalent actions.

A Open the Create Alias dialog window.

B Open the CBLe text editor to to perform SDATA BROWSE on the entry.

C Copy the entry.

D Delete the entry. User will be prompted to verify the deletion.

E Open the CBLe text editor to edit the entry.

EX Execute the library member entry. (Invokes the TSO command, EXECUTE, using the entry name as input.
Supported in MVS TSO or ISPF environments only.

F Open the FSU - File Search/Update Window to perform an advanced search and optionally update the contents of the entry.
Supported for MVS SELCOPY licensees only on all types of data set.

FO Open an SDE view to display (browse) the entry as output from the FSU - File Search/Update Window.
Supported for MVS SELCOPY licensees only.

FS Open the File Search window to search the contents of the entry.
Supported for MVS PDS/PDSE, CMS fileid, VSE LIBR sub-library and member entries only.

I Open an IDCAMS Command window and issue an IDCAMS LISTCAT for the entry.

J Submit the library member entry to batch. Executes the CBLe CLI SUBMIT command using the entry name as input. (A CBLe frame window must be active for this operation to suceed.)
Supported in MVS and VSE environments only.

K Delete (Kill) the entry without prompting for verification.

L Open a Dataset List window for the entry.
Supported for Execute CBLVCAT windows only.
For **VSE LIBR Library member** list windows only, lock the LIBR member.

M Open a Library List window for the entry.
Supported for MVS PDS/PDSE, VSE LIBR library and sub-library entries only.

Q List dataset enqueues (major name SYSDSN) for the entry.
Supported for MVS only.

R Rename the entry.

SD Open the SDE BROWSE/EDIT Dialog Window to edit or browse the entry's data within a Structured Data Environment window view.
Supported for MVS SELCOPY licensees only.

T Issue a LISTVCAT operation against the entry with parameters TUNE and DEFINE.
For DASD Listwindows only, open the VTOC list window for the volume entry.

U Unallocate the MVS DD name or UNLOCK the VSE LIBR member entry.
Entries may only be unallocated or unlocked by the user that originally allocated or locked it.

UT Opens the general file utilities menu to ultimately generate specific line commands in a temporary CMX file.

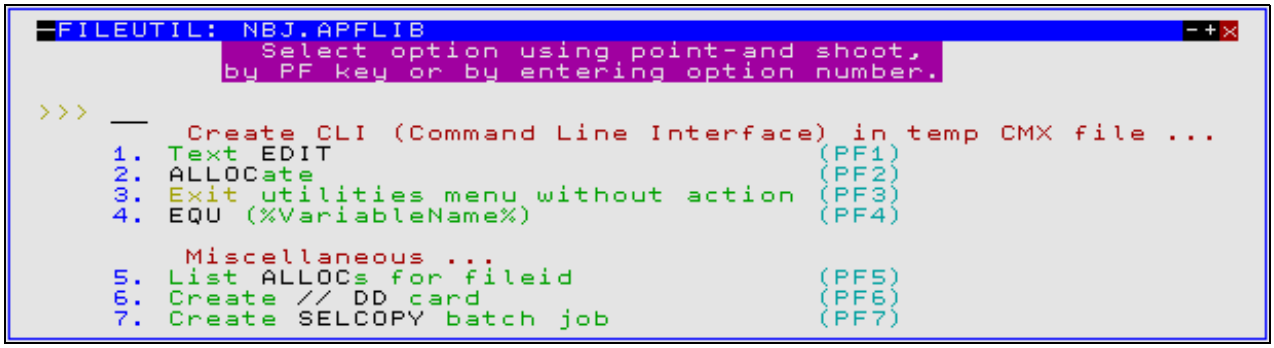


Figure 38. File Utilities Menu.

Options are selected by entering the required option number at the command prompt or executing the equivalent PFKey.

Executable CLI line commands are generated using the selected entry *fileid* as follows:

1. Text Edit	`<edit 'fileid'`
2. ALLOCate	`<alloc f(MYDDNAME) reuse shr dsn('fileid')`
4. EQU (%VariableName%)	`<equ MyFile 'fileid'`
5. List ALLOCs for fileid	`LA; where DsN=fileid`
6. Create // DD card	`//MYDDNAME DD DISP=SHR,DSN=fileid`

7. Create SELCOPY batch job	`//FILEUTIL EXEC PGM=SELCOPY`
	`//MYDDNAME DD DISP=SHR,DSN=NBJ.APFLIB`
	`//SYSPRINT DD SYSOUT=*`
	`//SYSIN DD *`
	`option worklen=65536 NoRdw`
	`read MYDDNAME`
	`print len=100 type=b stopaft=22`
	`/*`

V Open the CBLe text editor to View (edit read/only) the entry.

VC Open an Execute CBLVCAT window and issue a LISTVCAT and/or LISTVTOC operation (as appropriate) for the entry.

Z Perform a compress of an MVS PDS library to reclaim disk space occupied by replaced (back-level) members. This action performs an IEBCOPY to itself. No action is taken for PDSE entries, however, the IEBCOPY dialog is opened with an error message if executed against any non-PDS(E) entry.
Supported in MVS environments only.

? Open the DASD Volume Statistics window for the volume in the list entry.

/ Open a drop down menu containing valid prefix command functions for the list window entry. Position the cursor on the required function and hit <Enter> to action the command.
Assigned to PF4 by default.

> Open a new window containing a zoomed vertical display of the entry's fields. Particularly useful for list windows that have a large number of displayed columns.
Assigned to PF2 by default.

Command Cross-Reference

	Prefix Commands																									
	A	**B**	**C**	**D**	**E**	**EX**	**F**	**FO**	**FS**	**I**	**J**	**K**	**L**	**M**	**Q**	**R**	**SD**	**T**	**U**	**UT**	**V**	**VC**	**Z**	**?**	**/**	**>**
Execute CBLVCAT	-	Y	Y	Y	Y	-	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	-	-	Y	Y	Y	Y	-	Y
CBLVCAT Raw	-	Y	-	Y	Y	-	Y	Y	Y	Y	-	Y	-	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	-	Y	Y
DASD Volumes	-	-	-	-	-	-	Y	-	-	-	-	-	-	-	-	-	-	Y	-	-	-	Y	-	Y	Y	Y
CATALOG List	-	Y	Y	Y	Y	-	Y	Y	Y	Y	-	Y	-	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y
DATASET List	-	Y	Y	Y	Y	-	Y	Y	Y	Y	-	Y	-	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y
VTOC File List	-	Y	Y	Y	Y	-	Y	Y	Y	Y	-	Y	-	Y	Y	Y	Y	-	-	Y	Y	Y	Y	Y	Y	Y
VTOC Extent List	-	Y	Y	Y	Y	-	Y	Y	Y	Y	-	Y	-	Y	Y	Y	Y	-	-	Y	Y	Y	Y	Y	Y	Y
MVS Allocated Datasets	-	Y	Y	Y	Y	-	Y	Y	Y	Y	-	Y	-	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	Y
VSE Standard Lables	-	-	-	-	-	-	-	-	-	Y	-	-	-	-	-	-	-	-	-	-	-	Y	-	-	Y	Y
Library List	Y**	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y*	Y*	-	Y	Y	-	Y*	Y	Y	-	-	-	Y	Y
Enqueue List	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y
Job Enqueue List	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Y	Y
HFS Path List	-	Y	-	Y	Y	-	Y	-	-	-	-	Y	-	Y	-	Y	Y	-	-	Y	Y	-	-	-	Y	Y
File Search	Y**	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y*	Y*	-	Y	Y	-	Y*	Y	Y	-	-	-	Y	Y

Legend:

* VSE LIBR member list only.
** MVS LIBR member list only.

List DASD Volumes

The DASD Volumes List window may be opened via the following:

- Select 'DASD Volumes' from the LIST menu in the CBLi Main Menu.
- Enter the CBLi command LVOL on the command line of any window.

The DASD Volumes window displays the attributes of DASD volumes defined to your system.

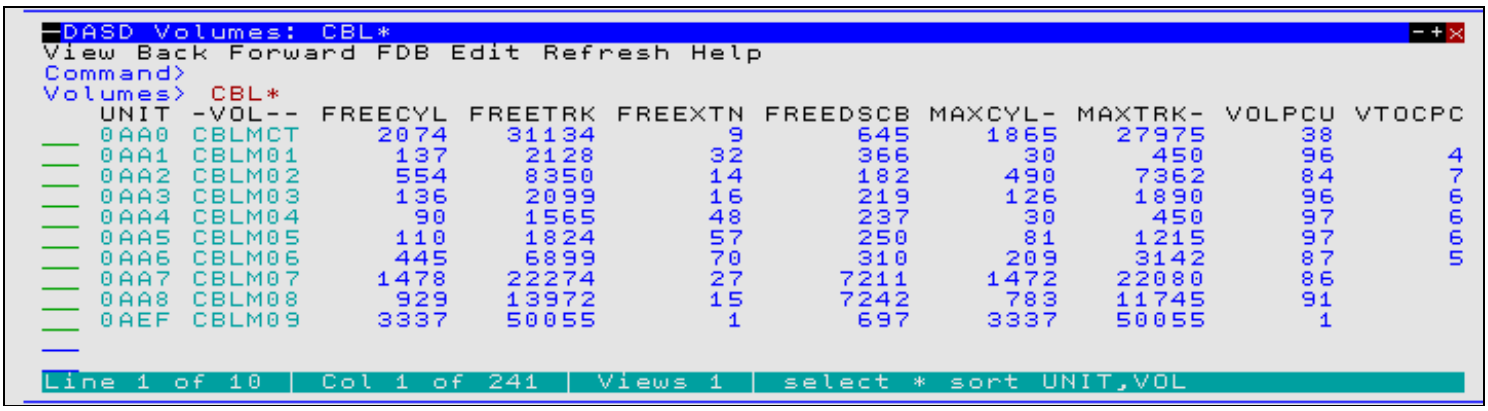


Figure 38. DASD Volumes window.

`Volume>`

Specify a volume id mask. The mask supports the following wild cards:

`*` An asterisk indicates that one or more characters within the volume id can occupy that position. An asterisk can precede or follow a set of characters.

`%` A single percent sign indicates that exactly one character can occupy that position. (Up to 6 percent signs can be specified.)

By default, a volume id mask that is less than 6 characters in length and does not contain an * (asterisk) wild card will be treated as having an implied trailing * wild card.

Prefix Line Commands

The following prefix line commands are available:

Command	Description
(blank)	Prefix Line command T. (The ENTER key must be pressed with the cursor on the line containing the volser).
F	Open the FSU - File Search/Update Window to perform an advanced search and optionally update the contents of the entry.
T	Open the VTOC list window for the volume.
VC	Open an Execute CBLVCAT window and issue a LISTVTOC operation for the entry.
?	Open the volume statistics window for the volume containing the file.
/	Open a drop down menu containing valid prefix command functions for the list window entry. Position the cursor on the required function and hit <Enter> to action the command. Assigned to PF4 by default.
>	Open a new window containing a zoomed vertical display of the entry's fields. Particularly useful for list windows that have a large number of displayed columns. Assigned to PF2 by default.

Columns Displayed

The data displayed for MVS is:

Name	Type	Description
UNIT	Hex	Unit address
VOL	Char	Volume serial number

FREECYL	UInt	Free cylinders
FREETRK	UInt	Free tracks
FREEXTN	UInt	Free extents
FREEDSCB	UInt	Free DSCBs
MAXCYL	UInt	Largest free extent (CYLs)
MAXTRK	UInt	Largest free extent (TRKs)
VOLPCU	UInt	Volume percent used
VTOCPCU	UInt	VTOC percent used
TOTALCYL	UInt	Total cylinders
TRKCYL	UInt	Tracks per cylinder
TRKLEN	UInt	Track length
UCBTYPE	Hex	Unit type
SMS	Char	SMS managed indicator
VTOCIX	Char	Indexed VTOC
VTOCXTN	UInt	Number of VTOC extents
VTOCTRK	UInt	Number of VTOC tracks
LOWCCHH	Hex	VTOC start CCHH
HIGHCCHH	Hex	VTOC end CCHH
DSCBTRK	UInt	DSCBs per track
FREEVIR	UInt	Number of free VTOC index recs
FRAGINDX	UInt	Fragmentation index
ALTCCHH	Hex	Next available alt track CCHH
ALTREM	UInt	Remaining alternate tracks
MOUNT	Char	Mount usage status
DEV	Char	Device type
MODEL	Char	Device model
MODELX	Hex	Device model (hex)
CACHE	Char	Cached device
SHARE	Char	Shareable device

The data displayed for VSE is:

Name	**Type**	**Description**
UNIT	Hex	Unit address
VOL	Char	Volume serial number
TYPE	Char	External device type code
FORMAT	Hex	Device format
AVRVTOC	Hex	VTOC address
PUBC	Hex	PUB device type code
DTFC	Hex	DTF device type code
UCBC	Hex	Unit code
DCTPCYL	UInt	Primary cylinders
DCTACYL	UInt	Alternate cylinders
DCTTCYL	UInt	Tracks per cylinder
DCTBTRK	UInt	Bytes per track
DCTTFIX	UInt	Cylinders under fixed head
DCTMAXR	UInt	Maximum physical record size
DCTDEVC	Hex	Device constants

List Catalog Entries

The Catalog List window may be opened via the following:

- Select 'Cataloged Files' from the LIST menu in the CBLi Main Menu.
- Enter the CBLi command LC on the command line of any window.

For CMS, the File List window is opened in place of the Catalog List or Dataset List window and displays information about files residing on accessed mini-disks. Refer to documentation on List CMS Files.

For VSE, the Catalog List window is supported only where the CBL software product CBLVCAT is installed and active. The Catalog List window uses CBLVCAT to read the specified VSAM catalog records to obtain information about the cataloged files.

For MVS, the Catalog List window displays the basic catalog entry information for ICF cataloged data sets. The Dataset List window should be used to display more detailed information on cataloged data sets.

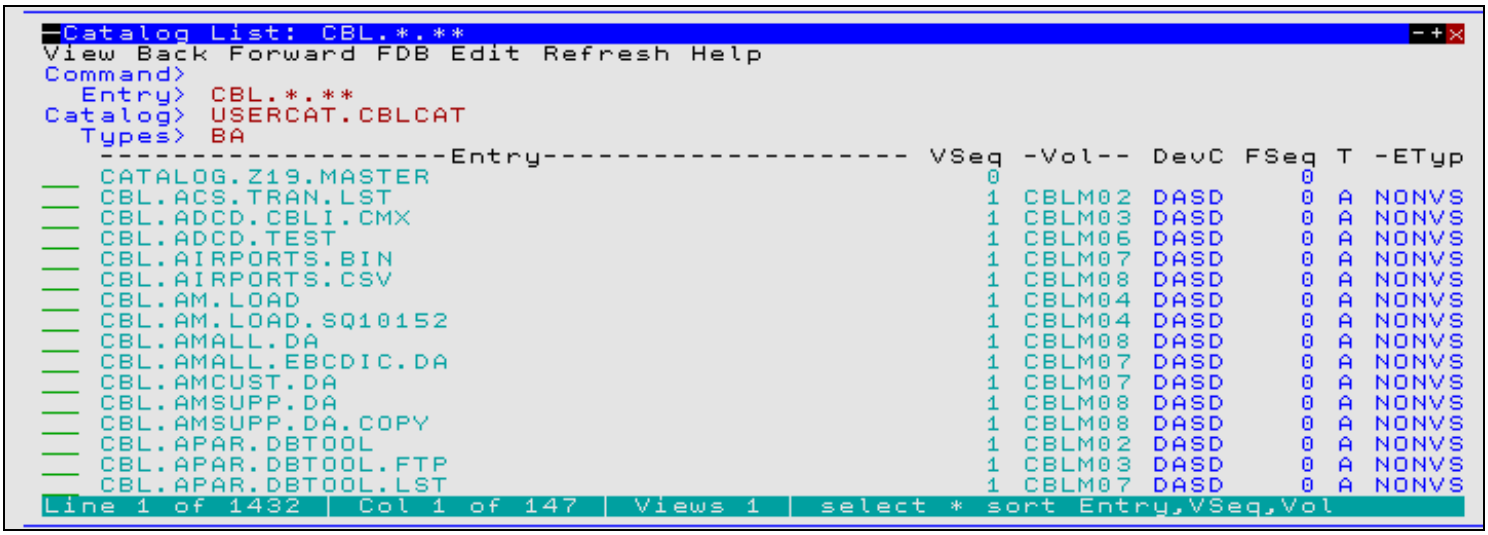


Figure 39. MVS Catalog List Window.

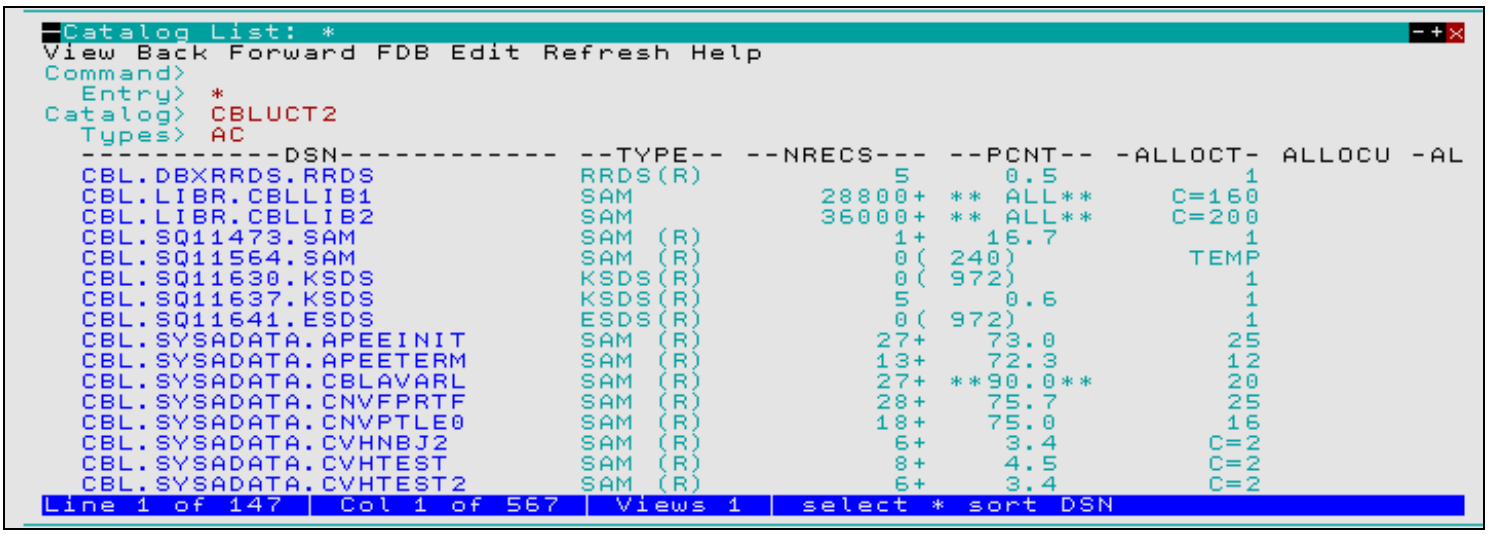


Figure 40. VSE Catalog List Window.

Entry>

Specify the fileid mask.

◊ For **MVS** systems, the fileid mask represents a DSN mask that supports the following wild cards:

`*` A single asterisk represents a DSN qualifier, or zero or more characters within a DSN qualifier.

`**` A double asterisk represents zero or more qualifiers within a DSN. Double asterisk must be preceded or followed by either a "." (dot/period) or a blank. It cannot precede or follow an alphanumeric character.

`%` A single percent sign represents exactly one character, other than "." (dot/period), within a DSN qualifier. Up to 8 percent signs can be specified in each qualifier.

If the last character of the fileid mask is "." (dot/period), then this marks the end of the low level DSN qualifier within the fileid mask. The trailing "." is stripped and no wildcard string is appended to the fileid mask. e.g.

```
DEV*.                 becomes:   DEV*
DEV.OEM.TRSPAN*.      becomes:   DEV.OEM.TRSPAN*
DEV.*.*SAMP%%.        becomes:   DEV.*.*SAMP%%
```

If the last character of the fileid mask is **not** "." (dot/period), then a default trailing wild card string is automatically appended to the fileid mask as follows:

1. If the fileid mask is a single qualifier or the last character of the fileid mask is "*" (asterisk), then a wildcard string of ".**" is appended. e.g.

```
DEV                   becomes:   DEV.**
DEV*                  becomes:   DEV*.**
DEV.OEM.TRSPAN*       becomes:   DEV.OEM.TRSPAN*.**
DEV.*.*SPA*           becomes:   DEV.*.*SPA*.**
```

2. Otherwise a wildcard string of "*.**" is appended. e.g.

```
DEV.OEM.TRSPAN        becomes:   DEV.OEM.TRSPAN*.**
DEV.*.*SPA%           becomes:   DEV.*.*SPA%*.**
SYS1.*.Z19            becomes:   SYS1.*.Z19*.**
```

Note that a warning message is displayed if the high level qualifier of the fileid mask is "*" (asterisk) or "**" (double asterisk). A fileid mask of this type would result in all catalogs being searched which would take some time to execute and would use a large amount of system resources.

◊ For **VSE** systems, the fileid mask is a valid CBLVCAT LISTCAT KEY parameter string. i.e. entries with file name **beginning** with the specified string or, if prefixed by "/" (slash), entries with file name **containing** the specified string. (See the CBLVCAT User Manual.)

If no fileid mask is specified, all entries will be selected.
Note that wild cards are not supported within the VSE fileid mask, however, "*" (asterisk) is tolerated if placed at the end of the fileid mask.

Catalog>

Nominate a specific catalog in which to search for the requested entry.

For **MVS** systems, this is a catalog DSN. Specifying a catalog DSN is unneccessary if an alias exists for the fileid mask high level qualifier (HLQ) in the master catalog. In this case, the appropriate catalog DSN will automatically be inserted in this field. If the HLQ contains a wild card, then all matching aliases are interrogated, the required catalogs are searched and the last catalog searched placed in the Catalog> fields.

For **VSE** systems, this is a disk label assigned to the VSAM catalog for which entries are to be listed.
If no catalog file label is specified, the Catalog List window displays all user catalogs cataloged in the master catalog.

Default is the master catalog.

Types>

Specify the catalog entry types required. Default is all types. One or more of the following types may be specified with no intervening blanks:

A	non-VSAM (or VSAM SAM) data set.
B	MVS - Generation data group.
C	Cluster.
G	Alternate Index.
H	MVS - Generation data set.
R	VSAM PATH.
X	Alias.
U	User catalog connector entry.
L	MVS - Tape volume catalog library entry.
W	MVS - Tape volume catalog volume entry.

Prefix Line Commands

For **MVS** systems, the following prefix line commands are available:

Command	Description
(blank)	Prefix line command M if entry is a PDS/PDSE library, prefix line command E otherwise. (The ENTER key must be pressed with the cursor on the line containing the PDS).
B	Open the CBLe text editor to to perform SDATA BROWSE on the entry.
C	Copy the entry.

D	Delete the entry. User will be prompted to verify the deletion.
E	Open the CBLe text editor to edit this entry.
F	Open the FSU - File Search/Update Window to perform an advanced search and optionally update the contents of the entry.
FO	Open an SDE view to display (browse) the entry as output from the FSU - File Search/Update Window.
FS	Open the File Search window for the entry.
I	Open an IDCAMS Command window and issue an IDCAMS LISTCAT for the entry.
K	Delete (Kill) the entry without prompting for verification.
M	If the entry is a PDS/PDSE, open a Library List window. (Default)
Q	List dataset enqueues (major name SYSDSN) for this entry.
R	Rename the entry.
SD	Open the SDE BROWSE/EDIT Dialog Window to browse or edit the entry's data within a Structured Data Environment window view.
T	Open an Execute CBLVCAT window and issue a LISTVCAT TUNE DEFINE operation for the entry.
UT	Opens the general file utilities menu to ultimately generate specific line commands in a temporary CMX file.
V	Open the CBLe text editor to View (edit read/only) this entry.
VC	Open an Execute CBLVCAT window and issue a LISTVCAT operation for the entry.
Z	Perform a compress of an MVS PDS library to reclaim disk space occupied by replaced (back-level) members. This action performs an IEBCOPY to itself. No action is taken for PDSE entries, however, the IEBCOPY dialog is opened with an error message if executed against any non-PDS(E) entry.
?	Open the volume statistics window for the volume containing the entry.
/	Open a drop down menu containing valid prefix command functions for the list window entry. Position the cursor on the required function and hit <Enter> to action the command. Assigned to PF4 by default.
>	Open a new window containing a zoomed vertical display of the entry's fields. Particularly useful for list windows that have a large number of displayed columns. Assigned to PF2 by default.

For **VSE** systems, the following prefix line commands are available:

Command	Description
D	Delete the entry. User will be prompted to verify the deletion.
K	Delete (Kill) the entry without prompting for verification.
R	Rename the entry.
T	Open an Execute CBLVCAT window and issue a LISTVCAT TUNE DEFINE operation for the entry.
VC	Open an Execute CBLVCAT window and issue a LISTVCAT operation for the entry.
>	Open a new window containing a zoomed vertical display of the entry's fields. Particularly useful for list windows that have a large number of displayed columns. Assigned to PF2 by default.

Columns Displayed

For **MVS** systems, the data displayed is:

Name	Type	Description
Entry	Char	Entry name
Vol	Char	Volume serial number
VSeq	UInt	Volume Sequence number
DevC	Char	Device Class
FSeq	UInt	File Sequence number
T	Char	Catalog entry type code
EType	Char	Catalog entry type
DSType	Char	Dataset type
UnitType	Hex	Unit type

UnitName	Char	Unit name
DataClas	Char	SMS Data Class
StorClas	Char	SMS Storage Class
MgmtClas	Char	SMS Management Class

For **VSE** systems, the data displayed is:

Name	Type	Description
ALLOCP	Char	Defined Primary Allocation
ALLOCS	Char	Defined Secondary Allocation
ALLOCT	Char	Current Total Space Allocation
ALLOCU	Char	Unused Allocated Space
AVRL	Char	Defined Average Record Length
BLKSIZE	Char	Defined VSAM SAM Block Size
BUFSP	Char	Defined Buffer Space (BUFSP)
BUFSP/IXL	Char	Defined BUFSP or INDEX levels
CATALOG	Char	Catalog File Name
CI/CA	Char	Number of Control Intervals/Control Area
CISIZE	Char	Defined Control Interval Size
COMPONENT	Char	VSAM Object Component Name
DEFINED	Char	Date the File was Defined
DSN	Char	Fileid
ENTRY	Char	VSAM Component Entry Name
EXCPS	Char	Number of Executed Channel Programs
EXPIRES	Char	Expiry Date
FREEBYTES	Char	Free Space Bytes Value
FRSP	Char	Defined Freespace (Bytes/CI and CI/CA)
HIALLRBA	Char	Current High Allocated RBA
HIUSERBA	Char	Current High Used RBA
IMB/REP	Char	Defined Index Attributes (IMBED and/or REPLICATE)
IXL	Char	Number of INDEX Levels
KL	Char	Defined KEY Length
KL/BLK/IMB	Char	Merge KL, BLK and IMB/REP Values
LMAX	Char	Defined Maximum Record Length
NRECS	Char	Current Number of Records
NSEC	Char	Number of Allocated Extents Minus One
PCNT	Char	Calculated Amount of Used Space
PHYREC	Char	Physical Record Size allocated by VSAM
RECSTATS	Char	Number of Records Deleted, Inserted, Updated and Read
RKP	Char	Defined Relative KEY Position
S/C	Char	Defined Local Share option and the Primary Space Class
SEVL	Char	CBLVCAT's Highest Severity Level Massage Reference for the File
SHR	Char	Defined Local (Cross Region) and Cross System Share Options
SPLITCA	Char	Number of CA Splits to Date.
SPLITCI	Char	Number of CI Splits to Date.
TIMESTMP	Char	Time Stamp of VSAM object (Last Closed)
TYPE	Char	File Type
VOLUME	Char	Defined Primary Volume Serial Number

List CMS Files

Supported for CMS systems only, the File List window may be opened via the following:

- Enter the CBLi command FL (synonym for LC) or LD on the command line of any window.

For CMS, the **File List** window is opened in place of the MVS/VSE Catalog List or Dataset List windows and displays information about files residing on accessed disks.

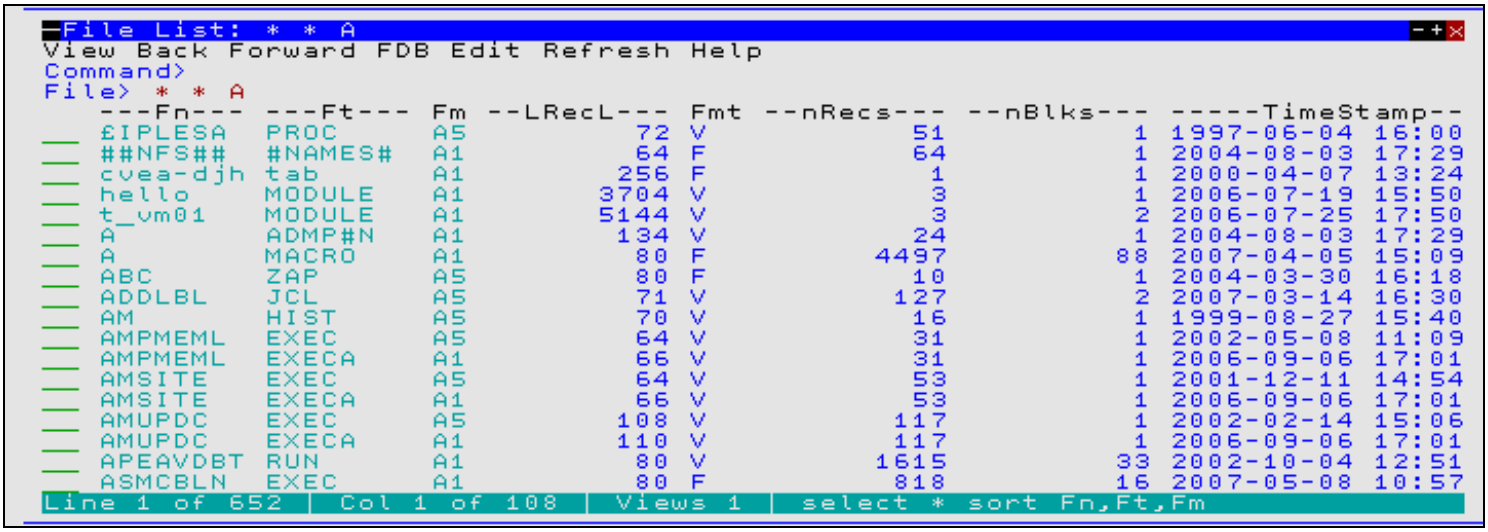


Figure 41. CMS File List window displaying all files on mini-disk A.

File>

Specify the CMS fileid mask.

The fileid mask may consist of up to 3 qualifiers representing a filename filetype filemode combination where qualifiers are separated by one or more blanks or a "." (dot/period).

A single "*" (asterisk) wild card may be used to represent an entire qualifier or zero or more characters at a particular position within the qualifier. Wild card "*" may be specified more that once, anywhere within a qualifier.

Default filemode qualifier is "A", default filetype qualifier is "*".

Prefix Line Commands

The following prefix line commands are available:

Command	Description
(blank)	Prefix line command E. (The ENTER key must be pressed with the cursor on the line containing the required entry).
C	Copy the entry.
D	Delete the entry. User will be prompted to verify the deletion.
E	Open the CBLe text editor to edit this entry.
F	Open the file search window for the PDS.
K	Delete (Kill) the entry without prompting for verification.
R	Rename the entry.
V	Open the CBLe text editor to View (edit read/only) this entry.
VC	Open an Execute CBLVCAT window and issue a LISTVCAT operation for the entry.
/	Open a drop down menu containing valid prefix command functions for the list window entry. Position the cursor on the required function and hit <Enter> to action the command. Assigned to PF4 by default.
>	Open a new window containing a zoomed vertical display of the entry's fields. Particularly useful for list windows that have a large number of displayed columns. Assigned to PF2 by default.

Columns Displayed

The data displayed is:

Name	Type	Description
nBlks	UInt	Number of blocks.
nRecs	UInt	Number of records.
Entry	Char	File id.
Fm	Char	File mode.
Fmt	Char	Record format.
Fn	Char	File name.
Ft	Char	File type
Label	Char	Disk label.
LRecL	UInt	Record length.
TimeStamp	Char	Last update date and time.

List Dataset Details

The Dataset List window may be opened via the following:

- Select 'Dataset Details' from the LIST menu in the CBLi Main Menu.
- Enter the CBLi command LD on the command line of any window.

For CMS, the File List window is opened in place of the Catalog List or Dataset List window and displays information about files residing on accessed mini-disks. Refer to documentation on List CMS Files.

The Dataset List window is not supported on **VSE** systems.

The Dataset List window displays the basic catalog entry information together with the details of their geometry obtained either from the catalog or the VTOC for cataloged data sets.

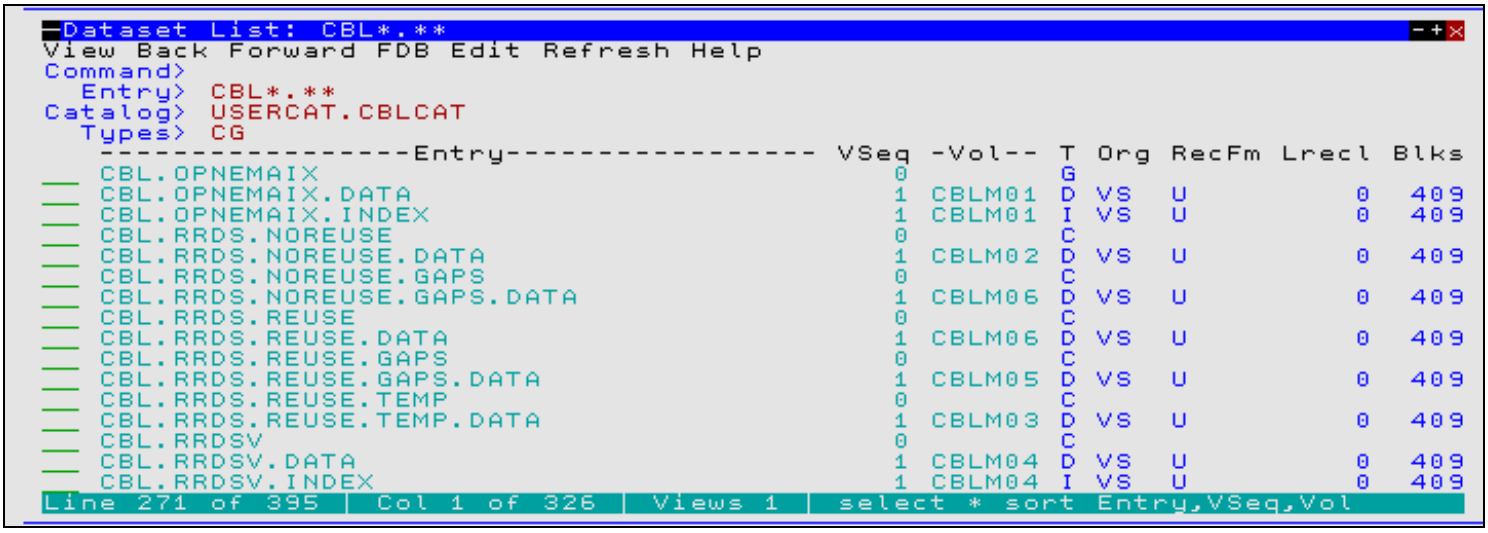


Figure 42. Dataset List window displaying all Cluster and AIX entries beginning 'CBL.'

Entry>

Specify the fileid mask.

The fileid mask represents a DSN mask that supports the following wild cards:

- * A single asterisk indicates that either a qualifier or one or more characters within a qualifier can occupy that position. An asterisk can precede or follow a set of characters.
- ** A double asterisk indicates that zero or more qualifiers can occupy that position. A double asterisk cannot precede or follow any characters; it must be preceded or followed by either a dot or a blank.
- % A single percent sign indicates that exactly one character can occupy that position. (Up to 8 percent signs can be specified in each qualifier.)

If the last character of the fileid mask is "." (dot/period), then this marks the end of the low level DSN qualifier within the fileid mask. The trailing "." is stripped and no wildcard string is appended to the fileid mask. e.g.

```
DEV*.                 becomes:   DEV*
DEV.OEM.TRSPAN*.      becomes:   DEV.OEM.TRSPAN*
DEV.*.*SAMP%%.        becomes:   DEV.*.*SAMP%%
```

If the last character of the fileid mask is **not** "." (dot/period), then a default trailing wild card string is automatically appended to the fileid mask as follows:

1. If the fileid mask is a single qualifier or the last character of the fileid mask is "*" (asterisk), then a wildcard string of ".**" is appended. e.g.

```
DEV                   becomes:   DEV.**
DEV*                  becomes:   DEV*.**
DEV.OEM.TRSPAN*       becomes:   DEV.OEM.TRSPAN*.**
DEV.*.*SPA*           becomes:   DEV.*.*SPA*.**
```

2. Otherwise a wildcard string of "*.**" is appended. e.g.

```
DEV.OEM.TRSPAN        becomes:   DEV.OEM.TRSPAN*.**
DEV.*.*SPA%           becomes:   DEV.*.*SPA%*.**
SYS1.*.Z19            becomes:   SYS1.*.Z19*.**
```

Note that a warning message is displayed if the high level qualifier of the fileid mask is "*" (asterisk) or "**" (double asterisk). A fileid mask of this type would result in all catalogs being searched which would take some time to execute and would use a large amount of system resources.

Catalog>

Nominate a specific catalog in which to search for the requested entry.

This is a catalog DSN. Specifying a catalog DSN is unneccessary if an alias exists for the fileid mask high level qualifier (HLQ) in the master catalog. In this case, the appropriate catalog DSN will automatically be inserted in this field. If the HLQ contains a wild card, then all matching aliases are interrogated, the required catalogs are searched and the last catalog searched placed in the Catalog> fields.

Default is the master catalog.

Types>

Specify the catalog entry types required. Default is all types. One or more of the following types may be specified with no intervening blanks:

A	non-VSAM (or VSAM SAM) data set.
B	MVS - Generation data group.
C	Cluster.
G	Alternate Index.
H	MVS - Generation data set.
R	VSAM PATH.
X	Alias.
U	User catalog connector entry.
L	MVS - Tape volume catalog library entry.
W	MVS - Tape volume catalog volume entry.

Prefix Line Commands

The following prefix line commands are available:

Command	Description
(blank)	Prefix line command M if entry is a PDS/PDSE library, prefix line command E otherwise. (The ENTER key must be pressed with the cursor on the line containing the PDS).
B	Open the CBLe text editor to to perform SDATA BROWSE on the entry.
C	Copy the entry.
D	Delete the entry. User will be prompted to verify the deletion.
E	Open the CBLe text editor to edit this entry.
F	Open the FSU - File Search/Update Window to perform an advanced search and optionally update the contents of the entry.
FO	Open an SDE view to display (browse) the entry as output from the FSU - File Search/Update Window.
FS	Open the File Search window for the entry.
I	Open an IDCAMS Command window and issue an IDCAMS LISTCAT for the entry.

K	Delete (Kill) the entry without prompting for verification.
M	If the entry is a PDS/PDSE, open a Library List window. (Default)
Q	List dataset enqueues (major name SYSDSN) for this entry.
R	Rename the entry.
SD	Open the SDE BROWSE/EDIT Dialog Window to browse or edit the entry's data within a Structured Data Environment window view.
T	Open an Execute CBLVCAT window and issue a LISTVCAT TUNE DEFINE operation for the entry.
UT	Opens the general file utilities menu to ultimately generate specific line commands in a temporary CMX file.
V	Open the CBLe text editor to View (edit read/only) this entry.
VC	Open an Execute CBLVCAT window and issue a LISTVCAT operation for the entry.
Z	Perform a compress of an MVS PDS library to reclaim disk space occupied by replaced (back-level) members. This action performs an IEBCOPY to itself. No action is taken for PDSE entries, however, the IEBCOPY dialog is opened with an error message if executed against any non-PDS(E) entry.
?	Open the volume statistics window for the volume containing the entry.
/	Open a drop down menu containing valid prefix command functions for the list window entry. Position the cursor on the required function and hit <Enter> to action the command. Assigned to PF4 by default.
>	Open a new window containing a zoomed vertical display of the entry's fields. Particularly useful for list windows that have a large number of displayed columns. Assigned to PF2 by default.

Columns Displayed

The data displayed is:

Name	Type	Description
Entry	Char	Entry name
Vol	Char	Volume serial number
T	Char	Catalog entry type code
Org	Enum	Data set organisation
RecFm	Enum	Record format
Lrecl	UInt	Logical record length
Blksz	UInt	Block Size
Alu	Char	Allocation unit
Pri	UInt	Primary space allocation
Sec	UInt	Secondary space allocation
Alt	UInt	Allocation total
Nxt	UInt	Number of extents
Trks	UInt	Tracks allocated
DsnPcu	UInt	Dataset percent used
DsKb	UInt	Dataset space Kilobytes
Created	VTOCDate	Creation date
Referenced	VTOCDate	Last referenced date
Expires	VTOCDate	Expiry Date
SMS	BitFlag	SMS managed dataset
PDSE	BitFlag	PDS extended
HFS	BitFlag	HFS dataset
UnCat	BitFlag	Uncataloged dataset
XFD	BitFlag	Extended format dataset
XAttr	BitFlag	Extended attributes exist
ReBlk	BitFlag	May be reblocked
IsICF	BitFlag	ICF catalog BCS dataset

InICF	BitFlag	Cataloged in an ICF catalog
DSInd	Hex	Dataset indicators (DS1DSIND)
KyL	UInt	Dataset key length
RKP	UInt	Relative key position
TBal	UInt	Bytes remaining on last track
BlKTrk	UInt	Blocks per track
F1Vol	Char	Format 1 DSCB volume serial
EType	Char	Catalog entry type
DSType	Char	Dataset type
UnitType	Hex	Unit type
UnitName	Char	Unit name
VSeq	UInt	Volume Sequence number
DevC	Char	Device Class
FSeq	UInt	File Sequence number
DataClas	Char	SMS Data Class
StorClas	Char	SMS Storage Class
MgmtClas	Char	SMS Management Class

List VTOC Files

The VTOC File List window may be opened via the following:

- Select 'VTOC Files' from the LIST menu in the CBLi Main Menu.
- Enter the CBLi command LV on the command line of any window.

The VTOC File List window displays data set entry information in a DASD volume's Volume Table of Contents (VTOC).

Note: List VTOC Files is not supported for CMS.

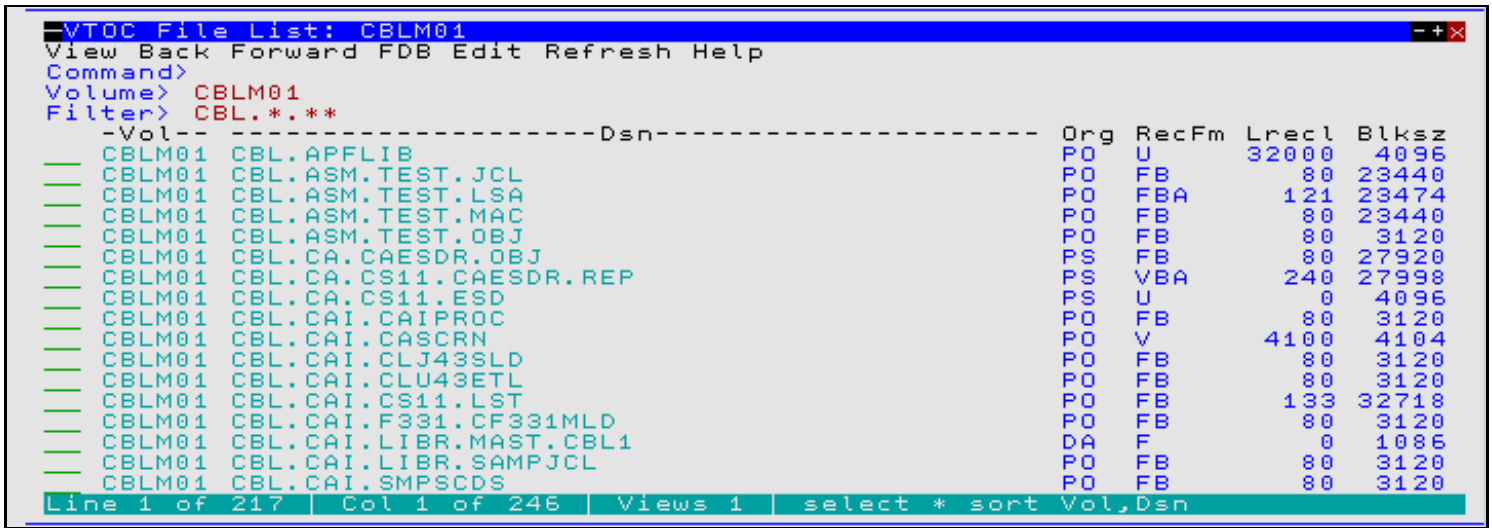


Figure 43. VTOC File List window displaying all entries beginning 'CBL.' on volume 'CBLM01.'

Volume>

The 1-6 character volume id containing the required VTOC.

Filter>

Note: The filter parameter is not supported for VSE.

Select only data sets that match the specified filter mask. The filter mask supports the following wild cards:

* A single asterisk represents a DSN qualifier, or zero or more characters within a DSN qualifier.

** A double asterisk represents zero or more qualifiers within a DSN. Double asterisk must be preceded or followed by either a "." (dot/period) or a blank. It cannot precede or follow an alphanumeric character.

- A single percent sign represents exactly one character, other than "." (dot/period), within a DSN qualifier. Up to 8 percent signs can be specified in each qualifier.

A filter field that contains **neither** "*" (asterisk) nor "**" (double asterisk) wild cards will have a wildcard string of "*.**" automatically appended and so list all those data sets whose names begin with the filter string.

