

Array Editor Readme

The Array Editor supports editing arbitrary arrays. It can be used with the following products on Windows®:

- Dyalog APL/W Version 13.2 or higher
- IBM® Workstation APL2® for Multiplatforms Version 2.0 - Service Level 19 or higher
- MathWorks® MATLAB® R2012b or higher
- MicroAPL™ APLX for Windows Version 5.1.0

Please report problems to support@davidliebtag.com.

The Array Editor.zip file contains the following files:

Array Editor Readme.pdf
dlaedit.dll
dlaedit64.dll
dlaedit.mexw32
dlaedit.mexw64
dlaedit.chm
dlaeditm.chm
dlaedit.nam
DEMOAE.atf
demoae.m
aedit.m
vedit.m
Keyboard Layouts.zip

Note:

When you downloaded the Array Editor.zip file from the internet, Windows or your firewall may have marked the files it contains as unsafe. This may cause attempts to open the CHM help files to fail. To solve this problem, right click on the zip file and open the Properties window. Press the Unblock button and then the Ok button. Then, extract the files and install them as directed below.

The Keyboard Layouts package is included to enable input of APL characters when the Array Editor is used in APLX. Consult the contents of the zip file for installation and usage instructions.

Installation, access and use – Dyalog APL/W

Installation

APL/W uses the following files:

```
dlaedit.chm  
dlaedit.dll  
dlaedit64.dll
```

Copy the appropriate DLL file into the directory containing dyalog.exe. Copy dlaedit.dll for 32 bit Dyalog and dlaedit64.dll for 64 bit Dyalog. Copy the CHM file into the Dyalog product's help directory.

Note:

The Array Editor is bundled with Dyalog APL/W Unicode Edition. You only need to copy the files to install updates.

Access and Use

The Array Editor is integrated in Dyalog Unicode Edition. To use the integrated version to edit a variable, click on the name of the variable and then select the “Edit array” icon in the session toolbar.

The package contains one monadic external function:

Array editor - Right argument is an arbitrary array. Result is the edited array.

Associate and use the editor like this:

```
'EditArray' ⌈NA 'dlaedit.dll|DyalogEditArray <pp >pp'  
Result←EditArray Array 0
```

Note:

If the Array Editor files are not in the Dyalog product's directories and are not in a directory listed in the PATH environment variable, include the path to the directory containing the Array Editor files in the name association.

Restrictions

The Array Editor has the following additional restrictions on Dyalog:

- Negative numbers must be represented using high minus signs. For example, $\bar{3}$ not -3 .
- Namespaces are not supported.
- Internal representations returned by \square OR are not supported.
- Only one instance of the Array Editor may be executed at a time.
- All calls to interpreter primitives use a value of 3 for \square ML.

Installation, access and use – IBM Workstation APL2

Installation

APL2 uses the following files:

```
dlaedit.chm  
dlaedit.dll  
dlaedit.nam
```

Copy these files into the APL2 product's bin directory. Alternatively, you can copy them into a directory that is listed in the PATH environment variable.

Access and Use

The package contains two monadic external functions:

Array editor - Right argument is an arbitrary array. Result is the edited array.

Variable editor - Right argument is a character vector containing a variable name. No result.

Associate and use the editors like this:

```
'<DLAEDIT>' 11 □NA 'EditArray'  
'<DLAEDIT>' 11 □NA 'EditVariable'  
Result←EditArray Array  
EditVariable 'VariableName'
```

Restrictions

The Array Editor has no additional restrictions on APL2.

Installation

MATLAB uses the following files:

```
dlaedit.mexw32  
dlaedit.mexw64  
dlaeditm.chm
```

Copy the files into a directory of your choosing. Copy dlaedit.mexw32 for 32 bit MATLAB and dlaedit.mexw64 for 64 bit MATLAB. Use the **Set Path...** choice on the MATLAB **File** pull-down menu to add the directory to MATLAB's search order.

Access and Use

The editor can be called in two ways: to edit an array, and to edit a variable.

To edit an array, pass one argument, the array to be edited. The result is the edited array. For example:

```
>> dlaedit({'Hello', 'World'})
```

```
ans =
```

```
    'Hello'    'World'
```

To edit a variable, pass two arguments, the variable name and an empty array. No result is returned. For example:

```
>> dlaedit('variable_name', '');
```

If the aedit.m file is in the MATLAB path, you can edit an array like this:

```
>> aedit({'Hello', 'World'})
```

If the vedit.m file is in the MATLAB path, you can edit a variable like this:

```
>> vedit('variable_name')
```

Restrictions

The Array Editor has the following additional restrictions on MATLAB:

- Sparse arrays are not supported.
- The following array classes are not supported: function, unsigned 64 bit integer, index, object, opaque, unknown, void.
- Infinite and NAN values are not supported
- Variables are always accessed in the base workspace.
- Empty cell array elements are filled with ' '.

Installation, access and use – MicroAPL APLX

Installation

APLX uses the following files:

```
dlaedit.chm  
dlaedit.dll  
dlaedit64.dll
```

Copy the CHM and appropriate DLL file into the APLX product's bin directory. Alternatively, you can copy them into a directory that is listed in the PATH environment variable. Copy dlaedit.dll for 32 bit APLX and dlaedit64.dll for 64 bit APLX.

Access and Use

The package contains an auxiliary processor.

Share a variable with the processor and use the editor like this:

```
3 □SVO 'SV3'  
2  
SV3←'dlaedit.dll'  
SV3←array  
result←SV3
```

Note:

If the Array Editor files are not in the APLX product's bin directory and are not in a directory listed in the PATH environment variable, include the path to the DLL in the initial specification of **SV3**.

Restrictions

The Array Editor has no additional restrictions on APLX.

Uninstallation

To uninstall the Array Editor, delete the files you copied.

The Array Editor saves options settings in the following registry key:

```
HKEY_CURRENT_USER\Software\DavidLiebtag.com\Array Editor
```

To remove the Array Editor's options settings, delete this key.

Change History

2015/12/13 Fixes in Version 1 Release 1 Modification 0 Level 91

Signal error when allocation fails during initialization
Horizontal scrollbar not shown when simple array is maximized
Reduce number of times rows are counted
Paste text containing multiple records of numeric data causes hang

2015/11/