Prefix Line Commands

The following prefix line commands are available:

Command	Description
(blank)	Prefix line command M if entry is a PDS/PDSE library, prefix line command E otherwise. (The ENTER key must be pressed with the cursor on the line containing the PDS).
B	Open the CBLe text editor to to perform SDATA BROWSE on the entry.
C	Copy the entry.
D	Delete the entry. User will be prompted to verify the deletion.
E	Open the CBLe text editor to edit this entry.
F	For MVS only, open the FSU - File Search/Update Window to perform an advanced search and optionally update the contents of the entry.
FO	Open an SDE view to display (browse) the entry as output from the FSU - File Search/Update Window.
FS	If the entry is a PDS(E), open the File Search window for the entry.
I	Open an IDCAMS Command window and issue an IDCAMS LISTCAT for the entry.
K	Delete (Kill) the entry without prompting for verification.
M	If the entry is a PDS/PDSE, open a Library List window. (Default)
Q	For MVS only, list dataset enqueues (major name SYSDSN) for this entry.
R	Rename the entry.
SD	Open the SDE BROWSE/EDIT Dialog Window to browse or edit the entry's data within a Structured Data Environment window view.
UT	Opens the general file utilities menu to ultimately generate specific line commands in a temporary CMX file.
V	Open the CBLe text editor to View (edit read/only) this entry.
VC	Open an Execute CBLVCAT window and issue a LISTVCAT operation for the entry.
Z	Perform a compress of an MVS PDS library to reclaim disk space occupied by replaced (back-level) members. This action performs an IEBCOPY to itself. No action is taken for PDSE entries, however, the IEBCOPY dialog is opened with an error message if executed against any non-PDS(E) entry.
?	Open the volume statistics window for the volume containing the entry.
/	Open a drop down menu containing valid prefix command functions for the list window entry. Position the cursor on the required function and hit <Enter> to action the command. Assigned to PF4 by default.
>	Open a new window containing a zoomed vertical display of the entry's fields. Particularly useful for list windows that have a large number of displayed columns. Assigned to PF2 by default.

Columns Displayed

The data displayed is:

Name	Type	Description
Vol	Char	Volume serial number
Dsn	Char	Dataset name
Org	Enum	Data set organisation
RecFm	Enum	Record format
Lrecl	UInt	Logical record length
Blksz	UInt	Block Size
Alu	Char	Allocation unit

Pri	UInt	Primary space allocation
Sec	UInt	Secondary space allocation
Alt	UInt	Allocation total
Nxt	UInt	Number of extents
Trks	UInt	Tracks allocated
DsnPcu	UInt	Dataset percent used
DsKb	UInt	Dataset space Kilobytes
Created	VTOCDate	Creation date
Referenced	VTOCDate	Last referenced date
Expires	VTOCDate	Expiry Date
SMS	BitFlag	SMS managed dataset
PDSE	BitFlag	PDS extended
HFS	BitFlag	HFS dataset
UnCat	BitFlag	Uncataloged dataset
XFD	BitFlag	Extended format dataset
XAttr	BitFlag	Extended attributes exist
ReBlk	BitFlag	May be reblocked
IsICF	BitFlag	ICF catalog BCS dataset
InICF	BitFlag	Cataloged in an ICF catalog
DSInd	Hex	Dataset indicators (DS1DSIND)
KyL	UInt	Dataset key length
RKP	UInt	Relative key position
TBal	UInt	Bytes remaining on last track
BlKTrk	UInt	Blocks per track
F1Vol	Char	Format 1 DSCB volume serial
VSeq	UInt	Volume sequence number

List VTOC Extents

The VTOC Extent List window may be opened via the following:

- Select 'VTOC Extents' from the LIST menu in the CBLi Main Menu.
- Enter the CBLi command LX on the command line of any window.

The VTOC Extent List window displays all information in a DASD volume's Volume Table of Contents (VTOC) by physical extent. This includes free extents and volume control areas such as the VTOC and the label area.

Note: Not supported for VSE.

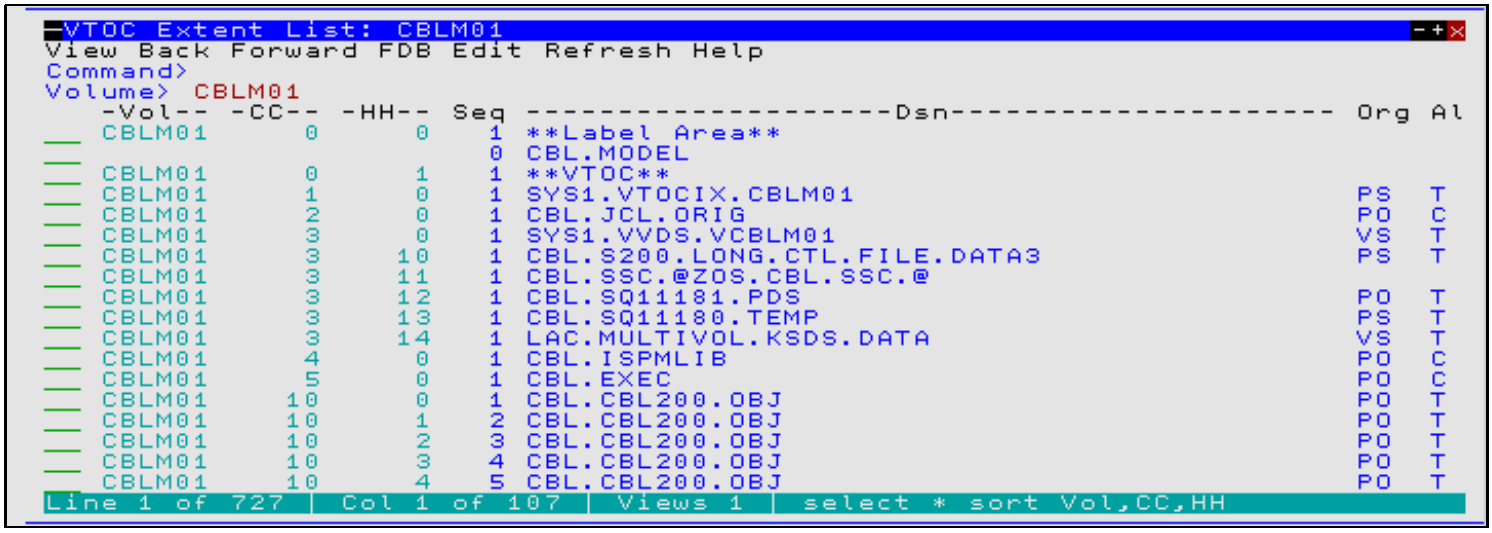


Figure 44. VTOC Extent List window displaying all extents on volume 'CBLM01.'

Volume>
The 1-6 character volume id containing the required VTOC.

Prefix Line Commands

The following prefix line commands are available:

Command	Description
(blank)	Prefix line command M if entry is a PDS/PDSE library, prefix line command E otherwise. (The ENTER key must be pressed with the cursor on the line containing the PDS).
B	Open the CBLe text editor to to perform SDATA BROWSE on the entry.
C	Copy the entry.
D	Delete the entry. User will be prompted to verify the deletion.
E	Open the CBLe text editor to edit this entry.
F	Open the FSU - File Search/Update Window to perform an advanced search and optionally update the contents of the entry.
FO	Open an SDE view to display (browse) the entry as output from the FSU - File Search/Update Window.
FS	If the entry is a PDS(E), open the File Search window for the entry.
I	Open an IDCAMS Command window and issue an IDCAMS LISTCAT for the entry.
K	Delete (Kill) the entry without prompting for verification.
M	If the entry is a PDS/PDSE, open a Library List window. (Default)
Q	List dataset enqueues (major name SYSDSN) for this entry.
R	Rename the entry.
SD	Open the SDE BROWSE/EDIT Dialog Window to browse or edit the entry's data within a Structured Data Environment window view.
UT	Opens the general file utilities menu to ultimately generate specific line commands in a temporary CMX file.
V	Open the CBLe text editor to View (edit read/only) this entry.
VC	Open an Execute CBLVCAT window and issue a LISTVCAT operation for the entry.
Z	Perform a compress of an MVS PDS library to reclaim disk space occupied by replaced (back-level) members. This action performs an IEBCOPY to itself. No action is taken for PDSE entries, however, the IEBCOPY dialog is opened with an error message if executed against any non-PDS(E) entry.
?	Open the volume statistics window for the volume containing the entry.
/	Open a drop down menu containing valid prefix command functions for the list window entry. Position the cursor on the required function and hit <Enter> to action the command. Assigned to PF4 by default.
>	Open a new window containing a zoomed vertical display of the entry's fields. Particularly useful for list windows that have a large number of displayed columns. Assigned to PF2 by default.

Columns Displayed

The data displayed is:

Name	Type	Description
Vol	Char	Volume serial number
CC	UInt	Cylinder number (decimal)
HH	UInt	Head number (decimal)
Seq	UInt	Extent sequence
Dsn	Char	Dataset name
Org	Enum	Data set organisation
Alu	Char	Allocation unit
Trks	UInt	Tracks allocated
Nxt	UInt	Number of extents
LoCCHH	Hex	Extent Low CCHH
HiCCHH	Hex	Extent High CCHH

List MVS Allocated Files

The Allocated Datasets may be opened via the following:

- Select 'Allocated Files' from the LIST menu in the CBLi Main Menu.
- Enter the CBLi command LA on the command line of any window.

The resultant Allocated Datasets window displays all current file allocations defined to the environment running CBLi. i.e.

MVS TSO	DDnames allocated to the TSO Userid.
MVS VTAM	Files allocated to the CBLi VTAM application.

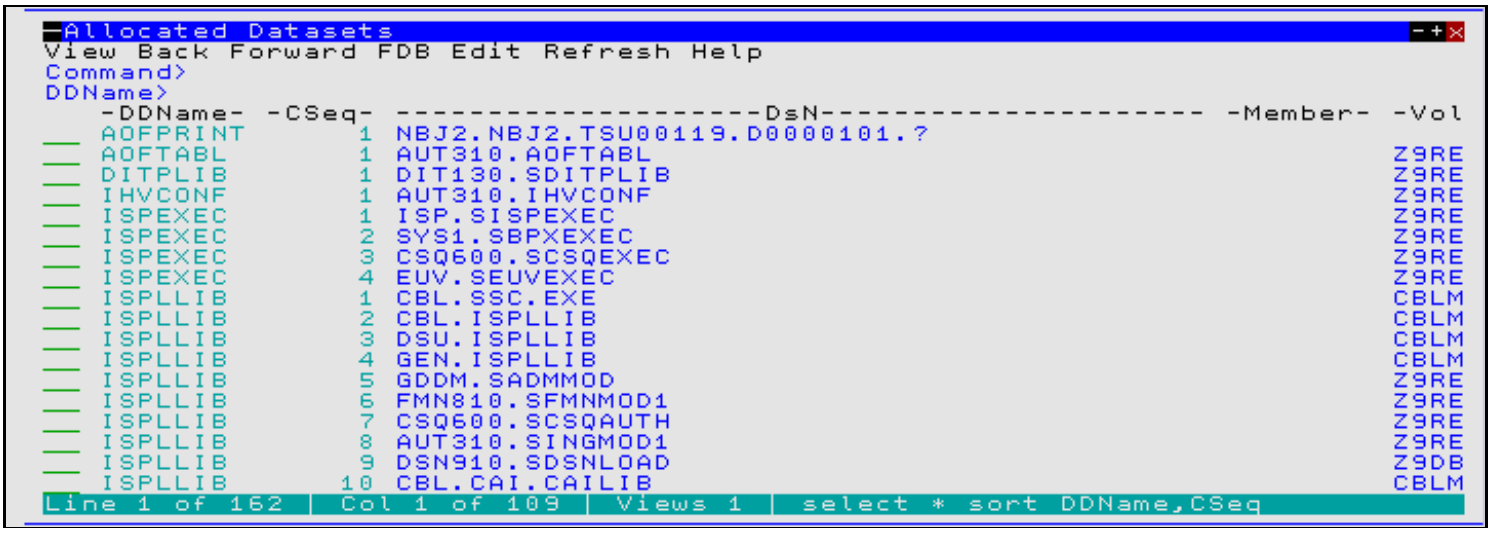


Figure 45. List MVS Allocated Datasets window.

DDName>
Select only DDNames that begin with the specified Character string.

Prefix Line Commands

The following prefix line commands are available:

Command	Description
(blank)	Prefix line command M if entry is a PDS/PDSE library, prefix line command E otherwise. (The ENTER key must be pressed with the cursor on the line containing the PDS).

B	Open the CBLe text editor to to perform SDATA BROWSE on the entry.
C	Copy the entry.
D	Delete the entry. User will be prompted to verify the deletion.
E	Open the CBLe text editor to edit this entry.
F	Open the FSU - File Search/Update Window to perform an advanced search and optionally update the contents of the entry.
FO	Open an SDE view to display (browse) the entry as output from the FSU - File Search/Update Window.
FS	If the entry is a PDS(E), open the File Search window for the entry.
I	Open an IDCAMS Command window and issue an IDCAMS LISTCAT for the entry.
K	Delete (Kill) the entry without prompting for verification.
M	If the entry is a PDS/PDSE, open a Library List window. (Default)
Q	List dataset enqueues (major name SYSDSN) for this entry.
R	Rename the entry.
SD	Open the SDE BROWSE/EDIT Dialog Window to browse or edit the entry's data within a Structured Data Environment window view.
U	Unallocate the DD name.
UT	Opens the general file utilities menu to ultimately generate specific line commands in a temporary CMX file.
V	Open the CBLe text editor to View (edit read/only) this entry.
VC	Open an Execute CBLVCAT window and issue a LISTVCAT operation for the entry.
Z	Perform a compress of an MVS PDS library to reclaim disk space occupied by replaced (back-level) members. This action performs an IEBCOPY to itself. No action is taken for PDSE entries, however, the IEBCOPY dialog is opened with an error message if executed against any non-PDS(E) entry.
?	Open the volume statistics window for the volume containing the entry.
/	Open a drop down menu containing valid prefix command functions for the list window entry. Position the cursor on the required function and hit <Enter> to action the command. Assigned to PF4 by default.
>	Open a new window containing a zoomed vertical display of the entry's fields. Particularly useful for list windows that have a large number of displayed columns. Assigned to PF2 by default.

Columns Displayed

Name	Type	Description
DDName	Char	DD name
CSeq	Int	Concatenmation sequence
DsN	Char	Dataset name
Mbr	Char	PDS member
Vol	Char	Volume serial number
Org	Char	Data set organisation
Recfm	Char	Record format
Lrecl	Int	Logical record length
BlkSize	Int	Block size
Disp	Char	Dataset disposition

List VSE Standard Labels

The VSE Standard Label window may be opened via the following to display all permanent and temporary file labels:

- Select 'Allocated Files' from the LIST menu in the CBLi Main Menu.
- Enter the CBLi command LA on the command line of any window.

Where information for individual fields are uninitialised, then the null indicator (-1) is displayed. e.g. If EXTNO field is null, then no extents have been associated with the label.

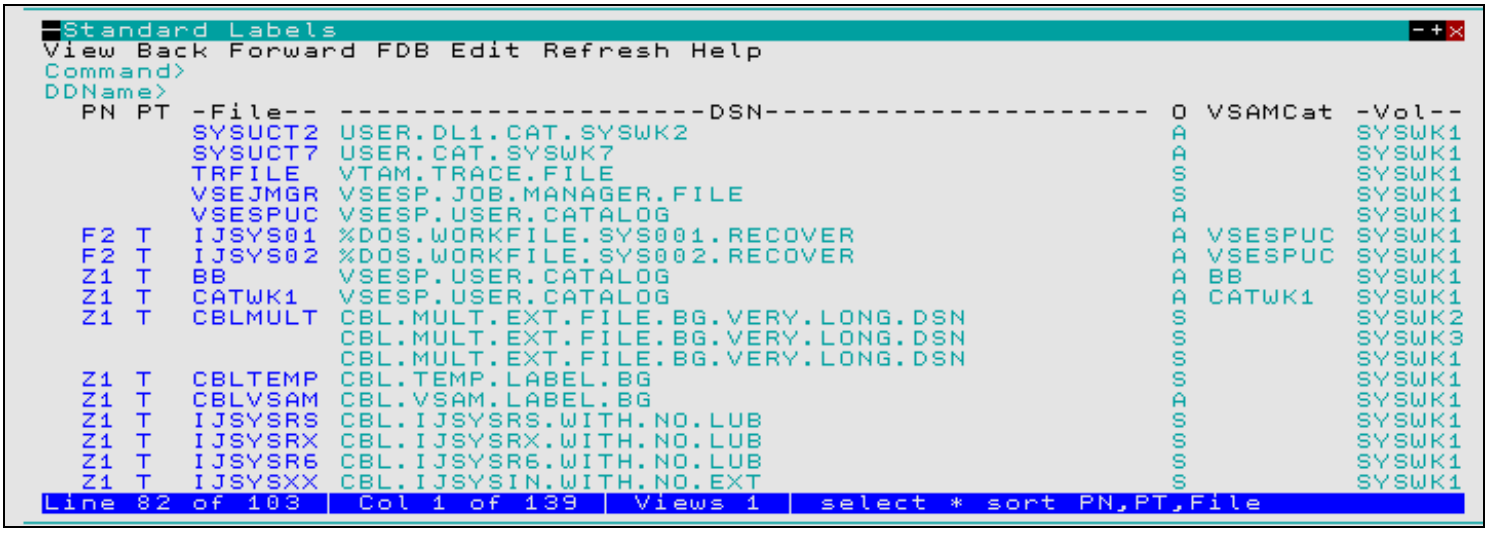


*Figure 46.*List Standard Labels Window for VSE.

DDName>
Select only Label Names that begin with the specified Character string.

Prefix Line Commands

The following prefix line commands are available:

Command	Description
I	For VSAM cataloged files only, open an IDCAMS Command window and issue an IDCAMS LISTCAT for the entry.
VC	For VSAM cataloged files only, open an Execute CBLVCAT window and issue a LISTVCAT operation for the entry.
/	Open a drop down menu containing valid prefix command functions for the list window entry. Position the cursor on the required function and hit <Enter> to action the command. Assigned to PF4 by default.
>	Open a new window containing a zoomed vertical display of the entry's fields. Particularly useful for list windows that have a large number of displayed columns. Assigned to PF2 by default.

Columns Displayed

Name	Type	Description
ADisp	Char	Abend disposition
BLKSIZE	Int	SAM CKD DTFSD BLKSIZE override
BUFND	Int	VSAM ACB BUFND override. Number of Data buffers
BUFNI	Int	VSAM ACB BUFNI override. Number of Index buffers
BUFSP	Int	VSAM ACB and IDCAMS DEFINE BUFSP override
CISIZE	Int	SAM FBA DTFSD CISIZE override
DSN	Char	File dataset name
ExpDate	VTOCDate	Expiration date
ExtAlloc	Int	Number of allocated tracks/blocks
ExtNo	Int	Extent Sequence Number
ExtStart	Int	Start of extent (relative track/block number)
File	Char	File name
FBA	BitFlag	FBA Device Indicator for OPEN
LogUnit	Char	Assigned System or Programmer Logical Unit
O	Char	Open code for file type

ODisp	Char	Open disposition
PriAlloc	Int	VSAM/SAM RECORDS primary allocation
PN	Char	Partition name
PT	Char	Perm/Temp
RetPeriod	Int	Retention period in number of days. (Default 7)
RECSIZE	Int	VSAM/SAM Record size
SecAlloc	Int	VSAM/SAM RECORDS secondary allocation
TDisp	Char	Termination disposition
Vol	Char	Volume serial of this extent
VSAMCat	Char	VSAM catalog

List Library Members

The Library List window may be opened via the following:

- Select 'Library Members' from the LIST menu in the CBLi Main Menu.
- Enter the CBLi command LL on the command line of any window.

The Library List window displays members of a PDS/PDSE (MVS) or LIBR (VSE) library.

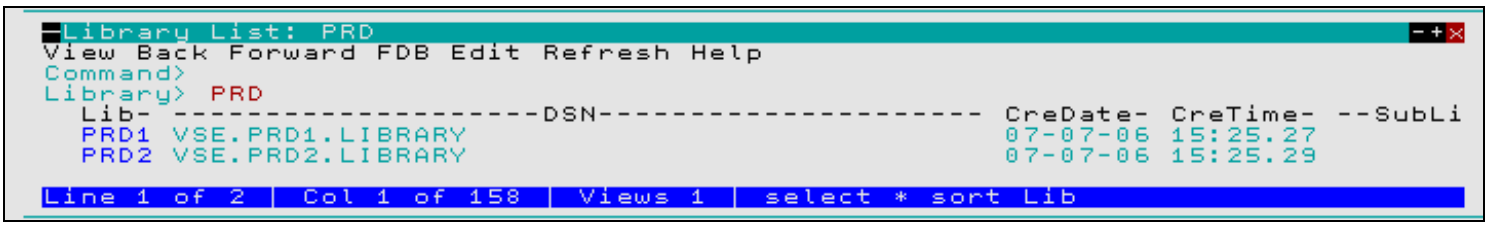


Figure 47. Library List window displaying VSE libraries beginning 'PRD'.

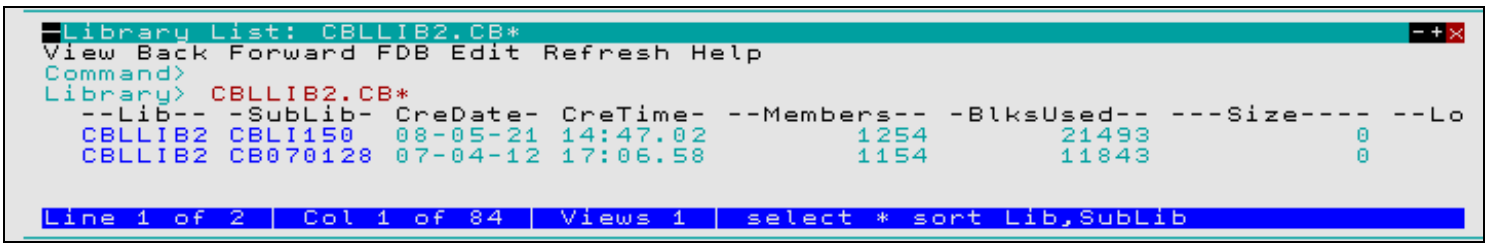


Figure 48. Library List window displaying VSE library 'CBLLIB2' sub-libraries beginning 'CB'.

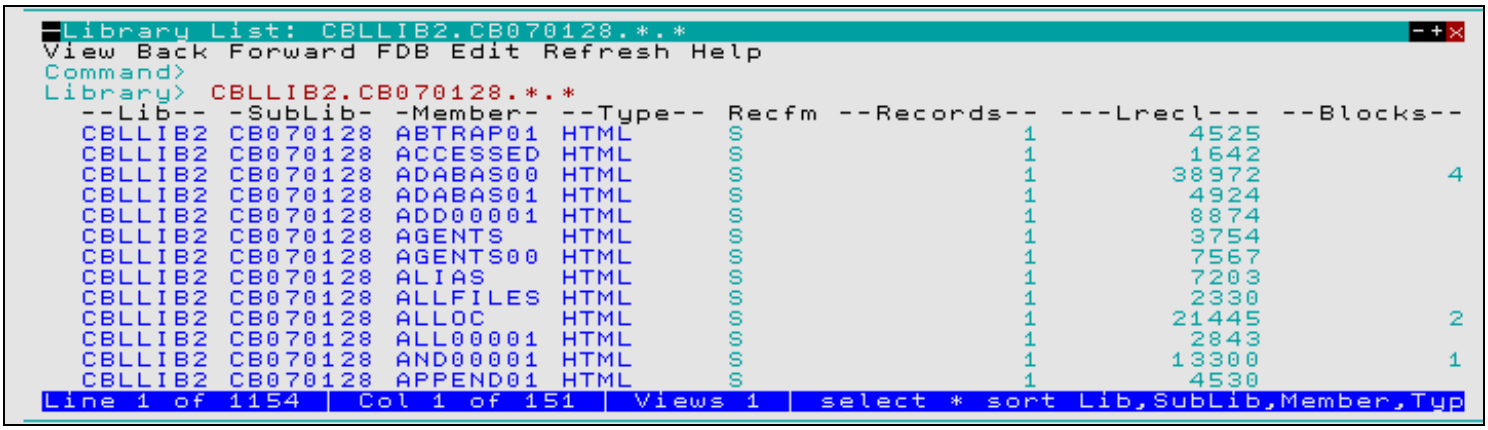


Figure 49. Library List window displaying all members of VSE sub-library 'CBLLIB2.CB070128'.

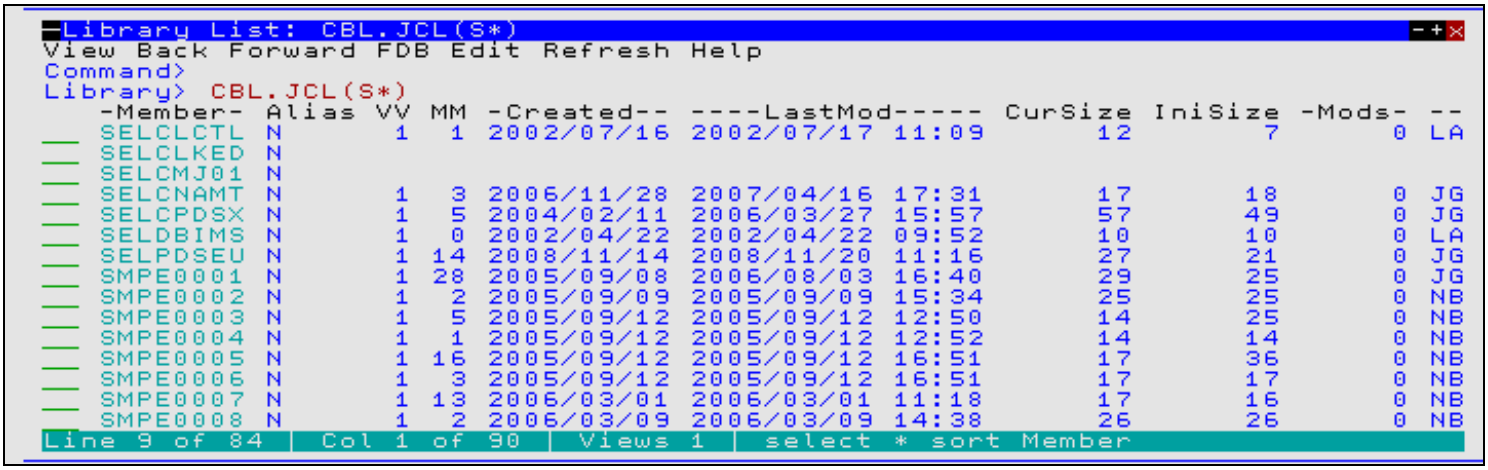


Figure 50. Library List window displaying members of MVS PDSE 'CBL.JCL' whose names begin with "S".

Library>
The name of the library for which the contents are to be listed.

◊ For **MVS** the library parameter is a PDS (or PDSE) dataset name and optionally one or more member name mask.

A member name mask supports the following wild cards:

*	A single asterisk represents an entire member name or zero or more characters within a member name mask.
%	A single percent sign represents exactly one character within a member name mask. Up to 8 percent signs can be specified in each member name mask.

If specified, the member name mask must immediately follow the PDS(E) DSN and be enclosed in "( )" (parentheses). Multiple member name masks, all specified within the single set of parentheses, must be separated by one or more blanks and/or a "," (comma). e.g.

```
LL  DEV.OEM.CBL202.CBLI.HELP.HTML(S*AN%  WIN*, *R)
```

◊ For **VSE** the library parameter can be:

1. A library name. In this case the statistics for the library are listed. e.g.

```
LL  CBLLIB
```

2. A library name and sublibrary name. In this case the sublibrary name may be a mask containing "*" (asterisk) wild cards as supported by VSE Librarian. The statistics for all sublibraries which fit the sublibrary name mask are listed. e.g.

```
LL  CBLLIB.TEST*
```

3. A library name, sublibrary name and member name and type. In this case the member name and type may be a mask containing "*" (asterisk) wild cards. The statistics for all members which fit the mask are listed. e.g.

```
LL  CBLLIB.TEST01.*.Z
```

Prefix Line Commands

For **MVS** systems, the following prefix line commands are available:

Command	Description
(blank)	Prefix line command E. (The ENTER key must be pressed with the cursor on the line containing the member).
A	Open the Create Alias dialog window.
B	Open the CBLe text editor to to perform SDATA BROWSE on the entry.
C	Copy the entry.
D	Delete the entry. User will be prompted to verify the deletion.
E	Open the CBLe text editor to edit this entry.

EX	Execute the entry. (Invokes the TSO command, EXECUTE, using the entry name as input.
F	Open the FSU - File Search/Update Window to perform an advanced search and optionally update the contents of the entry.
FS	Open the File Search window for the entry.
J	Submit the entry to batch. Executes the CBLe CLI SUBMIT command using the entry name as input. (A CBLe frame window must be active for this operation to suceed.)
K	Delete (Kill) the entry without prompting for verification.
R	Rename the entry.
SD	Open the SDE BROWSE/EDIT Dialog Window to browse or edit the entry's data within a Structured Data Environment window view.
UT	Opens the general file utilities menu to ultimately generate specific line commands in a temporary CMX file.
V	Open the CBLe text editor to View (edit read/only) this entry.
/	Open a drop down menu containing valid prefix command functions for the list window entry. Position the cursor on the required function and hit <Enter> to action the command. Assigned to PF4 by default.
>	Open a new window containing a zoomed vertical display of the entry's fields. Particularly useful for list windows that have a large number of displayed columns. Assigned to PF2 by default.

For **VSE** systems, the following prefix line commands are available when a list of VSE libraries or sublibraries is displayed:

Command	Description
(blank)	Prefix line command M. (The ENTER key must be pressed with the cursor on the line containing the library/sub-library.)
M	Opens another Library List window containing the library/sub-library contents.
L	Lock the VSE LIBR member. (VSE Only)
/	Open a drop down menu containing valid prefix command functions for the list window entry. Position the cursor on the required function and hit <Enter> to action the command. Assigned to PF4 by default.
>	Open a new window containing a zoomed vertical display of the entry's fields. Particularly useful for list windows that have a large number of displayed columns. Assigned to PF2 by default.

For **VSE** systems, the following prefix line commands are available when a list of VSE sublibrary members is displayed:

Command	Description
(blank)	Prefix line command E. (The ENTER key must be pressed with the cursor on the line containing the member).
D	Delete the entry. User will be prompted to verify the deletion.
E	Open the CBLe text editor to edit this entry.
FS	Open the File Search window to search the contents of this entry. Not supported for VSE LIBR library entries.
J	Submit the entry to batch. Executes the CBLe CLI SUBMIT command using the entry name as input. (A CBLe frame window must be active for this operation to suceed.)
K	Delete (Kill) the entry without prompting for verification.
L	LOCK the member.
R	Rename the entry.
U	UNLOCK the member. A member may only be unlocked by the user that locked it.
V	Open the CBLe text editor to View (edit read/only) this entry.
/	Open a drop down menu containing valid prefix command functions for the list window entry. Position the cursor on the required function and hit <Enter> to action the command. Assigned to PF4 by default.
>	Open a new window containing a zoomed vertical display of the entry's fields. Particularly useful for list windows that have a large number of displayed columns. Assigned to PF2 by default.

Columns Displayed

The data displayed for MVS is:

Name	Type	Description
Member	Char	Member name
Alias	BitFlag	Alias indicator
VV	Int	Version number
MM	Int	Modification level
Created	TimeDec	Creation date
LastMod	TimeDec	Last modified date and time
CurSize	Int	Current size
IniSize	Int	Initial size
Mods	Int	Modified records
User	Char	User id

The data displayed for VSE libraries is:

Name	Type	Description
Lib	Char	Library file name
SubLib	Char	Sublibrary name
CreDate	Char	Creation date
CreTime	Char	Creation time
Members	Int	Number of members
BlksUsed	Int	Number of library blocks used
Size	Int	Sublibrary size limit
Locked	Int	Number of locked members

The data displayed for VSE sublibraries is:

Name	Type	Description
Lib	Char	Library file name
SubLib	Char	Sublibrary name
Member	Char	Member name
Type	Char	Member type
Recfm	Char	Record format
Records	Int	Number of records or bytes
Lrecl	Int	Logical record length
Blocks	Int	Number of library blocks
UpdDate	Char	Last update date
UpdTime	Char	Last update time
CreDate	Char	Creation date
CreTime	Char	Creation time
SYSIPT	BitFlag	SYSIPT data in procedure
MSHP	BitFlag	Member is MSHP controlled
MSHPByP	BitFlag	MSHP control is bypassed
PrintCC	Enum	Printer control characters
MBSTLOCK	Char	Lock identifier

List MVS Enqueues

The Enqueue List window may be opened via the following:

- Select 'Enqueues' from the LIST menu in the CBLi Main Menu.
- Enter the CBLi command LQ on the command line of any window.

The Enqueue List window displays outstanding MVS enqueues by major name and minor name (queue name and resource name).

Note: Not implemented for VSE.

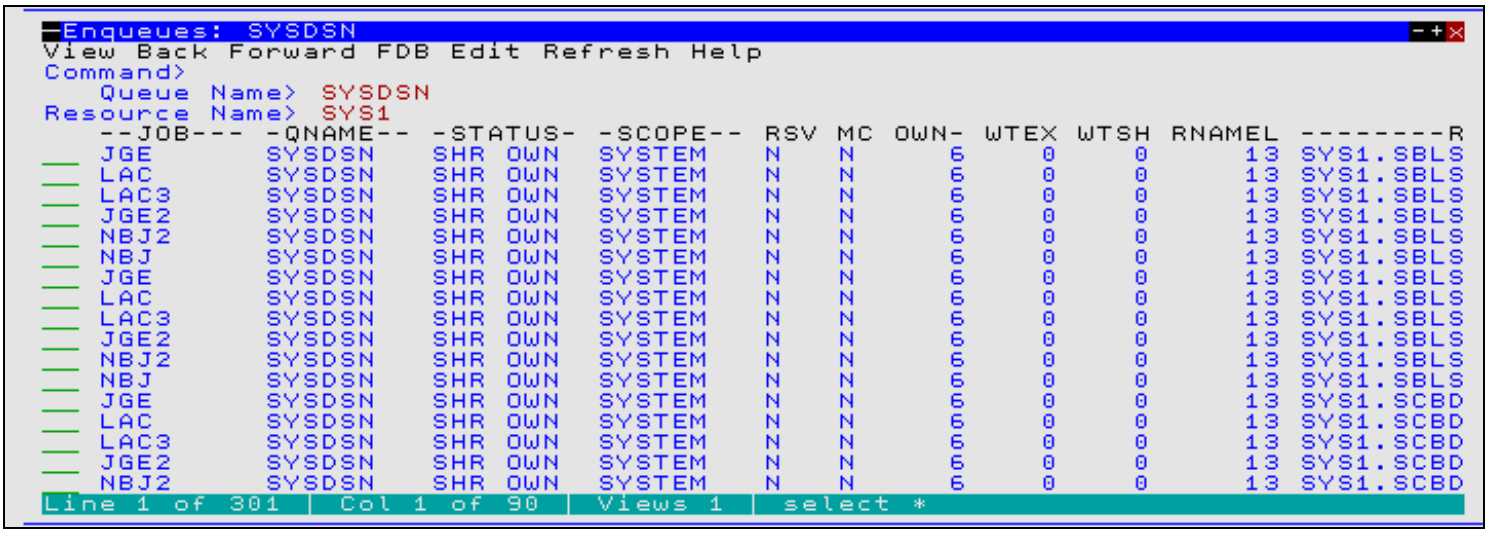


Figure 51. Enqueue List window displaying outstanding enqueues with resource name beginning 'SYS1' in queue SYSDSN.

`Queue Name>`
: The major name (queue name) of the ENQ resource. This is a 1-8 character upper case name. For example, dataset allocations are ENQueued with resource name SYSDSN .

`Resource Name>`
: This is a 1-256 character, case sensitive minor name (resource name). You need only enter the prefix of the resources you are interested in. All resources for the given queue with resource beginning with this value are listed.

Prefix Line Commands

The following prefix line commands are available:

Command	Description
/	Open a drop down menu containing valid prefix command functions for the list window entry. Position the cursor on the required function and hit <Enter> to action the command. Assigned to PF4 by default.
>	Open a new window containing a zoomed vertical display of the entry's fields. Particularly useful for list windows that have a large number of displayed columns. Assigned to PF2 by default.

Columns Displayed

The data displayed is:

Name	Type	Description
JOB	Char	Job name
QNAME	Char	Enqueue Major Name (Queue)
STATUS	Char	Status of Enqueue
SCOPE	Char	Scope of Enqueue
RSV	Char	Reserve
MC	Char	Must complete
OWN	Int	Number of owners

WTEX	Int	Number of waiters exclusive
WTSH	Int	Number of waiters shared
RNAMEL	Int	Rname length
RNAME	VChar	Enqueue Minor Name (Resource)

List MVS Job Enqueues

The Job Enqueue List window may be opened via the following:

- Select 'Job Enqueues' from the LIST menu in the CBLi Main Menu.
- Enter the CBLi command LJQ on the command line of any window.

The Job Enqueue List window displays outstanding MVS enqueues held by a given job.

Note: Not implemented for VSE.

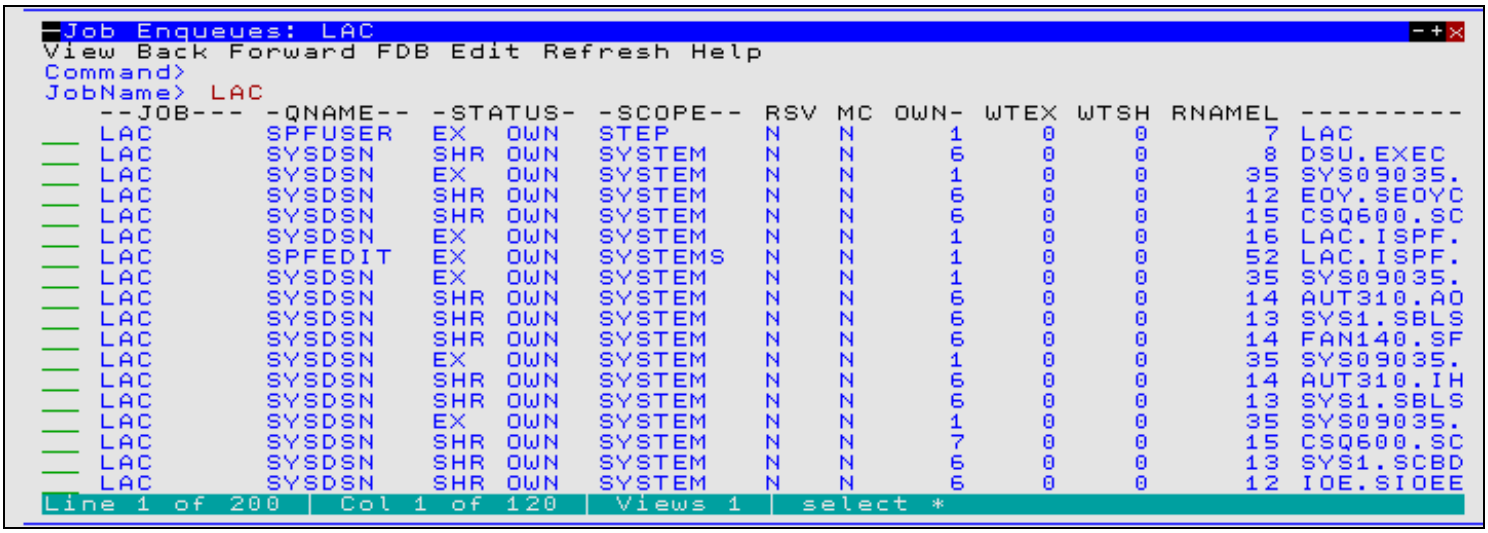


Figure 52. Job Enqueue List window displaying outstanding enqueues for Job 'LAC'.

`JobName>`
: The name of the job for which the ENQueues are to be listed.

Prefix Line Commands

The following prefix line commands are available:

Command	Description
/	Open a drop down menu containing valid prefix command functions for the list window entry. Position the cursor on the required function and hit <Enter> to action the command. Assigned to PF4 by default.
>	Open a new window containing a zoomed vertical display of the entry's fields. Particularly useful for list windows that have a large number of displayed columns. Assigned to PF2 by default.

Columns Displayed

The data displayed is:

Name	Type	Description
JOB	Char	Job name
QNAME	Char	Enqueue Major Name (Queue)
STATUS	Char	Status of Enqueue
SCOPE	Char	Scope of Enqueue

RSV	Char	Reserve
MC	Char	Must complete
OWN	Int	Number of owners
WTEX	Int	Number of waiters exclusive
WTSH	Int	Number of waiters shared
RNAMEL	Int	Rname length
RNAME	VChar	Enqueue Minor Name (Resource)

List HFS Path

The HFS Path List window displays the contents of the specified HFS directory path and optionally its sub-directories. It may be opened via the following:

- Select 'HFS Path Details' from the LIST menu in the CBLi Main Menu.
- Enter the CBLi command LP on the command line of any window.
- Enter the CBLi command LD with an HFS path argument on the command line of any window.

The HFS Path List window displays file, directory and link names contained in the specified HFS path, together with stored information for each directory entry.

Note: List HFS Path is not supported for CMS or VSE.

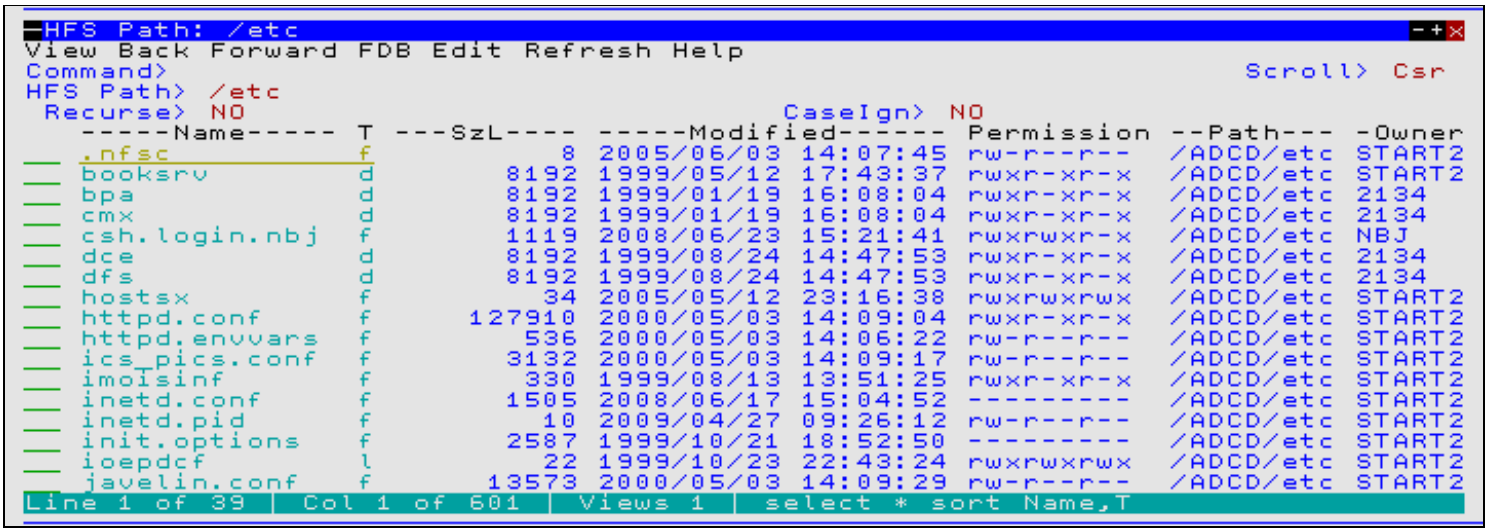


Figure 53. HFS Path List window.

HFS Path>
Specify the absolute or relative HFS path name.

The name portion of the HFS path is the character string at the end of the path that follows the last "/" (slash) of the fileid, or is the entire path name if "/" is not specified.
The following wild cards may only be specified within the name portion of the HFS path.

*	A single asterisk represents zero or more characters.
%	A single percent sign represents a single character.

Recurse>
Enter "YES" to recursively list the contents of all sub-directories found within the HFS path specification.
Default is "NO".

CaseIgn>
Enter "YES" to bypass case sensitivity for the name portion of the specified HFS path.
Default is "NO".

Prefix Line Commands

The following prefix line commands are available:

Command	Description
(blank)	Perform the default action for the list entry on which the cursor is positioned when <Enter> is pressed. Default action depends on the list entry as follows: • For a directory entry or a symbolic link to a directory, open a new List HFS list window to display the the contents of the directory. • For all other entries, a CBLe text editor view is opened to edit the data. (Equivalent to prefix command "E").
B	Open the CBLe text editor to to perform SDATA BROWSE on the entry.
D	Delete the entry (file, link or directory). User will be prompted to verify the deletion.
E	Open a CBLe text editor view to edit this entry.
F	Open the **FSU - File Search/Update Window** to perform an advanced search and optionally update the contents of the entry.
K	Delete (Kill) the entry without prompting for verification.
R	Rename the entry.
SD	Open the **SDE BROWSE/EDIT Dialog Window** to browse or edit the entry's data within a Structured Data Environment **window view**.
UT	Opens the general file utilities menu to ultimately generate specific line commands in a temporary CMX file.
V	Open the CBLe text editor to View (edit read/only) this entry.
/	Open a drop down menu containing valid prefix command functions for the list window entry. Position the cursor on the required function and hit <Enter> to action the command. Assigned to PF4 by default.
>	Open a new window containing a zoomed vertical display of the entry's fields. Particularly useful for list windows that have a large number of displayed columns. Assigned to PF2 by default.

Columns Displayed

The data displayed is:

Name	Type	Description
Name	ALPair	Filename
T	Enum	Dir entry type
SzL	UInt	Bytes Used (Low Order)
Modified	HDate	Data Modified Timestamp
Permission	Char	Permissions as displayed for the LS shell command.
Path	ALPair	Path
Owner	Char	Owner name
Group	Char	Group name
Fmt	Enum	File Format
Links	Int	Number of links
Mode	Int	HFS Mode (nnn)
UidX	BitFlag	Set user ID on execution
GrpX	BitFlag	Set group ID on execution
Sticky	BitFlag	Sticky Bit
INode	Hex	File Serial Number (INode)
Dev	Hex	Device ID
DevMaj	Hex	Major Device number
DevMin	Hex	Minor Device number
SzH	UInt	Bytes Used (High Order)
Uid	Int	Owner ID
Gid	Int	Group ID
Changed	HDate	File Stat Chg Timestamp

Accessed	HDate	Last Accessed Timestamp
Created	HDate	File Creation Timestamp
BlkSz	UInt	File Block Size
AuditId	Char	RACF File ID for auditing
AA1	Hex	Auditor audit byte 1
AA2	Hex	Auditor audit byte 2
AA3	Hex	Auditor audit byte 3
AA4	Hex	Auditor audit byte 4
UA1	Hex	User audit byte 1
UA2	Hex	User audit byte 2
UA3	Hex	User audit byte 3
UA4	Hex	User audit byte 4
rU	BitFlag	Read permission for User(Owner)
wU	BitFlag	Write permission for User(Owner)
xU	BitFlag	Exec permission for User(Owner)
rG	BitFlag	Read permission for Group
wG	BitFlag	Write permission for Group
xG	BitFlag	Exec permission for Group
rO	BitFlag	Read permission for Others
wO	BitFlag	Write permission for Others
xO	BitFlag	Exec permission for Others
NoDel	BitFlag	Files should not be deleted
ShrLib	BitFlag	Shared Library
NoShrs	BitFlag	No shareas flag
Auth	BitFlag	APF authorized flag
PgmC	BitFlag	Program controlled flag
ExtLink	BitFlag	External Symbolic Link
NoDelM	BitFlag	(Mask) Files should not be deleted
ShrLibM	BitFlag	(Mask) Shared Library
NoShrsM	BitFlag	(Mask) No shareas flag
AuthM	BitFlag	(Mask) APF authorized flag
PgmCM	BitFlag	(Mask) Program controlled flag
ExtLinkM	BitFlag	(Mask) External Symbolic Link
AclAccess	BitFlag	Access ACL exists
AclFModel	BitFlag	File Model ACL exists
AclDModel	BitFlag	Directory Model ACL exists
Set	Hex	Flag bytes 1-4
FTag	Char	File Tag
BlksH	UInt	Blocks Allocated (High Order)
BlksL	UInt	Blocks Allocated (Low Order)
Opq	Hex	Opaque attribute flags
OpqM	Hex	(Mask) Opaque attribute flags
M1	Hex	HFS Mode byte 1
M2	Hex	HFS Mode byte 2
M3	Hex	HFS Mode byte 3
RefT	UInt	Reference Time
Id	Hex	File Identifier

CTime	UInt	Ctime Micro_Seconds
SecLabel	Char	Security Label

Utility Windows

CBLi supports a number of general purpose utilities each operating in their own window.

To date, these utilities are:

1. Calculator Window
2. Calendar Window
3. File Search Window

The Utilities menu also contains items to launch the **ISPF Utilities menu** and **SDSF**.

Calculator Window

The Calculator window may be opened via the following:

- Select 'Calculator' from the Utilities menu item of the CBLi main menu.
- Enter the CBLi command CALC on the command line of any window.

The calculator window allows you to enter a calculation and displays the result of the calculation.

In fact the calculator is a REXX function interpreter. You enter a valid REXX expression and the calculator evaluates it. You are not restricted to numerical calculations. You can enter any valid REXX expression including for example the conversion functions.

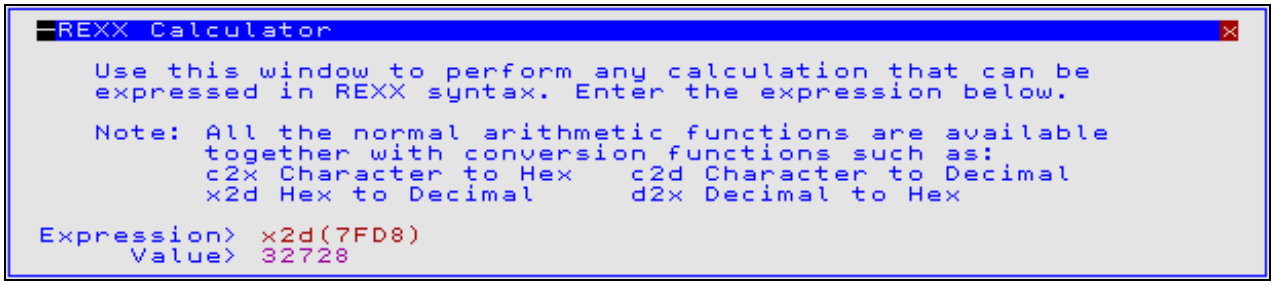


Figure 54. REXX Calculator window.

Calendar Window

The Calendar window may be opened via the following:

- Select 'Calendar' from the Utilities menu item of the CBLi main menu.
- Enter the CBLi command CALendar on the command line of any window.

When opened, the calendar window shows the current month with today's date highlighted. Each day has the day of the month and the Julian day number displayed in a table.

You can scroll the calendar backwards and forwards by the month or the year or you can enter a specific year or month in the fields at the top of the window.

To scroll the calendar use the following commands:

Command	Default PF key	Description
SCROLL UP	PF7	Display the previous month.
SCROLL DOWN	PF8	Display the next month.
SCROLL LEFT	PF11	Display the current month in the previous year.
SCROLL RIGHT	PF12	Display the current month in the next year.

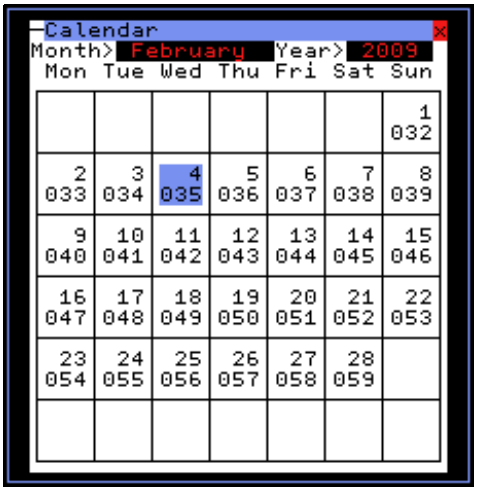


Figure 55. Calendar window.

FAV - Favourites Datasets/Commands Window

The FAV - Favourite Datasets/Commands window may be opened via the following:

- Select 'Favourites' from the Utilities menu in the CBLi Main Menu.
- Enter the CBLi command FAV on the command line of any window.

Backed by customer demand for an easy interface to commonly accessed data sets and in order to assist migratation from other productivity software that offer similar features, the Favourite Datasets/Commands window enables users to specify a default project hierarchy and also assign file names and command streams to items of a numbered list.

The desired file name or command may then be referenced directly by list item number.

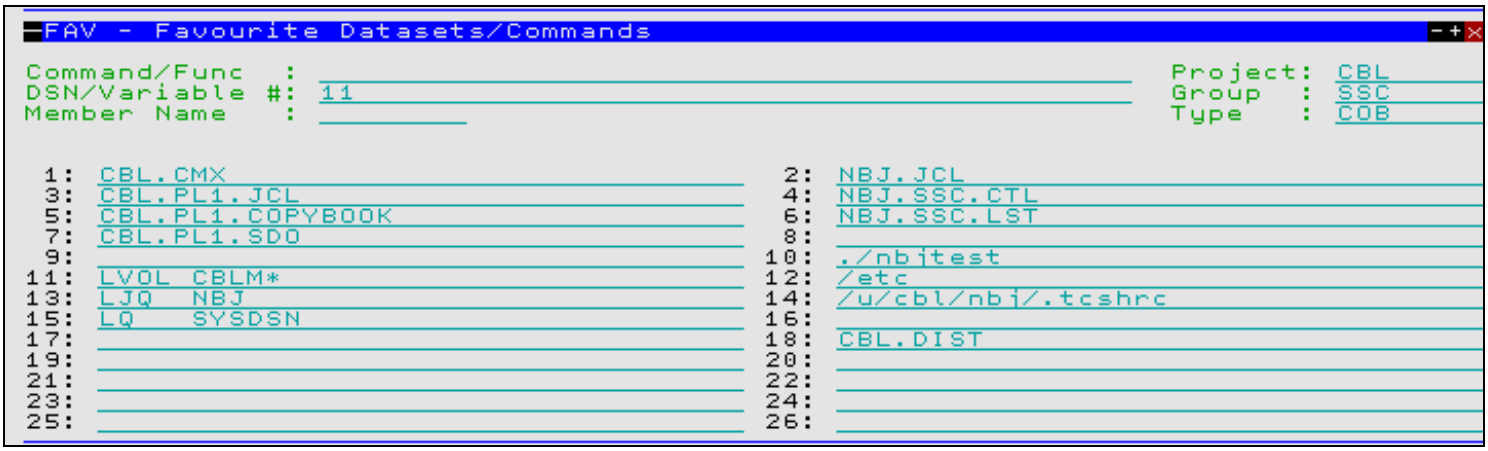


Figure 56. FAV - Favourite Datasets/Commands window.

When <Enter> is hit, the required fileid is determined based primarily on the contents of the **DSN/Variable #** field.

Note that hitting <Enter> on one of the numbered items is equivalent to entering the item number in the **DSN/Variable #** field then hitting <Enter>.

Field Content	Fileid Determination
null	Use the contents of the Project, Group, Type and Member Name fields.
non-numeric	Use the contents of the DSN/Variable # and Member Name field.
numeric	Use the contents of the specified number list item and the Member Name field.

`Command/Func:`
Enter the CBLi CLI command to be executed.

Default CLI command is determined as follows:

null	A CLI command is already included as part of the specified list item number.
LA	The fileid is a single token (qualifier) containing no "." (dot/period) and no leading "/" (slash).
EDIT	The fileid has a member name or is an absolute HFS path name.
LL	The fileid is an MVS PDS(E) DSN with no member name.
LD	The fileid is an MVS non-PDS(E) DSN.

DSN/Variable #:
Enter a complete fileid, a DSN of a PDS(E) library or reference the number of a list item.

Member Name:
A member name to be included as part of the fileid.

For MVS systems only, where the Member Name field is not empty, the use of its contents in the resultant fileid is based on whether a member name has already been specified via the other fields used to resolve the fileid. i.e. If no member name is identified within in the fileid, the contents of the Member Name field are enclosed in "( )" (parentheses) and appended to the fileid.

For VSE and CMS, this member name is used only if the **DSN/Variable #** field is null, in which case the fileid is built from the Project, Group, Type and Member Name fields.

Project:/Group:/Type:
The default fileid tokens (qualifiers) to be used if the **DSN/Variable #** field is null.

For MVS, the Project, Group and Type fields represent the first three qualifiers of the DSN.

For CMS, the Project and Type fields represent the FileMode and FileType tokens respectively. The Group field is ignored.

For VSE, the Project, Group and Type fields represent a LIBR library name, sub-library name and member type respectively.

n. (1-99)
99 available numbered list item slots in which to store commonly accessed fileids and CLI command streams.

Scroll up and down through the pages of list item slots using <PF7> and <PF8> respectively.

File Search Window

The File Search window may be opened via the following:

- Select 'File Search' from the Utilities menu in the CBLi Main Menu.
- Enter the CBLi command FS on the command line of any window.

The File Search window displays the lines in a PDS member (MVS), LIBR member (VSE) or CMS file that contain a given string.

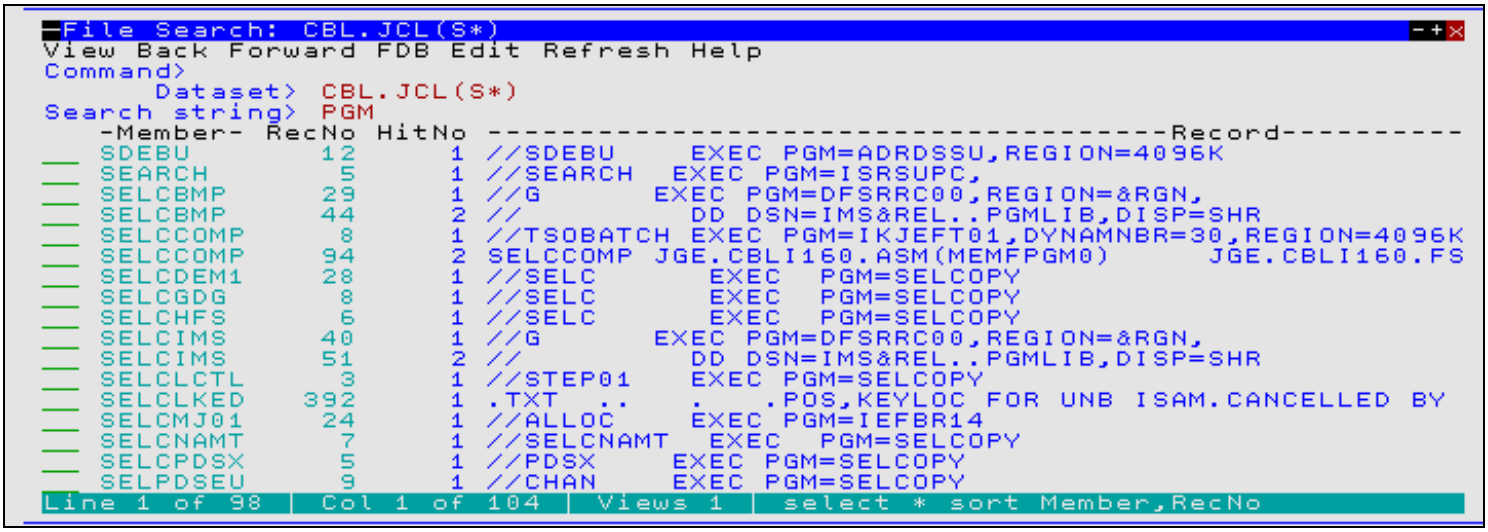


Figure 57. File Search window.

Dataset>
◊ For MVS, the Dataset parameter is the DSN of a PDS(E) library to be searched which may optionally include a member name mask to identify a subset of members to be searched.

A member name mask supports the following wild cards:

`*` A single asterisk represents an entire member name or zero or more characters within a member name mask.

`%` A single percent sign represents exactly one character within a member name mask. Up to 8 percent signs can be specified in each member name mask.

If specified, the member name mask must immediately follow the PDS(E) DSN and be enclosed in "( )" (parentheses). A member name mask that is less than 8 characters in length and does not contain an "*" (asterisk) wild card will have a trailing "*" wild card automatically appended. e.g. To search all members of "CBP.PGMLIB" whose names start "CBLA":

```
CBL.PGMLIB(CBLA)
```

◊ For VSE, the Dataset parameter is the name of the LIBR library and sub-library to be searched. The sub-library name, member name and member type may include the "*" wild card to represent zero or more characters. e.g. To search all members of "OEM2.CBL" :

```
OEM2.CBL.*.*
```

◊ For CMS, the Dataset parameter is a CMS fileid mask in standard CMS format denoting the files to be searched. The file name, file type and file mode may each include the "*" wild card to represent zero or more characters. e.g. To search all "EXEC" file types with file name beginning "SS" on all accessed mini-disks.

```
SS* EXEC *
```

`Search string>`
The character search string.

The search string is **not** case sensitive and must be enclosed in single or double quotes if it includes blank characteres.

Prefix Line Commands

For **MVS** systems, the following prefix line commands are available:

Command	Description
(blank)	Prefix line command E. (The ENTER key must be pressed with the cursor on the line containing the member).
A	Open the Create Alias dialog window.
B	Open the CBLe text editor to to perform SDATA BROWSE on the entry.
C	Copy the entry.
D	Delete the entry. User will be prompted to verify the deletion.
E	Open the CBLe text editor to edit this entry.
EX	Execute the entry. (Invokes the TSO command, EXECUTE, using the entry name as input.
F	Open the FSU - File Search/Update Window to perform an advanced search and optionally update the contents of the entry.
FS	Open the File Search window for the entry.
J	Submit the entry to batch. Executes the CBLe CLI SUBMIT command using the entry name as input. (A CBLe frame window must be active for this operation to suceed.)
K	Delete (Kill) the entry without prompting for verification.
R	Rename the entry.
SD	Open the SDE BROWSE/EDIT Dialog Window to browse or edit the entry's data within a Structured Data Environment window view.
UT	Opens the general file utilities menu to ultimately generate specific line commands in a temporary CMX file.
V	Open the CBLe text editor to View (edit read/only) this entry.
/	Open a drop down menu containing valid prefix command functions for the list window entry. Position the cursor on the required function and hit <Enter> to action the command. Assigned to PF4 by default.
>	Open a new window containing a zoomed vertical display of the entry's fields. Particularly useful for list windows that have a large number of displayed columns. Assigned to PF2 by default.

For **VSE** systems, the following prefix line commands are available:

Command	Description
(blank)	Prefix line command E. (The ENTER key must be pressed with the cursor on the line containing the member).
D	Delete the entry. User will be prompted to verify the deletion.
E	Open the CBLe text editor to edit this entry.
FS	Open the File Search window to search the contents of this entry. Not supported for VSE LIBR library entries.
J	Submit the entry to batch. Executes the CBLe CLI SUBMIT command using the entry name as input. (A CBLe frame window must be active for this operation to suceed.)
K	Delete (Kill) the entry without prompting for verification.
L	LOCK the member.
R	Rename the entry.
U	UNLOCK the member. A member may only be unlocked by the user that locked it.
V	Open the CBLe text editor to View (edit read/only) this entry.
/	Open a drop down menu containing valid prefix command functions for the list window entry. Position the cursor on the required function and hit <Enter> to action the command. Assigned to PF4 by default.
>	Open a new window containing a zoomed vertical display of the entry's fields. Particularly useful for list windows that have a large number of displayed columns. Assigned to PF2 by default.

Columns Displayed

The data displayed is:

Name	Type	Description
Member	ALPair	Member
RecNo	Int	Record number
HitNo	Int	Hit number
Record	ALPair	File record

File Search & Update Utility

File Search & Update is a more advanced utility than File Search utility which supports only a single string search on members of a single PDS(E) library.

There is often a requirement to locate and optionally change strings of data in multiple data sets and/or PDS members, and subsequently produce a report of those records where a data string was found and optionally updated.

Furthermore, it may be necessary to locate (and change) only values in particular fields within records that are mapped by a defined structure (e.g. a COBOL or PL/1 copy book) and match specific criteria. e.g. In a structured file containing employee data, find all records where the employee name is "Smith" and where salary is greater than 20,000.

The FSU (File Search and Update) utility allows users to perform these tasks and more via an intuitive dialog window or the CBLi CLI command, FSU.

The functionality and features provided by the structured data environment (SDE) are used by FSU to perform the advanced record selection and update. Consequently, the FSU utility is only available to users who have a licensed version of SELCOPY installed and operational on their system.

A report of records found and/or records updated is presented to the user in an SDE window view.

During execution, a progress window is displayed which allows the user to interrupt processing using the Attention key.

FSU - File Search/Update Window

The FSU - File Search/Update window may be opened via the following:

- Select 'File search/update' from the Utilities menu.
- Execute the command FSU with no parameters from the command line of any window.
- Execute the prefix command "F" from an Execute CBLVCAT or file List type window.

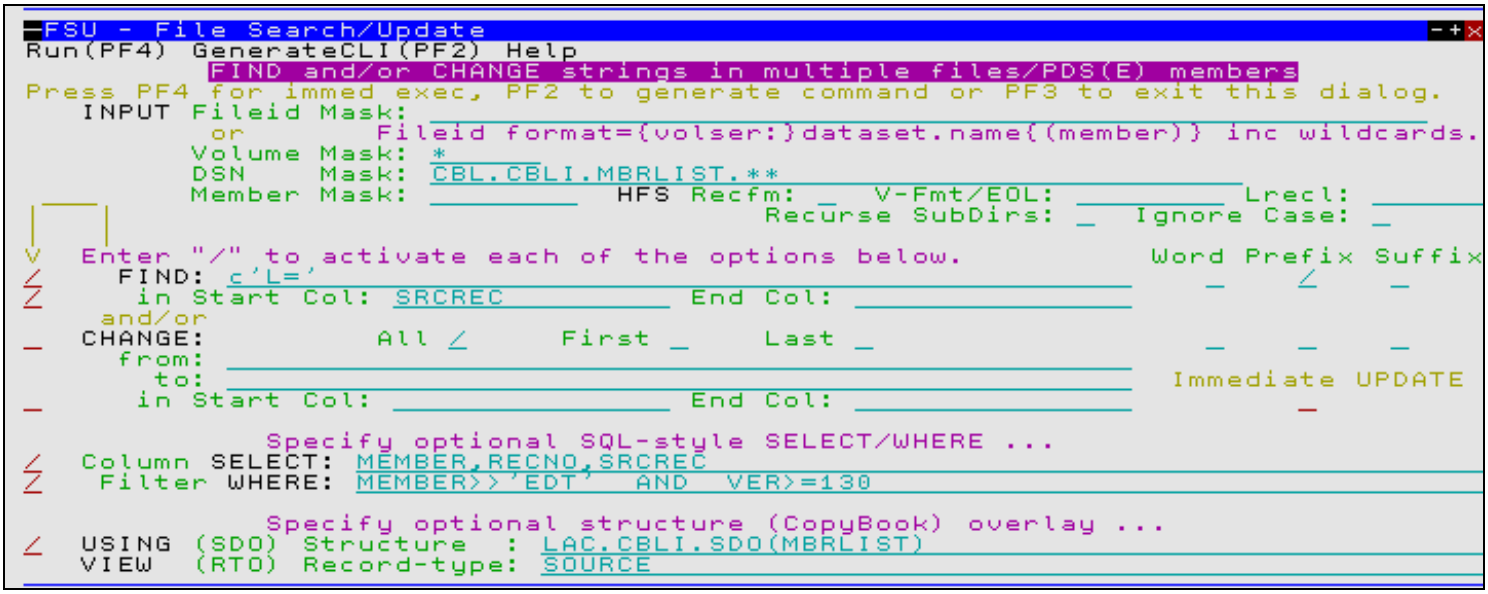


Figure 58. File Search/Update Dialog Window.

File Search/Update window allows the user to search cataloged data sets, HFS files and/or PDS(E) members for a search string and optionally perform a CHANGE command to perform data update in-place.

Field entries in the File Search/Update dialog correspond to parameters specified on the SDE CLI command, FSU, which themselves correspond to SDE CLI commands that filter records, columns and find or update fields within the selected data sets. These parameters are INPUT, FIND, CHANGE and WHERE and, additionally for structured file search, USING, SELECT and VIEW. Specific to HFS paths are parameters EOL, RECFM, LRECL, RECURSE and CASEIGN.

More complex and detailed data search and change criteria can be expressed in the FSU command syntax than can be catered for using an interactive panel. For example, the File Search/Update window supports specification of only one FIND and CHANGE condition and also entry of a finite number of characters in each parameter field.

Therefore, in circumstances where the dialog window does not sufficiently accomodate the user's search and update arguments, the dialog should be used to generate the FSU command allowing the user to insert the required arguments without restriction.

Unstructured File Search & Update

Unstructured File Search & Update is the most commonly used format and means that the operation is executed without an accompanying SDE structure to map data fields within the input records. i.e. The USING field is disabled. Records are treated as a single character string of length equal to the record length as with standard CBLe text edit.

Structured File Search & Update

The more advanced Structured File Search & Update is invoked where a CBLi Structure Data Environment (SDE) structure name (SDO) is specified via the USING parameter.

An attempt is made to associate each input record with a record type (RTO) defined in the structure and, if successful, the field definitions within the RTO are used to map the data of the input record. SDE determines the record type to be associated with each record based on the record's length and any user defined USE *record_type* WHEN conditions applied to the SDO. See documentation on SDE for further information on RTO record association.

Records are treated as comprising a number of data fields of pre-determined lengths and of various data types. Each field within the record may be referenced independently allowing the user to be more descriminate when selecting records for find and update.

For Unstructured File Search & Update, only those records that are associated with a single, specified RTO are included for search and update. All other records are bypassed. The single RTO is specified by the VIEW parameter or defaults to the RTO that occurs first within the SDO. To avoid confusion over which RTO is being used, the dialog window makes user specification of a VIEW argument mandatory when USING is enabled.

SDOs are generated using the SDE CREATE STRUCTURE CLI command, usually from an existing COBOL or PL1 copy book that is associated with the file data. For more information on SDE and edit of data sets containing structured data, please refer to the CBLi SDE Manual.

Menu Items:

Run(PF4)
Select this item or hit PF4 to begin immediate execution of FSU engine using the parameters entered by the user.

GenerateCLI(PF2)
Select this item or hit PF2 to generate the SDE FSU CLI command syntax (see below) for the parameters entered by the user. The generated FSU command is displayed in a temporary CBLe text edit window in a format suitable for execution using CMDTEXT (PF4).

The user has the opportunity to edit the command prior to its execution and/or copying it to the home (CMX) command centre for future reference and re-execution.
GenerateCLI should be used where:

1. One or more of the fields within the File Search/Update window is not sufficiently large enough to contain the entered text.
2. More than one FIND condition and/or CHANGE condition is required.
   The File Search & Update engine supports multiple FIND conditions and CHANGE conditions specified with intervening logical AND or logical OR operators.

Help
Open the General Help for the File Search/Update window.

Field Entries:

By default, field entries are populated with arguments and options that were entered the last time the File Search/Update window was used. The current value of each field is stored as a CBLiINI variable when focus is removed from the dialog window. These variables are subsequently saved under the FSU section of the USER CBLiINI data set when the CBLi session is ended normally.

Most field entries are optional and need to be enabled by entering "/" in the activation field which precedes the field.

`INPUT:`
Identify the data sets to be searched.

This is achieved by entering one or more fileid masks in the Fileid Mask field **or** by generating a single fileid mask by entering a combination of a volume mask, DSN mask and member mask in the appropriate fields.

`Fileid Mask:`
One or more complete fileid masks used to select the HFS files and/or data sets to be searched. Multiple fileid masks may be specified with one or more intervening blanks.

All HFS files, sequential, VSAM and PDS(E) data sets that match a specified fileid mask are selected for input. If one of these data sets is a PDS(E) library then all members of that library will be searched.

A complete fileid mask may be in one of the following formats:

1. A pre-allocated non-HFS DDNAME which may represent one or more (concatenated) data set and/or library. (e.g. SYSEXEC)
2. An absolute or relative HFS Path name.

   Wild card characters "%" (percent), representing a single characters, and "*" (asterisk), representing zero or more characters, are supported in the name portion of the HFS path. The name portion of the HFS path is the character string at the end of the path that follows the last "/" (slash) of the fileid, or is the entire path name if "/" is not specified.
3. A DSN Mask and optionally a Volume Mask and/or multiple PDS(E) Member Masks in the following format:

   ```
   {volmask:}data.set.name.mask{(membmask{,membmask, ...} )}
   ```

   Fileid masks must **not** be enclosed in quotes (TSO prefix is not used.)

   In order to restrict the search to a single PDS(E) library and so exclude any non-PDS data set that matches the fileid mask, one or more member masks should be specified between a single pair of "( )" (parentheses). Multiple PDS(E) member masks must be separated by a "," (commma) and/or one or more intervening blanks.

   If a volume serial mask is specified, the search is restricted to only those data sets that match the specified fileid mask and also have extents that exist on the volume(s) that match the specified volume mask. The volume serial mask is specified at the start of the fileid mask and is distinguishable from the rest of the fileid mask by an intervening ":" (colon) and no embedded blanks. e.g.

   ```
   Z9RES1:ADCD.Z19.PROCLIB(*)
   ```

Wild card characters are supported as described for **Volume Mask**, **DSN Mask** and **Member Mask**.

Examples:

```
  Fileid Mask:   PE1.DEV.SRC.COBOL.CRKSW00(*)
  Fileid Mask:   SYS6.JNP*.**
  Fileid Mask:   OEM.TEST%%.**.CBLI.**(BOX*,D%T*,*ALL)   Z9RES1:ADCD.**
```

`Volume Mask:`

Optionally specify a volume serial id mask. (Not applicable to HFS files.)

The search will be restricted to only those data sets that match the DSN mask **and** also have extents that exist on the volume(s) that match the volume mask.

The volume mask supports wild card characters as follow:

- `*` A single asterisk represents a complete volume name or zero or more characters within a volume name.
  e.g. `CBL*, *RES*`
- `%` A single percent sign represents exactly one character within the volume mask.
  e.g. `Z9DB9%, %%XV3%`

`DSN Mask:`

The data set name mask to be used to identify data sets to be searched. (Not applicable to HFS files.)

A DSN mask is mandatory if a Fileid Mask is not specified. A pre-allocated DDNAME may be specified in the DSN mask field to represent one or more (concatenated) data set and/or library.

All sequential, VSAM and PDS(E) data sets that match a specified DSN mask are selected for input. If one of these data sets is a PDS(E) library then all members of that library will be searched.

DSN mask must **not** be enclosed in quotes (TSO prefix is not used.)

DSN mask supports wild card characters as follow:

- `*` A single asterisk represents a DSN qualifier or zero or more characters within a DSN qualifier. e.g.
  e.g. `DEV.CBLINS.*.JCL, DEV.CBLINS.TEST*.ISP*LIB, DEV.CBLINS.*.*`
- `**` Double asterisk represents zero or more qualifiers within a DSN. Double asterisk must be preceded or followed by either a "." (dot/period) or a blank. It cannot precede or follow an alphanumeric character.
  e.g. `DEV.CBLINS.**, DEV.CBLINS.**.CBLE`
- `%` A single percent sign represents exactly one character other than "." (dot/period) within a DSN qualifier.
  e.g. `DEV.CBLINS.TEST0%.JCL, DEV.CBLI%%.TEST06.CBLI.%%%`

`Member Mask:`

Optionally specify one or more PDS(E) member name mask.

In order to restrict the search to PDS(E) libraries and so exclude any non-PDS data set that matches the DSN mask, one or more member masks should be specified. Multiple PDS(E) member masks must be separated by a "," (comma) and/or one or more intervening blanks.
e.g. `BLOCK, PROFILE BOXSEQ`

The search will be restricted to only those PDS(E) data sets that match the DSN mask **and** only members with a member name that matches any one of the supplied member masks.

A member mask supports wild card characters as follow:

- `*` A single asterisk represents an entire member name or zero or more characters within a member name.
  e.g. `CBL*5, BOX*, D*T*`
- `%` A single percent sign represents exactly one character within a member name mask.
  e.g. `H%, D%R*, E%A`

`HFS`

HFS specific options that apply to **all** HFS path fileid masks specified in the INPUT field.

The HFS fields are as follow:

`Recfm:`

Specify the record format (F or V) to be used for all HFS files that match the HFS path fileid masks specified on the INPUT parameter.

`V-Fmt/EOL:`

Specify the EOLIN (input end-of-line) delimiter to be used for determining the end of a record for all HFS files that match the HFS path fileid masks specified in the INPUT field.

Note that, if the RecFm field is not empty, the contents of the V-Fmt/EOL field are ignored unless the value of the RecFm field is "V". In this case, the contents of the V-Fmt/EOL field are used to specify comma separated *offset*,

length and *origin* values with or without enclosing "( )" (parentheses). *offset* and *length* define the record length field in the record data, while *origin* defines the start of the record data to which the record length is applied.

`Lrecl:`
Specify the maximum record length of input records belonging to all HFS files that match the HFS path fileid masks specified in the INPUT field.

Default for *lrecl* and its effect on input records is as supported by the SDE CLI command EDIT.

`Ignore Case:`
Bypass case sensitivity for the **name** portion of all specified HFS path fileid masks specified in the INPUT field. The name portion of the HFS path is the character string at the end of the path that follows the last "/" (slash) of the fileid, or is the entire path name if "/" is not specified.

`Recurse SubDirs:`
For all HFS path names specified in the INPUT field, recursively search files within all sub-directories found within each HFS path specification.

`FIND:`
Insert arguments to be translated into a single SDE FIND operation.

If enabled, only those input records that satisfy VIEW and WHERE filtering are passed to the FIND operation, otherwise FIND operates on all input records. Records that contain the FIND string are passed to the next stage of processing which, if enabled, is the CHANGE operation. Otherwise the records are displayed in the FIND output report.

For Structured File Search & Update, a numeric search string will be treated as a signed numeric value and an arithmetic compare will occur for numeric data fields. For non-numeric fields and unstructured file searches all search strings are treated as character data and a logical string compare is performed.

If more than one FIND search string is required, enter details of the first search string in the FIND field then select GenerateCLI(PF2) from the menu bar (or simply hit PF2) to edit the FSU CLI command and add further FIND conditions. Note that each group of FIND parameters that constitute a single FIND condition, must be separated by either a logical "AND" or a logical "OR" and must be enclosed in "( )" (parentheses).
e.g. `FIND (  (c'James Kirk')  AND  (c'Spock' WORD)  )`

If logical "AND" is specified, all FIND conditions must be satisfied before the record is selected. If logical "OR" is specified, any of the FIND conditions must be satisfied before the record is selected. FIND conditions separated by a mixture of logical "AND" and logical "OR" operators is not permitted. If this is required, the WHERE clause should be used in place of, or in addition to the FIND.

The FIND fields are as follow:

`FIND:`
Specifies a single SDE FIND format search string.

In order to include a FIND operation (and hence any of the other fields associated with FIND) within the FSU operation, the FIND field must be enabled by entering "/" in the activation field.

`Start Col:`
Specifies the start (or only) position or field column within the input records from which the scan for the search string will begin. Record data in positions or columns before the start column is not searched.

If a numeric value is entered, then it is treated as a position in the input records.
For a structured file search (i.e. a structure is specified via the USING field), Start Col may contain a field name (e.g. Emp_Name) or a field reference number (e.g. #5) instead of a position. If a multiple field range or a more complex combination of field references is required, then use the GenerateCLI(PF2) menu bar item to edit the FSU CLI command and make the relevant additions.

In order to be include "Start Col" and "End Col" in the FSU operation, the fields must also be enabled by entering "/" in the activation field.

`End Col:`
Specifies the end position or field column within the input records beyond which no part of the search string will be found. Only positions or field columns between the Start Col and End Col will be searched. Record data in positions or columns following the end column is not searched.

The format of the value entered in this field (i.e. position or field reference) must match that entered for the Start Col field.

If no End Col is entered, then the default is the Start Col entry so defining a search range width of 1 position or field column.

`Prefix/Suffix/Word`
If the condition is to include one of the parameters PREFIX, SUFFIX or WORD, then enter "/" in the appropriate parameter field. Note that these fields are mutually exclusive.

PREFIX	A successful match only if the search string is found at the start of a word and does not constitute the entire word.
SUFFIX	A successful match only if the search string is found at the end of a word and does not constitute the entire word.
WORD	A successful match only occurs the search string constitutes an entire word.

If none of these fields are selected, the search string may be found anywhere within the data being searched.

For a detailed description of FIND parameters and their effects, please refer to the SDE CLI FIND command documentation.

`CHANGE:`

Insert arguments to be translated into a single SDE CHANGE operation.

In order to include a CHANGE operation (and hence any of the other fields associated with CHANGE) within the FSU operation, the CHANGE field must be enabled by entering "/" in the activation field.

If enabled, only those input records that satisfy VIEW, WHERE and FIND filtering are passed to the CHANGE operation, otherwise CHANGE operates on all input records. Each of these records are displayed twice in the UPDATE/NOUPDATE output report showing the appearance of data before and after the CHANGE operation.

For Structured File Search & Update, numeric search and replace CHANGE strings are treated as signed numeric values. For numeric data fields, an arithmetic compare will occur against a numeric search string and numeric replace strings will be converted to the appropriate data type. For non-numeric fields and unstructured file searches all search strings and replace CHANGE strings are treated as character data.

The File Search & Update utility will only allow update-in-place of record data so the lengths of the input records being processed cannot be changed. Any CHANGE operation that results in a change to the record length will flag an error against that record in the output report.

If more than one CHANGE operation is required, enter details of the first search and replace string in the CHANGE field then select GenerateCLI(PF2) from the menu bar (or simply hit PF2) to edit the FSU CLI command and add further CHANGE conditions. Note that each group of CHANGE parameters that constitute a single CHANGE condition, must be separated by either a logical "AND" or a logical "OR" and must be enclosed in "( )" (parentheses).
e.g. `CHANGE ( ('01656' '+1656' PREFIX ALL) OR ('-1656' '+1656' PREFIX ALL) )`

If logical "AND" is specified, a CHANGE operation will be executed for all of the CHANGE conditions. If logical "OR" is specified, a CHANGE operation will be executed for each CHANGE condition in turn until one is successful. CHANGE conditions separated by a mixture of logical "AND" and logical "OR" operators is not supported.

The CHANGE fields are as follow:

`All/First/Last`

Indicates whether ALL occurrences, the FIRST occurrence or the LAST occurrence of the CHANGE search string within the input record is to be changed. Since each execution of CHANGE operates on the full width of selected data within the record, NEXT and PREV CHANGE parameters are equivalent to FIRST and LAST respectively and so are not included as CHANGE options.

Unlike execution of CHANGE in an SDE edit window, CHANGE for the File Search & Update utility processes one record at a time, not the entire file. Therefore, FIRST and LAST does **not** refer to the first and last occurrence in the file, but the first and last occurrence within the selected data width of the input record.

CHANGE ALL is selected by default. If CHANGE FIRST or LAST is required, then enter "/" in the appropriate parameter field. Note that these fields are mutually exclusive.

`from:`

Specify a single SDE CHANGE format search string.

`to:`

Specify a single SDE CHANGE format replace string.

`Start Col:`

Specifies the start (or only) position or field column within the input records from which the scan for the change search string will begin. Record data in positions or columns before the start column is not searched.

If a numeric value is entered, then it is treated as a position in the input records.
For a structured file search (i.e. a structure is specified via the USING field), Start Col may contain a field name (e.g. Emp_Name) or a field reference number (e.g. #5) instead of a position. If a multiple field range or a more complex combination of field references is required, then use the GenerateCLI(PF2) menu bar item to edit the FSU CLI command and make the relevant additions.

In order to be include "Start Col" and "End Col" in the FSU operation, the fields must also be enabled by entering "/" in the activation field.

`End Col:`

Specifies the end position or field column within the input records beyond which no part of the change search string will be found. Only positions or field columns between the Start Col and End Col will be searched. Record data in positions or columns following the end column is not searched and so is unaffected by the CHANGE condition.

The format of the value entered in this field (i.e. position or field reference) must match that entered for the Start Col field.

If no End Col is entered, then the default is the Start Col entry so defining a search range width of 1 position or field column.

`Prefix/Suffix/Word`

If the condition is to include one of the parameters PREFIX, SUFFIX or WORD, then enter "/" in the appropriate parameter field. Note that these fields are mutually exclusive.

Definitions of PREFIX, SUFFIX and WORD are the same as for FIND.

If none of these fields are selected, the CHANGE search string may be found anywhere within the data being searched.

`Immediate UPDATE`

If changes are to be actioned, and so update all data sets in which a change has successfully occurred, then this field must be enabled by entering "/" in the activation field.

Caution: Activation of this field will cause all changed records to be re-written.

As a precaution, the File Search/Update window will prompt the user to confirm this selection before executing or generating the FSU command.

If this field is not enabled, the CHANGE operations will not actually change data on disk but still reports on those records that are affected by the CHANGE. It is recommended that this should be done prior to executing the operation with Immediate UPDATE enabled.

This option means that data sets will be opened for update-in-place processing instead of being simply opened for input. An exclusive ENQ will be set when the data set is opened, and reset when it is closed.

For a detailed description of CHANGE parameters and their effects, please refer to the SDE CLI CHANGE command documentation.

`SELECT:`

For Structured File Search & Update only, insert an SQL-style SELECT clause to select individual fields from records of the record type specified by the VIEW entry. The select clause is processed by a single SDE SELECT operation.

In order to include a SELECT operation within the FSU operation, the SELECT field must be enabled by entering "/" in the activation field.

Only those fields specified by SELECT are eligable for inclusion in the FIND and CHANGE operations. i.e. If the SELECT field is enabled, all record field entries referenced by Start Col and End Col for FIND and/or CHANGE must exist in the list of record fields entered for SELECT.

By default, only those fields specified by SELECT are displayed in the SDE window output report display. However, all record fields may be subsequently displayed by executing the following from the SDE window command line:
`SELECT *`

For a detailed description of the select clause, please refer to the SDE CLI SELECT command documentation.

`WHERE:`

Insert an SQL-style WHERE clause to filter records. The where clause is processed by a single SDE WHERE operation.

In order to include a WHERE operation within the FSU operation, the WHERE field must be enabled by entering "/" in the activation field.

If enabled, only those input records that satisfy VIEW filtering are passed to the WHERE operation, otherwise WHERE operates on all input records. Records that satisfy the WHERE clause are passed to the next stage of processing which, if enabled, is the FIND operation followed by the CHANGE operation. Otherwise the records are displayed in the FIND output report.

For Unstructured File Search & Update, the where clause may only reference the single character string field that constitutes the entire record, i.e record field reference "#1" or field name "Record". (Note that that this should not be confused with the "zRecord" field group which represents the record in the output report).
e.g. `WHERE ( (#1 >> '01') AND ( (#1 << 'James') OR (#1 << 'John') ) )`

For Structured File Search & Update, the where clause may reference any of the record fields defined by the record type specified by the VIEW entry, regardless of whether it has been included by the SELECT entry.
e.g. `WHERE ( (#3 >= 22) AND ( (EmpName = 'Smith') OR (Dept >> 'E1') ) )`

For a detailed description of the where clause, please refer to the SDE CLI WHERE command documentation.

`USING:`

Insert the name (fileid) of an SDE structure (SDO) which is to be used to map the input records. The USING field entry is equivalent to the USING parameter argument on the SDE EDIT operation.

The named SDO must first have been generated using the SDE CREATE STRUCTURE CLI command, usually from an existing COBOL or PL1 copy book that is associated with the file data. For more information on SDE structures and structured data sets, please refer to the CBLi SDE Manual.

Only those records that are associated with a single record type object (RTO) within the SDO are included for search and update. All other records are bypassed. Although not mandatory on the FSU CLI command itself, to avoid confusion over which records are to be searched, specification of a VIEW field argument in the dialog window is mandatory when USING is enabled. Therefore, in order to include a USING argument within the FSU operation, the USING field must be enabled by entering "/" in the activation field **and** a record type (RTO) must be specified in the VIEW field.

If enabled, USING implies that Structured File Search & Update is in effect.

For a detailed description of the USING argument, please refer to the SDE CLI USING command documentation.

`VIEW:`

For Structured File Search & Update only, insert the record type object (RTO) name defined within the SDE structure (SDO) specified in the USING field. The VIEW field entry is processed by a single SDE VIEW operation.

Only records that are associated with the specified RTO are passed to the next stage of processing which, if enabled, is the WHERE operation followed by FIND followed by CHANGE.

In order to include a VIEW argument within the FSU operation, the USING field must have first been enabled by entering "/" in the activation field.

For a detailed description of the VIEW operation, please refer to the SDE CLI VIEW command documentation.

File Search & Update Output

Output from The File Search & Update utility is presented in an SDE edit window which is automatically opened on execution of File Search & Update. The saved output of any previous execution may be browsed using the FSUOUT macro or "FO" list window prefix command.

The File Search & Update utility generates two temporary, in-storage data sets as follow:

***prefix*.FSU.Dyyyyjjj.Thhmmss**
This data set contains structured, output report data records. Records comprise a number of fields of various data types containing totals values and record information for the searched and/or updated records.

***prefix*.FSU.Dyyyyjjj.Thhmmss.SDO**
An SDE Structured Data Object (SDO) containing a number of record types (RTO) used to map data fields in the report records data set.

Note: The high level qualifier, *prefix*, is the value assigned to **System.UserDSNPrefix** in the USER CBLiINI file.

At the start of execution, the File Search & Update utility automatically opens an SDE Edit window view to display the structured report records. The display is refreshed every second as the operation executes allowing the user to view the progress.

Since the data sets exist in storage only, performance is greatly improved. However, following completion of the operation and on closing the FSU output window view, the user is prompted to save the 2 data sets to disk. The report data will be saved as a VSAM ESDS data set and the accompanying SDO as a sequential data set.

It is strongly recommended that the user save these files following an execution of FSU for UPDATE. This will provide the user with an audit trail and the necessary input required to execute FSUUNDO to reverse the changes if necessary. It also allows the user to browse the output from previous FSU executions using FSUOUT.

Purely as a safety mechanism, the user will also be prompted to save the data sets if a READ or UPDATE I/O error occurs before the run has completed. This ensures that the audit trail exists even if control is not returned from the system routine.

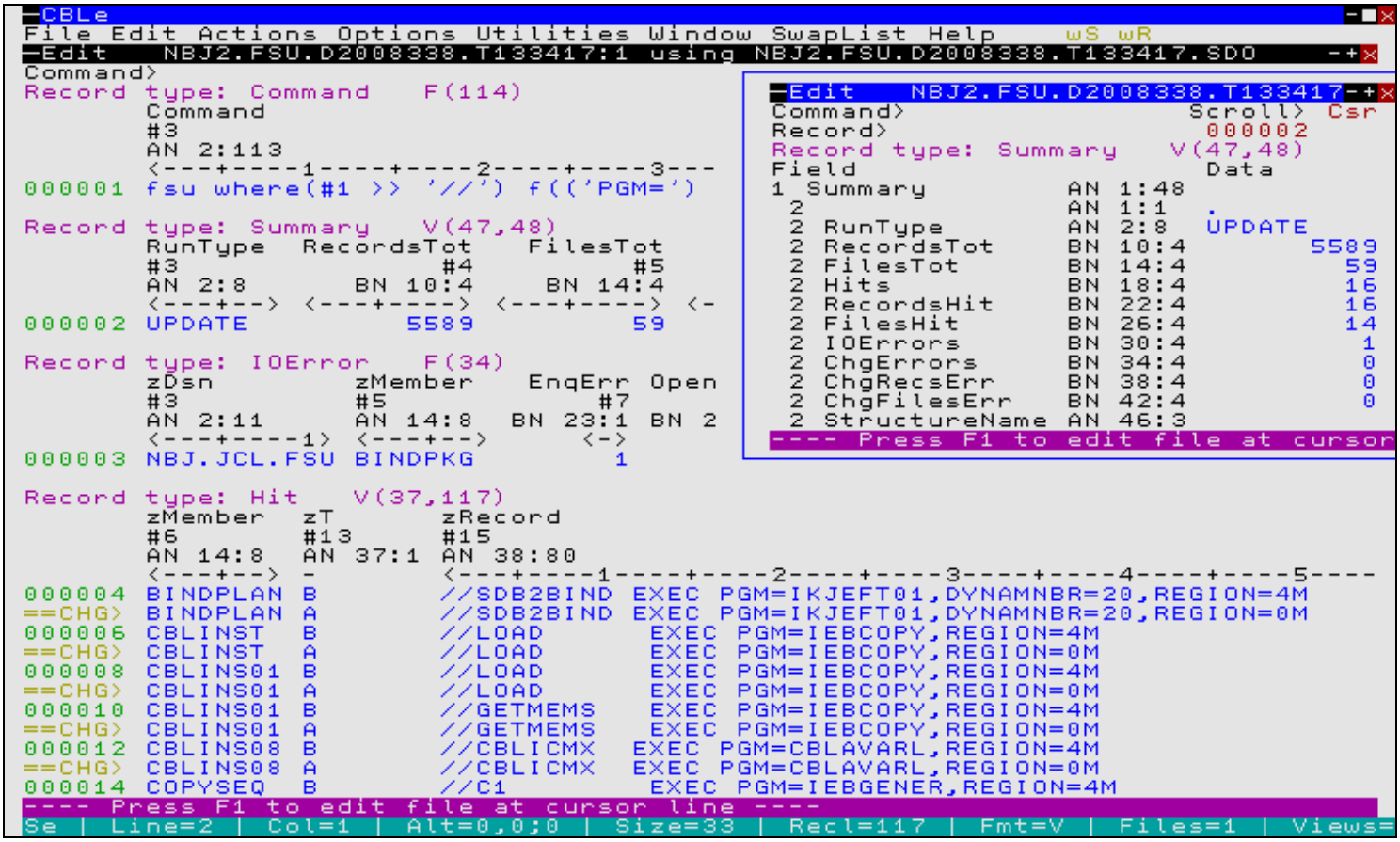


Figure 59. File Search & Update Output.

In the FSU output displayed in Figure x., the user has hit the PF2 key on the Summary record, to display the record's fields in single view, and also executed the following SDE SELECT command to restrict the fields displayed in records of record type Hit:

```
SELECT   zMember, zT, zRecord    FROM Hit
```

FSUPROF Profile Macro

When the output report SDE window is opened, the default profile REXX macro FSUPROF is executed in addition to the standard SDEPROF profile macro. By default, FSUPROF allocates the PF1 key to execute macro FSUEDIT for this window only.

FSUEDIT allows the user to place the cursor on a "Hit" or "IOError" type record (described below) and then hit PF1 to perform an edit of the data set, specified by the "zDSN" and "zMember" fields, and to scroll directly to the reported record. If the file has an associated SDE structure (SDO), then SDE EDIT is performed using the structure. Otherwise CBLe text edit is used.

The FSUPROF macro may be updated to configure alternate SDE settings for the FSU report window. e.g. "SET TYPE OFF" may be included to suppress the data type description header lines. See SDE Commands and SET/QUERY/EXTRACT documentation.

FSUOUT Macro

The FSUOUT macro is used to display (browse) the saved output from a previous execution of the File Search & Update utility. e.g.

```
FSUOUT     DEV.NBJ.FSU.D2008268.T114326
```

This executes the SDE EDIT command to display the specified FSU output report using the structure of the same DSN but with additional low level qualifier, ".SDO". If no argument is specified on FSUOUT, the last saved FSU output is displayed.

FSUOUT may also invoked for an entry in a list window, using the "FO" prefix command.

FSU Output Records

The output report consists of 4 record types: 1 Command record, 1 Summary record, 0 or more Hit records and 0 or more IOError records.

Record Type: Command

A single character field containing the FSU command executed (directly or via the FSU - File Search/Update Window). The Command record is located at the end of the output report.

Record Type: Summary

Contains statistical fields providing totals for the File Search & Update execution as follow:

`RunType`
: Describes the type of execution of the File Search & Update utility and so governs the format of the Hit records. For an invocation of FSU that performs a search only, RunType is "FIND". Where CHANGE is specified, RunType is "NOUPDATE" or "UPDATE" depending on the specification of NOUPDATE (default) or UPDATE on the FSU command or activation of "Immediate UPDATE" in the dialog window.

`RecordsTot`
: The total number of input records successfully read from the selected files.

`FilesTot`
: The total number of files that match the supplied fileid mask(s).

`Hits`
: For RunType "FIND", this is the total number of occurrences of the FIND search string(s) found within the input records that satisfy the logical combination of FIND conditions. e.g. `FIND ( ('A') AND ('B') )` will increment the Hit total for every occurrence of 'A' and 'B' in records that contain both 'A' and 'B'.
For RunType "NOUPDATE" and "UPDATE", this is the total number of occurrences of the CHANGE search string(s) found within the selected input records (i.e. input records that satisfy the VIEW, WHERE and/or FIND criteria.)

`RecordsHit`
: For RunType "FIND", this is the total number of input records that satisfy the supplied WHERE clause and/or FIND search string criteria.
For RunType "NOUPDATE" and "UPDATE", this is the total number of selected input records that satisfy the CHANGE search string criteria.
RecordsHit corresponds with the number of input records that are of the record type "Hit Records" and so are displayed in the report output.

`FilesHit`
: The total number of files that contains at least one record that includes a hit.

`IOErrors`
: The total number of files for which I/O errors that have occurred during execution.

`ChgErrors`
: The total number of CHANGE errors. i.e. the total number of occurrences of a CHANGE search string, within all selected records, that cannot be updated with the CHANGE replace string.
For RunType "FIND", this value is aways 0 (zero).

`ChgRecsErr`
: The total number of selected input records for which a CHANGE error has occurred.
For RunType "FIND", this value is aways 0 (zero).

`ChgFilesErr`
: The total number of files that contain at least one record for which a CHANGE error has occurred.
For RunType "FIND", this value is aways 0 (zero).

`Structure`
: The name of the structure (SDO) specified via the USING field/parameter for Structured File Search & Update.
For Unstructured File Search & Update, this field value is always blank.

Record Type: Hit

The format of the Hit records depend on the Summary record "RunType" field, as follows:

1. For RunType "FIND", displays every record that satisfies all the specified search criteria. i.e. the VIEW record type (for Structured File Search & Update), the WHERE clause and the FIND search string(s). Note that there is no CHANGE operation specified.

2. For RunType "NOUPDATE" and "UPDATE", a pair of records for every input record that satisfies the CHANGE arguments. The first record of the pair displays the original, unaltered record data, the second displays the record data after the CHANGE operation(s) have been executed.
Depending on whether the CHANGE operation(s) are successful, the prefix area of the line displaying the updated record will contain the line flag "==CHG>" or, if an error has occurred, "==ERR>".

   With NOUPDATE (the default) in effect, this allows the user the opportunity to check the changed data before re-running FSU with UPDATE to action the changes.

The Hit record type contains 2 group fields, "z" and "zRecord", where "z" includes information fields relating to the record, and "zRecord" includes all the record data field(s). The Hit record type has been designed this way so that the user can suppress or include all fields within either field group by specifying the group field name as the argument of a SELECT command. e.g. `SELECT zRecord` will display only the field data and suppress the information fields.

The Hit record type field structures are as follow:

`z`
: The structure including all the information fields.

  `zDsn`
  : The DSN (or HFS path name) containing the reported record.

  `zMember`
  : The PDS(E) member containing the reported record.
  This field is only present if at least one PDS(E) data set is included by the input fileid mask(s). For non-PDS(E) data sets, this field contains blanks.

  `zRecNo`
  : The record number of the record within the data set.

  `zHitNo`
  : The hit count number of the record within the data set. The "zHitNo" field is incremented by one for each new record within the data set that satisfies the search criteria for the particular RunType. The "zHitNo" count is reset to zero for each new input data set. Use `WHERE zHitNo=1` to display a list of all data sets (and library members) containing at least one hit.

  `zLrecl`
  : The record length of the record within the data set.

  `zHits`
  : The total number of occurrences of the search string(s) within the record.
  For all RunType "FIND" Hit records or RunType "NOUPDATE"/"UPDATE" Hit records with "zT" field flag set to "B", this is the number of FIND search string occurrences.
  For all RunType "NOUPDATE"/"UPDATE" Hit records with "zT" field flag set to "A", this is the number of CHANGE search string occurrences.

  `zErrs`
  : For RunType "NOUPDATE" and "UPDATE" only, the total number of occurrences of a CHANGE search string within the record that cannot be updated with the CHANGE replace string.
  For RunType "FIND", this field is omitted.

  `zT`
  : For RunType "NOUPDATE" and "UPDATE" only, the record flag which may be one of the following:

    B Indicates that the record data that follows represents the record data **Before** the CHANGE operation(s) have been applied.

    A Indicates that the record data that follows represents the record data **After** the CHANGE operation(s) have been applied.
    Note that the record data will be unchanged if the values in the fields "zHits" and "zErrs" are equal.

    For RunType "FIND", this field is omitted.

`zRecord`
: The structure including all the record data fields.

  For Unstructured File Search & Update, the "zRecord" field contains the unexpanded record data as a single character field of length equal to the record length.

  For Structured File Search & Update, the "zRecord" field contains the expanded record data mapped with the field names defined by the record type (RTO). If the SELECT parameter was specified on the FSU command or File Search/Update dialog window, then these selected fields are displayed by default. To display all fields, excluding the record information fields, enter the following:

```
SELECT   zRecord
```

Record Type: IOError

Contains information relating to an I/O error that has occurred when opening, reading or updating the file. IOError records are located amongst the Hit records, as I/O errors are encountered.

`zDsn`
: The DSN (or HFS path neame) for which the I/O error occurred.

`zMember`
: The PDS(E) member for which the I/O error occurred.
This field is only present if the at least one PDS(E) data set is included by the input fileid mask(s). For non-PDS(E) data sets, this field contains blanks.

`EnqErr`
: 1 if the error occurred when attempting to obtain an exclusive SPFEDIT ENQ for UPDATE on the file, otherwise 0.

`OpenErr`
: 1 if the error occurred when attempting to open the file, otherwise 0.

`ReadErr`
: 1 if the I/O error occurred when attempting to read a block of data from the file, otherwise 0.

`UpdErr`
: 1 if the I/O error occurred when attempting to re-write (update-in-place) a record to the file, otherwise 0.

`RecordsRead`
: The number of records successfully read before the I/O error occurred.

`RecordsUpd`
: The number of records successfully updated before the I/O error occurred.

FSUUNDO

The FSUUNDO utility exists in order to allow the user to recover from any accidental or erroneous execution of the File Search & Update (FSU) utility where update of record data has occured.

Beware:
FSUUNDO does **not** support recovery of records in an **HFS** file.
FSUUNDO will bypass FSU report Hit records that contain an HFS path name so that updated HFS file records are not recovered. Bypassed HFS files are reported in the FSUUNDO output listing.

When the FSU utility is executed to change and immediately UPDATE data set records, the original record data, before execution of the change operation(s), is recorded in the FSU output report data set. FSUUNDO uses these report records as part of its processing and so will only operate successfully if the FSU report data set exists.

Therefore, it is strongly recommended that, when prompted on exit from the report data set, users elect to save the report and its accompanying SDE structure (SDO), for audit purposes and also for potential, subsequent execution of FSUUNDO.

FSU report output reflecting FIND or NOUPDATE run types need not be saved. If used as input to FSUUNDO, FSU report output of run type FIND will return an error.

FSUUNDO generates a SELCOPY executable program that performs the following:

1. Input the FSU report records.
2. For each "Hit" record "Before" and "After" pair reported in the FSU output, identify the DSN, PDSE(E) member name (if applicable) and record number at which the updated record may be found.
3. Sequentially read records from the data set or PDS(E) member until the required record number is found.
4. Verify that the input record matches the record "After" data reported in the FSU output.
5. Optionally UPDATE the data set record with the record "Before" data reported in the FSU output, thus restoring the record to its original status.
6. Generate an entry in the FSUUNDO report.
7. Repeat all steps until all "Hit" record pairs in the FSU output report have been processed.

Error checking is also performed for conditions which include record not found or containing unexpected data. These conditions are reported in the FSUUNDO output report.

This SELCOPY job may be executed in the Foreground (TSO) or displayed as a JCL job, suitable for submission to batch. Using either method, options exist to generate an Expanded or Terse report, an optional Diagnostic SELCOPY execution report and, most importantly, options to Verify or Update changed records.

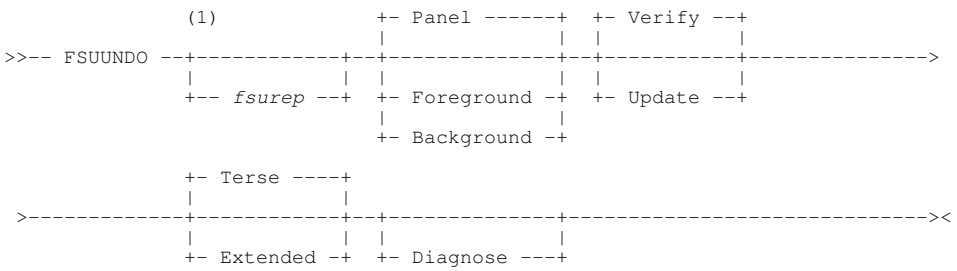
It is strongly recommended that users execute FSUUNDO with options VERIFY (the default) and EXTENDED, and then review the FSUUNDO output report before executing FSUUNDO again with option UPDATE.

Beware that record data that has been changed between the time of execution of the original File Search & Update job and this execution of FSUUNDO, will not be updated but will be reported as an error. Processing will continue with input of the next "Hit" record pair. Records that have already been restored as a result of a previous execution of FSUUNDO UPDATE, will be reported as a match and no error returned.

If SELCOPY ends with a return code other than 0 (zero - successful execution, no error conditions) or 112 (errors condition(s) detected), then re-run with option DIAGNOSE to establish the cause of the SELCOPY error.

The most likely cause of an unxpected return code will be if a selection (run) time error (RC=44) has occured. Usually caused by an OPEN error for an input data set (e.g. if an exclusive ENQ already exists for the data set.) In this event, SELCOPY processing ends immediately and all data sets opened by SELCOPY are automatically closed.

Syntax:



Notes:

1. Parameters may be entered in any order.

Description:

Use the FSUUNDO command to restore records updated by a previous File Search & Update run referenced by the specified FSU output report.

Record data belonging to an entry flagged as "A" (After) in the zT field of the FSU report "Hit" records, will be replaced by data in the preceding FSU report record flagged as "B" (Before).

Any record whose data or record number has been altered since it was updated by the FSU CHANGE UPDATE operation will **not** be restored by FSUUNDO.

Unless parameter FOREGROUND or BACKGROUND is specified, FSUUNDO will open a dialog window. Other parameters specified on FSUUNDO will be reflected in the dialog fields.

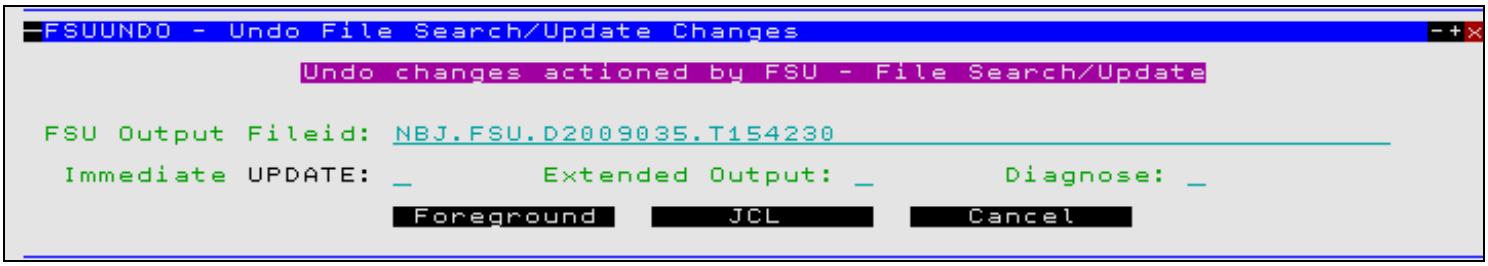


Figure 60. FSUUNDO Dialog Window.

Parameters:

fsurep
: Specifies the DSN of the FSU output report to be used to identify changed data set records.

The FSU report data set referenced may be that of **any** previous execution of FSU that involved a CHANGE operation.

Default is the last saved FSU report, or, optionally, the FSU report displayed in the current SDE edit window view. If the current SDE edit window view contains an FSU output report (identified by its DSN format), the user will be prompted to use this report instead.

PANEL
FOREGROUND
BACKGROUND
: Specifies whether to open the FSUUNDO dialog window (PANEL), execute the FSUUNDO verify or update procedure immediately in TSO (FOREGROUND) or generate and display a JCL job deck suitable for submission to batch (BACKGROUND).

Default is PANEL.

VERIFY
UPDATE
: Specifies whether to execute the UNDO procedure with or without performing an update of the record data.

VERIFY provides the user with the opportunity to execute a "dry run" to examine the FSUUNDO output report for any errors before proceeding with an execution for UPDATE. It is strongly recommended that FSUUNDO is executed with VERIFY prior to performing a run for UPDATE. Use of VERIFY will be indicated at the start and end of the FSUUNDO report with the additional record beginning "** Verify Only".

UPDATE will update records in the FSU reported data sets, so undoing the changes made by the FSU execution.

Default is VERIFY.

`TERSE`
`EXTENDED`
Specifies whether FSUUNDO is to output a brief (TERSE) or verbose (EXTENDED) report.

In a terse report output, data sets or PDS(E) members that have been updated without error are represented by a single report line and data sets that have already been updated by a previous FSUUNDO run are not reported. However, more detailed report output is generated if unexpected data is found and so an error condition flagged.

Extended report output will generate output for every successful or unsuccessful record update. See FSUUNDO Report Output for more details.

Default is TERSE.

`DIAGNOSE`
Required only if a SELCOPY run time error occurs during execution of FSUUNDO, DIAGNOSE will remove the SELCOPY NOPRINT option and so write diagnostic report information to SYSPRINT.

If executing with parameter FOREGROUND, the SYSPRINT output is automatically displayed in a CBLe edit view with a DSN equal to the FSU output report DSN but with the additional low level qualifier "LIST". e.g.
`NBJ2.DEV.FSU.D2008346.T162607.LIST`

FSUUNDO Report Output:

Report output is generated on every execution of FSUUNDO.

If FSUUNDO is executed with parameter BACKGROUND (JCL) to generate JCL output, then the output report is written to SYSPRINT when the job is submitted. By default, SYSPRINT is allocated to SYSOUT=*. Furthermore, if DIAGNOSE parameter was specified, then the SYSPRINT output will also contain diagnostic information for the SELCOPY run before and after the printed report output.

If FSUUNDO is executed with parameter FOREGROUND to execute in TSO, then an output report data set is opened in a CBLe edit view and report records are inserted. The DSN of this data set is equal to the FSU report DSN with the additional low level qualifier "UNDOV" for VERIFY reports, or "UNDO" for UPDATE reports. e.g.
`NBJ2.DEV.FSU.D2008346.T162607.UNDO`

If this data set already exists, then the report records will be appended to the existing report data and the edit display positioned at the start of the latest report output. On exit of this data set the user will be prompted to save and, if necessary allocate, the data set with suitable space attributes.

Report Fields:

Dataset
The up to 44 character DSN of the data set or PDS(E) processed.

Member
For PDS(E) libraries only, the name of the member being processed.

RecordNumber
The record number at which an FSUUNDO error has occurred.
For EXTENDED output, this field also contains the record numbers of records that have been successfully updated.

Message Text
Message indicating success or failure to locate and update records referenced by the FSU report. All possible messages are as follow:

`= = File Updated = =`
`= = Member Updated = =`
One or more records within the reported data set or PDS(E) member were successfully updated.

For EXTENDED output only, this message is repeated for each record that has been successfully updated. Also, up to 100 bytes of the record data before and after the update is printed on the report lines that follow.

`## Member not found ##`
The member name within the PDS(E) library referenced by the FSU report line, no longer exists. The member has been deleted or renamed.
Return Code 112 is set and the error count incremented by one for each missing member.

`## Record not found ##`
The record number of the data set or member record referenced by the FSU report line, no longer exists. This message is repeated for each missing record within a data set or member.

For EXTENDED output only, up to 100 bytes of the expected record data is also printed on the report lines that follow.
Return Code 112 is set and the error count is incremented by one for each missing record.

`### Data Mismatch ###  --WARNING--`

The record data at the required record number within the data set or member, does not match the record data as it was following the FSU update. (i.e. the data has been altered since the FSU update was executed.) This message is repeated for each mis-matching record within a data set or member.

For both EXTENDED and TERSE output, up to 100 bytes of the found record data, followed by up to 100 bytes of the expected record data, is also printed on the report lines that follow.
Return Code 112 is set and the error count is incremented by one for each missing record.

`<<< Already Undone >>>`

This message is generated for EXTENDED report output only. TERSE report output does not report instances where no record update is required.

The record data at the required record number within the data set or member, matches the record data as it was prior to the FSU update. (i.e. the record has already been restored.)

This message is repeated for each already restored record within a data set or member and the records already undone count is incremented by one. Up to 100 bytes of the record data is also printed on the following report lines.

Record Data:

For EXPANDED output or where a data mismatch error has occurred, record data is reported in the FSUUNDO output.

The data lines are preceded by a brief description of the record. Where two contrasting records are to be displayed, the description line also reports the position within the record data of the first difference found. Furthermore, if this difference occurs beyond the record description and within the first 100 bytes, a marker ">*<" is positioned above the mis-matching character.

The record data follows the description line for a length equal to the lesser of the record length value and 100. The data is displayed in both character and vertical hexadecimal notation. (Equivalent to SELCOPY's TYPE=B print output.)

A scale line is written following the record data.

```
Record Found:  (1st Diff at Pos    049)        >*<
EDTFCLR0 0720 MEMFLSTE >>>>>>>>>>AZZElement     Test                        3 117ADA10 117BFAC8 00000..
CCECCDDF4FFFF4DCDCDEEC46666666666CEEC98989A44444E8AA444444444444444444444444F4FFFCCCFF4FFFCCCCF4FFFFF
5436339000720045463235OEEEEEEEEE19953545530000035230000000000000000000000030117141100117261380000000

Record Expected:
EDTFCLR0 0720 MEMFLSTE >>>>>>>>>>AZZElement                                 3 117ADA10 117BFAC8 00000..
CCECCDDF4FFFF4DCDCDEEC46666666666CEEC98989A4444444444444444444444444444444F4FFFCCCFF4FFFCCCCF4FFFFF
5436339000720045463235OEEEEEEEEE19953545530000000000000000000000000000000030117141100117261380000000
....,....1....,....2....,....3....,....4....,....5....,....6....,....7....,....8....,....9....,...10
```

Figure 61. Record Data Output.

Summary Block:

The summary block reports the totals of:

1. Records undone
2. Records already undone
3. Files updated
4. Errors

Where FSUUNDO errors have occured, the Errors total has the additional eye-catcher "###" following.

Sample Terse Report Output:

```
------------------------------------ Start of FSUUNDO Report ----------------------------------------


  Output From:  FSUUNDO  NBJ2.DEV.FSU.D2008357.T132545  FOREGROUND  VERIFY  TERSE


  ** Verify Only - No data sets will be updated. **



------------------------------------------- -------- ------------         ----------------   --------
Dataset                                     Member   RecordNumber         2008/12/22 13:27   PAGE   1
------------------------------------------- -------- ------------         ----------------   --------
NBJ.JCL.FSU                                 CBLINST               = = Member Updated = =
NBJ.JCL.FSU                                 CBLINS01              = = Member Updated = =
NBJ.JCL.FSU                                 CBLINS01         188  ## Record not found ##
NBJ.JCL.FSU                                 EQAWIVP1              = = Member Updated = =
NBJ.JCL.FSU                                 IEBCOPY1          51   ### Data Mismatch ###  --WARNING--

Record Found:  (1st Diff at Pos    046)     >*<
//GETMEMS   EXEC PGM=IEBCOPY,REGION=0M       ## Get ###
66CCEDCDE444CECC4DCD7CCCCDDE6DCCCDD7FD4444444774C8A477744444444444444444444444444
11753454200057530774E9523678B957965E040000000BB07530BBB00000000000000000000000000

Record Expected:
//GETMEMS   EXEC PGM=IEBCOPY,REGION=0M
66CCEDCDE444CECC4DCD7CCCCDDE6DCCCDD7FD44444444444444444444444444444444444444444444
11753454200057530774E9523678B957965E04000000000000000000000000000000000000000000
....,....1....,....2....,....3....,....4....,....5....,....6....,....7....,....8

NBJ.JCL.FSU                                 IEBCOP02              = = Member Updated = =

     ----------------------------------------
     Records undone:                    4
     Records already undone:            0
     Files   updated:                   5
     Errors:                            2###
     ----------------------------------------

  ** Verify Only - No data sets have been updated. **


  *** Warning:  SELCOPY execution ended with RC=112 ***

  One or more data sets have been altered between the time of execution of
  the original File Search/Update job and this execution of FSUUNDO.
```

Figure 62. FSUNDO TERSE Output with VERIFY.

Sample EXTENDED Output:

```
---------------------------------- Start of FSUUNDO Report ----------------------------------------


  Output From:  FSUUNDO  NBJ2.DEV.FSU.D2008357.T132545  FOREGROUND  UPDATE  EXTENDED



------------------------------------------- -------- ------------         ----------------   --------
Dataset                                     Member   RecordNumber         2008/12/22 13:35   PAGE   1
------------------------------------------- -------- ------------         ----------------   --------
NBJ.JCL.FSU                                 CBLINST           42  = = Member Updated = =

Record Old:  (Changed data starts at Pos    037)
//LOAD      EXEC PGM=IEBCOPY,REGION=4M
66DDCC444444CECC4DCD7CCCCDDE6DCCCDD7FD44444444444444444444444444444444444444444444
113614000000057530774E9523678B957965E44000000000000000000000000000000000000000000

Record New:
//LOAD      EXEC PGM=IEBCOPY,REGION=0M
66DDCC444444CECC4DCD7CCCCDDE6DCCCDD7FD44444444444444444444444444444444444444444444
113614000000057530774E9523678B957965E04000000000000000000000000000000000000000000
....,....1....,....2....,....3....,....4....,....5....,....6....,....7....,....8




------------------------------------------- -------- ------------         ----------------   --------
Dataset                                     Member   RecordNumber         2008/12/22 13:35   PAGE   1
------------------------------------------- -------- ------------         ----------------   --------
NBJ.JCL.FSU                                 CBLINS01         119  = = Member Updated = =

Record Old:  (Changed data starts at Pos    037)
//LOAD      EXEC PGM=IEBCOPY,REGION=4M
66DDCC444444CECC4DCD7CCCCDDE6DCCCDD7FD44444444444444444444444444444444444444444444
113614000000057530774E9523678B957965E44000000000000000000000000000000000000000000

Record New:
//LOAD      EXEC PGM=IEBCOPY,REGION=0M
66DDCC444444CECC4DCD7CCCCDDE6DCCCDD7FD44444444444444444444444444444444444444444444
113614000000057530774E9523678B957965E04000000000000000000000000000000000000000000
....,....1....,....2....,....3....,....4....,....5....,....6....,....7....,....8

NBJ.JCL.FSU                                 CBLINS01         188  ## Record not found ##

Record Expected:
//GETMEMS   EXEC PGM=IEBCOPY,REGION=4M
66CCEDCDE444CECC4DCD7CCCCDDE6DCCCDD7FD44444444444444444444444444444444444444444444
117534542000057530774E9523678B957965E44000000000000000000000000000000000000000000
....,....1....,....2....,....3....,....4....,....5....,....6....,....7....,....8




------------------------------------------- -------- ------------         ----------------   --------
Dataset                                     Member   RecordNumber         2008/12/22 13:35   PAGE   1
------------------------------------------- -------- ------------         ----------------   --------
NBJ.JCL.FSU                                 EQAWIVP1         124  = = Member Updated = =

Record Old:  (Changed data starts at Pos    046)
//COMPILE EXEC PGM=IGYCRCTL,PARM=(''),REGION=4M
66CDDDCDC4CECC4DCD7CCECDCED6DCDD747756DCCCDD7FD44444444444444444444444444444444444
113647935057530774E97839333B7194EDDDDB957965E44000000000000000000000000000000000

Record New:
//COMPILE EXEC PGM=IGYCRCTL,PARM=(''),REGION=0M
66CDDDCDC4CECC4DCD7CCECDCED6DCDD747756DCCCDD7FD44444444444444444444444444444444444
113647935057530774E97839333B7194EDDDDB957965E04000000000000000000000000000000000
....,....1....,....2....,....3....,....4....,....5....,....6....,....7....,....8

NBJ.JCL.FSU                                 EQAWIVP1         203  = = Member Updated = =

Record Old:  (Changed data starts at Pos    043)
//LKED    EXEC PGM=HEWL,PARM='MAP',REGION=4M
66DDCC4444CECC4DCD7CCED6DCDD77DCD76DCCCDD7FD44444444444444444444444444444444444444
113254000057530774E8563B7194ED417DB957965E44000000000000000000000000000000000000

Record New:
//LKED    EXEC PGM=HEWL,PARM='MAP',REGION=0M
66DDCC4444CECC4DCD7CCED6DCDD77DCD76DCCCDD7FD44444444444444444444444444444444444444
113254000057530774E8563B7194ED417DB957965E04000000000000000000000000000000000000
....,....1....,....2....,....3....,....4....,....5....,....6....,....7....,....8




------------------------------------------- -------- ------------         ----------------   --------
Dataset                                     Member   RecordNumber         2008/12/22 13:35   PAGE   1
------------------------------------------- -------- ------------         ----------------   --------
NBJ.JCL.FSU                                 IEBCOPY1          51   ### Data Mismatch ###  --WARNING--

Record Found:  (1st Diff at Pos    046)     >*<
```

```
//GETMEMS   EXEC PGM=IEBCOPY,REGION=4M       ## Get ###
66CCEDCDE444CECC4DCD7CCCCDDE6DCCCDD7FD4444444774C8A477744444444444444444444444444
11753454200057530774E9523678B957965E440000000BB07530BBB00000000000000000000000000

Record Expected:
//GETMEMS   EXEC PGM=IEBCOPY,REGION=4M
66CCEDCDE444CECC4DCD7CCCCDDE6DCCCDD7FD44444444444444444444444444444444444444444444
11753454200057530774E9523678B957965E44000000000000000000000000000000000000000000
....,....1....,....2....,....3....,....4....,....5....,....6....,....7....,....8



---------------------------------------- -------- ------------         ----------------   --------
Dataset                                  Member   RecordNumber         2008/12/22 13:35   PAGE   1
---------------------------------------- -------- ------------         ----------------   --------
NBJ.JCL.FSU                              IEBCOP02           7  = = Member Updated = =

Record Old:  (Changed data starts at Pos    037)
//UNLOAD    EXEC PGM=IEBCOPY,REGION=4M
66EDDDCC4444CECC4DCD7CCCCDDE6DCCCDD7FD44444444444444444444444444444444444444444444
11453614000057530774E9523678B957965E44000000000000000000000000000000000000000000

Record New:
//UNLOAD    EXEC PGM=IEBCOPY,REGION=0M
66EDDDCC4444CECC4DCD7CCCCDDE6DCCCDD7FD44444444444444444444444444444444444444444444
11453614000057530774E9523678B957965E04000000000000000000000000000000000000000000
....,....1....,....2....,....3....,....4....,....5....,....6....,....7....,....8


     ---------------------------------------
     Records undone:                    5
     Records already undone:            0
     Files   updated:                   4
     Errors:                            2###
     ---------------------------------------


  *** Warning:  SELCOPY execution ended with RC=112 ***

  One or more data sets have been altered between the time of execution of
  the original File Search/Update job and this execution of FSUUNDO.
```

Figure 63. FSUNDO EXTENDED Output with UPDATE.

System Windows

CBLi can display current status information about the environment in which it is running.

System information windows are as follow:

1. Operating System
2. CBLi Storage Stats
3. CBLi Module List
4. CBLi SVC
5. CBLNAME

Operating System Window

The Operating System window may be opened via the following:

- Select 'Operating System' from the System menu in the CBLi Main Menu.
- Enter the CBLi command SYSI on the command line of any window.

Note: Not implemented for VSE.

Use PF7 and PF8 to scroll down and up respectively through the window contents.

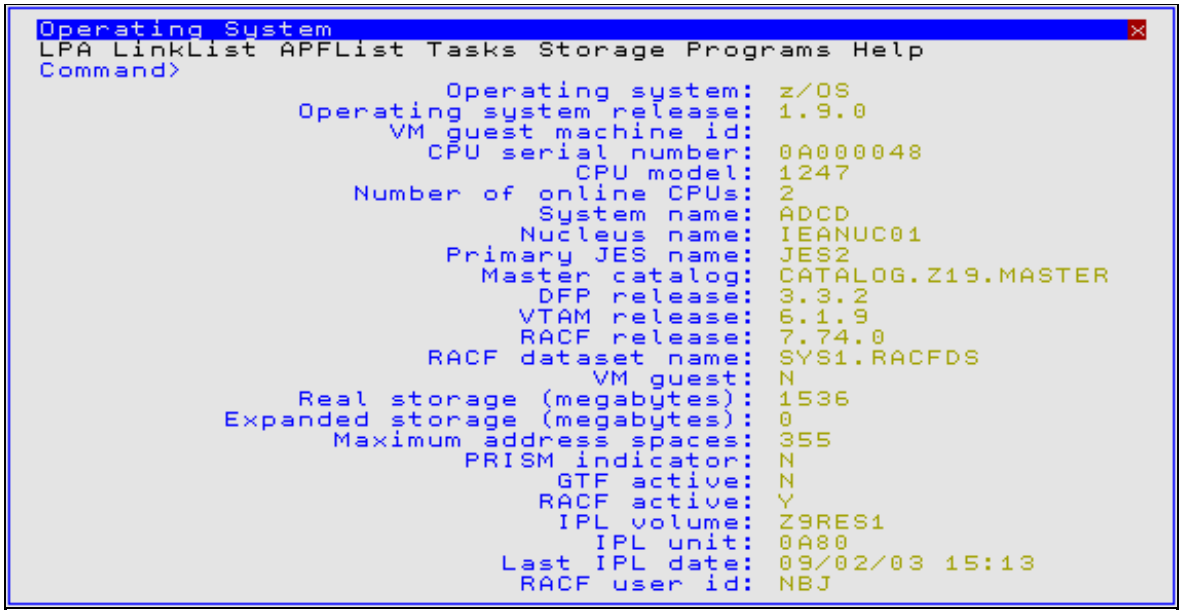


Figure 64. MVS Operating System window.

The MVS Operating System menu consists of the following items:

LPA	Open LPA Modules Window
LinkList	Open Link List Window
APFList	Open APF List Window
Tasks	Open Task List Window
Storage	Open Allocated Storage Windows
Programs	Open Loaded Programs Window

LPA Modules Window

The LPA (Link Pack Area) Modules window may be opened via the following:

- Select 'LPA' from the Operating System window menu.
- Enter the CBLi command SYSLPA on the command line of any window.

The LPA Modules window is a List Window and supports the standard List window features. i.e. Field Descriptor Block, Edit and Selecting, Sorting and Filtering.

Note: Not valid for CMS and VSE.

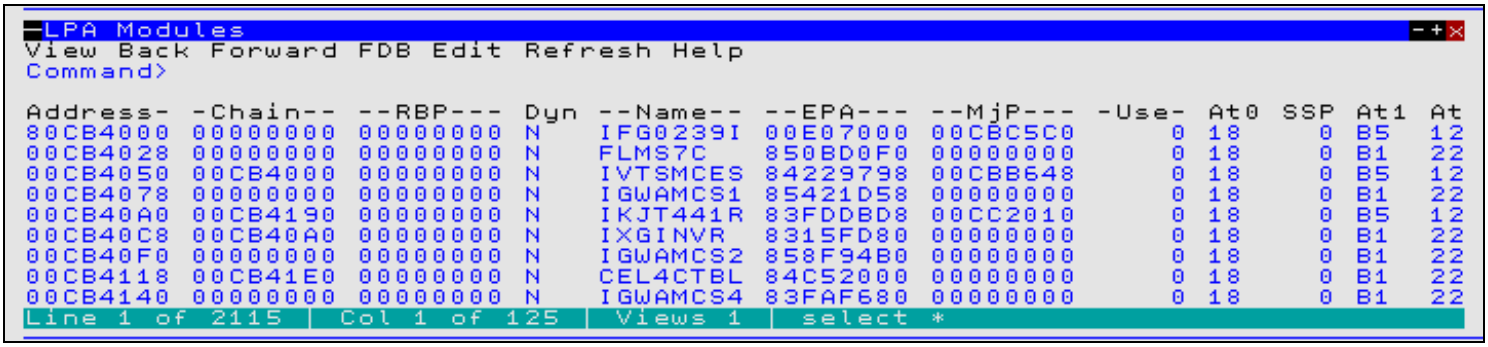


Figure 65. LPA Modules window.

Columns Displayed

The data displayed is:

Name	Type	Description
Address	Hex	LPDE or CDE element address
Chain	Hex	LPDE or CDE chain pointer
RBP	Hex	RB pointer
Dyn	BitFlag	Dynamic LPA
Name	Char	Module name
EPA	Hex	Entry point address
MjP	Hex	Major name pointer
Use	UInt	Use count
At0	Hex	Attributes 0
SSP	UInt	Storage subpool
At1	Hex	Attributes 1
At2	Hex	Attributes 2
At3	Hex	Attributes 3
At4	Hex	Attributes 4
AliasOf	Char	Aliased name
LoadedAt	Hex	Load point address
LenHex	Hex	Load module length
LenDec	UInt	Load module length

Link List Window

The Link List window may be opened via the following:

- Select 'LinkList' from the Operating System window menu.
- Enter the CBLi command SYSLL on the command line of any window.

The Link List window is a List Window and supports the standard List window features. i.e. Field Descriptor Block, Edit and Selecting, Sorting and Filtering.

The contents of each library may be displayed in a List Library Members window by hitting the enter key on the required entry.

Note: Not valid for CMS and VSE.

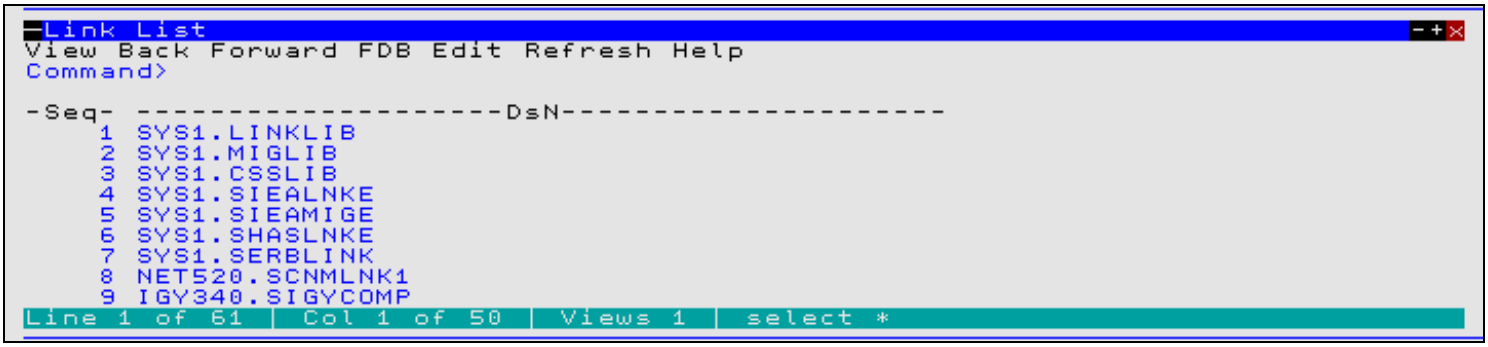


Figure 66. Link List window.

Columns Displayed

The data displayed is:

Name	Type	Description
Seq	UInt	Link list sequence number
DsN	Char	Link list library name

APF List Window

The APF (Authorised Program Facility) List window may be opened via the following:

- Select 'APFList' from the Operating System window menu.
- Enter the CBLi command SYSAPF on the command line of any window.

The APF List window is a List Window and supports the standard List window features. i.e. Field Descriptor Block, Edit and Selecting, Sorting and Filtering.

The contents of each authorised library may be displayed in a List Library Members window by hitting the enter key on the required entry.

Note: Not valid for CMS and VSE.

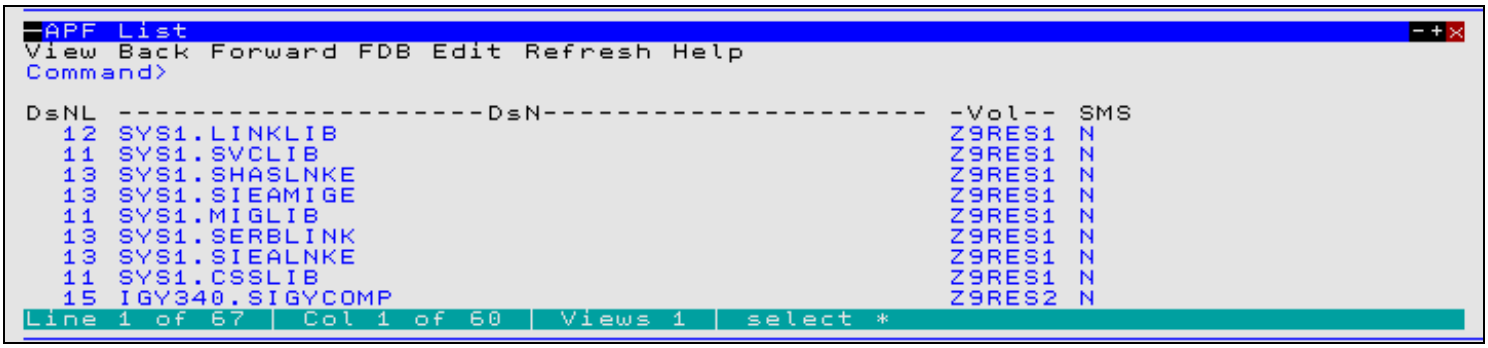


Figure 67. APF List window.

Columns Displayed

The data displayed is:

Name	Type	Description
DsNL	UInt	APF library name length
DsN	Char	APF library name
Vol	Char	Volume serial
SMS	BitFlag	SMS managed

Task List Window

The Task List window may be opened to display the active tasks in the local address space, via the following:

- Select 'Tasks' from the Operating System window menu.
- Enter the CBLi command SYSTASK on the command line of any window.

The Task List window is a List Window and supports the standard List window features. i.e. Field Descriptor Block, Edit and Selecting, Sorting and Filtering.

Note: Not implemented for CMS and VSE.

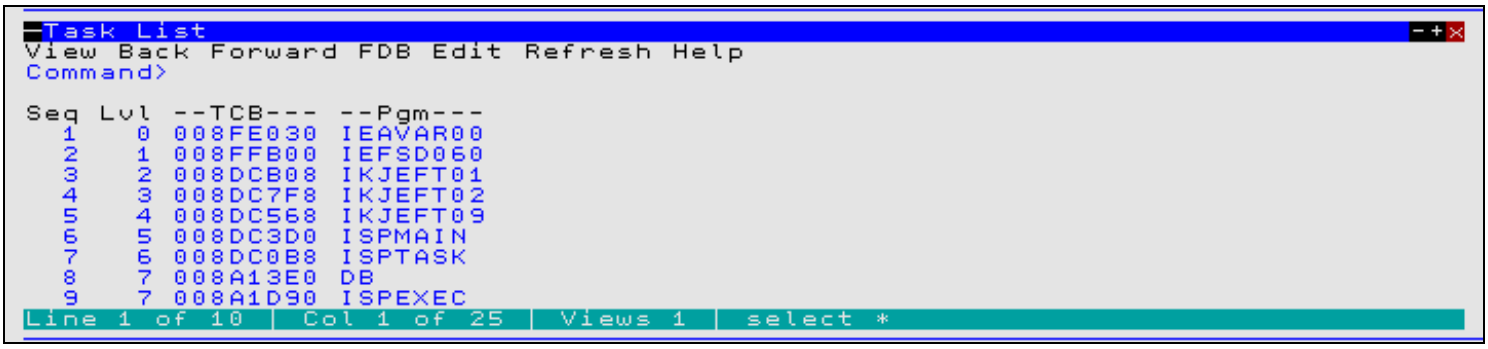


Figure 68. Task List window.

Columns Displayed

The data displayed is:

Name	Type	Description
Seq	UInt	Task sequence
Lvl	UInt	Task level
TCB	Hex	TCB address
Pgm	Char	Program name

Allocated Storage Windows

Allocated Storage and Unallocated Storage windows may be opened to display areas of allocated, free and unallocated storage in the local address space. Separate storage windows display storage of types Private (PVT), CSA, SQA and LSQA and may be opened by selecting the required storage type from a pop-up menu displayed on selecting 'Storage' from the Operating System window menu.

The storage windows are List Windows and support standard List window features. i.e. Field Descriptor Block, Edit and Selecting, Sorting and Filtering.

Note: Not implemented for CMS and VSE.

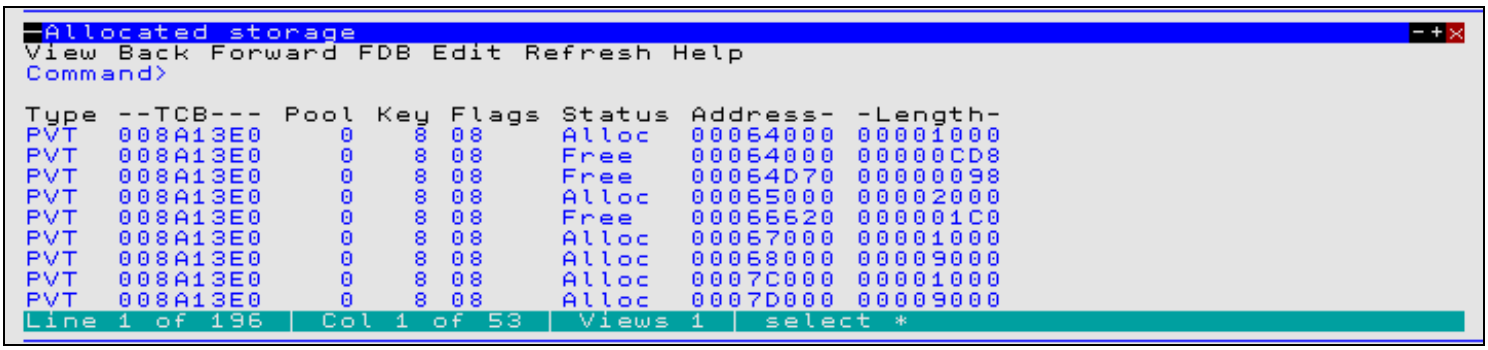


Figure 69. Allocated Private Storage window.

Columns Displayed

The data displayed is:

Name	Type	Description
Type	Char	Storage type
TCB	Hex	Owning TCB
Pool	UInt	Sub pool
Key	UInt	Sub pool storage key
Flags	Hex	Sub pool flags
Status	Char	Storage status
Address	Hex	Storage address
Length	Hex	Storage length

Loaded Programs Window

The Loaded Programs window may be opened to display programs that have been dynamically loaded into the local address space, via the following:

- Select 'Programs' from the Operating System window menu.
- Enter the CBLi command SYSPGM on the command line of any window.

The Loaded Programs window is a List Window and supports standard List window features. i.e. Field Descriptor Block, Edit and Selecting, Sorting and Filtering.

Note: Not implemented for CMS and VSE.

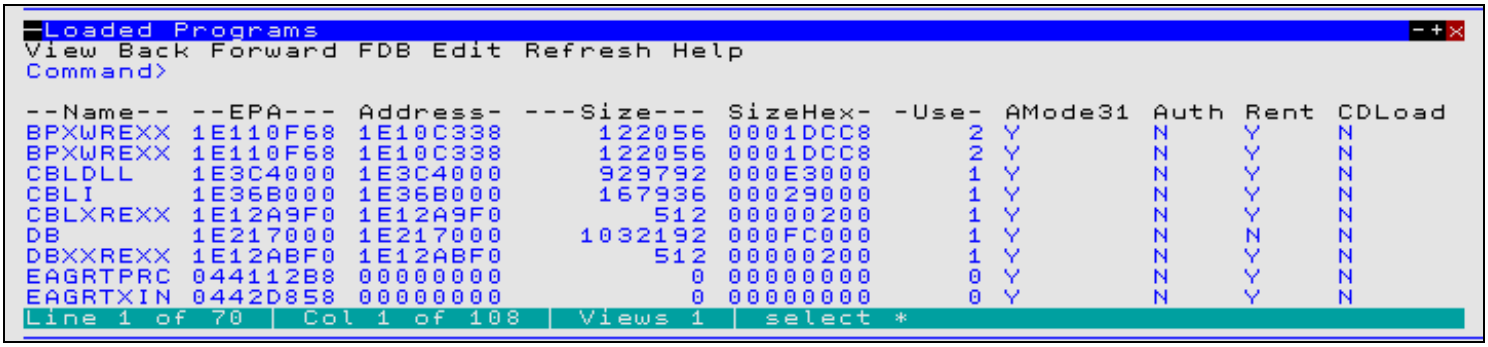


Figure 70. Loaded Programs window.

Columns Displayed

The data displayed is:

Name	Type	Description
Name	Char	Program name.
EPA	Hex	Entry point address.
Address	Hex	Load address.
Size	UInt	Load module size.
SizeHex	Hex	Load module size (hex).
Use	UInt	Use count.
AMode31	BitFlag	Program is AMODE 31.
Auth	BitFlag	Program is authorised.
Rent	BitFlag	Program is reuseable.
CDLoad	BitFlag	Program loaded with VSE CDLOAD.
Perm	BitFlag	CMS nucleus extension PERM attribute.
Sys	BitFlag	CMS nucleus extension SYSTEM attribute.

Service	BitFlag	CMS nucleus extension SERVICE attribute.
EndCmd	BitFlag	CMS nucleus extension ENDCMD attribute.
ImmCmd	BitFlag	CMS nucleus extension IMMCMD attribute.

CBLi Storage Statistics Window

The Storage Statistics window may be opened via the following:

- Select 'CBLi Storage Stats' from the System menu in the CBLi Main Menu.
- Enter the CBLi command SYSSTOR on the command line of any window.

The Storage Statistics window displays storage being used by CBLi at that moment in time. The values in each field will vary as windows are opened and closed.

The storage allocated by CBLi is categorised internally as belonging to the Heap or the Stack.

Heap

Heap storage contains structures such as lists, control blocks, etc.

Each structure is an element within the heap and may persist beyond the life of the function that generated it. Each element exists within a fixed length heap storage block which itself may contain 1 or more elements. When an element is released by CBLi, the area within the storage block occupied by that element, is freed.

If possible, CBLi will utilise these free areas of storage for new elements. However, if an element is generated with a length that exceeds the available free area within existing storage blocks, a new storage block is allocated from main storage. Similarly, if all the elements within a storage block are freed, the block is released back to main storage.

Stack

The stack is a fixed area of storage that contains the dynamic storage areas associated with each function that has been called.

A function acquires dynamic storage for local variables from the stack when it is called and frees this storage when it returns control to its caller.

Thus, the amount of stack storage in use at any time depends on the number of levels of nested function calls and the amount of storage required by each function. This, in turn, depends on which facilities of CBLi are in use.

The **Stack high water mark** represents the maximum amount of stack storage that has been in use in the current CBLi session.

Lists

The List insert work area and List container are areas of storage associated with CBLi listing facilities.

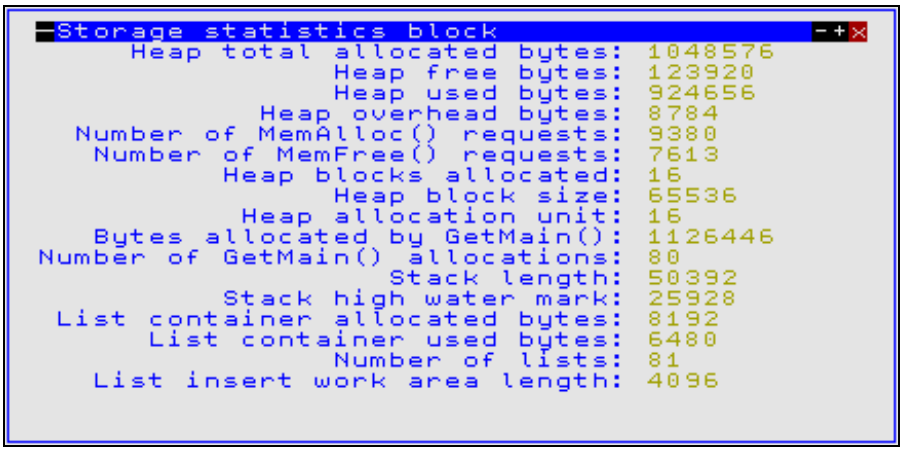


Figure 71. Storage Statistics window.

CBLi Module List Window

The CBLi Module List may be opened to display information on all modules that comprise CBLi, via the following:

- Select 'CBLi module list' from the System menu in the CBLi Main Menu.
- Enter the CBLi command APE on the command line of any window.

The Module List window is a List Window and supports the standard List window features. i.e. Field Descriptor Block, Edit and Selecting, Sorting and Filtering.

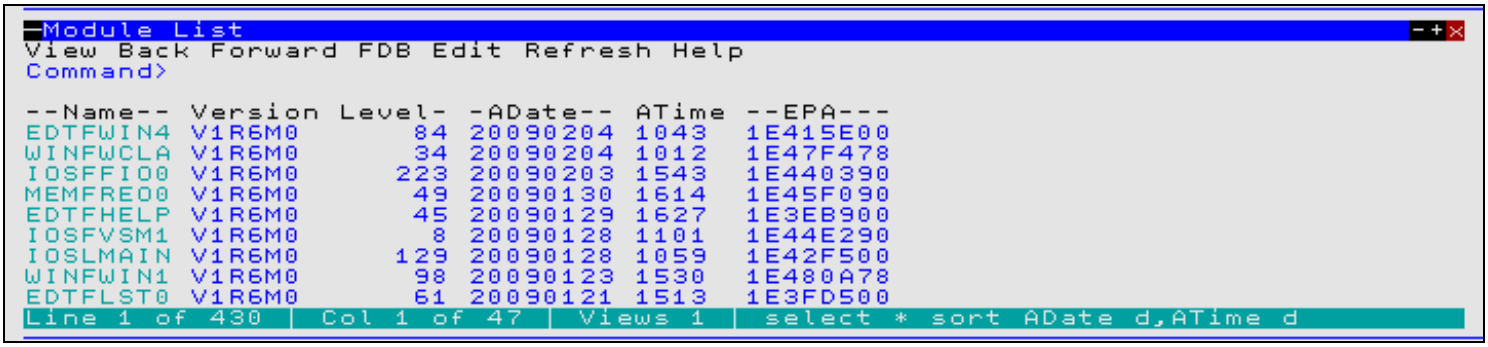


Figure 72. Module List window.

CBLVCAT SVC window

The CBLVCAT SVC window may be opened via the following:

- Select 'CBLi SVC' from the System menu in the CBLi Main Menu.
- Enter the CBLi command SVC on the command line of any window.

The CBLVCAT SVC window displays information about the CBLVCAT SVC required to perform CBLVCAT LISTVCAT catalog listings.

Note: Not valid for CMS and VSE.

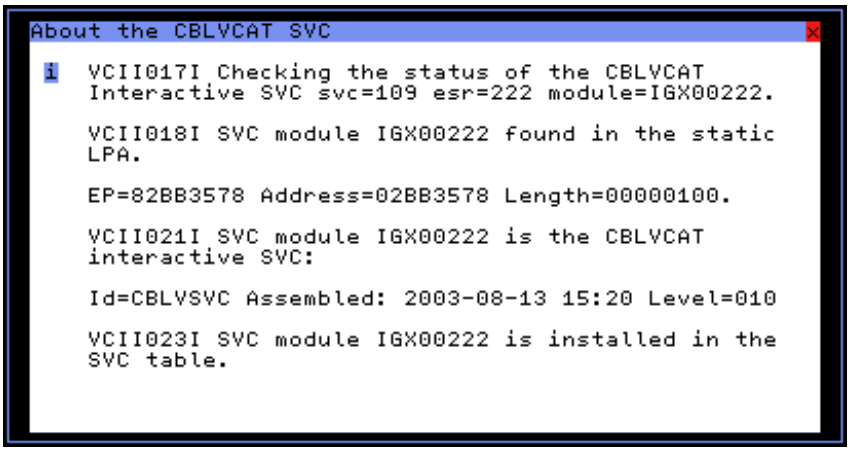


Figure 73. CBLVCAT SVC window.

CBLNAME Window

The CBLNAME window is a storage display window containing the CBLNAME module loaded by CBLi. The window is opened by selecting 'CBLNAME' from the System menu item in the CBLi Main Menu.

The CBLNAME storage display window does not display areas of storage outside the loaded CBLNAME module and the data may not be updated by the user.

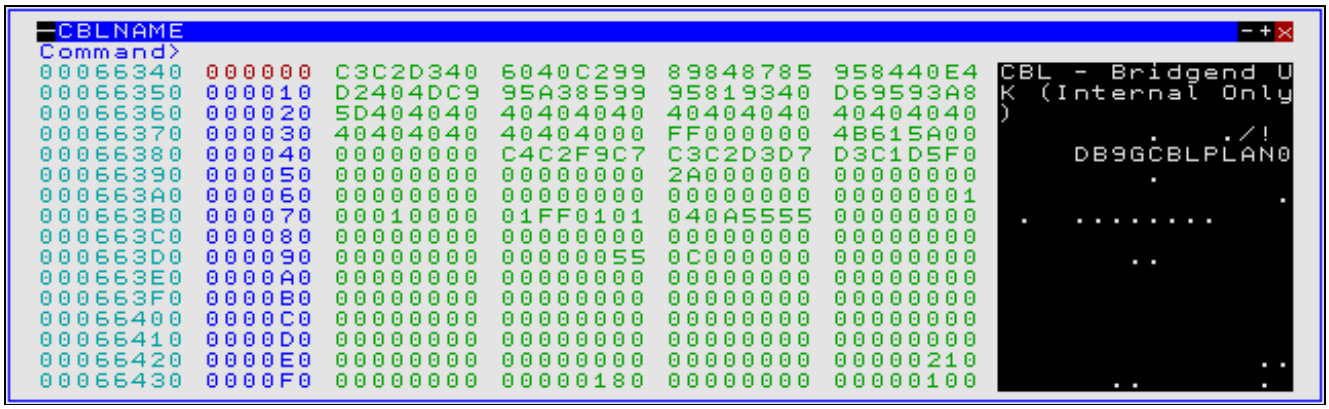


Figure 74. CBLNAME window.

CBLi Interactive Help

The CBLi Interactive Help windows are basic HTML browse windows started with links to the CBLi suite of HTML help files located via the CBLIINI variable Help.DefaultPath.

The CBLi Main Help menu window is opened via the **Help** menu item of the CBLi window main menu bar or by executing the HELP line command at the CBLi main window command prompt. Context sensitive help windows are displayed by performing either of these functions within the appropriate CBLi window. e.g. Executing HELP in a Library List window opens the help window for the topic List Library Members.

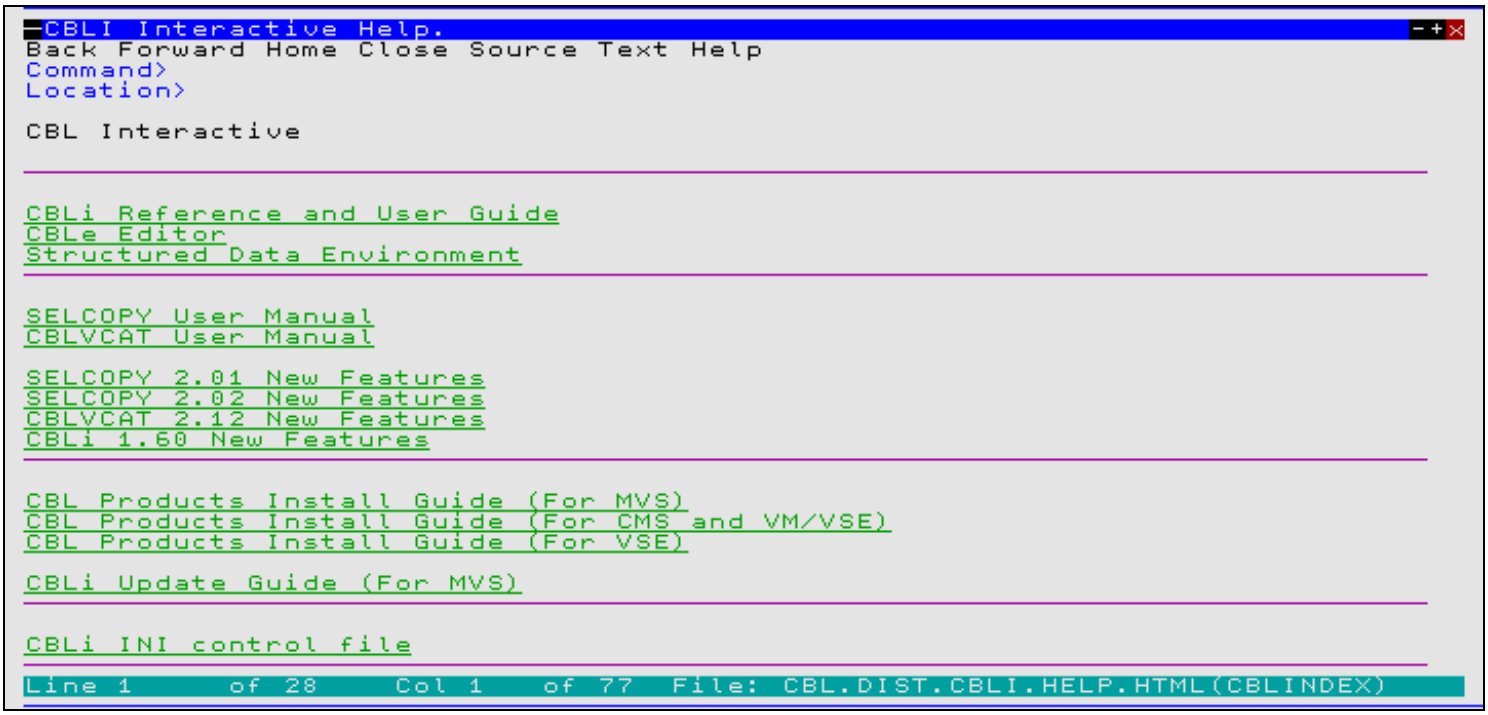


Figure 75. CBLi Main Help Menu window.

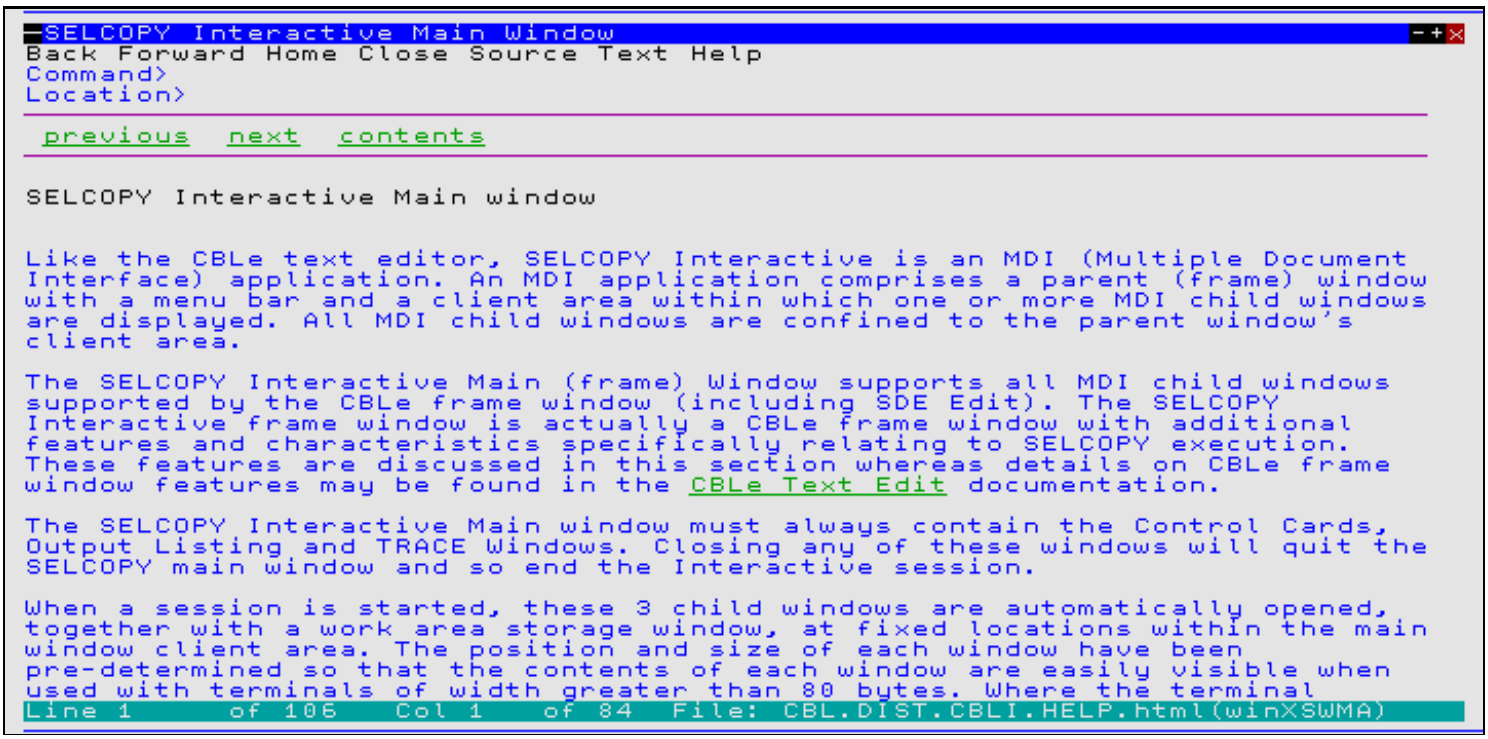


Figure 76. Help window for SELCOPY Interactive.

`Back`
Display the HTML page that occurs immediately prior to the current page in the stack of viewed pages.

`Forward`
Display the HTML page that occurs immediately after the current page in the stack of viewed pages.

`Home`
Display the defined Home page.

`Close`
Close the current HTML browse window.

`Refresh`
Refresh (reload) the current HTML page.

`Find`
Open a dialog window to locate lines in the current HTML page that contain a specified string.
Not yet supported.

`Source`
Open a CBLe text editor window to edit the source for the current HTML page.

`Options`
Tailor options for the current HTML browse window.
Not yet supported.

`Text`
Open a CBLe text editor window to edit the current HTML page as plain text with file name UNTITLED.

`Help`
Display this help page.

`Location>`
Specify an explicit HTML source fileid. If only a file name is specified, then the HTML browse window will search the Help.Defaultpath library for that file name.

This allows the user to display any file containing basic HTML tags that is not necessarily associated with the CBLi suite of help files.

CBLi Command Line Interface

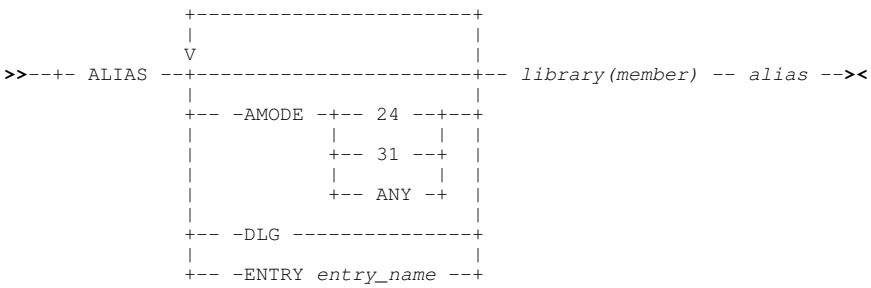
You can issue CBLi commands from the command line at the Command> prompt. Most main menu commands have a command line equivalent.

Command	Description
ALIAS	Open the Create ALIAS dialog window (includes support for PDSE Load libraries).
AMS	Open the IDCAMS Command window. An AMS/IDCAMS command can be passed as a parameter.
APE	Open the CBLi Module List.
BACKWARD	Scroll the display backwards by one page.
BOTTOM	Display the last lines of data.
BROWSE	Open the CBLe text editor to edit a file read-only.
CALENDAR	Open the calendar window.
CALC	Open the calculator window.
CBLI	Pass a command directly to the CBLi command processor.
CBLICANCEL	Exit and close the CBLi session without opening the quit session confirmation pop-up window.
CBLNAME	Open a storage window containing the loaded CBLNAME module.
CLOSE	Close a window.
CMDTEXT	Pick up a command from the text displayed in a window at the cursor position and either execute it or place it on the command line for editing before execution.
COMMANDLINE	Set the command line attributes.
CURSORSELECT	Perform the default operation based on the cursor position.
DOWN	Scroll the window display downwards.
DRAGBORDERMINUS	Drag the window's border closer to the top left corner of the display.
DRAGBORDERPLUS	Drag the window's border away from the top left corner of the display.
EDIT	Open the CBLe text editor to edit a file.
EO	Display output queue listing.
ERASE	Erase a file.
FAV	Open the Favourites Panel.
FORWARD	Scroll the display forwards by one page.
FS	Open the File Search window.
FSU	Open the File Search/Update window.
HELP	Open the help top level window.
HOME	Place focus on the CBLe edit view containing the user's command centre file.
IEBCOPYDIALOG	Open the IEBCOPY Dialog window.
ISPF	Toggle between TSO and ISPF 3270 I/O.
ISPFUTIL	Start ISPF Utilities Panel.
KEYS	Set a function key or open the function key dialog.
LA	Open the list allocated files window.
LC	Open the cataloged files list window. For MVS a partial dataset name can be passed as a parameter. For VSE not yet implemented. For CMS a file name, type and mode pattern can be passed as a parameter.
LD	Open the dataset details list window. For MVS a partial dataset name can be passed as a parameter. For VSE not yet implemented. For CMS a file name, type and mode pattern can be passed as a parameter.
LEFT	Scroll the window display to the left.
LJQ	Open the Job Enqueues list window. A job name can be passed as a parameter. Not implemented for VSE.
LL	Open the library members list window. For MVS a PDS name can be passed as a parameter. For VSE a LIBR library, sublibrary and member name and type pattern can be passed as a parameter.
LP	Open the HFS Paths list window. An absolute or relative HFS path name can be passed as a parameter.
LQ	Open the Enqueues list window. An enqueue major name and resource name can be passed as a parameter. Not implemented for VSE.

LV	Open the VTOC files list window. A volume name can be passed as a parameter.
LVOL	Open the DASD volumes list window. A volume name pattern can be passed as a parameter.
LVR	Open the CBLVCAT Raw list window. A CBLVCAT command string can be passed as a parameter.
LX	Open the VTOC extents list window. A volume name can be passed as a parameter. Not yet implemented for VSE.
MAXIMISE	Maximise a window.
MDINEXT	Place focus on the next MDI child window.
MDIPREV	Place focus on the previous MDI child window.
MINIMISE	Minimise a window.
MOVEWINDOW	Move a window.
NEXTMAINWINDOW	Sets the focus window to the next main window within the CBLi desktop.
NEXTWINDOW	Sets the focus window to the next window in the ring of all windows.
POWER	Open the POWER Command Output window.
PREVMAINWINDOW	Sets the focus window to the previous main window within the CBLi desktop.
PREVWINDOW	Sets the focus window to the previous window in the ring of all windows.
QUIT	Exit and close the current window.
RENAME	Rename a file.
RESTORE	Restore a window.
RETRIEVE	Retrieve previously executed commands.
RIGHT	Scroll the window display to the right.
SDATA	Direct a command to the Structured Data Environment (SDE).
SDE	Same as SDATA but opens SDE dialog window if no parameters.
SDSF	Start the SDSF application.
SELCOPY	Start the SELCOPY Interactive window.
SETCOLOUR	Remap the appearence of a colour and its associated highlighting.
SETFOCUS	Sets the focus window to a named window in the ring of all windows.
SHOWPOPUPMENU	For storage windows, display the options popup menu.
SHOWWATTR	Show Window Attributes.
SIZEWINDOW	Resize a window.
SQL	Open the Dynamic SQL window.
SVC	Display the status of the CBLVCAT Interactive SVC.
SYSAPF	Open the APF List window. (MVS only)
SYSCOMMAND	Pass a command directly to the local TSO or CMS command processor.
SYSI	Open the system information window. Not yet implemented for VSE.
SYSLL	Open the Link List window. (MVS only)
SYSLPA	Open the LPA Modules window. (MVS only)
SYSMENU	Open a window's System Menu.
SYSPGM	Open the Loaded Programs Menu.
SYSSTOR	Open the Storage Statistics window.
SYSTASK	Open the Task List window. (MVS only)
TASK	Execute a program as a sub-task of CBLi.
TOP	Display the first lines of data.
UP	Scroll the window display upwards.
VCAT	Open the Execute CBLVCAT window. A CBLVCAT command string can be passed as a parameter.
VIEW	Open the CBLe text editor to edit a file read-only.
VOLSTATS	Open the Volume statistics window.
WINDOWLIST	Open the window list window. This lists all currently open windows.
WINDOWNAMES	Hide or display the window names in the title bar.

ALIAS

Syntax:



Description:

Use the ALIAS command to create a new PDS/PDSE library member alias, or open "Create ALIAS" dialog window.

Note that aliases for load-library members are created using the binder to relink the module in being aliased. This will result in an update to the module's **TTR**.

Use of the **-DLG** parameter invokes the Create ALIAS dialog window, which is also available through the **'A'** prefix-command in a Library List window.

Parameters:

library(member)
: The PDS/PDSE library member be be aliased.

alias
: The alias name to be added

-AMODE
: For a load-library member, used to specify the Addressing Mode for the new aliased entry-point. Valid arguments are 24, 31 and ANY.

-DLG
: Invoke the "Create Alias" dialog window.

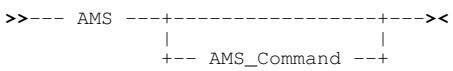
-ENTRY *entry_name*
: For a load-library member, used to specify the symbolic name of the entry-point address to be used.

Examples:

```
< alias JGE.CBLINST.D070919.EXE.COPY(I141) CBLI
< alias JGE.CBLINST.D070919.EXE.COPY(I141) CBLAVTAM -entry VCIAVTAM
< alias JGE.CBLINST.D070919.EXE.COPY(I141) CBLIVTAM -entry VCIRVTAM
< alias JGE.CBLINST.D070919.EXE.COPY(V212) CBLV
< alias JGE.CBLINST.D070919.EXE.COPY(V212) CBLV31 -amode 31
< alias JGE.CBLINST.D070919.EXE.COPY(V212) CBLV24 -amode 24
< alias JGE.CBLINST.D070919.EXE.COPY(V212) CBLV24 -amode 24 -dlg
< alias JGE.CBLINST.D070919.EXE.COPY(S202) SELCOPY
```

AMS

Syntax:



Description:

Use the AMS command to open the IDCAMS Command window and optionally execute an AMS/IDCAMS command.

The IDCAMS Command window displays the SYSPRINT/SYSLST output generated on execution of the IDCAMS command.

Parameters:

`AMS_Command`
: AMS/IDCAMS command to be executed.

Examples:

```
AMS  LISTCAT  ENTRY(CBL.MCAT.CMP.P)  ALL
```

APE

Syntax:

```
>>--- APE --------------------><
```

Description:

Use the APE (Assembler Programming Environment) command to display the Module List window containing the current status of all modules that comprise CBLi.

The Module List window may also be opened via the System menu of the CBLi main window menu bar.

APE may be executed to determine the level of a currently installed module.

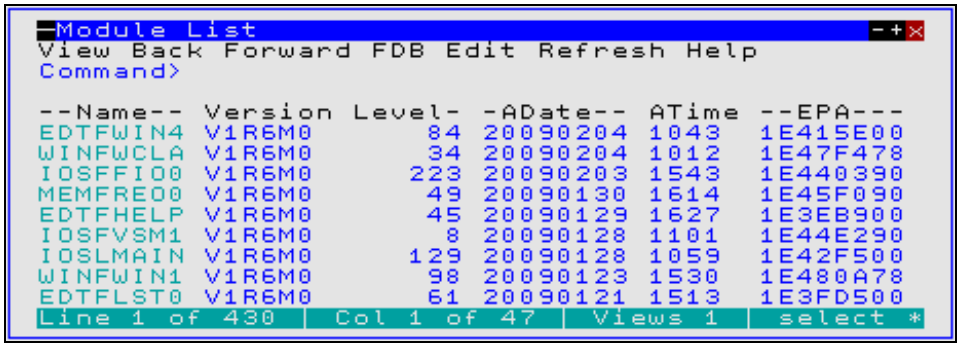


Figure 77. Module List window.

BACKWARD

Syntax:

```
>>--+- BAck -----+-----------------><
    |            |
    +- BACKWARD -+
```

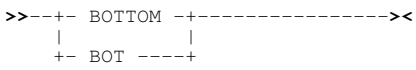
Description:

Use the BACKWARD command to scroll the window contents backwards by a page.

Note that BACKWARD is the same as UP CURSOR where the cursor is outside the display area.

BOTTOM

Syntax:



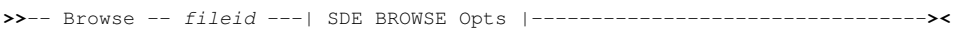
Description:

Use the BOTTOM command to display the bottom lines of the data in the focus window. The last line of the data becomes the last line of the display area.

Note that the CBLi BOTTOM command acts differently to the BOTTOM command available in a CBLe text editor window.

BROWSE

Syntax:



Description:

For **VSE** and **CMS** systems, BROWSE is a synonym for VIEW.

Use the BROWSE command to open a Structured Data Environment (SDE) BROWSE window view to browse a page of data from the specified fileid.

If the CBLe text editor main window has been stopped, BROWSE will start the CBLe main window and open an edit view for the user's HOME CMX file before opening the SDE browse window for the requested file.

Use BROWSE instead of VIEW to browse large data sets. Unlike EDIT and VIEW, BROWSE does not need to load the entire file into storage in order to display a page of records.

Parameters:

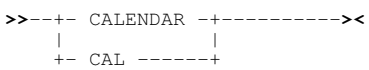
fileid
: The fileid of the file to be browsed.

  fileid may be the DSN of a sequential or VSAM data set, the member name (with or without the library DSN) of a PDS/PDSE member or an HFS file name. If member name is specified without a library DSN, the DSN of the library member in the current edit view is used.

SDE BROWSE Opts
: See SDE BROWSE for supported parameters.

CALENDAR

Syntax:



Description:

Use the CAL command to open the Calendar Window.

The Calendar Window may also be opened via the Utilities entry of the CBLi main menu.

CALC

Syntax:

```
>>--+- CALCULATE -+--+---------------------+--><
    |              |  |                     |
    +- CALC -------+  +-- REXX_expression --+
```

Description:

Use the CALC command to open the Calculator Window and optionally evaluate a REXX expression.

The Calculator Window may also be opened via the Utilities menu of the CBLi main window menu bar.

Parameters:

REXX_expression
: The Calculator will evaluate any valid REXX expression. This may include the result of any REXX function built in to REXX or written by the user.

Examples:

```
CALC  (1024+281) / (3*2)

CALC  c2x(bitxor('af'x,'44'x))
```

CBLI

Syntax:

```
>>-- CBLI --- command --->>
```

Description:

Execute a CBLi command.

The specified command is passed to the CBLi environment. Any windows opened are child windows of the CBLi main window, not of the current window.

Parameters:

command
: CBLi command.

Examples:

`cbli  vcat < cbl.vvc.ctl(vvrep01)`
: Open a CBLVCAT Interactive window and execute CBLVCAT with control statements from file CBL.VVC.CTL(VVREP01).

CBLICANCEL

Syntax:

```
>>-- CBLICANcel ------------------------------------------------------------><
```

Description:

Exit and close the CBLi session without opening the quit session confirmation pop-up window.

CBLNAME

Syntax:

```
>>-- CBLNAME --------------><
```

Description:

Use the CBLNAME command to open the CBLNAME window.

The CBLNAME storage display window may also be opened via the System menu item of the CBLi main window menu bar.

CLOSE

Syntax:

```
>>--+- CLOSE -+---+---------------+---><
    |         |   |               |
    +- CLO ---+   +- windowname -+
    |         |
    +- Quit --+
```

Description:

Use the CLOSE command to close a window.

By default this command is assigned to function key **PF3**. You can also use the close button if the window has one.

Parameters:

windowname
: The window name of the window to close. If not supplied then the window in which the command is issued (via a command line or function key) is assumed.

CMDTEXT

Syntax:

```
>>--+-- CMDTEXT ------+---+------------+---><
    |                 |   |            |
    +-- COMMANDTEXT -+   +- EDIT -----+
    |                 |   |            |
    +-- CTX ----------+   +- EDITALL -+
```

Description:

CMDTEXT extracts the text at the cursor position and either executes it as a command or places it on the command line for editing and/or execution.

By default this command is assigned to function key **PF4**.

Its prime use is from within the CBLe file editor and provides the user with a facilty to store commonly used, or difficult to remember, commands as plain text within any editable file.

While it is recommended to create dedicated 'command files', using a filetype CMX, both for specific tasks (e.g. hlq.MONTHLY.REPORT.CMX) and for one for each user with various task sections (e.g. userid.CMX), commands may also be included as comment data in JCL, program source and configuration files.

The text selected for execution can span multiple lines using the continuation character, backslash ('\' - X'E0'), allowing both for very long commands and the chaining of multiple commands using the command delimiter character. (See below)

Note: The selected text may extend beyond the text visible in the window. i.e. text that would be displayed if the window is made wider or scrolled may also form part of the CMDTEXT selected text string.

Some characters within the line of command text is given special treatment:

'|' (or symbol - X'4F')
: Used to partition a single line of command text into separately executable commands and/or sections of comment data. This character marks the limits the focus command to be executed based on the cursor position when CMDTEXT is

executed. A '||' prefix can be added at the start of the line of command text (but following '<' or '>') to indicate that any occurence of the '|' character in the command text is to be treated as part of the command data.

'<' (less than - X'4C'
If found in the first 4 characters (including leading blanks) of the line of command text, indicates that immediate execution is required. Characters in front of the '<' are ignored. This allows comment indication characters to exist and so enabling insertion of point-and-shoot commands in JCL, etc. e.g.

```
//*<sub ;OQ  %JobName%    | Submit and wait in SDSF for output.
```

'>' (greater than - X'6E'
As above for '<' but indicating that the command is to be placed on the command-line, for potential edit and delayed execution by hitting <Enter>. This is the default if neither '<' nor '>' is found in the first four characters.

'_' (underscore - X'6D'
The first occurence of this character is always removed from the command text and indicates the location at which the cursor is positioned when the command is placed on the command line for edit. Note that, if the first occurence of '_' in the command is to be treated as part of the command data, then an extra '_' must be added before the before it. e.g.

```
>e my.jcl(Job_01)         | Edit job number then hit ENTER.
```

'`' (reverse apostrophe - X'79'
This character is treated as a null and all occurences are removed from the command text. Its purpose is to allow alignment of alike items purely for readabilty. e.g.

```
>e my.jcl```(Job_01)      | Edit DSN 'my.jcl(Job_01)'.
>e my.output(Job_01)      |
```

'\' (backslash - X'EO'
If the last non-blank character on the whole line is '\', then the line of command text is continued onto the next line. e.g.

```
>alloc  reuse f(OUTDD)  new dsn('CBL.TEST.OUTPUT') \
        space(1,1) cyl unit(3390) vol('DATT0B')    \
        recfm(F,B) lrecl(80) blksize(0)

>sub my.jcl```(Job_01) \
;e   my.output(Job_01) \
;e                              CBL.TEST.OUTPUT
```

Note: In the above example, ';' (semi-colon) is the command delimiter.

The command text selected by CMDTEXT is identified by starting at the cursor position and searching to the left for a '<', '>', '|' character or the start of the line. This determines the left extent of the command string. The right extent of command string is then determined by starting at the cursor and searching to the right for a '|' character or the end of the line of text.

Parameters:

null
If the left command string delimiter is a < character then execute the command string. Otherwise place the command string on the command line.

EDIT
If the left command string delimiter is a < character then place the command string on the command line. Otherwise execute the command string.

EDITALL
Place the whole focus line (the line containing the cursor) on the command line.

Examples:

The following are examples of commands that may be entered on the CBLi command line.

In each case a window will be created. You can close these windows with the CLOSE command (by default assigned to **PF3**) or by using the close button at the right of the title bar.

Command	Description
<vcat q cblname	Open the CBLVCAT execution window and list the contents of CBLNAME.
<lvol *	Open the list DASD volumes window to list all volumes.
<lc sys1.h	Open the list calatog window to list all cataloged datasets whose names begin sys1.h (MVS only).
<lc %user%	Open the list calatog window to list all cataloged datasets whose names begin with the current userid.
<ll sys1.help	Open the list library window to list all members of the sys1.help library (MVS only).
<ll prd2.*	Open the list library window to list all sublibraries of the prd2 library (VSE only).
<wl	Open the window list window.
<cal	Open the calendar window.
<calc x2d('1000')	Convert X'1000' to decimal using the calculator window.

```
<ll %user%.cbli.cble; where User = %user% & LastMod => '%date%'  \
;ll %user%.cbli.cmx ; where User = %user% & LastMod => '%date%'
```
| List all library members changed by me today.

See Also:

CBLe command, EXTRACT
CBLe command, QUERY

COMMANDLINE

Syntax:

```
>>--+- COMMANDLINE -+--+--------------+--+---------+--+--------+--->
    |                |  |              |  |         |  |        |
    +- CLN ----------+  +- windowname -+  +- SHOW -+  +- TOP -+
                                          |         |  |        |
                                          +- HIDE -+  +- BOT -+

 >--+------------------+--+-------------+--><
    |                  |  |             |
    +- PROMPT=prompt -+  +- SCROLL ----+
                         |             |
                         +- NOSCROLL --+
```

Description:

If this command is issued with no parameters or with the window name parameter only, then a dialog box is opened in which the user can define the characteristics of the command line of the specified window.

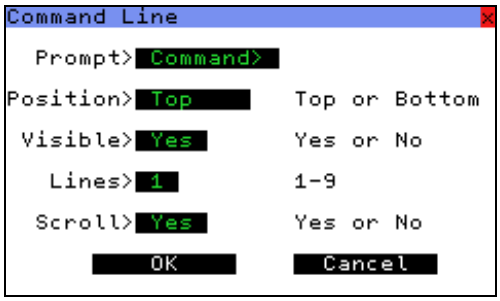


Figure 78. Command Line Dialog Window.

If parameters other than the window name are supplied then the specified change is made to the command line.

Parameters:

windowname
: The window name containing the command line. If not supplied then the window in which the command is issued (via a command line or function key) is assumed.

SHOW
HIDE
: Show or hide the command line.

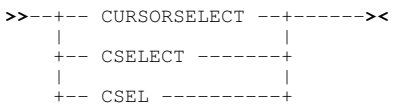
TOP
BOT
: Show the command line at the top or the bottom of the window.

PROMPT
: The character string following the PROMPT= keyword is used as the prompt prefixing the command line input area in the window.

SCROLL
NOSCROLL
: For CBLe only, show or hide the ISPF Edit style scroll entry field.
For INTERFACE=ISPF, the default is SCROLL.
For INTERFACE=CBLE, the default is NOSCROLL.

CURSORSELECT

Syntax:



Description:

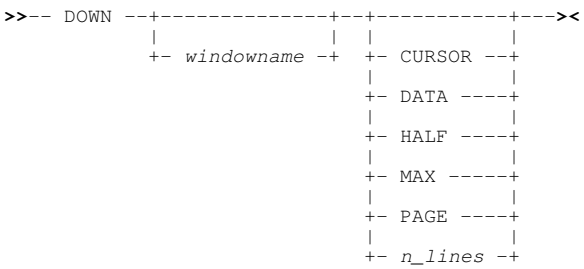
CURSORSELECT is a generic command that performs the default operation for the field at the cursor position.

The default operation depends on the function of the window, the window class and the field in which the cursor is positioned. The default operation for a particular window/field may be found in the documentation for the relevant window type.

CURSORSELECT is intended to be assigned to a function key to execute the same operation performed when >Enter< is hit.

DOWN

Syntax:



Description:

Scroll the view of the data within the specified window downwards towards the bottom of the displayable data.

The extent by which data is scrolled is determined by the CURSOR, DATA, HALF, PAGE, MAX or *n_lines* parameter which may be specified using any one of three methods determined in the following order of precedence:

1. The scrolling command verb, DOWN, and one of these scrolling parameters is explicitly specified on the command line.
2. The scrolling parameter is specified on the command line and a PFKey assigned to DOWN is actioned.
   Note that the contents of a command line are appended to the command stream assigned to a PFKey when that PFKey is actioned.
3. No scrolling parameter is specified, so the current value of the "Scroll>" field is used.
4. No scrolling parameter is specified and no "Scroll>" field is present, so a defualt of one line is used.

By default this command is assigned to function key **PF8**.

Parameters:

windowname
: The window name of the window in which the display is to be scrolled. If not supplied then the window in which the command is issued (via a command line or function key) is assumed.

CURSOR
: The line on which the cursor is positioned becomes the first line of the scrolled display.
If the cursor is positioned outside the display area or on the first line within the display area, then DOWN PAGE is executed instead.

DATA
: Scroll down to display one page (display window depth) less one line of data.
The last line in the current display area becomes the first line of the scrolled display.

`HALF`
Scroll down half a page of data.
The line that is half way down the page of data in the current display area becomes the first record of the scrolled display.

`MAX`
Scroll down to display the last page of data.
Where more than one page of data exists, the last displayable line becomes the last line of the scrolled display.
Otherwise, the first line of data becomes the first line of the scrolled display.

`PAGE`
Scroll down to display the next whole page of data.
The line following the last line of the current display area becomes the first line of the scrolled display.

`n_lines`
Scroll down a specified number of lines.
The line that is *n_lines* below the current line becomes the first line of the scrolled display.

DRAGBORDERMINUS

Syntax:

```
>>--- DRAGBORDERMINUS --------><
```

Description:

Window resizing command, DRAGBORDERMINUS is intended to be assigned to PFKeys at the "Border" level (see CLI command KEYS).

DRAGBORDERMINUS moves the window's border closer to the top left corner of the 3270 display area.

When the cursor is positioned on a horizontal border, the border is dragged one row upwards; when on a vertical border, the border is dragged one column to the left; and when on a corner, the border is dragged both one row upwards and one column to the left.

The border will not be positioned outside the display area in which it is defined. i.e. MDI child window borders cannot be dragged outside its parent's client area and all other windows cannot be dragged outside the 3270 display area.

Similarly, CBLi will not allow the window borders to be dragged so that the window is smaller than 3 rows x 8 columns.

By default, DRAGBORDERMINUS is assigned to Border PFKeys F7 and F10.

DRAGBORDERPLUS

Syntax:

```
>>--- DRAGBORDERPLUS ---------><
```

Description:

Window resizing command, DRAGBORDERPLUS is intended to be assigned to PFKeys at the "Border" level (see CLI command KEYS).

DRAGBORDERPLUS moves the window's border away from the top left corner of the 3270 display area.

When the cursor is positioned on a horizontal border, the border is dragged one row downwards; when on a vertical border, the border is dragged one column to the right; and when on a corner, the border is dragged both one row downwards and one column to the right.

The border will not be positioned outside the display area in which it is defined. i.e. MDI child window borders cannot be dragged outside its parent's client area and all other windows cannot be dragged outside the 3270 display area.

Similarly, CBLi will not allow the window borders to be dragged so that the window is smaller than 3 rows x 8 columns.

By default, DRAGBORDERPLUS is assigned to Border PFKeys F8 and F11.

EDIT

Syntax:

```
>>-- Edit --+------------+--+-------------------------------------------+-><
            |            |  |                                           |
            +-- fileid --+  +- ( -+-- PROFILE macroname --+-+-------------+
                                  |                       | |             |
                                  +-- NOPROFile ----------+ +-| HFS Opts |-+
```

Description:

Use the EDIT command to open a CBLe text edit window view to edit a file (read/write).

If the CBLe text editor main window has been stopped, EDIT will start the CBLe main window before opening the edit view of the requested file.

If the file has a VSE LIBR LOCK applied or an exclusive MVS SPFEDIT ENQ to a different job id, then the **Enqueue Failed** pop-up window is displayed containing message EDT015E prompting the user to edit the file in read-only mode.

Read-only edit may be invoked directly using the VIEW command thus avoiding the Enqueue Failed window.

Figure 79. Enqueue Failed Window.

Parameters:

fileid
The fileid of the file to be viewed.

For MVS, *fileid* may be the DSN of a sequential or VSAM data set, the member name (with or without the library DSN) of a PDS/PDSE member or an HFS file name. If member name is specified without a library DSN, the DSN of the library member in the current edit view is used.

For VSE, *fileid* is the member name of a LIBR library in lib.sublib.mn.mt format.

For CMS, *fileid* is a CMS fileid.

Note that if **fileid** is not specified, then the CBLIINI variable System.CmdTEXT is used. If System.CmdTEXT has not been set, then no action is taken.

PROFILE *macroname*
The REXX edit macro to be executed as the profile when editing the file.

This macro overrides use of the default profile macro defined by the CBLiINI [Edit] option DEFPROFILE=macroname and/or the CBLe command SET DEFPROFILE (default PROFILE.)

The macro name must exist in a library within the CBLe macro path.

The PROFILE option only affects the profile for the file currently being added to the ring, and does not affect the profile to be used when additional files are added to the edit ring later in your edit session.

NOPROFILE
Suppresses use of a profile macro when editing the file.

The NOPROFILE option only affects the file currently being added to the ring, and does not affect the profile to be used when additional files are added to the ring later in your edit session.

HFS Opts
See CBLe CLI command EDIT for supported HFS parameters.

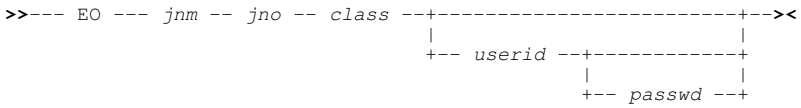
Examples:

```
EDIT     NBJ.DATA.SET    (PROFILE  PROFTEMP
```
Edit NBJ.DATA.SET using macro PROFTEMP as a profile.

```
EDIT     NBJ.JCL(CBLINS01)   (NOPROF
```
Edit PDS member NBJ.JCL(CBLINS01) without a profile macro.

EO

Syntax:



Description:

Use the EO command to Edit (read only) an Output listing from the system's output queues. A new CBLe text editor window is opened if CBLIINI variable Edit.Instance=Multiple or if no CBLe window is already open.

A temporary fileid is used to edit the file. For VSE, the fileid is **SYSLST.class.jnm.jno**.

The CBLi command, EO, may be used in conjunction with the CBLe command, SUBMIT. A job may be submitted to batch from within CBLe and the output retrieved via EO.

In VSE, Basic Security Manager (BSM) does not impose security on the VSE POWER queues. Therefore, in order to impose access restrictions on LST queue output when CBLIINI variable System.VSESMLogon=Yes, the following restrictions apply:

1. If an entry is **not** password protected, then it may only be edited if the TO or FROM attributes match the user's userid.
2. If an entry is password protected, then it may be edited by any user so long as the password is supplied.

If CBLIINI variable System.VSESMLogon=No (i.e. no Security Manager is active), then EO is only successful if the entry is password protected and the password is specified as a parameter to EO.

Note: Not yet implemented for MVS.

Parameters:

jnm
The required Job Name.

jno
The required Job Number.
Note that, when a job is submitted using the CBLe SUBMIT command, the job number is displayed in the job submitted confirmation message.

class
The required List Class.

userid
The userid of the user that owns the job. For VSE, this must be the userid on either the TO or FROM LST queue attributes.
Default is the current user's userid.

passwd
The password to be used when editing a password protected queue entry.
If the entry is password protected and no password is specified, then EO will fail.

Examples:

```
eo  LIBRDEL  1551  S
```
View list output for job LIBRDEL having job number 1551 and belonging to list class S. For successful operation, the job must have TO or FROM LST queue attributes equal to the userid of the current user and CBLIINI variable System.VSESMLogon=Yes.

```
eo  CICSICCF  201  A  SYSA  SECRET
```
View list output for job CICSICCF having job number 201, a TO or FROM attribute of SYSA and belonging to list class A. The queue entry is password protected with password "SECRET".

ERASE

Syntax:

- **Erase an MVS data set, HFS file or PDS(E) member.**

```
>>-- ERAse -----+---------------------+---- fileid --------------------------><
                |                     |
                +- volid ------ : ----+
```

- **Erase a CMS file on an accessed minidisk.**

```
>>-- ERAse ------------------------------ fileid --------------------------><
```

- **Erase a VSE sequential or VSAM file.**

```
>>-- ERAse -----+- volid ---+-- : --------- fileid --------------------------><
                |           |
                +- catdsn --+
```

Description:

Erase (delete) a single sequential DASD file, HFS file, PDS(E) member or VSAM file.

To succeed, the user must have sufficient read/write authority for the file and no exclusive ENQ or LOCK should already exist for the file.

For VSE, sequential files may only be erased if the CBL software product **CBLVCAT** is licensed. CBLi uses CBLVCAT's DEL operation to perform the erase.

Parameters:

volid
: For MVS uncataloged data sets and VSE sequential disk files, this is the volume serial number of the DASD volume on which the file resides.

catdsn
: For VSE VSAM files, this is the full fileid of the VSAM catalog to which the VSAM managed file belongs.

fileid
: The full fileid of the file to be erased.

  For MVS, specification of a leading "." (dot/period) or "/" (slash) identifies **fileid** as being an absolute or relative HFS path name. Erasing an HFS path name performs a USS UNLINK operation for the individual HFS path name and so alternate path names to the same data are unaffected.

Examples:

`erase test.exec.a`
: Erase CMS file TEST.EXEC.A.

`erase cbl.cbli.test.file`
: Erase MVS cataloged data set CBL.CBLI.TEST.FILE.

`erase cbl.cbli.testlib(example1)`
: Erase MVS PDS(E) member CBL.CBLI.TESTLIB(EXAMPLE1).

`erase OEM001:cbl.cbli.test.file`
: Erase MVS uncataloged data set CBL.CBLI.TEST.FILE from DASD volume OEM001.

`erase SYSWK1:CBL.SELCOPY.NAM`
: Erase VSE sequential file CBL.SELCOPY.NAM on SYSWK1. (CBLVCAT must be licensed.)

`erase VSESP.USER.CATALOG:CBL.TEST.KSDS`
: Erase VSE VSAM managed data set CBL.TEST.KSDS cataloged in the VSAM catalog, VSESP.USER.CATALOG.

FAV

Syntax:

```
>>---- FAV ------------------------------------------------------------------><
```

Description:

The FAV command may be used to open a Favourites Datasets/Commands window to easily access commonly used files and commands.

The dialog window will be opened with fields populated with parameters entered by the user during the last invocation of the window.

Parameters:

FAV has no parameters.

FORWARD

Syntax:

```
    >>--+- FORWARD -+----------><
        |           |
        +- FOrw ----+
```

Description:

Use the FORWARD command to scroll the window contents forwards by a page.

Note that FORWARD is the same as DOWN CURSOR where the cursor is outside the display area.

FS

Syntax:

```
    >>--+- FS ---------+--+-------------------------+--><
        |              |  |                         |
        +- FILESEARCH -+  +-- filemask -- string --+
```

Description:

Use the FS command to open the File Search Window and optionally perform a file search.

The File Search window may also be opened via the Utilities menu of the CBLi main window menu bar.

Parameters:

filemask
: The file mask of the MVS PDS and member, the VSE LIBR lib.sublib and member or the CMS file name type and mode to be searched.

  This parameter is placed in the Dataset field of the File Search window.

string
: The search string.

  This parameter is placed in the Search String field of the File Search window.

Examples:

FS
: Open the File Search window with both the Dataset and Search String fields left blank.

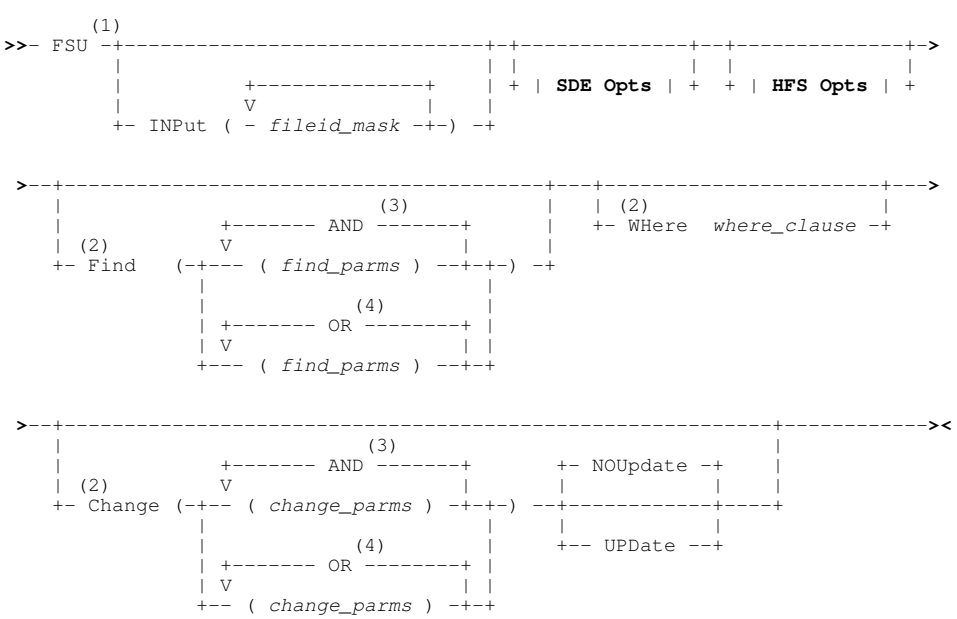
FS 'CBL.Q6930.JCL(VV*)' 'PGM=CBLV'
: Search PDS members beginning 'VV' for string 'PGM=CBLV'.

```
FS  'PRD2.CBL.*.htmlL'      '<H1>'
```
Search VSE PRD2.CBL library members of type 'HTML' for string '<H1>'.

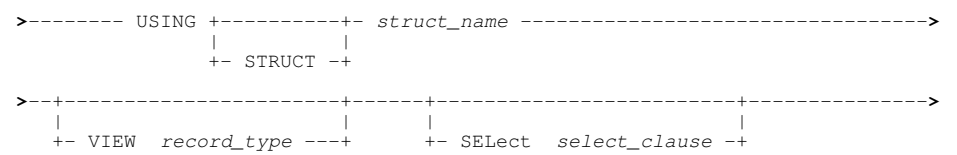
```
FS  '* EXEC A'              'SELCOPY'
```
Search CMS EXEC files on the A minidisk for string 'SELCOPY'.

FSU

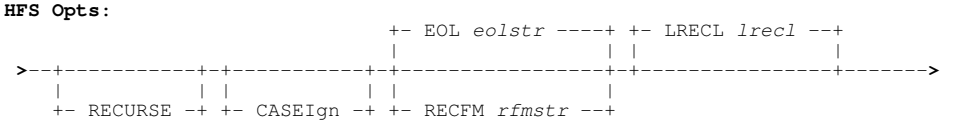
Syntax:



SDE Opts (Structured File Search & Update):



HFS Opts:



Notes:

1. Parameters may be entered in any order.
2. At least one of FIND, WHERE or CHANGE must be specified.
3. **AND** logical operator literal or its equivalent symbol: "&" (ampersand).
4. **OR** logical operator literal or its equivalent symbols: "¦" (broken bar) or "|" (vertical line).

Description:

Use the FSU command to search cataloged data sets, HFS files and/or PDS(E) members for one or more search strings and optionally perform CHANGE commands to perform data update in-place.

Each parameter of the FSU command, other than INPUT, equates to an SDE CLI command to filter records and columns, find and update fields within the selected data sets. If FSU is executed with no parameters, the FSU - File Search/Update Window is opened.

All data sets and/or PDS(E) members, whose DSNs match the fileid mask(s) provided on the INPUT parameter, are opened and each record is passed as input to the supplied FIND, WHERE and/or CHANGE conditions. If Structured File Search is used (i.e.

SDE Options are provided), then only those records that are assigned the single record type (RTO) specified by the VIEW parameter (or default record type if VIEW is not specified) are processed. Records not assigned this record type are bypassed.

Any section or sections of the FSU command stream may be commented out using REXX style comment delimiters. i.e. enclose areas of the command stream text between "/*" and "*/". This is particularly useful for use of FSU commands in the user's HOME (CMX) data set command centre where the command may span several (continued) lines. e.g. To temporarily omit the CHANGE parameter, thus allowing the user to identify those records that would be selected for change...

```
<sd fsu                                                \
   INPUT (                                             \
           CBL*:JGE*.CBLI.SDE.SAMP.VAR(DATS*)          \
              %user%.CBLI.SDE.SAMP.VAR.DATS*.ESDS      \
         )                                             \
   WHERE (    CUST-ID > 5000                           \
         )                                             \
/*                                                     \
   CHANGE( (c'Aqua' c'AQUA'  (COMPANY)     )   AND     \
           (c'Jim'  c'James' (NAME,#9:#11) )           \
         )                                             \
      NOUPDATE                                         \
*/                                                     \
   USING      %user%.CBLI.SDO(CobSALES)                \
   VIEW       REC-CARD
```

Unlike file edit, the FIND, WHERE and CHANGE conditions operate on a **single record only**. As such, FIND parameters ALL/NEXT/FIRST/PREV/LAST all have the same effect and so may be omitted. The same parameters in CHANGE conditions apply to occurrences of the search string within the record. i.e. All occurrences in the record (ALL), the first occurrence in the record (FIRST,NEXT) or the last occurrence in the record (LAST, PREV).

Where CHANGE is specified, FIND and WHERE are treated as filter mechanisms, excluding records before the CHANGE operation is executed. i.e. Data will only be changed in records that first satisfy both the FIND and WHERE criteria. Where FIND and WHERE are not specified, then CHANGE will operate on all input records.

CHANGE with UPDATE will re-write any changed data records using update-in-place and so the record length cannot be changed. Any CHANGE operation that results in a change to the record length will fail.

During execution, a progress window is displayed which allows the user to interrupt processing using the Attention key.

FSU generates an output report in an SDE window view. See File Search & Update Output.

Parameters:

`CASEIGN`

Bypass case sensitivity for the **name** portion of all specified HFS path fileid masks specified on the INPUT parameter. The name portion of the HFS path is the character string at the end of the path that follows the last "/" (slash) of the fileid, or is the entire path name if "/" is not specified.

`CHANGE ( {(} change_parms {)} {AND|OR ...} )`

Specifies one or more CHANGE search string, replace string and associated parameters.

CHANGE operates on records that have been selected by the VIEW, WHERE and/or FIND parameters. If none of VIEW, WHERE and FIND have been specified, then CHANGE operates on all records in the specified data set search chain.

Each *change_parms* specification is a combination of parameters supported by the SDE CLI command CHANGE. For Unstructured File Search (i.e. no SDE Options), field references other than #1 or "Record", that are specified within *change_parms*, are invalid.

If multiple *change_parms* combinations are specified, each group of CHANGE parameters must be enclosed in "( )" (parentheses). Multiple *change_parms* combinations must also be separated by either logical AND or logical OR operators. Note that a combination of both AND and OR logical operators is invalid.
If logical operator AND is used, CHANGE will execute all the *change_parms* operations.
If logical operator OR is used, CHANGE will execute each *change_parms* operation in turn until one successfully changes the data. e.g.

```
FSU INPUT(OEM.**)     CHANGE( ( c'DB8F' c'DB9G' PREFIX ALL)  AND  ( c'CBLI' c'CBLI160' ALL) )
FSU INPUT(DEV.USER01.JCL(*) )       FIND(c'EXEC' WORD 1 20)   CHANGE( c'IEWL' c'BIND' WORD FIRST 16 80)
FSU INPUT(DEV.TEST.DATAX3) USING(DEV.SDO(DATAX3))  CH(('Jo Smith' c'JS' (#2:#5)) OR ('J W Smith' c'JS' (#2:#5)))
```

Where logical AND is used, a change made by a *change_parms* specification may itself be changed by a subsequent *change_parms* specification within the same execution of FSU. Also, each execution of a CHANGE operation will perform a scan for the search string within the **entire width** of selected record data and is not subject to the position within that record of a previous, successful FIND or CHANGE operation.

Where the length of the search string is different to that of the replace string, then the following occurs:

- If the replace string length is greater than the search string length, then words to the right of the replaced string will be shifted right with multiple, consecutive blanks being absorbed to leave at least one blank between each word.
- If the search string length is greater than the replace string length, then text to the right of the replaced string will be shifted left. However, if more than one blank exists before a word to the right of the replaced string, then additional blanks are inserted to maintain that word's position in the record.

FSU performs an update-in-place for a data set record altered by a CHANGE operation. Therefore, any change that would result in a change to the record's length will fail.

For Structured File Search, any fields referenced by field name or field reference number within a *change_parms* combination must exist within the record type specified by the VIEW parameter (or default record type if VIEW is not specified). Similarly, referenced fields must also exist within the subset of fields specified by the SELECT parameter.

CHANGE is mandatory if FIND and WHERE parameters are omitted.

`EOL eolstr`

Specify the EOLIN (input end-of-line) delimiter to be used for determining the end of a record for all HFS files that match the HFS path fileid masks specified on the INPUT parameter.

Possible values and default for *eolstr* are as supported by the SDE CLI command SET EOLIN.

`FIND ( {({} find_parms {)} {AND|OR ...} )`

Specifies one or more FIND search string and associated parameters.

FIND and WHERE are used to select records from the specified data set search chain. If CHANGE is also specified, then the CHANGE operations are executed against the selected records only.

Each *find_parms* specification is a combination of parameters supported by the SDE CLI command FIND. For Unstructured File Search (i.e. no SDE Options), field references other than #1 or "Record", that are specified within *find_parms*, are invalid.

If multiple *find_parms* combinations are specified, each group of FIND parameters must be enclosed in "( )" (parentheses). Multiple *find_parms* combinations must also be separated by either logical AND or logical OR operators. Note that a combination of both AND and OR logical operators is invalid. This indicates whether a record must satisfy all *find_parms* operations or only one of the *find_parms* operations in order to be selected. e.g.

```
FSU INPUT( DEV.USER01.JCL(*) )    FIND( (c'EXEC' WORD 1 20)  AND  (c'IKJEFT01' NEXT)  AND ('REGION' NEXT) )
FSU INPUT( DEV.USER*.COBOL.COPYBOOK(*) )   FIND( (c'REDEFINES' WORD)  OR ('OCCURS' WORD)  OR ('filler.' 12 80) )
FSU INPUT( DEV.TEST.DATAX3. )  USING( DEV.TEST.SDO(SDDATAX3) )  FIND( (25 (#10:#18)) OR ('Ramsay' (EMP_NAME)) )
```

Where logical AND is used, each execution of a FIND operation will perform a scan for the search string within the **entire width** of selected record data and is not subject to the position within that record of a previous, successful FIND operation.

For Structured File Search, any fields referenced by field name or field reference number within a *find_parms* combination must exist within the record type specified by the VIEW parameter (or default record type if VIEW is not specified). Similarly, referenced fields must also exist within the subset of fields specified by the SELECT parameter.

FIND is mandatory if WHERE and CHANGE parameters are omitted.

`INPUT (fileid_mask {...} )`

Specifies one or more HFS Path name, DSN and/or PDS(E) member fileid masks to be searched. Multiple *fileid_mask* arguments may be specified with one or more intervening blanks. Note that only cataloged data sets are selected by a fileid mask.

A single *fileid_mask* may be in one of the following formats:

1. A pre-allocated DDNAME (non-HFS) which may represent one or more (concatenated) data set and/or library. (e.g. SYSEXEC)

2. An absolute or relative HFS Path name.

   Wild card characters "%" (percent), representing a single characters, and "*" (asterisk), representing zero or more characters, are supported in the name portion of the HFS path. The name portion of the HFS path is the character string at the end of the path that follows the last "/" (slash) of the fileid, or is the entire path name if "/" is not specified.

   Beacuse FSU supports comment specification (text enclosed between "/*" and "*/"). Where the HFS file name wild card "*" (asterisk) is to be used following a directory separator "/" (slash), the HFS path must me enclosed in single quotes (apostrophes) or double quotes. e.g.

   ```
   '/u/ibmuser/tmp/*'    /* Search all files in this directory. */
   ```

3. A DSN Mask and optionally a Volume Mask and/or multiple PDS(E) Member Masks in the following format:

   ```
   {volmask:}data.set.name.mask{(membmask{,membmask, ...} )}
   ```

   Fileid masks must **not** be enclosed in quotes (TSO prefix is not used.)

   Wild card characters "%" (percent), "*" (asterisk) and "**" (double asterisk) are supported. (See SDE FSU - File Search/Update Window documentation for use of wild cards in the Volume, DSN and Member masks.) Similarly, one or more member masks may be specified between a single pair of "( )" (parentheses). Multiple PDS(E) member masks must be separated by a "," (commma) and/or one or more intervening blanks.
   e.g. `DEV88%.CBL*.**(SELC*, *MAN, XM*J*)`

   All sequential, VSAM and PDS(E) data sets that match a specified fileid mask are selected for input. If one of these data sets is a PDS(E) library then all members of that library will be searched. In order to restrict the search

to a single PDS(E) library and so exclude any non-PDS data set that matches the fileid mask, then a member mask should be specified.
e.g. `SYS7.OEM.CBL202.CBLI.CBLE(*)`

A fileid mask may also be prefixed by a volume serial mask in order to restrict the search to only those cataloged data sets that match the specified fileid mask and also have extents that exist on the specified volume(s). The volume serial mask must be destinguishable from the rest of the fileid mask by an intervening ":" (colon) with no embedded blanks.
e.g. `CBLM04:SYS7.**.DZ3*.**`

`LRECL` *`lrecl`*
Specifies the maximum record length of input records belonging to all HFS files that match the HFS path fileid masks specified on the INPUT parameter.

Default for *lrecl* and its effect on input records is as supported by the SDE CLI command EDIT.

`RECFM` *`rfmstr`*
Specify the record format (F or V) to be used for all HFS files that match the HFS path fileid masks specified on the INPUT parameter.

Possible values and default for *rfmstr* are as supported by the SDE CLI command EDIT. Note that specification of RECFM V *off*,*len* and *origin* parameters are enclosed in "( )" (parentheses). e.g. `RECFM( V(0,4,10) )`

`RECURSE`
For all HFS path names specified on the INPUT parameter, recursively search files within all sub-directories found within each HFS path specification.

`SELECT` *`select_clause`*
For Structured File Search only, SELECT specifies the fields within the selected record type that are to be included within the FSU FIND and CHANGE operations. SELECT also provides the order in which fields are to be searched by the FIND and CHANGE operations.

The *select_clause* specification is identical to that supported by the SDE CLI command SELECT. If SELECT is not specified, then all fields will be searched in the order in which they occur within the record type (RTO) definition.

An error message is returned if FIND *find_parms* and/or CHANGE *change_parms* include references to fields not included by SELECT *select_clause*.

`UPDATE`
`NOUPDATE`
NOUPDATE indicates that records that would be altered by the CHANGE operation are not to be written to disk so allowing the user to first verify that the changes are correct in the output report before re-running the FSU command with UPDATE. If UPDATE is specified, records altered by the CHANGE operation are written to disk replacing the previous copy of the record.
Default is NOUPDATE.

`USING {STRUCTURE}` *`struct_name`*
Indicates that **Structured File Search** is to be used by specifying the Structure Definition Object (SDO) to be applied to the selected input files.

The *struct_name* specification is identical to that supported by the USING parameter of the SDE CLI command EDIT. Where USING is not specified, Unstructured File Search is used.

`VIEW` *`record_type`*
For Structured File Search only, VIEW specifies the single record type to be used in selecting records to be processed. Only records that are assigned this record type for SDE edit, will be passed for input to the FIND, WHERE and/or CHANGE conditions.

The *record_type* specification is identical to that supported by the SDE CLI command VIEW.

Default is the *default record type* definition.
It is recommended that a VIEW parameter is specified in order to avoid any ambiguity over record type selection. This is particularly true when executing FSU with CHANGE UPDATE.

`WHERE` *`where_clause`*
Specifies a *where_clause* condition to select only records that match the specified *where_clause* criteria.

FIND and WHERE are used to select records from the specified data set search chain. If CHANGE is also specified, then the CHANGE operations are executed against the selected records only. e.g.

```
FSU INPUT( DEV.TEST.DATAX3. )  USING( DEV.TEST.SDO(SDDATAX3) )
      WHERE ( JOBTITLE = 'MANAGER' OR SALARY > 38000 )
      CHANGE( ('John W Smith' c'JWS' (#20:#22)) OR ('J W Smith' c'JWS' (#20:#22)) )
```

The *where_clause* condition is a combination of parameters supported by the SDE CLI command WHERE. For Unstructured File Search (i.e. no USING parameter), *where_clause* may only reference field #1 or "Record". e.g.

```
FSU INPUT( DEV.USER01.JCL(*) )    WHERE( #1 >> '//'  AND  #1 << 'EXEC' )
```

Fields referenced by field name or field reference number within a *where_clause* must exist within the record type specified by the VIEW parameter (or default record type if VIEW is not specified). However, unlike FIND and CHANGE, WHERE may reference fields that do not exist within the subset of fields specified by the SELECT parameter.

WHERE is mandatory if FIND and CHANGE parameters are omitted.

Examples:

Use of the CLI FSU command may result in long command streams. Therefore, it is recommended that any FSU command should be entered as text in your HOME command centre (CMX) data set.

```
<sdata fsu  input ( XRVHC.**.PROCLIB(*) SYS1.PROCLIB(*) )    find( DSN710 )
```

Report any member records within the specified PROCLIB libraries that contain the string "DSN710".

```
<sdata fsu  input ( XRVHC.**.PROCLIB(*) SYS1.PROCLIB(*) )  change( DSN710 DSN810 ALL )
```

For member records within the specified PROCLIB libraries, report records that contain the string "DSN710" followed by the records' appearance after replacing all occurrences of "DSN710" to "DSN810". Members records are **not** updated.

```
<sdata fsu  INPUT ( SAR22.TEST.FX*.** )                                                \
            USING ( SAR22.FX100.COBOL.COPYBK.SDO )                                     \
            VIEW  ( FX_Part_02 )                                                       \
            SELECT( Part_ID, Serial_No, Batch_No, Part_Description )                   \
            WHERE ( Batch_No > 730   AND  (Fault_Type >> 'RTB'  OR  Quantity < 200) )  \
            FIND  ( c'Nut' PREFIX (Part_Description) )                                 \
            CHANGE( 'screw' 'bolt' WORD (Part_Description) )                           \
            NOUPDATE
```

A Structured File Search and Replace. Records from data sets and members of PDS(E) libraries whose DSNs match the specified fileid mask are filtered so that only records that are of the record type "FX_Part_02" and match the FIND and WHERE criteria are processed by the CHANGE operation. SELECT indicates a subset of fields eligible to be searched, updated, and displayed in the output report. Both the FIND and CHANGE arguments further restrict string location/update to text within the field "Part_Description" only.

HELP

Syntax:

```
>>-- Help --+-----------+--------><
            |           |
            +-- topic --+
```

Description:

Use the HELP command to open the Help Window and optionally link directly to help on a specific CLI command.

Where topic is not specified or not found, the relevant table of contents is displayed.

The Help window may also be opened via the Help item of the window's menu bar.

Parameters:

topic

Display help on a specific topic.
If topic is enclosed in single or double quotes, the string is treated as the fileid of an HTML data set to be browsed. This may be the fully qualified fileid of an HTML document or the name of a PDS member that exists in the defualt HELP library.

Examples:

```
HELP
```

Open the Help window contents page.

```
HELP CBLe
```

Open the Help window at the CBLe command page.

```
H "OEM.CBL.HTML(TEST)
```

Open a specific HTML document library member.

```
H "WINSIZEW"
```

Open the CBLi Help member name WINSIZEW.

HOME

Syntax:

```
>>-- HOme ------------------------------------------------------------------><
```

Description:

Edit the user's personal command centre (CMX) file. A new CBLe text edit session is opened if one is not already open.

IEBCOPYDIALOG

Syntax:

```
>>---- IEBCOPYDialog ------------------------------------------------------><
```

Description:

The IEBCOPYDIALOG command may be used to open the Execute IEBCOPY dialog window to copy members between PDS(E) libraries.

The dialog window will be opened with fields populated with parameters entered by the user during the last invocation of the window.

Parameters:

IEBCOPYDIALOG has no parameters.

ISPF

Syntax:

```
    >>--- ISPF --+----------------+--->< 
                 |                |
                 +- ispf_command -+
```

Description:

When running in an ISPF environment, the CBLi command **ISPF** either toggles between using TSO and ISPF to manage 3270 I/O or executes an ISPF command. When used to execute an ISPF command, screen management is always handled by ISPF regardless of the current 3270 screen manager.

Note that when ISPF is the screen manager, the menu item **Swap** is added to the CBLi Main Menu. Selecting Swap will execute **ISPF SWAP** to display an ISPF split screen.

It is recommended that, when running CBLi in an ISPF environment, ISPF should always be used as the 3270 screen manager to take advantage of ISPF screen split, etc. In order to do this without disrupting PFkey assignments, CBLi must run as an ISPF application with applid CBLI.

The CBLi Installation guide provides details and sample job streams to enable your systems programmer to establish this. When configured, there should never be any need to toggle back to TSO screen management. The supplied REXX macro, CBLII, may be used to run CBLi as an ISPF application with applid CBLI.

If CBLi is not defined as an ISPF application, then, when ISPF screen manager is used, CBLi function key definitions will be interpreted differently to those defined in CBLi. In this case, it is recommended that passing control to ISPF should only be carried out temporarily to perform ISPF explicit functions.

Toggling between ISPF and TSO screen management may also be achieved via the **Use TSO/ISPF** item of the System Menu.

Parameters:

ispf_command
: ISPF command to be issued.

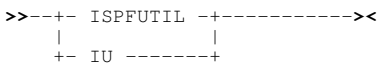
Examples:

`ISPF`
: Set TSO as the screen manager if current screen management is done by ISPF **or** set ISPF as the screen manager if current screen management is done by TSO.

`ISPF SPLIT`
: Set ISPF as the screen manager (if not already so) and execute ISPF SPLIT command so that the screen is split at the current cursor position.

ISPFUTIL

Syntax:



Description:

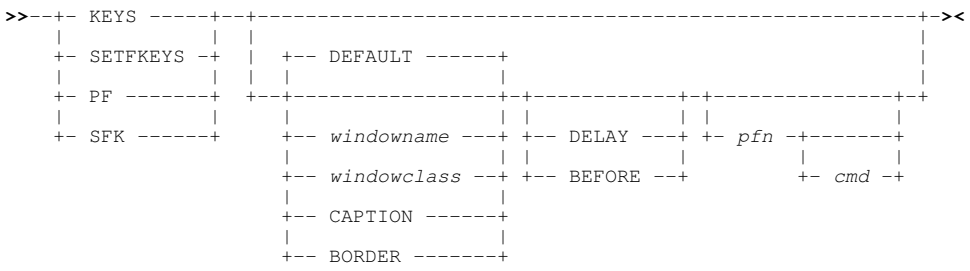
When running CBLI in ISPF, the CBLi command **ISPFUTIL** starts the ISPF Utility Selection Panel.

The ISPF panel is started as a full screen application which returns control to CBLi only after it is closed.

The ISPF Utility Selection Panel may also be started via the **Utilities** menu of the CBLi main window menu bar.

KEYS

Syntax:



Description:

Use the KEYS command to assign a command to a function key or display the Function Keys window.

Parameters:

`null`
: Opens the Function Keys Command Tables for the current window.

`DEFAULT`
: Selects the system default function key table.

`CAPTION`
: Selects the window caption function key table.

`BORDER`
: Selects the window border function key table.

`windowname`
: Selects the function key table of the window name specified.

`windowclass`
: Selects the function key table of the window class specified.

`pfn`
: The function key number 1-24.

`cmd`

The command text string to be assigned. If null then the function key becomes unassigned.

`DELAY`
Place the function key command on the command line when the key is pressed rather than execute it.

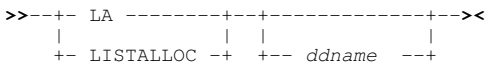
`BEFORE`
Execute the function key command before processing any user screen inputs.

Examples:

`KEYS EDTWEDIT 16 'macro delblank'`
Set PF16 to execute user edit macro DELBLANK for all windows of windowclass EDTWEDIT.

LA

Syntax:



Description:

Use the LA (List Allocated files) command to open an Allocated Datasets List window and optionally list all MVS DD names, VSE file labels or CMS FILEDEFs currently allocated to your job.

The Allocated Files window may also be opened via the List menu of the CBLi main window menu bar.

Note: Not yet implemented for CMS.

Parameters:

ddname
Select only the list entry for the specified MVS DD name, VSE file name or CMS FILEDEF. A partial name may be entered, in which case only those allocated files that start with the string entered will be listed.

Datasets List window.

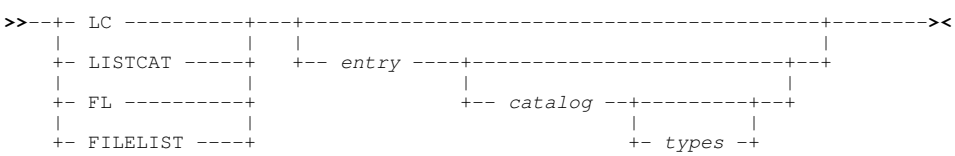
Examples:

`LA SYS`
List all allocated files beginning with 'SYS'.

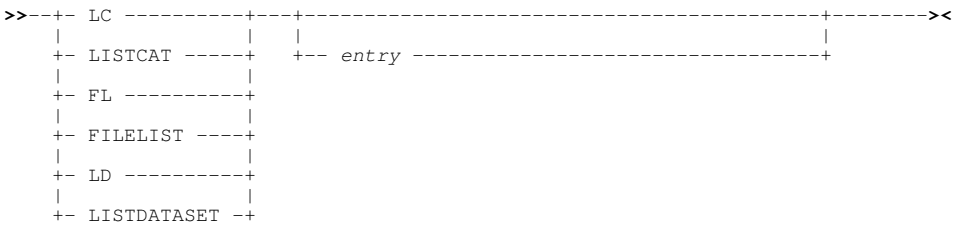
LC

Syntax:

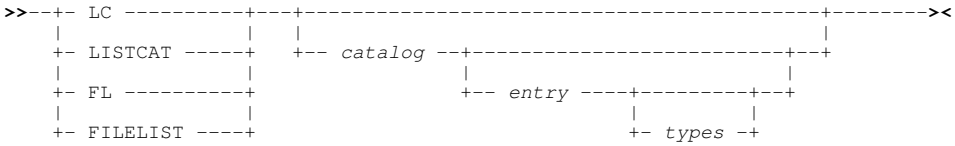
- **Open an MVS Cataloged Entries List Window.**



- **Open a CMS File List Window.**



- **Open a VSE Catalog List Window.**



Description:

For CMS, the LC command opens the File List window in place of the Catalog List or Dataset List window, and displays information about files residing on accessed mini-disks.

For MVS and VSE, the LC (List Catalog entries) command may be used to open a Catalog List window and optionally list basic information about entries in the catalog. This is a less detailed list than that generated by the LD command.

For VSE, the LC command is only supported where the CBL software product CBLVCAT is installed and active. The LC command uses CBLVCAT to read the specified VSAM catalog records and obtain information about the cataloged files.

The Catalog List window may also be opened via the List menu of the CBLi main window menu bar.

Parameters:

entry

Specifies the fileid mask which is placed in the Entry field of the MVS/VSE Catalog List window or the File field of the CMS File List window.

◊ For **MVS** systems, the fileid mask represents a DSN mask that supports the following wild cards:

`*` A single asterisk represents a DSN qualifier, or zero or more characters within a DSN qualifier.

`**` A double asterisk represents zero or more qualifiers within a DSN. Double asterisk must be preceded or followed by either a "." (dot/period) or a blank. It cannot precede or follow an alphanumeric character.

`%` A single percent sign represents exactly one character, other than "." (dot/period), within a DSN qualifier. Up to 8 percent signs can be specified in each qualifier.

If the last character of the fileid mask is "." (dot/period), then this marks the end of the low level DSN qualifier within the fileid mask. The trailing "." is stripped and no wildcard string is appended to the fileid mask. e.g.

```
DEV*.                 becomes:   DEV*
DEV.OEM.TRSPAN*.      becomes:   DEV.OEM.TRSPAN*
DEV.*.*SAMP%%.        becomes:   DEV.*.*SAMP%%
```

If the last character of the fileid mask is **not** "." (dot/period), then a default trailing wild card string is automatically appended to the fileid mask as follows:

1. If the fileid mask is a single qualifier or the last character of the fileid mask is "*" (asterisk), then a wildcard string of ".**" is appended. e.g.

```
DEV                   becomes:   DEV.**
DEV*                  becomes:   DEV*.**
DEV.OEM.TRSPAN*       becomes:   DEV.OEM.TRSPAN*.**
DEV.*.*SPA*           becomes:   DEV.*.*SPA*.**
```

2. Otherwise a wildcard string of "*.**" is appended. e.g.

```
DEV.OEM.TRSPAN        becomes:   DEV.OEM.TRSPAN*.**
DEV.*.*SPA%           becomes:   DEV.*.*SPA%*.**
SYS1.*.Z19            becomes:   SYS1.*.Z19*.**
```

Note that a warning message is displayed if the high level qualifier of the fileid mask is "*" (asterisk) or "**" (double asterisk). A fileid mask of this type would result in all catalogs being searched which would take some time to execute and would use a large amount of system resources.

◊ For **VSE** systems, the fileid mask is a valid CBLVCAT LISTCAT KEY parameter string. i.e. entries with file name **beginning** with the specified string or, if prefixed by "/" (slash), entries with file name **containing** the specified string. (See the CBLVCAT User Manual.)

If no fileid mask is specified, all entries will be selected.
Note that wild cards are not supported within the VSE fileid mask, however, "*" (asterisk) is tolerated if placed at the end of the fileid mask.

An "*" (asterisk) may also be specified in place of the fileid mask to imply that all entries are to be selected. This need only be specified if the *types* parameter is to be used.

For **CMS** systems, the fileid mask may consist of up to 3 qualifiers representing a filename filetype filemode combination where qualifiers are separated by one or more blanks or a "." (dot/period).

A single "*" (asterisk) wild card may be used to represent an entire qualifier or zero or more characters at a particular position within the qualifier. Wild card "*" may be specified more that once, anywhere within a qualifier.

Default CMS filemode qualifier is "A", default CMS filetype qualifier is "*".

catalog

Specifies the catalog in which to search for the requested entry.

For **MVS** systems, this is a catalog DSN. Specifying a catalog DSN is unneccessary if an alias exists for the fileid mask high level qualifier (HLQ) in the master catalog. In this case, the appropriate catalog DSN will automatically be inserted in this field. If the HLQ contains a wild card, then all matching aliases are interrogated, the required catalogs are searched and the last catalog searched placed in the Catalog> field.

An "*" (asterisk) may be specified to imply the default catalog name. This need only be specified if the *types* parameter is to be used.

For **VSE** systems, this is a disk label assigned to the VSAM catalog for which entries are to be listed.

Default for both MVS and VSE is the master catalog.

The *catalog* string is placed in the Catalog field of the Catalog List window.

types

Specifies the catalog entry types required. Default is all types. One or more of the following types may be specified with no intervening blanks:

A	non-VSAM (or VSAM SAM) data set.
B	MVS - Generation data group.
C	Cluster.
G	Alternate Index.
H	MVS - Generation data set.
R	VSAM PATH.
X	Alias.
U	User catalog connector entry.
L	MVS - Tape volume catalog library entry.
W	MVS - Tape volume catalog volume entry.

Default is to display entries of all types.

The *types* string is placed in the Types field of the Catalog List window.

See Also:

LD

Examples:

```
lc   CBL.%%C
```
List MVS cataloged entries matching the fileid mask "CBL.%%C*.**".

```
lc   CBL.SYS*.**   *    A
```
List MVS non-VSAM cataloged entries matching the fileid mask "CBL.SYS*.**".

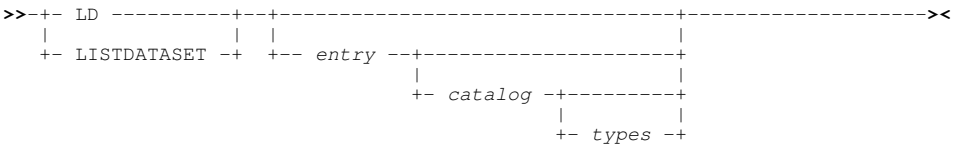
```
lc   IJSYSCT  *    U
```
List user catalogs in the VSE VSAM master catalog.

```
lc   VSESPUC  /CICS
```
List all files containing the string "CICS" in the VSE VSAM catalog "VSESP.USER.CATALOG".

```
fl   CBL*.EXEC
```
List CMS files that match the fileid mask "CBL* EXEC A".

LD

Syntax:



Description:

For CMS only, the LD and LC commands are synonyms for the FL command and so opens the File List window. Refer to documentation for LC (FL) for syntax and parameter specification.

The LD command is not supported on **VSE** systems.

For MVS, the LD (List Dataset details) command is used to open a Dataset List window and optionally list entries in the catalog together with the details of their geometry obtained either from the catalog or the VTOC. This is a more detailed list than that generated by the LC command.

Where *entry* is identified as being an HFS path (i.e. begins with "." or contains "/"), the HFS Path list window is opened instead.

The Dataset List window may also be opened via the List menu of the CBLi main window menu bar.

Parameters:

entry

Specifies the fileid mask used to identify required catalog entries.

The fileid mask represents a DSN mask that supports the following wild cards:

- `*` A single asterisk indicates that either a qualifier or one or more characters within a qualifier can occupy that position. An asterisk can precede or follow a set of characters.
- `**` A double asterisk indicates that zero or more qualifiers can occupy that position. A double asterisk cannot precede or follow any characters; it must be preceded or followed by either a dot or a blank.
- `%` A single percent sign indicates that exactly one character can occupy that position. (Up to 8 percent signs can be specified in each qualifier.)

Unless the **last** character of the fileid mask is a wild card "*" (asterisk) or a "." (dot/period), then a default trailing wild card string is appended to the fileid mask as follows:

1. If the fileid mask is a single qualifier or the last qualifier is length 8, a wildcard string of ".**" is appended. e.g.

```
DEV                  becomes:   DEV.**
DEV.OEM.TRSPAN00     becomes:   DEV.OEM.TRSPAN00.**
DEV.*.TRSPAN00       becomes:   DEV.*.TRSPAN00.**
```

2. A wildcard string of ".**" is appended. e.g.

```
DEV.OEM.CBL202       becomes:   DEV.OEM.CBL202*.**
SYS1.ZOS             becomes:   SYS1.ZOS*.**
```

The ammended *entry* string is placed in the Entry field of the Dataset List window.

catalog

Specifies the catalog in which to search for the requested entry.

This is a catalog DSN. Specifying a catalog DSN is unneccessary if an alias exists for the fileid mask high level qualifier (HLQ) in the master catalog. In this case, the appropriate catalog DSN will automatically be inserted in this field. If the HLQ contains a wild card, then all matching aliases are interrogated, and the required catalogs are searched.

An "*" (asterisk) may be specified to imply the default catalog name. This need only be specified if the *types* parameter is to be used. Default is the master catalog.

The *catalog* DSN searched is placed in the Catalog field of the Dataset List window.

types

Specify the catalog entry types required. Default is all types. One or more of the following types may be specified with no intervening blanks:

A	non-VSAM (or VSAM SAM) data set.
B	MVS - Generation data group.
C	Cluster.
G	Alternate Index.
H	MVS - Generation data set.
R	VSAM PATH.
X	Alias.
U	User catalog connector entry.
L	MVS - Tape volume catalog library entry.
W	MVS - Tape volume catalog volume entry.

The *types* parameter string is placed in the Catalog field of the Dataset List window.

See Also:

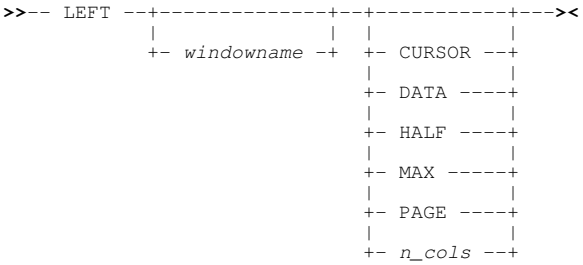
LC Command

Examples:

```
LD CBL.%%C
LD CBL.SYS*.**   USERCAT.CBLCAT  A
```

LEFT

Syntax:



Description:

Scroll the view of the data within the specified window left towards the first column of the displayable data.

The extent by which data is scrolled is determined by the CURSOR, DATA, HALF, PAGE, MAX or *n_cols* parameter which may be specified using any one of three methods determined in the following order of precedence:

1. The scrolling command verb, LEFT, and one of these scrolling parameters is explicitly specified on the command line.
2. The scrolling parameter is specified on the command line and a PFKey assigned to LEFT is actioned.
   Note that the contents of a command line are appended to the command stream assigned to a PFKey when that PFKey is actioned.
3. No scrolling parameter is specified, so the current value of the "Scroll>" field is used.
4. No scrolling parameter is specified and no "Scroll>" field is present, so a defualt of one column is used.

List windows may contain fields that have **KEY** attribute **YES** defined in the Field Descriptor Block. Fields with this attribute are always in view and may not be scrolled right or left. If the cursor is positioned in a column belonging to this type of field, then, for LEFT CURSOR and RIGHT CURSOR, the cursor is considered to be outside the display area. All columns of data that do not belong to a **KEY** field are scrollable using LEFT and RIGHT.

By default this command is assigned to function key **PF10**.

Parameters:

`windowname`
The window name of the window in which the display is to be scrolled. If not supplied then the window in which the command is issued (via a command line or function key) is assumed.

`CURSOR`
The scrollable column on which the cursor is positioned becomes the last scrollable column of the display.
If the cursor is positioned outside the display area, in a KEY field or on the last scrollable column within the display area, then LEFT PAGE is executed instead.

`DATA`
Scroll left so that the first scrollable column in the current display area becomes the last scrollable column of the display.

`HALF`
Scroll a number of columns so that the column situated half way along the width of the current display of scrollable columns, becomes the last scrollable column of the display.

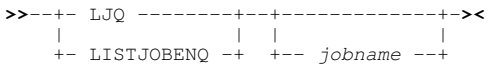
`MAX`
Scroll left to display the first scrollable column of data.

`PAGE`
Scroll left so that the scrollable column of data to the left of the first scrollable column in the current display, becomes the last scrollable column of the display.

`n_cols`
Scroll left a specified number of floating columns.
The scrollable column of data that is *n_cols* to the left of the first scrollable column becomes the new first scrollable column of the display.

LJQ

Syntax:



Description:

Use the LJQ (List MVS Job Enqueues) command to open a Job Enqueue List window containing outstanding MVS enqueues held by a given job.

The Job Enqueue List window may also be opened via the List menu of the CBLi main window menu bar.

Note: Not implemented for CMS or VSE.

Parameters:

`jobname`
The name of the job for which the ENQueues are to be listed.

This parameter is placed in the JobName field of the Job Enqueue List window.

See Also:

LQ Command

Examples:

`LJQ NBJTSO`
List Enqueues for job NBJTSO.

LL

Syntax:

```
>>--+- LL ----------+--+-------------+------------------------------------><
    |               |  |             |
    +- LISTLIBRARY -+  +-- library --+
    |               |
    +- LM ----------+
    |               |
    +- LISTMEMBERS -+
```

Description:

Use the LL (List Library) command to open a Library List window and optionally list the members of an MVS PDS/PDSE, VSE LIBR library or CMS minidisk.

The Library List window may also be opened via the List menu of the CBLi main window menu bar.

Note: Not implemented for CMS.

Parameters:

library
The name of the library for which the contents are to be listed.

◊ For **MVS** the library parameter is a PDS (or PDSE) dataset name and optionally one or more member name mask.

A member name mask supports the following wild cards:

`*` A single asterisk represents an entire member name or zero or more characters within a member name mask.

`%` A single percent sign represents exactly one character within a member name mask. Up to 8 percent signs can be specified in each member name mask.

If specified, the member name mask must immediately follow the PDS(E) DSN and be enclosed in "( )" (parentheses). Multiple member name masks, all specified within the single set of parentheses, must be separated by one or more blanks and/or a "," (comma). e.g.

```
LL  DEV.OEM.CBL202.CBLI.HELP.HTML(S*AN%  WIN*, *R)
```

◊ For **VSE** the library parameter can be:

1. A library name. In this case the statistics for the library are listed. e.g.

```
LL  CBLLIB
```

2. A library name and sublibrary name. In this case the sublibrary name may be a mask containing "*" (asterisk) wild cards as supported by VSE Librarian. The statistics for all sublibraries which fit the sublibrary name mask are listed. e.g.

```
LL  CBLLIB.TEST*
```

3. A library name, sublibrary name and member name and type. In this case the member name and type may be a mask containing "*" (asterisk) wild cards. The statistics for all members which fit the mask are listed. e.g.

```
LL  CBLLIB.TEST01.*.Z
```

This parameter is placed in the Library field of the Library List window.

Examples:

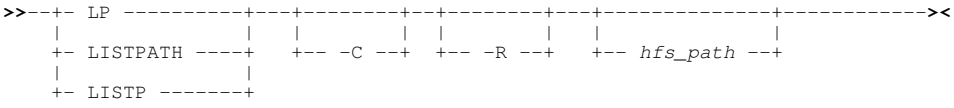
`LL CBL.JCL`
List all members of the CBL.JCL PDS.

`LL PRD2.CBL.*.*`
List all members of the PRD2.CBL LIBR sublibrary.

`LL PRD2.*`
List all LIBR sublibraries of PRD2.

LP

Syntax:



Description:

The LP (List Path entries) command may be used to open an HFS Path List window to list information about entries that match the specified HFS path.

If no parameters are specified, the list window will be opened with fields populated with parameters entered by the user for the last invocation of the HFS Path list window.

The HFS Path List window may also be opened via the LD command if the dataset specification begins with "." (dot/period) or contains "/" (slash), or via the List menu of the CBLi main window menu bar.

The LP command is not supported on CMS and VSE systems.

Parameters:

`-C`
: Specify -C or -c to bypass case sensitivity for the **name** portion of the specified HFS path. The name portion of the HFS path is the character string at the end of the path that follows the last "/" (slash) of the fileid, or is the entire path name if "/" is not specified.

`-R`
: Specify -R or -r to recursively list the contents of all sub-directories found within the HFS path specification.

`hfs_path`
: Specifies the HFS path which is to be placed in the HFS Path> field of the list window. This may be a path name relative to the current working directory.

  The following wild cards may only be specified within the name portion of the HFS path.

`*`	A single asterisk represents zero or more characters.
`%`	A single percent sign represents a single character.

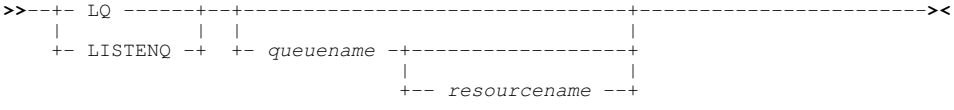
Examples:

`lp -r /u/johnd02/temp*`
: Lists the contents of the "/u/johnd02" directory where name begins with "temp" and, if a directory entry, list the contents of that directory and any of its sub-directories.

`listpath '200401*_%%% Audit Report.tgz'`
: List entries in the current working directory. The HFS path is quoted since the name mask contains a blank. Wildcards "*" and "%" are used to represent multiple (zero or more) and single characters respectively.

LQ

Syntax:



Description:

Use the LQ (List MVS Enqueues) command to open an Enqueue List window and optionally list outstanding MVS enqueues by major name and minor name (queue name and resource name).

The Enqueue List window may also be opened via the List menu of the CBLi main window menu bar.

Note: Not implemented for CMS or VSE.

Parameters:

queuename
: The major name (queue name) of the ENQ resource. This is a 1-8 character upper case name. For example, dataset allocations are ENQueued with resource name SYSDSN.

  This parameter is placed in the Queue Name field of the Enqueue List window.

resourcename
: This is a 1-256 character, case sensitive minor name (resource name). You need only enter the prefix of the resources you are interested in. All resources for the given queue with resource beginning with this value are listed.

  This parameter is placed in the Resource Name field of the Enqueue List window.

See also:

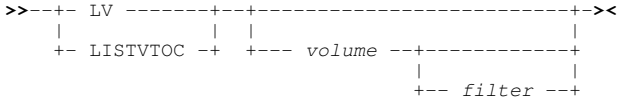
LJQ Command

Examples:

`LQ  SYSDSN  SYS1`
: List Enqueues for queue name SYSDSN for resource names starting with upper case 'SYS1'.

LV

Syntax:



Description:

Use the LV (List VTOC Files) command to open a VTOC File List window and optionally list, by data set name, entries contained in a DASD volume's Volume Table of Contents (VTOC).

The VTOC File List window may also be opened via the List menu of the CBLi main window menu bar.

Note: Not implemented for CMS.

Parameters:

volume
: The 1-6 character volume id containing the required VTOC.

  This parameter is placed in the Volume field of the VTOC File List window.

filter
: **Note:** The filter parameter is not yet implemented for VSE.

  Select only catalog entries that match the specified filter mask. The filter mask supports the following wild cards:

  - `*` A single asterisk indicates that either a qualifier or one or more characters within a qualifier can occupy that position. An asterisk can precede or follow a set of characters.
  - `**` A double asterisk indicates that zero or more qualifiers can occupy that position. A double asterisk cannot precede or follow any characters; it must be preceded or followed by either a dot or a blank.
  - `%` single percent sign indicates that exactly one character can occupy that position. (Up to 8 percent signs can be specified in each qualifier.)

  A filter that does not contain an * (asterisk) wild card will be appended with *.** to list those data sets whose names begin with the filter string.

  This parameter is placed in the Filter field of the VTOC File List window.

See also:

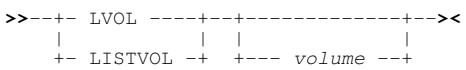
LX Command
: List VTOC entries by Extent.

Examples:

```
LV   CBLM02  CBL.SELC%%%.*
LV   CBLM02  SYS%.AX*.A*B*.**
```

LVOL

Syntax:



Description:

Use the LVOL (List Volumes) command to open a DASD Volumes List window and optionally display the attributes of selected DASD volumes defined to your system.

The DASD Volumes window may also be opened via the List menu of the CBLi main window menu bar.

Parameters:

volume
: Select only defined DASD volumes that match the specified volume id mask. The volume mask supports the following wild cards:

  * An asterisk indicates that one or more characters within the volume id can occupy that position. An asterisk can precede or follow a set of characters.
  % A single percent sign indicates that exactly one character can occupy that position. (Up to 6 percent signs can be specified.)

  A volume field that does not contain an * (asterisk) wild card will be appended with "*" to list all DASD volumes whose volume ids begin with the volume string.

  This parameter is placed in the Volume field of the DASD Volumes window.

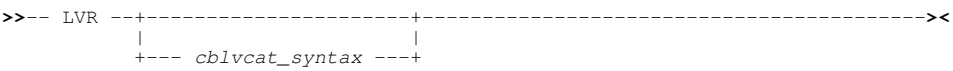
Examples:

`LVOL *`
: List all volumes.

`LVOL SYS%%A`
: List all volumes with 6 character volume name beginning with the characters 'SYS' and ending with 'A'.

LVR

Syntax:



Description:

LVR opens the CBLVCAT Raw window and optionally executes CBLVCAT control statements.

The CBLVCAT Raw window may also be opened via the "Raw" menu item of the Execute CBLVCAT window.

Parameters:

cblvcat_syntax
Valid CBLVCAT syntax to be executed when the CBLVCAT Raw window is opened.
This parameter is placed in the "VCAT command line>" field of the CBLVCAT Raw window.

See Also:

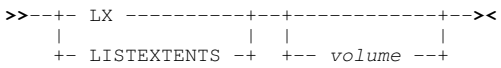
VCAT Command

Examples:

```
LVR   listvcat key=nbj type=c
LVR   listvtoc vol=cblmct
```

LX

Syntax:



Description:

Use the LX (List VTOC Extents) command to open a VTOC Extent List window and optionally list, by physical extent, the entries contained in a DASD volume's Volume Table of Contents (VTOC).

The VTOC Extent List contains an entry for each extent on the volume, including free extents and volume control areas such as the VTOC and the label area.

The VTOC Extent List window may also be opened via the List menu of the CBLi main window menu bar.

Note: Not implemented for CMS or VSE.

Parameters:

volume
The 1-6 character volume id containing the required VTOC.

This parameter is placed in the Volume field of the VTOC Extent List window.

See also:

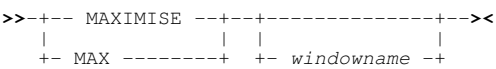
LV Command
List VTOC entries by Data Set Name.

Examples:

```
LX   CBLM01
```
List extents on volume id CBLM01.

MAXIMISE

Syntax:



Description:

This command maximises the specified window.

This command is equivalent to selecting the Maximise Button of the window to be maximised.

Parameters:

windowname
: The window name of the window to maximise. If not supplied then the window in which the command is issued (via a command line or function key) is assumed.

MDINEXT

Syntax:

```
>>-- MDINEXT ---><
```

Description:

For use in MDI applications only (e.g. CBLe and SELCOPY Interactive), this command sets the focus window to be the next MDI child window in the ring of MDI child windows.

The MDI application's ring of child windows is maintained in creation sequence and wraps round from the last created to the first created.

MDIPREV

Syntax:

```
>>-- MDIPREV ---><
```

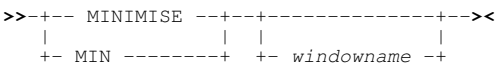
Description:

For use in MDI applications only (e.g. CBLe and SELCOPY Interactive), this command sets the focus window to be the previous MDI child window in the ring of MDI child windows.

The MDI application's ring of child windows is maintained in creation sequence and wraps round from the first created to the last created.

MINIMISE

Syntax:



Description:

This command minimises the specified window.

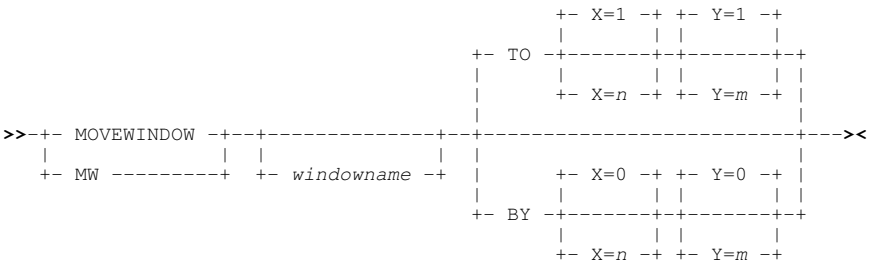
This command is equivalent to selecting the Minimise Button of the window to be minimised.

Parameters:

windowname
: The window name of the window to minimise. If not supplied then the window in which the command is issued (via a command line or function key) is assumed.

MOVEWINDOW

Syntax:



Description:

Use MOVEWINDOW to move the specified window to an absolute X,Y coordinate or to an X,Y coordinate relative to its current position. Coordinates 0,0 reference the top left corner of the desktop.

The current position of a window is defined to be the X,Y coordinate of the top left corner of the window.

Note that it is not possible to move a window completely outside the CBLi Desktop window. At least one column of the title bar must be viewable within the desktop. Therefore, limits governed by the currnet window position and the 3270 session screen size are imposed on the X,Y values supplied on the MOVEWINDOW command. Specifying X,Y values that fall outside these limits result in the limit value being used.

A window may also be moved by dragging then dropping the window using the titlebar. Similarly, the default function key table for the TitleBar level contains MOVEWINDOW commands allocated to PFkeys PF07, PF08, PF10 and PF11 to position the window up and down 1 line and left and right 1 column respectively.

Parameters:

`windowname`
: The window name of the window to be moved. If not supplied then the window in which the command is issued (via a command line or function key) is assumed.

`TO`
: Indicate that an absolute X,Y position follows.

`BY`
: Indicate that a relative X,Y position follows.

`X=`*n*
: Define the horizontal coordinate.

  If absolute, *n* must be a positive integer. The window will be moved horizontally so that the top left corner of the window is in column *n*.
  Default value for *n* is 1.

  If relative, *n* is an integer that may be prefixed by "+" (plus) or "-" (minus) to indicate a positive or negative horizontal displacement. The window will be moved horizontally *n* columns to the right (positive) or left (negative) from its current position.
  Default value for *n* is 0.

`Y=`*m*
: Define the vertical coordinate.

  If absolute, *m* must be a positive integer. The window will be moved vertically so that the top left corner of the window is in row n.
  Default value for *m* is 1.

  If relative, *m* is an integer that may be prefixed by "+" (plus) or "-" (minus) to indicate a positive or negative vertical displacement. The window will be moved vertically *m* rows downwards (positive) or upwards (negative) from its current position.
  Default value for *m* is 0.

Examples:

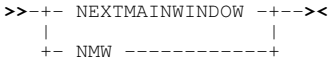
`MOVEWINDOW TO X=32`
: Window is moved to column 32, row 1 (Y=1 is default).

`MW TO X=32 Y=80`
: Window is moved to column 32, row 80. However, if row 80 is outside the 3270 display, then the window is moved so that the title bar is displayed in the last visible row.

```
MW BY X=2 Y=-5
```
Window is moved 2 columns to the right and 5 columns upwards.

NEXTMAINWINDOW

Syntax:



Description:

This command sets the focus window to the next main window i.e. one that is an immediate child of the desktop window. e.g. instances of CBLe, SELCOPY Interactive, CBLVCAT Interactive or any list windows/dialogs created directly from the desktop menu bar or command line.

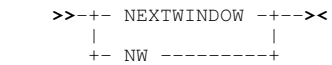
The ring is maintained in creation sequence and wraps round from the first created to the last created.

See Also:

PREVMAINWINDOW
NEXTWINDOW
PREVWINDOW
MDINEXT
MDIPREV

NEXTWINDOW

Syntax:



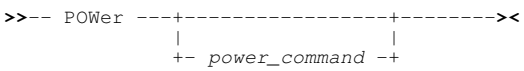
Description:

This command sets the focus window to the next window in the ring of all windows.

The ring is maintained in creation sequence and wraps round from the last created to the first created.

POWER

Syntax:



Description:

For VSE only, use the POWER command to open a POWER Command Output window and optionally execute a VSE POWER command.

The Power Command Output window may also be opened via the File menu of the CBLi main window menu bar.

If CBLIINI variables System.VSESMLogon=No (i.e. no Security Manager is active) and System.TrustedUser=No, then POWER commands are restricted to PDISPLAY operations only.

Parameters:

power_command
Any supported VSE POWER command.

This parameter is placed in the POWER Command field of the POWER Command Output window.

Note that some POWER commands are not supported for cross partition usage (e.g. PDISPLAY STATUS)

Examples:

```
POWER D LST
```
Display the POWER list queue.
```
POW  PRELEASE RDR,CBLTEST
```
Release entry CBLTEST from the POWER reader queue.

PREVMAINWINDOW

Syntax:

```
>>-+- PREVMAINWINDOW -+--><
   |                  |
   +- PMW ------------+
```

Description:

This command sets the focus window to the previous main window i.e. one that is an immediate child of the desktop window, e.g. instances of CBLe, SELCOPY Interactive, CBLVCAT Interactive or any list windows/dialogs created directly from the desktop menu bar or command line.

The ring is maintained in creation sequence and wraps round from the first created to the last created.

Because MDI applications such as the CBLe editor and SELCOPY Interactive have many child windows of their own (navigable with MDINext/Prev commands), this command is necessary to switch directly between CBLi applications.

By default, PF09 is set to **MDINext**.
By default, PF21 is set to **PrevMainWindow** (Shift-PF9)

See Also:

NEXTMAINWINDOW
NEXTWINDOW
PREVWINDOW
MDIPREV
MDIPREV

PREVWINDOW

Syntax:

```
>>-+- PREVWINDOW -+--><
   |              |
   +- PW ---------+
```

Description:

This command sets the focus window to the previous window in the ring of all windows.

The ring is maintained in creation sequence and wraps round from the first created to the last created.

QUIT

Syntax:

```
    >>-- QUIT ----------------><
```

Description:

Use QUIT to exit and close the current CBLi window.

If the current window is the CBLi main window, then a pop-up window prompts the user to confirm whether or not to quit the CBLi session.

RENAME

Syntax:

- **Rename an MVS data set, HFS file or PDS(E) member, or a CMS file on an accessed minidisk.**

```
>>-- REName ------------------------ fileid1 --------- fileid2 -------><
```

- **Rename a VSE sequential or VSAM file.**

```
>>-- REName ----+- volid ---+-- : -- fileid1 --------- fileid2 -------><
                |           |
                +- catdsn --+
```

Description:

Rename a single sequential DASD file, HFS file, PDS(E) member or VSAM file.

To succeed, the user must have sufficient read/write authority for the file and no exclusive ENQ or LOCK should already exist for the file.

In an MVS environment, when renaming a PDS member, parameters should be specified in one of the following formats:

1. fileid1 is the data set and member name of the member to be renamed and fileid2 is the new member name only.
2. fileid1 is the **quoted** data set and member name for the member to be renamed and fileid2 is the **quoted** data set and new member name.

This second method also applies to MVS sequential and VSAM data sets whereupon RENAME executes the following IDCAMS command:

```
   ALTER  fileid1  NEWNAME(fileid2)
```

Therefore, types of file that may be renamed and the supported format of fileid1/2 is governed by the IDCAMS ALTER command. (See "DFSMS Access Method Services for Catalogs".)

For HFS files, specification of a leading "." (dot/period) or "/" (slash) in the HFS path name is mandatory in order to distinguish it from an MVS data set name. Both fileid1 and fileid2 may be specified as an absolute or relative HFS path and may reference a file name, directory name, hard link or symbolic link.

For VSE, sequential files may only be renamed if the CBL software product **CBLVCAT** is licensed. CBLi uses CBLVCAT's MOD operation to perform the rename.

Parameters:

volid
: For VSE sequential disk files, this is the volume serial number of the DASD volume on which the sequential file resides.

catdsn
: For VSE VSAM files, this is the full fileid of the VSAM catalog to which the VSAM managed file belongs.

fileid1
: The current fileid in full of the file to be renamed. For HFS, this may be an absolute or relative path name.

fileid2
: The new fileid to be assigned to the file. For HFS, this may be an absolute or relative path name.

Examples:

```
rename  cbl.ssc.ctl(sstest)    sstest01
```
Rename an MVS PDS(E) member.

```
rename "cbl.jcl(cblins01)"    "cbl.jcl(install)"
```
Rename an MVS PDS(E) member.

```
ren     cbl.cbli.test.file     nbj.test.data
```
Rename an MVS sequentail or VSAM data set.

```
rename   SYSWK1:CBL.SELCOPY.NAM    CBL.SELCOPY.NAM.NEWNAME
```
Rename a VSE sequential disk file. (CBLVCAT must be licensed.)

```
rename   VSESP.USER.CATALOG:CBL.TEST.KSDS   CBL.TEST.KSDS.NEWNAME
```

Rename a VSE VSAM managed data set.

```
rename   ./nbj.tmp.gz    /scr/install.x1832.gzip
```

Rename an HFS file and move it to a new directory.

RESTORE

Syntax:

```
>>-+-- RESTORE --+--+---------------+--><
   |              |  |               |
   +- RES -------+  +- windowname -+
```

Description:

This command restores the specified window from a maximised or minimised state back to its original size and position.

This command is equivalent to selecting the Restore Button of the window to be minimised.

Parameters:

windowname
The window name of the window to maximise. If not supplied then the window in which the command is issued (via a command line or function key) is assumed.

RETRIEVE

Syntax:

```
    >>--- RETRIEVE ----+--  + (plus) ---+---><
                       |                 |
                       +--  - (minus) --+
```

Description:

For each window, CBLi stores a history of the commands issued. Use the RETRIEVE command to recall commands from the ring of executed commands.

The recalled command is placed on the focus window's command line.

By default this command is assigned to function key **PF12**.

Parameters:

+
Recall commands scrolling forwards through the ring.

-
Recall commands scrolling backwards through the ring.

RIGHT

Syntax:

```
>>-- RIGHT -+---------------+--+-----------+---><
            |               |  |           |
            +- windowname -+  +- CURSOR --+
                              |           |
                              +- DATA ----+
                              |           |
                              +- HALF ----+
                              |           |
                              +- MAX -----+
                              |           |
                              +- PAGE ----+
                              |           |
                              +- n_cols --+
```

Description:

Scroll the view of the data within the specified window right towards the last column of the displayable data.

The extent by which data is scrolled is determined by the CURSOR, DATA, HALF, PAGE, MAX or *n_cols* parameter which may be specified using any one of three methods determined in the following order of precedence:

1. The scrolling command verb, RIGHT, and one of these scrolling parameters is explicitly specified on the command line.
2. The scrolling parameter is specified on the command line and a PFKey assigned to RIGHT is actioned.
   Note that the contents of a command line are appended to the command stream assigned to a PFKey when that PFKey is actioned.
3. No scrolling parameter is specified, so the current value of the "Scroll>" field is used.
4. No scrolling parameter is specified and no "Scroll>" field is present, so a defualt of one column is used.

List windows may contain fields that have **KEY** attribute **YES** defined in the Field Descriptor Block. Fields with this attribute are always in view and may not be scrolled right or left. If the cursor is positioned in a column belonging to this type of field, then, for LEFT CURSOR and RIGHT CURSOR, the cursor is considered to be outside the display area. All columns of data that do not belong to a **KEY** field are scrollable using LEFT and RIGHT.

By default this command is assigned to function key **PF11**.

Parameters:

windowname
: The window name of the window in which the display is to be scrolled. If not supplied then the window in which the command is issued (via a command line or function key) is assumed.

CURSOR
: The scrollable column on which the cursor is positioned becomes the first scrollable column of the display.
If the cursor is positioned outside the display area, in a KEY field or on the first scrollable column within the display area, then RIGHT PAGE is executed instead.

DATA
: Scroll right so that the last scrollable column in the current display area becomes the first scrollable column of the display.

HALF
: Scroll a number of columns so that the column situated half way along the width of the current display of scrollable columns, becomes the first scrollable column of the display.

MAX
: Scroll right to display the last scrollable column of data.
Where the display area is able to contain all columns of data, the first scrollable column becomes the first scrollable column of the display. Otherwise, the last scrollable column of data becomes the last column of the scrolled display.

PAGE
: Scroll right so that the column of data to the right of the last scrollable column in the current display, becomes the first scrollable column of the display.

n_cols
: Scroll right a specified number of columns.
The column of data that is *n_cols* to the right of the first scrollable column becomes the new first scrollable column of the display.

SDATA

Syntax:

```
>>-- SData -- sde_command ----------------------------------------------------><
```

Description:

Direct a command to the CBLi Structured Data Environment (SDE).

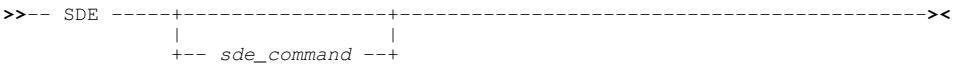
The SDATA command allows SDE commands to be issued from any CBLi window.
If the CBLe text editor main window has been stopped, SDATA will start the CBLe main window and open an edit view for the user's HOME CMX file before executing the SDATA command.
Also see the SDATA CBLe CLI command.

Parameters:

sde_command
Any SDE command.

SDE

Syntax:



Description:

Performs the same action as SDATA except that, if no arguments are specified the Structured Edit dialog window is opened.

Parameters:

sde_command
Any SDE command.
Default is EDITDIALOG.

SDSF

Syntax:

Description:

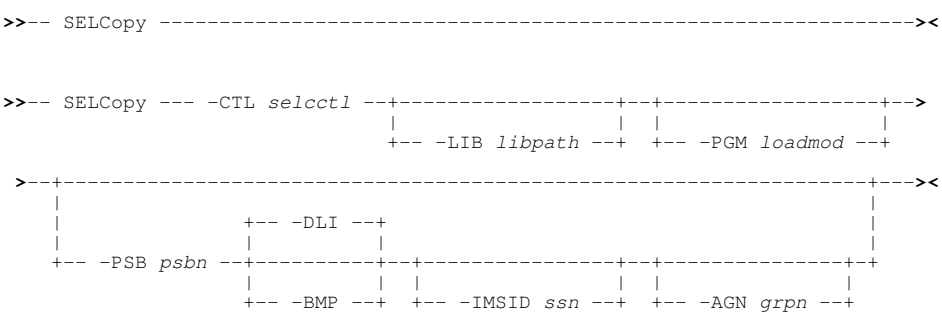
When running CBLI in TSO (with or without ISPF), the CBLi command **SDSF** starts the System Display and Search Facility.

SDSF is started as a full screen TSO application which returns control to CBLi only after it is closed. At this time, SDSF does not execute within a CBLi window.

SDSF may also be started via the **Utilities** menu of the CBLi main window menu bar.

SELCOPY

Syntax:



Description:

Use the SELCOPY command to open the SELCOPY Interactive window and load the specified file containing SELCOPY control statements.

The SELCOPY Interactive window may also be opened via the File menu of the CBLi main menu.

If no parameters are specified, then a pop-up window prompts the user enter a SELCOPY control statement source fileid.

SELCOPY Interactive opens a CBLe edit view for the **selcctl** SYSIN/SYSIPT source file input. If selcctl is supplied as an explicit fileid (DSN) which is not locked (with an exclusive ENQ) by another process, and the user has sufficient authority, the file is edited

read-write. In this case, updates can be made to the SYSIN source and execution repeated without leaving the SELCOPY Interactive application.

Where **selcctl** refers to a previously allocated filename (DD/FILEDEF/DLBL), which may be a concatenation of datasets, then it is opened read-only by the SELCOPY Interactive SYSIN/SYSIPT CBLe edit view. A token of 8 or fewer characters with no embedded dots is automatically treated an allocated filename.

Read-only access to SELCOPY control cards held in CA-LIBRARIAN members is made available on MVS systems via CBLi's ALLOC, which supports the SUBSYS(LAM) parameter.

See Executing SELCOPY for full information on the features of the SELCOPY Interactive application, including point-and-shoot options provided through the PF4 key (SdbPopup).

MVS JCL decks

SELCOPY Interactive handling of MVS JCL decks can be acheived using the JCLCMX pre-processor tool. JCLCMX is a REXX macro that must be be run from within the CBLe file editor.

Simply edit the JCL deck using CBLe, then key in JCLCMX from the edit command line. The tool will generate a CBLi ALLOC command corresponding to each DD statement, and a CALL command corresponding to each EXEC statement. Where EXEC PGM=SELCOPY is encountered, the appropriate SELCOPY Interactive invocation command is generated.

The commands generated by JCLCMX are not immediately executed, but presented to the user in separate, editable CMX files, one for each job step, ready for individual point-and-shoot execution using the PF4 key (CMDTEXT) in the standard CBLi fashion.

Parameters:

`-CTL` *`selcctl`*
: The full fileid or an already defined DD/FILEDEF/DLBL of the file containing the SELCOPY control statements.

`-LIB` *`libpath`*
: For **MVS** SELCOPY jobs only, a list of load libraries to be included before the current environment's search library chain. This is equivalent to supplying a JCL STEPLIB statement in a batch job and so may be used to control which SELCOPY module is executed and also any routines executed via the SELCOPY CALL statement.

  Libpath may be one of the following:

  - ◊ A DDname which has been pre-allocated to one or more load libraries.
  - ◊ One or more load library DSNs separated by '`,`' (commas), '`;`' (semi-colons) or ' ' (blanks).
    Note that if blanks are used, quotes must also be used to delimit the list of DSNs, not the individual DSNs.

`-PGM` *`loadmod`*
: Use an alternative load MODULE or PHASE name in place of the default name, SELCOPY.

`-PSB` *`psbn`*
: For **MVS IMS** SELCOPY jobs only, the Program Specification Block name to be used to access DL1 data.

`-DLI`
`-BMP`
: For **MVS IMS** SELCOPY jobs only, use either the DLI region or BMP region.
  Default is -DLI.

`-IMSID` *`ssn`*
: For **MVS IMS** SELCOPY jobs only, the sub-system name of the IMS Region to which to connect.

`-AGN` *`grpn`*
: For **MVS IMS** SELCOPY jobs only, the IMS Application Group name.

Examples:

```
S   -CTL CBL.SSC.CTL(DIRD01)
```
: Start the SELCOPY Interactive window and load control statements from the DSN CBL.SSC.CTL(DIRD01).

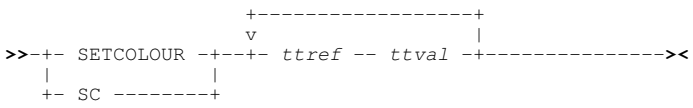
```
SELCOPY  -CTL SYSIN
```
: Start SELCOPY Interactive using control statements in the currently allocated filename SYSIN.

```
SELCOPY  -CTL SYS3.CBL.SELCOPY.CTL001   -LIB  "DEV.CBL.LOAD   DEV.TEST.RTN001.LOAD"
```
: Start SELCOPY Interactive using control statements in data set SYS3.CBL.SELCOPY.CTL001. Search load libraries DEV.CBL.LOAD then DEV.TEST.RTN001.LOAD ahead of the search chain when locating the SELCOPY executable module and any modules called using the SELCOPY CALL operation.

```
<alloc  dd(INCTL)  dsn('SYS3.NBJ.EQU001'  'SYS3.TEST.SELCOPY.CTL(SQ10249)')  shr
<selcopy  -ctl INCTL
```
: In this example, the CBLe ALLOCATE command is first used to allocate a concatenation of two DSNs to DDname, INCTL. These commands should be entered in a CBLe edited CMX file and executed using CMDTEXT (PF4).

SETCOLOUR

Syntax:



Description:

Use SETCOLOUR to remap the appearence of a colour and its associated highlighting.

CBLi maintains a translate table that defines how a colour/highlight style combination is to be displayed. Each colour/highlight style combination may be remapped so that it is displayed as a different colour/highlight style.

A colour/highlight style combination is represented as a pair of descriptor characters, the first of which is the initial of the colour, and the second the initial of a highlight style. All valid combinations are as follow:

		2nd Char			
		B	**D**	**R**	**U**
1st Char	**B**	Blue Blink	Blue Default	Blue REVVideo	Blue Underline
	G	Green Blink	Green Default	Green REVVideo	Green Underline
	P	Pink Blink	Pink Default	Pink REVVideo	Pink Underline
	R	Red Blink	Red Default	Red REVVideo	Red Underline
	T	Turquoise Blink	Turquoise Default	Turquoise REVVideo	Turquoise Underline
	W	White Blink	White Default	White REVVideo	White Underline
	Y	Yellow Blink	Yellow Default	Yellow REVVideo	Yellow Underline

These descriptor pairs reference cells in the translate table as well as describing the values within a cell. The default translate table is such that each cell referenced by a colour/highlight combination contains that colour/highlight combination. i.e.

		2nd Char			
		B	**D**	**R**	**U**
1st Char	**B**	BB	BD	BR	BU
	G	GB	GD	GR	GU
	P	PB	PD	PR	PU
	R	RB	RD	RR	RU
	T	TB	TD	TR	TU
	W	WB	WD	WR	WU
	Y	YB	YD	YR	YU

A number of **ttref** and **ttval** pairs may be specified, each defining a single update to the translate table.

Parameters:

ttref
: A colour/highlight style pair referencing a cell in the translate table.

ttval
: A colour/highlight style pair to be inserted into the translate table cell referenced by *ttref*. Where CBLi uses the ttref colour/highlight style combination, the ttval colour/highlight style is displayed instead.

Examples:

```
SETCOLOUR   BD BR
```
: Blue Default will be displayed as Blue REVVideo.

```
SC    RR YB    PD TU
```
: Red REVVideo will be displayed as Yellow Blink and Pink Default will be displayed as Turquoise Underline.

SETFOCUS

Syntax:

```
>>-+- SETFOCUS -+---+--------------+--->< 
   |            |   |              |
   +- SF -------+   +- windowname -+
```

Description:

Use the SETFOCUS command to change the focus window.

Parameters:

windowname
: The name of the window to receive the focus. If not supplied then the window in which the command is issued (via a command line or function key) is assumed.

SHOWPOPUPMENU

Syntax:

```
    >>-- SHOWPOPUPMENU ---+--------------+---->< 
                          |              |
                          +-- winname --+
```

Description:

The SHOWPOPUPMENU command displays the options popup menu for the current storage display window.

Storage display windows include SELCOPY Interactive Work Area and POS windows, CBLe Hex display windows and the CBLNAME window.

By default, the SHOWPOPUPMENU command is assigned to PF5 in storage display windows. The options popup menu may also be opened via the system menu button of the storage display window.

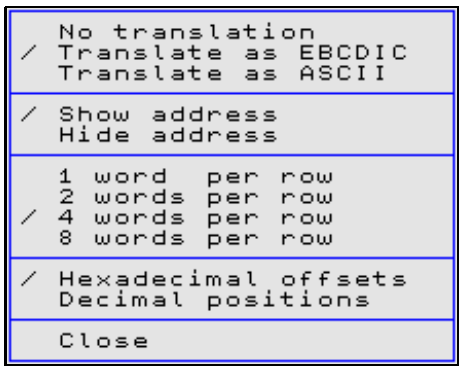


Figure 80. Storage Window Popup.

The mark "/" against items in the menu identifies the current status of the storage display window.

`No translation`
`Translate as EBCDIC`
`Translate as ASCII`
: Defines the interpretation of the hexadecimal data in the character field. (i.e. ASCII or EBCDIC.) If No translation is selected, then the character field is suppressed.

`Show address`
`Hide address`
: Defines whether the field containing the address in storage of each row of data is displayed or suppressed.

`1/2/4/8 words per row`
: Defines the number of words (length 4 bytes) are displayed in each row of data.

`Hexadecimal offsets`
`Decimal Positions`
: Defines whether the numeric field, displaying the displacement of each row of data relative to the first byte of data in the storage window, is presented as a hexadecimal offset or as a decimal position.

(e.g. row displayed as hexadecimal offset X'0000f0' is equivalent to decimal position 241.)

`Close`
Closes the storage display window.

Parameters:

`winname`
The name of the storage window for which the popup menu will apply. If not supplied then the name of the window in which the command is issued (via a command line or a function key) is assumed.

SHOWWATTR

Syntax:

```
>>--+- SHOWWATTR -+----------><
    |             |
    +- SWA -------+
```

Description:

Use the SHOWWATTR command to open the **Window Attributes** window to display the attributes of all open windows.

The Window Attributes window is essentially a List window and has the same charactersitics as List windows. For example select, sort and filter to display new views of the data are supported.

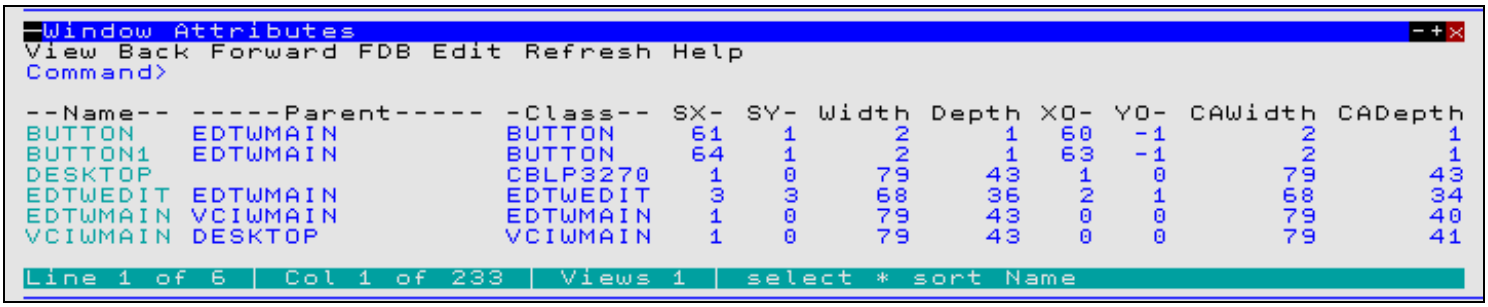


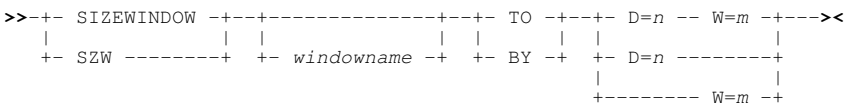
Figure 81. Window Attributes Window.

Columns Displayed

Name	Type	Description
Name	Char	Window name
Parent	Char	Window parent name
Class	Char	Window class
SX	Int	Screen x coordinate
SY	Int	Screen y coordinate
Width	Int	Window width
Depth	Int	Window depth
XO	Int	X offset within parent
YO	Int	Y offset within parent
CAWidth	Int	Client area width
CADepth	Int	Client area depth
CAXO	Int	Client area x offset
CAYO	Int	Client area y offset
CursorX	Int	Cursor x coordinate
CursorY	Int	Cursor y coordinate
Title	Char	Window title

SIZEWINDOW

Syntax:



Description:

Use SIZEWINDOW to resize the specified window to an absolute depth and/or width or to a depth and/or width relative to the window's current size.

The window depth and window width are the number of rows and columns respectively that are displayed in the window's displayable area.

Note that the window's displayable area includes items such as the title bar and command line, but do not include the window's horizontal and vertical borders which occupy an additional 2 rows and 4 columns respectively. e.g. To determine the number of rows/columns of text that would be displayed on resizing a CBLe edit view, deduct 2 from the depth value (title bar, command line) and, if SCALE is set on, deduct an extra 1 for the scale line. If PREFIX is set on, deduct 6 columns from the width value for the prefix area.

The current position of the window is unchanged following a SIZEWINDOW command.

A window may also be resized by dragging the border of the window.

Parameters:

windowname
: The window name of the window to be resized. If not supplied then the window in which the command is issued (via a command line or function key) is assumed.

TO
: Indicate that an absolute depth and/or width follows.

BY
: Indicate that a relative depth and/or width follows.

D=*n*
: Define the window depth change.

  If absolute, *n* must be a positive integer. The number of rows displayed is equal to n and the bottom border of the window is raised or lowered accordingly.

  If relative, *n* is an integer that may be prefixed by "+" (plus) or "-" (minus) to indicate a positive or negative adjustment to the number of rows displayed. The number of rows displayed is increased or decreased by *n* rows and the bottom border of the window is raised or lowered accordingly.

  There is no default value for *n*. If omitted, the depth is unchanged.

W=*m*
: Define the window width change.

  If absolute, *m* must be a positive integer. The number of columns displayed is equal to m and the right border of the window is adjusted accordingly.

  If relative, *m* is an integer that may be prefixed by "+" (plus) or "-" (minus) to indicate a positive or negative adjustment to the number of columns displayed. The number of columns displayed is increased or decreased by *m* columns and the right border of the window is adjusted accordingly.

  There is no default value for *m*. If omitted, the width is unchanged.

Examples:

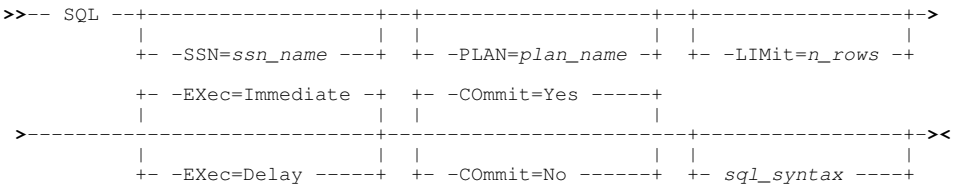
```
SIZEWINDOW  TO D=21
```
: Window is resized to display 21 rows.

```
SZW TO D=14 W=33
```
: Window is resized to display 14 rows and 33 columns.

```
SZW BY D=8 Y=-4
```
: Window is resized to display an additional 8 rows and 4 columns less.

SQL

Syntax:



Description:

Use the SQL command to open the Dynamic SQL window.

The Dynamic SQL window may also be opened via the File menu of the CBLi main window menu bar.

The Dynamic SQL window connects the user to the DB2 subsystem using the DB2 subsystem name and plan specified in the **CBLNAME** load module.

Note: Not implemented for CMS or VSE.

Parameters:

`-SSN=`*`ssn_name`*
: The DB2 sub-system to be the target of the CONNECT.
The DB2 Subsystem>" field of the Dynamic SQL window.
Default is that defined by the CBLiINI option, DB2.SSN, otherwise the sub-system name specified in the DB2SubSys field of the CBLNAME load module is used.

`-PLAN=`*`plan_name`*
: The SELCOPY DB2 plan name which has been bound to the DB2 sub-system.
This parameter is placed in the "Plan>" field of the Dynamic SQL window.
Default is that defined by the CBLiINI option, DB2.Plan, otherwise the plan name specified in the DB2Plan field of the CBLNAME load module is used.

`-LIMIT=`*`n_rows`*
: Limit the number of rows to be displayed in the Dynamic SQL window following a SELECT transaction. Once the limit threshold has been reached, a pop-up message window is displayed and no further attempt is made to retrieve selected rows of data.
The *n_rows* value is placed in the "Select Limit>" field of the Dynamic SQL window.
The default limit is that defined by the CBLiINI option, DB2.SelectLimit, otherwise no limit is implied.

`-EXEC=IMMEDIATE|DELAY`
: Determine whether the SQL command is to be executed immediately when the Dynamic SQL window is opened or simply placed on the SQL Statement command line.
The default is IMMEDIATE.

`-COMMIT=YES|NO`
: Determine whether a COMMIT is to be automatically issued following every transaction (AutoCommit). If COMMIT=NO, then the user should issue COMMIT manually to commit any changes made to the data. A commit is executed automatically when the Dynamic SQL window is closed, regardless of the AutoCommit field setting.
The commit value is reflected in the "AutoCommit>" field of the Dynamic SQL window.
The default is YES.

`sql_syntax`
: Valid SQL syntax to be executed when the Dynamic SQL widow is opened.
The *sql_syntax* string is placed in the first SQL Statement line field of the Dynamic SQL window.

Examples:

`SQL -SSN=DB8G  select * from dsn810.emp`
: Display all entries in the table DSN810.EMP in sub-systen DB8G.

SVC

Syntax:

```
>>--- SVC --------------------><
```

Description:

For MVS only, use the SVC command to display the CBLVCAT SVC window containing the current status of the CBLVCAT Interactive (VCI) SVC required for LISTVCAT operations.

The CBLVCAT SVC window may also be opened via the System menu of the CBLi main window menu bar.

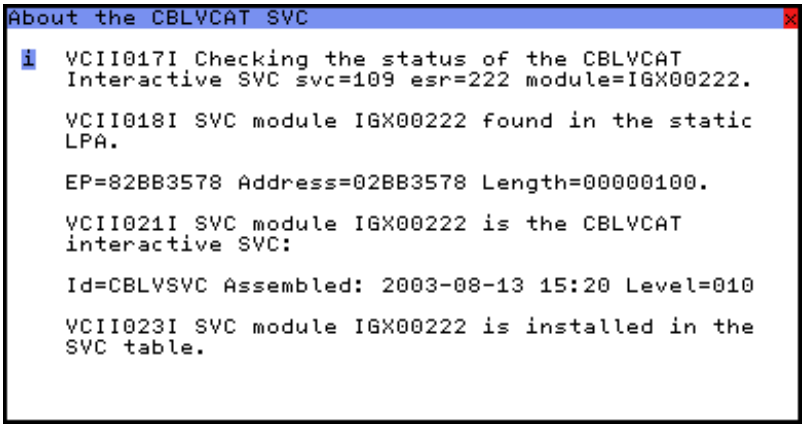


Figure 82. CBLVCAT SVC Window.

SYSAPF

Syntax:

```
>>-- SYSAPF ----------------><
```

Description:

Use the SYSAPF command to open the APF List window.

The APF List window may also be opened via the System menu of the CBLi main window menu bar.

Note: Not valid for CMS and VSE.

SYSCOMMAND

Syntax:

```
>>--+- SYSCOMMAND -+--- command ---><
    |              |
    +- SYS ---------+
    |              |
    +- SYSTEM ------+
    |              |
    +- TSO ---------+
    |              |
    +- CMS ---------+
    |              |
    +- DOS ---------+
```

Description:

Pass the command directly to the local CMS or TSO environment for execution.

When a command is issued in a CBLi window, the following occurs:

1. If the command is recognised as a CBLi command it is executed by CBLi.
2. If the command is not recognised as a CBLi command, it is passed to the CMS or TSO environment.

Parameters:

command
: Valid CMS or TSO command or expression.

Example:

`cms query dasd`
: Pass the command "query dasd" to CMS.

SYSI

Syntax:

```
>>--+- SYSI -----+------------><
                 |            |
                 +- SYSINFO -+
```

Description:

Use the SYSI command to open the Operating System window.

The System Information window may also be opened via the System menu of the CBLi main window menu bar.

SYSLL

Syntax:

```
>>-- SYSLL ----------------><
```

Description:

Use the SYSLL command to open the Link List window.

The Link List window may also be opened via the System menu of the CBLi main window menu bar.

Note: Not valid for CMS and VSE.

SYSLPA

Syntax:

```
>>-- SYSLPA ---------------><
```

Description:

Use the SYSLPA command to open the LPA Modules window.

The LPA Modules window may also be opened via the System menu of the CBLi main window menu bar.

Note: Not valid for CMS and VSE.

SYSMENU

Syntax:

```
>>-- SYSMENU --+---------------+--->< 
               |               |
               +- windowname -+
```

Description:

Use the SYSMENU command to open the System Menu for the specified window.

The System Menu may also be opened via the System Menu button of a window.

Parameters:

windowname
: The window name of the window for which the system menu is to be opened. If not supplied then the window in which the command is issued (via a command line or function key) is assumed.

SYSPGM

Syntax:

```
>>-- SYSPGM ---------------><
```

Description:

Use the SYSPGM command to open the Loaded Programs window.

The Loaded Programs window may also be opened via the System menu item of the CBLi main window menu bar.

SYSSTOR

Syntax:

```
>>-- SYSSTOR ---------------><
```

Description:

Use the SYSSTOR command to open the Storage Statistics window.

The Storage Statistics window may also be opened via the System menu of the CBLi main window menu bar.

SYSTASK

Syntax:

```
>>-- SYSTASK --------------><
```

Description:

Use the SYSTASK command to open the Task List window.

The Task List window may also be opened via the System menu of the CBLi main window menu bar.

Note: Not implemented for CMS and VSE.

TASK

Syntax:

```
>>-- TASK --- pgmname ---+------------------+---+----------------+---><
                         |                  |   |                |
                         +-- -LIB libpath --+   +-- -PARM parm --+
```

Description:

For MVS only, use the TASK command to start a program as a sub-task of CBLi.

TASK commands are generated by the CBLe REXX macro, JCLCMX, to run non-SELCOPY job steps of an MVS batch job in the environment in which CBLi is being executed (i.e. TSO or VTAM).

Parameters:

pgmname
: The name of the program load module to be executed.

-LIB *libpath*
: A list of load libraries to be included before the current environment's search library chain. This is equivalent to supplying a JCL STEPLIB statement in a batch job and so may be used to define the location of the program module to be executed plus any modules called by the program.

  Libpath may be one of the following:

  - ◊ A DDname which has been pre-allocated to one or more load libraries.
  - ◊ One or more load library DSNs separated by '*,*' (commas), '*;*' (semi-colons) or ' ' (blanks).
    Note that if blanks are used, quotes must also be used to delimit the list of DSNs, not the individual DSNs.

-PARM *parm*
: Parameter string to be passed to the program. This is equivalent to supplying the PARM parameter on an JCL EXEC statement in a batch job.

  If the parm string contains blanks, then quotes must be used to delimit the parm string.

Examples:

```
TASK  TRSMAIN   PARM='UNPACK'
```
: Start program TRSMAIN to unpack a tersed data set.
  Relevant INFILE and OUTFILE ddnames must be allocated before executing this command. (See the CBLe command ALLOCATE.)

```
TASK  MYPROG  -LIB "SYS7.DEV.MYLIB.LOAD  SYS4.USER.ROUTINES.X01323"
```
: Include the specified libraries at the start of the load library search chain then execute program MYPROG.

TOP

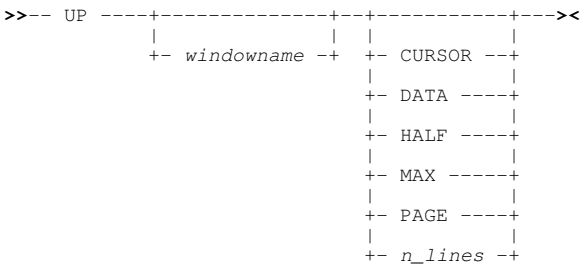
Syntax:

Description:

Use the TOP command to display the top lines of the data in the focus window. The first line of the data becomes the first line of the display area.

UP

Syntax:



Description:

Scroll the view of the data within the specified window upwards towards the top of the displayable data.

The extent by which data is scrolled is determined by the CURSOR, DATA, HALF, PAGE, MAX or *n_lines* parameter which may be specified using any one of three methods determined in the following order of precedence:

1. The scrolling command verb, UP, and one of these scrolling parameters is explicitly specified on the command line.
2. The scrolling parameter is specified on the command line and a PFKey assigned to UP is actioned.
   Note that the contents of a command line are appended to the command stream assigned to a PFKey when that PFKey is actioned.
3. No scrolling parameter is specified, so the current value of the "Scroll>" field is used.
4. No scrolling parameter is specified and no "Scroll>" field is present, so a defualt of one line is used.

By default this command is assigned to function key **PF7**.

Parameters:

windowname
: The window name of the window in which the display is to be scrolled. If not supplied then the window in which the command is issued (via a command line or function key) is assumed.

CURSOR
: The line on which the cursor is positioned becomes the last line of the scrolled display.
If the cursor is positioned outside the display area or on the first line within the display area, then UP PAGE is executed instead.

DATA
: Scroll up to display one page (display window depth) less one line of data.
The first line in the current display area becomes the last line of the scrolled display.

HALF
: Scroll up half a page of data.
The line that is half way down the page of data in the current display area becomes the last line of the scrolled display.

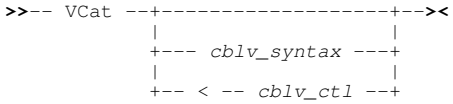
MAX
: Scroll up to display the first page of data.
The first displayable line becomes the first line of the scrolled display.

PAGE
: Scroll up to display the next whole page of data.
The line before the first line of the current display area becomes the last line of the scrolled display.

n_lines
: Scroll up a specified number of lines.
The line that is *n_lines* lines above the current line becomes the first line of the scrolled display.

VCAT

Syntax:



Description:

Use the VCAT command to open the Execute CBLVCAT window and optionally execute CBLVCAT control statements.

The Execute CBLVCAT window may also be opened via the File menu of the CBLi main window menu bar.

Parameters:

cblv_syntax
: Valid CBLVCAT syntax to be executed when the Execute CBLVCAT window is opened. Refer to the CBLVCAT User Manual for command reference.

  Note: The separator character, which by default is "!" (exclamation mark), may be used to enter multiple CBLVCAT operations on a single control statement.

  Currently, CBLVCAT control statements are restricted to a maximum length of 71 characters.

  This parameter is placed in the first VCAT command line field of the Execute CBLVCAT window.

`<`
: CBLVCAT input control statements will be passed from the data set referenced by cblv_ctl, to the Execute CBLVCAT window for CBLVCAT execution.

`cblv_ctl`
: The data set name of an MVS sequential data set or PDS and member, VSE LIBR lib.sublib and member or CMS fileid containing CBLVCAT control statements.

  This parameter, together with <, is placed in the first VCAT command line field of the Execute CBLVCAT window.

Examples:

`V q cblname`
: Generate CBLVCAT Query CBLNAME report.

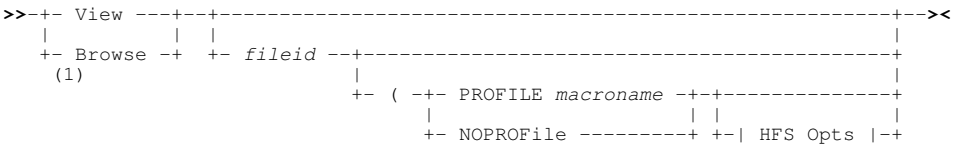
`V option pw 133 !report vcat dsn type component alloc3 !lc key=cbl type=c`
: Generate CBLVCAT catalog report.

`V < CBL.VVC.CTL(REPVTOC)`
: Generate CBLVCAT report by executing control statements located in PDS member REPVTOC of CBL.VVC.CTL.

`V < PRD2.CBLVCAT.REPVTOC.CTL`
: Generate CBLVCAT report by executing control statements located in VSE LIBR member REPVTOC of sublibrary PRD2.CBLVCAT.

VIEW

Syntax:



Notes:

1. BROWSE is a synonym of VIEW for VSE and CMS systems only.

Description:

Use the VIEW command to open a CBLe text edit window view to edit a file in read only mode.

If the CBLe text editor main window has been stopped, VIEW will start the CBLe main window before opening the read only edit view of the requested file.

A file edited in read only mode has **(Read Only)** in the title bar of the document window view.

Read-write edit may be invoked using the CBLi EDIT command.

Parameters:

`fileid`
: The fileid of the file to be viewed.

  For MVS, *fileid* may be the DSN of a sequential or VSAM data set, the member name (with or without the library DSN) of a PDS/PDSE member or an HFS file name. If member name is specified without a library DSN, the DSN of the library member in the current edit view is used.

  For VSE, *fileid* is the member name of a LIBR library in lib.sublib.mn.mt format.

  For CMS, *fileid* is a CMS fileid.

  Note that if **fileid** is not specified, then EDIT is executed for the fileid specified by the CBLIINI variable System.CmdTEXT. If System.CmdTEXT has not been set, then no action is taken.

`PROFILE` *`macroname`*
: The REXX edit macro to be executed as the profile when editing the file.

This macro overrides use of the default profile macro defined by the CBLiINI (Edit) option DEFPROFILE=*macroname* and/or the CBLe command SET DEFPROFILE (default PROFILE.)

The macro name must exist in a library within the CBLe macro path.

The PROFILE option only affects the profile for the file currently being added to the ring, and does not affect the profile to be used when additional files are added to the edit ring later in your edit session.

NOPROFILE
Suppresses use of a profile macro when editing the file.

The NOPROFILE option only affects the file currently being added to the ring, and does not affect the profile to be used when additional files are added to the ring later in your edit session.

HFS Opts
See CBLe CLI command EDIT for supported HFS parameters.

VOLSTATS

Syntax:

```
>>--+- VOLSTATS -+--+------------+-><
    |             |  |            |
    +- VOL ------+  +-- volser --+
```

Description:

Use the VOLSTATS command to open a DASD Volume Statistics window and optionally display statistics for a specific DASD volume.

The DASD Volume Statistics window may also be opened via the prefix command **V** on any list window entry containing a volser field.

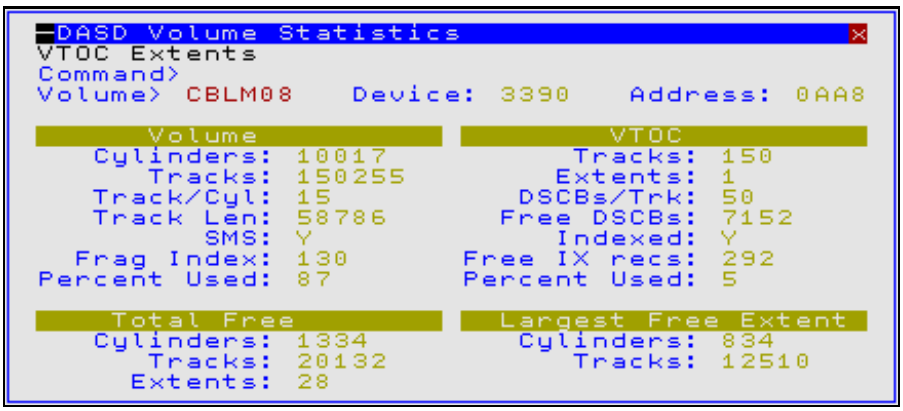


Figure 83. DASD Volume Statistics Window.

Parameters:

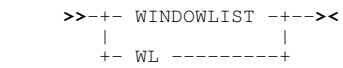
volser
The volume serial number of the volume for which statistics are to be displayed.
This parameter is placed in the Volume field of the DASD Volume Statistics window.

Examples:

```
VOLSTATS  Z2RES1
```

WINDOWLIST

Syntax:



Description:

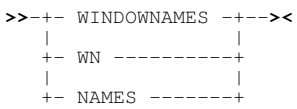
Use this command to open the Window List window which lists all open windows.

The Window List window may also be opened via the **Window** item of the CBLi main window menu bar.

By moving the cursor to the line containing a window and pressing enter the user can close the window list and make the selected window the focus window.

WINDOWNAMES

Syntax:



Description:

This command toggles the display of window names in the title bar. When the window names are displayed, they are shown left justified in the title bar followed by a colon.

USS commands

The CBLe text editor and SDE (Structured Data Environment) Edit support HFS files and the concept of a current working directory. This enables users to reference HFS files by an HFS path relative to the current working directory.

To fully support this functionality and assist with HFS file management for data edit, certain UNIX System Services commands are supported as part of the CBLi CLI command set. These commands are prefixed by "USS".

USS prefixed CBLi CLI commands may only affect HFS path names and so specification of "/" (slash) within the path name or a leading "." (dot/period) in order to identify the fileid as an HFS path name is unnecessary.

Command	Description
USS CHDIR	Change the current working directory.
USS GETCWD	Display the current working directory.
USS LINK	Define a new HFS hard link to a file.
USS MKDIR	Define a new HFS directory.
USS REALPATH	Display the absolute HFS file path for a given relative HFS path.
USS RENAME	Rename an existing HFS file, hard link, symbolic link or directory.
USS RMDIR	Remove an existing, empty HFS directory.
USS STAT	Display status of a specified HFS path.
USS UNLINK	Remove an existing HFS file, hard link or symbolic link.

USS CHDIR

Syntax:

```
>>-- USS ----- CHDIR ------ hfs_path ---------------------------------><
```

Description:

Change the current working directory.

USS CHDIR is equivalent to the USS shell command CD but without the additional options.

Parameters:

hfs_path
: An HFS path name representing a directory.

USS GETCWD

Syntax:

```
>>-- USS --+-- GETCwd --+-------------------------------------------><
           |            |
           +--- PWD ----+
```

Description:

Display the current working directory. If executed from a CBLe or SDE edit view, output is displayed on the message line. Otherwise, output is displayed in a popup message window.

USS GETCWD is equivalent to the USS shell command PWD.

Parameters:

USS GETCWD has no parameters.

USS LINK

Syntax:

```
>>-- USS ----- LINK ----- old_hfs_path ---- new_hfs_path ------><
```

Description:

Create a hard link to an existing HFS file.

USS LINK is equivalent to the USS shell command LINK.

Parameters:

old_hfs_path
: An HFS path name representing a file. This may be the HFS file name, another hard link or a symbolic link. If *old_hfs_path* is a symbolic link, a hard link is created to the file that results from resolving the symbolic link.

new_hfs_path
: The HFS path name of the new hard link to the file data.

USS MKDIR

Syntax:

```
>>-- USS ----- MKDIR ------ hfs_path ---------------------------------><
```

Description:

Create a new HFS directory.

USS MKDIR is equivalent to the USS shell command MKDIR but without the additional options.

Parameters:

hfs_path
: An HFS path name representing a directory.

USS REALPATH

Syntax:

```
>>-- USS ----- REALPATH --- hfs_path ---------------------------------><
```

Description:

Display the absolute HFS path name for the specified (relative) HFS path name.

Parameters:

hfs_path
Any HFS path name.

USS RENAME

Syntax:

```
>>-- USS ----- RENAME --- old_hfs_path ---- new_hfs_path ------><
```

Description:

Rename an existing HFS file, hard link, symbolic link or directory name.

USS RENAME is equivalent to the CBLi RENAME CLI command except that rename arguments are always treated as HFS path names.

Parameters:

old_hfs_path
An HFS path name representing a file, hard link, symbolic link or directory name.

new_hfs_path
The new HFS path name.

USS RMDIR

Syntax:

```
>>-- USS ----- RMDIR ------ hfs_path ---------------------------------><
```

Description:

Remove an existing, empty HFS directory.

USS RMDIR is equivalent to the USS shell command RMDIR except that, currently, no option exists to remove intermediate directory components.

Parameters:

hfs_path
An HFS path name representing a directory.

USS STAT

Syntax:

```
>>-- USS ----- STAT ------- hfs_path ---------------------------------><
```

Description:

Display the status of the specified HFS path name.

This includes the absolute HFS path name, type, file size, blocksize, format and permissions (octal).

Parameters:

hfs_path
An existing HFS path name.

USS UNLINK

Syntax:

```
>>-- USS ----- UNLINK ----- hfs_path ---------------------------------><
```

Description:

Unlink the specified HFS path name.

USS UNLINK is equivalent to the USS shell command UNLINK.

Parameters:

hfs_path
An existing HFS path name representing a file name, hard link or symbolic link.
Alternate path names to the same data are unaffected.

CBLIVTAM commands

Commands may be passed to the CBLIVTAM application via the system operator console.

In MVS, this is achieved using the MODIFY (F) JES command and the appropriate job name as follows:

```
MODIFY  CBLIVTAM,command
```

In VSE, this is achieved via an operator communications (OC) exit using the attention routine (AR) command MSG for the partition running CBLIVTAM. e.g.

```
MSG     F8,DATA=command
```

Command	Description
MESSAGE	Send a text message to one or more users logged on to CBLIVTAM.
QUERY	Query the CBLIVTAM environment.
STOP	Stop CBLIVTAM.

MESSAGE

Syntax:

```
>>--+- MESsage -+--+- user -+--- text --------><
    |           |  |        |
    +- MSG -----+  +-- * ---+
```

Description:

Send a text message to a single user or all users logged on to CBLIVTAM. The message text will appear in a pop-up window at the user's terminal when a 3270 AID key is hit. (e.g. Enter, any PFKey, etc.)

Parameters:

user
: The user id of the user to whom the message is to be sent.
If "*" (asterisk) is specified, then the message is sent to all users who are logged on to CBLIVTAM.

text
: The message text.

Examples:

```
F CBLIVTAM,MSG JOHNB Please browse CBL.CMX(SKEL).

MSG F8,DATA=MESSAGE * Please logoff. CBLIVTAM will be stopped at 10:00.
```

QUERY

Syntax:

```
              +- Users -+
              |         |
>>-- Query --+---------+--------><
```

Description:

Query information about the CBLIVTAM environment. CBLi currently supports only one parameter (i.e. USERS). users logged on to CBLIVTAM.

Parameters:

USERS
: Display information about users who are logged on to CBLIVTAM.

Examples:

```
MSG F8,DATA=Q
 VTM021I Applid CBLIVTAM has 2 active sessions
         User     Terminal Session
         JGE1     D20001   30000002
         NBJ1     D20101   12000003
```

STOP

Syntax:

```
    >>-- STOP ----------------------><
```

Description:

Stop the CBLIVTAM job.

Examples:

```
F CBLIVTAM,STOP

MSG F8,DATA=STOP
```

CBLi Dump Files

CBLi dump files are supported for CBLi running in MVS environments only.

In order to assist CBL software engineers to correct any defects encountered in the CBLi system and programs, CBLi dump files exist to store formatted storage dumps.

By default, the **System.AbendTrap** variable is set **ON** in the CBLi SYSTEM CBLiINI file. Therefore, in the event of a program check or program abend occuring which ultimately halts the CBL interactive environment, a message is sent to the user and control is passed to CBLi's abend handler routines.
If AbendTrap is set **OFF**, any abnormal program end is handled by the operating system.

Each time the CBLi abend handler is called, a new dump file is allocated with DSN prefix qualifier(s) determined by the **System.DumpDSNPrefix** variable in the SYSTEM or USER CBLiINI file. DumpDSNPrefix=%USER%.CBLIDUMP is default.
The remainder of the dump file DSN is of the form **.Dyyyyddd.Thhmmssx**, representing the current date and time.

Dump files are allocated as physical sequential data sets with DCB=(RECFM=VB,LRECL=256,BLKSIZE=0) and SPACE=(CYL,(9,5)).

If an abend is encountered in CBLi, then please contact the CBL support desk via telephone on +44 1656 650692 or via email at support@cbl.com. A request to email the CBLi dump file to CBL file is likely.

CBLIINI control file

On execution of CBLi, certain environment defaults may be overridden by variables and their associated values specified in INI control files, referred to throughout this documentation as CBLIINI files.

CBLIINI files are EBCDIC, plain text files of the format discussed below.

SYSTEM CBLIINI

During installation of CBLi, the installer is prompted to tailor and catalog a SYSTEM CBLIINI file that contains the systemwide default options for CBLi. On startup, CBLi obtains the fileid of the SYSTEM CBLIINI file from the CBLNAME PHASE/LOAD MODULE.

USER CBLIINI

In addition to the SYSTEM CBLIINI file, a USER CBLIINI file may also exist allowing users to tailor their own environment.

The SYSTEM CBLIINI file is read first then the USER CBLIINI file. If values for a variable are specified in both the USER and SYSTEM CBLIINI files, then the value in the USER CBLIINI takes precedence. The exception to this is the variable VSESMLogon and any variables set under the RACF heading.

The fileid of the USER CBLIINI file is identified on each supported operating system as follows:

MVS

1. If the SYSTEM CBLIINI file is a PDS/PDSE member, then the USER CBLIINI file is the member in this same PDS/PDSE with member name equal to the user's logon id.
   e.g.

```
SYSTEM CBLIINI file:   CBL.CBLI11B.INI(CBLI)
USER   CBLIINI file:   CBL.CBLI11B.INI(uid)
```

2. If the SYSTEM CBLIINI file is a sequential file, then the USER CBLINI file is the sequential file with high level qualifier equal to the user's login id and lower level qualifiers the same as the SYSTEM CBLIINI file.
   e.g.

```
SYSTEM CBLIINI file:   CBL.CBLI11B.INI
USER   CBLIINI file:   uid.CBLI11B.INI
```

CMS

The USER CBLIINI is first file found on an accessed minidisk that has file name equal to the user's logon id and file type CBLIINI.
e.g.

```
USER   CBLIINI file:   uid CBLIINI A
```

VSE

The USER CBLIINI is the LIBR member, cataloged in the same sublibrary as SYSTEM CBLIINI, with a member name equal to the user's logon id and member type CBLIINI.
e.g.

```
SYSTEM CBLIINI file:   OEM.CBLI.SYSTEM.CBLIINI
USER   CBLIINI file:   OEM.CBLI.uid.CBLIINI
```

CBLIINI Variable Format

CBLIINI file variables are stored internally with two level names of the form:

```
nnnnn.mmmmm
```

The first level is indicated by a line in the CBLIINI file containing:

```
[nnnnn]  or  (nnnnn)
```

The second level and value of the CBLIINI variable is set by a line containing:

```
mmmm=value
```

Variables inherit the first level name of the previous **(nnnnn)** line in the file.

The value may be enclosed in "'" or '"' (single or double quotes) but are only mandatory if the value itself contains a single or double quote or an (*) asterisk. The outer encompassing quotes are not stored as part of the variable's value.
A **null** value is also acceptable.

Comments may be included by prefixing the comment text with an (*) asterisk (either the whole line, or after the setting of a variable).

The case of the variable names is ignored. The case of the variable values may or may not be significant depending on the use of the variable.

There is no check for duplication of variable setting. The last value set in the CBLIINI file takes precedence. Sections, each starting with a (nnnnn) first level variable name, may be in any order. Furthermore, sections may be split (i.e. (nnnnn) lines may be repeated).
e.g.

```
(System)
  ....
(Edit)
  ...
(System)
  ....
```

Assign CBLIINI Variables

CBliINI variables may be inserted using either of the following methods:

- Execute the CBLe CLI command, SET INIVAR. The variable is set with immediate effect and gets automatically inserted in the USER CBLiINI file when the CBLi session is ended normally.
- Manually edit the changes in the relevant (USER or SYSTEM) CBLiINI file and save. The alterations are not immediate and will only take effect when CBLi is re-started.

The following CBLiINI variables are updated automatically when the CBLi session ends normally, if the associated CBLe SET command has been issued during the session.

CBLiINI Variable	CBLe SET Option
SDE.AuxDSNPrefix	AUXDSNPREFIX
SDE.COBOLCompiler	COMPILER
SDE.LoadWarning	LOADWARNING
SDE.MaxCOBOLRC	MAXCOBOLRC
SDE.MaxPL1RC	MAXPL1RC
SDE.MaxStor	MAXSTOR
SDE.PL1Compiler	COMPILER

Display CBLIINI Fileids and Variables

The CBLe function QUERY INIFILE displays the active SYSTEM and USER CBLIINI fileids.

The CBLe function QUERY INIVAR displays all SYSTEM and USER CBLIINI variables.

For CBLe REXX macros, the active CBLIINI files and the variables set within may be displayed using the EXTRACT function with arguments **INIFILE** and **INIVAR** respectively.
e.g. To display the active CBLIINI file variables and their values, execute the following from the CBLe command line:

```
imm 'extract inivar';  do i=1 to inivar.0;  'msg' inivar.i;  end
```

Alternatively, use the **QX** CBLe REXX macro found in the CBL distributed macro library:

```
qx inivar
```

CBLi variables may also be referenced as text edit environment variables from within CBLe text edit window views, by enclosing the variable name in "%" (percent symbols). Environment variables are substituted with their equivalent values when used in CBLe CLI commands executed via the following:

- The CBLe command line.
- A CBLe CMX file. (e.g. the HOME CMX file)
- A CBLe REXX macro.

When referenced as a text edit environment variable, the CBLiINI variable should include the type of CBLiINI file (SYSTEM or USER) as the first qualifier. e.g `%USER.Edit.LoadWarning%`, `%USER.System.PF12%`, `%SYSTEM.System.CmdText%`

CBLIINI Standard Variables

Any variable name may be assigned within the SYSTEN and USER CBLiINI files, however, certain standard CBLiINI variables are significant to the operation of the CBLi program.

The standard CBLiINI variables are as follow:

(System)

AbendTrap=ON|OFF (SYSTEM CBLiINI Only)

For diagnostic purposes only, should a Program Check or Abend occur whilst running CBLi, AbendTrap determines whether control is passed to the CBLi abend handler (AbendTrap=ON) or back to the operating system (AbendTrap=OFF).
Default value is ON.

CmdLine=TOP|BOTtom

Open all windows that have a command line, with the command line at the TOP or BOTTOM of the window.
Default value is TOP.

CmdText=*filename*

The default command (CMX) file to display on startup of CBLi. If this variable exists then the CBLe editor window is automatically opened at the start of CBLi to edit this file.

If the file is a PDS/PDSE with member name SKEL, then a member within the same PDS/PDSE with name equal to the user's logon id, will be edited. If this member does not exist, then the contents of the SKEL member are copied in (though not automatically saved).

This file can be a VSE LIBR member, CMS or MVS sequential file or an MVS PDS/PDSE member.
There is no default.

MVS System symbols and the special variable **&USER** or **%USER%** may be included in the fileid. **&USER** and **%USER%** denote the user's login userid. e.g

```
CmdText=SYS4.OEM.CBL.&USER.CMX
```

CommandDelimiter=*char*

The command delimiter character used to separate multiple commands on any single, CBLi command line. This character also applies to CBLe edit views unless overridden by the SET LINEND command.
Default is ';' (semi-colon - X'5E') for MVS, otherwise '!' (exclamation mark - X'5A'). e.g.

```
CommandDelimiter=#
```

DumpDSNPrefix=*prefix*

For **MVS only**, the dataset name prefix (maximum length 26) to be used by CBLI when allocating a default dump data set. If prefix exceeds 26 characters, then truncation occurs.

Qualifiers of the form **.Dyyyyddd.Thhmmssx**, representing the current data and time, are appended to the dump data set name prefix qualifiers.

Default value is **%USER%.CBLIDUMP**.

InitialSize=MAX

Open all windows that can be maximised, in the maximised state.

ListFileAction=Browse|Edit|NONE

Set the default action on hitting <Enter> on an entry in a List window.

If the entry is an editable object (CMS fileid, VSE LIBR member name, MVS DSN or PDS(E) member name) then ListFileAction=Browse will cause the object to be edited read/only whereas ListFileAction=Edit will cause the object to be edited read/write.

If ListFileAction=NONE, then no action is taken when <Enter> is hit on any entry of a List window.

Default value is Edit.

ListMaxKB=*n_kbytes*

Set a limit for in-storage lists in KiloBytes. If not supplied (or not a valid number) then there is no limit enforced. Note that in-storage lists are used for loading CBLe edit REXX macros, therefore, if this limit is set too small some macros may fail to load.
The limit applies to each list.

PF*nn*=*cmd*

Where nn can be 01-24 (PF1 - PF9 also supported). Set the default system pf keys which apply to any CBLi window type. The following are the defaults set by the program:

PF1	top
PF2	bottom
PF3	close
PF4	cmdtext
PF5	nop
PF6	nop
PF7	up cursor
PF8	down cursor
PF9	NextMainWindow
PF10	left cursor
PF11	right cursor
PF12	retrieve -
PF13	ShowPopupMenu
PF14	nop
PF15	nop
PF16	cmdtext edit
PF17	nop
PF18	nop
PF19	nop
PF20	nop
PF21	PrevMainWindow
PF22	nop
PF23	nop
PF24	retrieve +

ScrollBars=YES|NO

Controls whether the window system displays scroll bars in scrollable windows.
Default value is NO.

TrustedUser=YES|NO (SYSTEM CBLiINI Only)

Controls whether the trusted user mechanism is to be activated in order to apply a basic level of security on systems without security management software. (Usually VSE systems without BSM/ESM active).
Default value is NO.

Only userids referenced by a **Trust-*userid*=*password*** entry will be eligible to logon to CBLi. For VSE systems with no security manager software, trusted users have unrestricted access to VSE resources including display of non-password protected POWER queue entries.

Trust-*userid*=*password* (SYSTEM CBLiINI Only)

Specifies a single *userid* and *password* for trusted user logon. A separate Trust-*userid*=*password* entry must be used for each trusted user.
TrustedUser=YES must be specified to activate the trusted user mechanism.

UserINIFile=*user.cbliini.file* (SYSTEM CBLiINI Only)

For MVS environments, System.UserINIFile may only be specified in the System CBLiINI file to define the full DSN of the User CBLiINI file. This option will override CBLi's default method of identifying the User CBLiINI file.

MVS System symbols and the special variable **&USER** or **%USER%** may be included in the fileid. **&USER** and **%USER%** denote the user's login userid. e.g

```
UserINIFile=&SYSNAME..DEV.&USER.CBLI.INI
```

VSESMLogon=YES|NO (SYSTEM CBLiINI Only)

For **VSE Only**, activate|deactivate VSE Security Manager logon (BSM or ESM). If activated, authorities imposed by the security managed are applied to users logged on to CBLi.
Default value is YES.

(SELCOPY)

InitialPos=*row,col*

Initial position of the SELCOPY Interactive MDI parent window on the screen (row number and column number within the 3270 terminal display.) InitialPos=1,1 is the top left corner of the display.
The default position of the SELCOPY parent window is based on the dimensions of the 3270 terminal. If the 3270 terminal width is 80 or less, the SELCOPY Interactive MDI parent window is opened in a maiximised state.

InitialSize=*rows,cols*

Initial number of rows and columns in the SELCOPY Interactive MDI parent window.
The default size of the SELCOPY parent window is based on the dimensions of the 3270 terminal. If the 3270 terminal width is 80 or less, the SELCOPY Interactive MDI parent window is opened in a maiximised state.

LoopBreakIn=*n_times*

The Loop break-in counter for SELCOPY Interactive.

When the break-in threshold has been reached, a pop-up message window is opened and control is passed back to the user to continue debug investigation. This means that there is no need to forcibly end the CBLi session in order to restart the SELCOPY debug process that is infinitely looping.
The default *n_times* value is 1000000.

ProgramName=*name*

The name of the SELCOPY load module to be loaded to execute SELCOPY interactively.
Default value is SELCOPY.

(DLI)

ACBLIB=*pdsname*

For **MVS only**, the name of the IMS/DL1 ACBLIB to be used when executing SELCOPY Interactive jobs that access IMS/DL1 databases.

DBDLIB=*pdsname*

For **MVS only**, the name of the IMS/DL1 DBDLIB to be used when executing SELCOPY Interactive jobs that access IMS/DL1 databases.

PSBLIB=*pdsname*

For **MVS only**, the name of the IMS/DL1 PSBLIB to be used when executing SELCOPY Interactive jobs that access IMS/DL1 databases.

RESLIB=*pdsname*

For **MVS only**, the name of the IMS/DL1 RESLIB to be used when executing SELCOPY Interactive jobs that access IMS/DL1 databases.

(DB2) **MVS Only**

Exec=Immediate|Delay

For **MVS only**, the default action for the -EXEC parameter of the CBLi SQL command.

PLAN=*plan*

For **MVS only**, the name used to bind the application plan (supplied with the SELCOPY product) to the required DB2 subsystems when SELCOPY was installed (e.g. CBLPLAN0.) This plan is used by the DB2 Dynamic SQL window.

SelectLimit=*n_rows*

For **MVS only**, the default limit for number of rows returned by an SQL SELECT operation.

SSN=*ssname*

For **MVS only**, the name of the default DB2 subsystem to which CBLi will connect when a DB2 Dynamic SQL window is opened.

(CBLVCAT)

DefaultCommand=(<) (CBLi VCAT CLI command input)

Specifies the CBLVCAT Interactive input parameters to be used when the CBLVCAT Interactive window is opened with no parameters.

The syntax is the same as that specified on a CBLi CLI VCAT command. i.e. any valid CBLVCAT syntax or input via a control file e.g. "< cbl.ssc.ctl(report1)".

If the input parameters are prefixed by "<" (less than), the command is actioned immediately when the window is opened. Otherwise, the command is simply placed at the VCAT Command prompt for edit.

The default action, when no parameters are specified and no CBLVCAT.DEFAULTCOMMAND is set, is to place the following command string at the VCAT Command prompt:

```
REPORT VCAT DSN TYPE VOL2 !LISTCAT TYPE=U REF=your.master.catalog
```

This will generate a report that lists all user catalogs in the master catalog.

ProgramName=*name*

The name of the CBLVCAT load module to be loaded to execute CBLVCAT interactively.
Default value is CBLV.

SVC=*nnn*

For **MVS Only**, the CBLVCAT SVC number used to open an MVS ICF catalog when CBLi is not running authorised. During CBLi installation, the installer is prompted to Link Edit this SVC and update this CBLIINI variable.
Default value is 109 which is the MVS extended SVC router SVC. See ESR=nnn below.

ESR=*nnn*

For **MVS Only**, the CBLVCAT extended SVC routing code number. Required if the SVC is 109.
Default value is 222.

(ISPF) **MVS Only**

InitialState=ON|OFF

For TSO ISPF environments only, defines whether 3270 I/O is performed by ISPF (ON) or TSO (OFF). The CBLi CLI ISPF command may subsequently be used to toggle between the two environments.
Default value is ON.

(ISPFEdit) **MVS Only**

PF*nn*=*cmd*

Where nn can be 01-24 (PF1 - PF9 also supported). Set the default CBLe editor PFkeys for INTERFACE=ISPF mode operation. These apply to any CBLe edit window.
The following are the defaults set by the program:

PF1	sos lineadd
PF2	duplicate
PF3	end
PF4	cmdtext
PF5	rfind
PF6	rchange
PF7	up
PF8	down
PF9	MDINext
PF10	left
PF11	right
PF12	retrieve -
PF13	sos linedel
PF14	spltjoin
PF15	mark box

PF16	mark line
PF17	ECommand copy block
PF18	ECommand move block
PF19	ECommand delete block
PF20	overlaybox
PF21	PrevMainWindow
PF22	undo
PF23	redo
PF24	ECommand reset block

(Edit)

DefProfile=*macroname*

Define the name of the macro to be used as the CBLe text edit deafult profile macro. This macro is executed every time a new file is loaded into the editor.

This may also be set using the CBLe CLI command SET DEFROFILE.

The name of the default profile may be temporarily overridden using the EDIT command options NOPROF and PROFILE.

The default profile name is PROFILE.

InitialSize=*rows,cols*

Initial number of rows and columns in the CBLe edit main window.
The default size of the CBLe parent window is based on the dimensions of the 3270 terminal. If the 3270 terminal width is 80 or less, the CBLe MDI parent window is opened in a maiximised state.

InitialPos=*row,col*

Initial position of the edit main window on the screen (row number and column number within the 3270 terminal display.) InitialPos=1,1 is the top left corner of the display.
The default position of the CBLe parent window is based on the dimensions of the 3270 terminal. If the 3270 terminal width is 80 or less, the CBLe MDI parent window is opened in a maiximised state.

Instance=Single|Multiple

Allow CBLi to open multiple instances or only a single instance of the CBLe editor If Instance=Single then each request to edit a file will use the same CBLe edit window. If Instance=Multiple then requests to edit a file which originate from non-CBLe command lines or from list selections, will open a new instance of the CBLe editor.
Default value is Multiple.

Interface=ISPF|CBLe

Defines the default CBLe edit interface. For MVS systems the program default is ISPF, for VM and VSE it is the original XEDIT/KEDIT compatible CBLe interface.

LoadWarning=*nnn*|*nnn*K|*nnn*M

The number of file bytes loaded threshold factor. During load of a file for edit, if the number of bytes loaded exceeds a factor of the loadwarning threshold, then a popup message window is displayed prompting the user to continue or cancel the file load.

The value can be specified as a number of bytes (nnn), a number of kilobytes (nnnK) or a number of megabytes (nnnM).

The default value is 1M (one megabyte).

MacroPath=*pathname1 pathname2 ... pathnameN*

Library search path for CBLe edit macros.

pathname1, pathname2, etc. are tokens (containing no blanks, commas or semi-colons) representing elements of the macro path. The meaning and format of these elements vary depending on the operating system.

Blanks, commas or semi-colons can be used as delimiters between tokens.

The macro path can also be set with the CBLe command:

```
SET MACROPath pathname1 pathname2 ... pathnameN
```

Whether set in the CBLIINI file or with the SET MACROPath command a maximum of 15 macro path tokens is currently supported.

If a macro path is specified in the USER CBLIINI file then it replaces any macro path defined in the SYSTEM CBLIINI file (i.e. USER and SYSTEM CBLIINI file defined macro paths are **not** concatenated).

Rules for MACROPATH vary depending on the operating system as follow:

MVS

The macro path is a list of PDS/PDSE libraries that must exist at the time the macro path is defined. These libraries are dynamically concatenated and opened when the MACROPATH command is executed, therefore, they must also have the same RECFM. If RECFM=F, then LRECL must also be the same.

There is no default. If no macro path is given then no implicit macros can be executed (though immediate, instorage or full file name macros can be defined and executed).

MVS CBLIINI file example:

```
MacroPath=USER.CBLEDIT.MACROS;SYSTEM.CBLEDIT.MACROS
```

CMS

The macro path is a list of file types and optional file modes. If given, the file mode must be separated from the file type with a "." (period).

For example, to search for a CBLe macro name match on files on the B disk with file type of EDITMAC, then the macro path should include **EDITMAC.B**.

If no macro path is specified in either the USER or SYSTEM CBLIINI files or via a SET MACROPath command, then the default is to search all accessed disks for files with file name equal to the given macro name and file types as follows (in order):

1. CBLE
2. CBLEDIT
3. XEDIT

If a macro path is specified only files with the given file types and modes will be loadable as macros.

CMS CBLIINI file example:

```
MacroPath=CBLETEST.A,CBLE.*,CBLEDIT
```

VSE

The macro path is a list of LIBR sub-libraries and/or LIBR chain (LIBDEF) names. The sub-libraries must exist, but the chain names are not checked.

If no macro path is specified in either the USER or SYSTEM CBLIINI files or via a SET MACROPath command then the default is the LIBR PROC LIBDEF chain. If a macro path is specified the PROC LIBDEF chain is **not** searched unless explicitly named in the macro path.

Members are searched for with the following member types (in this order):

1. CBLE
2. CBLEDIT
3. XEDIT

VSE CBLIINI file example:

```
MacroPath=LIB.USER  LIB1.SYS   LIB2.SYS    PROC
```

PF*nn*=*cmd*

Where nn can be 01-24 (PF1 - PF9 also supported). Set the default CBLe editor PFkeys for INTERFACE=CBLe mode operation. These apply to any CBLe edit window.
The following are the defaults set by the program:

PF1	sos lineadd
PF2	duplicate
PF3	quit
PF4	cmdtext
PF5	macro block up major
PF6	macro block down major
PF7	backward
PF8	forward
PF9	MDINext
PF10	left half

PF11	right half
PF12	retrieve -
PF13	sos linedel
PF14	spltjoin
PF15	mark box
PF16	mark line
PF17	ECommand copy block
PF18	ECommand move block
PF19	ECommand delete block
PF20	overlaybox
PF21	PrevMainWindow
PF22	undo
PF23	redo
PF24	ECommand reset block

SizeWarning=*nnn*|*nnn*K|*nnn*M

The maximum size (number of bytes) of a file that may be edited without opening the file size warning popup window. This only applies to files where the size may be determined prior to its load into storage. Then a popup message window prompts the user to continue or cancel the file edit.

The value can be specified as a number of bytes (nnn), a number of kilobytes (nnnK) or a number of megabytes (nnnM).

The default value is 1M (one megabyte).

UseDSNPrefix=YES|NO

For MVS Only, use a dataset name prefix for dataset names that are not enclosed in quotes. If running under TSO then the current prefix in the TSO profile is used. If running under VTAM then the default is the user's logon id. This default can be changed with the edit command SET DSNPREFIX. The prefix becomes the dataset high level qualifier.
Default value is NO.

(RACF) **MVS Only**

ResourceCheck=NO|YES

Use MVS RACF, or equivalent security package, for CBLi resource access checking. Default is NO.

SuppressWTO=NO|YES

For CBLi resource access checking, SuppressWTO controls whether access failure messages written to the console are to be suppressed. Default is NO.

ResourceClass=*ClassName*

For CBLi resource access checking, ResourceClass specifies the MVS RACF, or equivalent, general resource class. Default is FACILITY.

System=*ResourceName*

For CBLi resource access checking, specifies the MVS RACF, or equivalent, resource name to be applied when an attempt is made to open a CBLi System window either via the drop down menus or the CLI command interface. Default is CBLI.SYSTEM.

The resource name must first be defined to the resource class specified in the ResourceClass option.

UserTSO=*ResourceName*

For CBLi resource access checking, specifies the MVS RACF, or equivalent, resource name to be applied when an attempt is made to start CBLi in a TSO environment. Default is CBLI.USER.TSO.

The resource name must first be defined to the resource class specified in the ResourceClass option.

UserVTAM=*ResourceName*

For CBLi resource access checking, specifies the MVS RACF, or equivalent, resource name to be applied when an attempt is made to logon to CBLi in a VTAM environment. Default is CBLI.USER.VTAM.

The resource name must first be defined to the resource class specified in the ResourceClass option.

SELCOPY=*ResourceName*

For CBLi resource access checking, specifies the MVS RACF, or equivalent, resource name to be applied when an

attempt is made to start SELCOPY Interactive either via the drop down menus or the CLI command interface. Default is CBLI.SELCOPY.

The resource name must first be defined to the resource class specified in the ResourceClass option.

CBLVCAT=*ResourceName*

For CBLi resource access checking, specifies the MVS RACF, or equivalent, resource name to be applied when an attempt is made to start CBLVCAT Interactive either via the drop down menus or the CLI command interface. Default is CBLI.CBLVCAT.

The resource name must first be defined to the resource class specified in the ResourceClass option.

DB2=*ResourceName*

For CBLi resource access checking, specifies the MVS RACF, or equivalent, resource name to be applied when an attempt is made to start the DB2 SQL Window either via the drop down menus or the CLI command interface. Default is CBLI.DB2.

The resource name must first be defined to the resource class specified in the ResourceClass option.

(Trace)

VTAM3270IO=YES|NO

Used to provide diagnostic information for CBLi execution under VTAM.
Default value is NO.

(Help)

DefaultPath=*pathname*

Ignored for **CMS**. Set the default path for the CBLi and CBLe help files.

For **VSE**, this is the name of the LIBR sub-library containing the help files.

For **MVS**, this is the name of the PDS/PDSE containing the help file members without the lowest level qualifier (which must be HTML).
e.g. If the help PDS/PDSE is called:

```
CBL.CBLI.HELP.HTML
```

then specify:

```
DefaultPath=CBL.CBLI.HELP
```

(SDE) **MVS Only**

AuxDSNPrefix=*prefix*

The dataset name prefix (maximum length 26) to be used by CBLI SDE when allocating a default Auxiliary Edit data set. If prefix exceeds 26 characters, then truncation occurs.

Qualifiers of the form **.Dyyyyddd.Thhmmssx**, representing the current data and time, are appended to the dump data set name prefix qualifiers.

This CBLiINI option may be updated using the SDE CLI command SET AUXDSNPREFIX.

Default value is **%USER%.CBLI.SDEAUX**.

COBOLCompiler=*fileid*

Specifies the full DSN and member name of the COBOL Compiler module. e.g. IGY330.SIGYCOMP(IGYCRCTL)

CBLi SDE will invoke the COBOL compiler if requested to generate an internal SDE structure from a COBOL Copy Book.

Specification of COBOLCompiler is necessary only if your COBOL compiler program module is **not** named IGYCRCTL and is **not** a member of a library within the Link List.

This CBLiINI option may be updated using the SDE CLI command, SET COMPILER COBOL.

LoadWarning=*n_recs*

The number of file records loaded threshold factor. During load of a file from disk for SDE edit or browse, if the number of records loaded exceeds a factor of the loadwarning threshold, then a popup message window is displayed prompting the user to continue or cancel the file load.

If the user chooses to cancel load when prompted, then the records that have already been loaded are displayed in the SDE window view. If the records were loaded for edit, then Update-in-place edit will be used overriding any EDIT REPLACE request for full edit capabilities.

The default value is 5000 records.

This CBLiINI option may be updated using the SDE CLI command, SET LOADWARNING.

MaxCOBOLRC=*value*

The maximum acceptable COBOL compiler return code for which an SDE structure will be successfully generated.

This value is only applicable to execution of the SDE CLI command, CREATE STRUCTURE, with parameter **FROM COBOL *copybook***.
The default value is 4.

Where a COBOL return code greater than the MAXCOBOLRC value occurs, the CREATE STRUCTURE operation fails with an error message.

This CBLiINI option may be updated using the SDE CLI command, SET MAXCOBOLRC.

MaxPL1RC=*value*

The maximum acceptable PL/1 compiler return code for which an SDE structure will be successfully generated.

This value is only applicable to execution of the SDE CLI command, CREATE STRUCTURE, with parameter **FROM PL1 *copybook***.
The default value is 4.

Where a PL/1 return code greater than the MAXPL1RC value occurs, the CREATE STRUCTURE operation fails with an error message.

This CBLiINI option may be updated using the SDE CLI command, SET MAXPL1RC.

MaxStor=*n_bytes*|*n_bytes*K|*n_bytes*M

The maximum storage available for SDE edit of a single data set.

An SDE edited data set is limited by the lesser of the prevailing MAXSTOR value and the amount of free private area storage above the 16MB line available within the region at the time of open.

This limit is used to determine the SDE edit technique and data record management used to edit the data set.

This value may be specified as a number of bytes (*n_bytes*), number of kilobytes (*n_bytes*K) or a number of megabytes (*n_bytes*M).
The default value is 0 (unset).

This CBLiINI option may be updated using the SDE CLI command, SET MAXSTOR.

PL1Compiler=*fileid*

Specifies the full DSN and member name of the PL1 Compiler module. e.g. IEL330.SIBMZCMP(IBMZPLI)

CBLi SDE will invoke the PL1 compiler if requested to generate an internal SDE structure from a PL1 Copy Book.

Specification of PL1Compiler is necessary only if your PL1 compiler program module is **not** named IBMZPLI and is **not** a member of a library within the Link List.

This CBLiINI option may be updated using the SDE CLI command, SET COMPILER PL1.

Glossary

The following is a glossary of terms used in this document.

3270 Emulator
Third party software that emulates Mainframe 3270 hardware terminals on PC and UNIX based platforms.

CLI
A Command Line Interface is a text based method by which users can execute functions supported by the application.

CBLe
A powerful text editor that runs as an MDI application under CBLi. CBLe supports its own CLI and has been developed based on specifications found in Mansfield Software's KEDIT for Windows.

CBLi
The Interactive environment developed by CBL and supplied as part of SELCOPY and CBLVCAT licensable software products.

CBLiINI
File containing configuration options for CBLi. The SYSTEM CBLiINI file is processed on startup of CBLi and contains options that apply to all users. The USER CBLiINI file contains options specific to each user that may, where appropriate, override options set in the SYSTEM CBLiINI file.

CBLiVTAM
Name of the multi-user version of the CBLi application that executes under VTAM.

CBLVCAT
CBL licensable product that supports VSAM file tuning and VTOC, ICF/VSAM catalog and VSE LABEL reporting. Executes as a batch facility or interactively as a CBLi application.

Edit View
A CBLe MDI document window that contains a display of edited data. If the same file is displayed in multiple windows, then the user has multiple edit views of the file. Each edit view can have a different current line, ARBCHAR setting, ZONE columns, etc.

List Window
A CBLi window containing rows of associated information. List windows support point-and-shoot column sorting; select, sort and filter CLI commands; and prefix area commands.

MDI
Multiple Document Interface is a Microsoft specification for PC applications that enable the user to work with multiple documents at the same time. Each document is displayed in a separate child window within the client area of the application's main (frame) window. Typical MDI applications on PCs include word-processing and spread sheet applications.

MDI Client Area window
The MDI client area window is the display area within an MDI application's frame window. The MDI client area serves as the backround for MDI child windows.

MDI Child/Document Window
An MDI child or document window is opened in an application's client area window each time a document is opened. Each child window has a sizing border, title bar, window menu, minimise, maximise, restore and close buttons. A child window is clipped so that it is confined to the client window and cannot appear outside it.
When a child window is maximized, its client area completely fills the MDI client area window. In addition, the system automatically hides the child window's title bar, and adds the child window's window menu icon and Restore button to the MDI application's menu bar.

MDI Frame Window
An MDI frame window may be considered the main window of an MDI application. It is the parent window of the MDI client area window in which MDI child windows are opened. It has a sizing border, title bar, window menu, minimise, maximise restore and close buttons.

Ring
The set of all **files** being edited within CBLe. It is not the set of all windows opened. e.g. The contents of one file may be displayed in more than one edit view (window.)

SDB
See SELCOPY Interactive.

SELCOPY Interactive (SDB)
An Intergrated Development Environment for SELCOPY (SELCOPY DeBug) that runs as an MDI application under CBLi.

Storage Display Window
A CBLi window containing hexadecimal and character display of areas of storage.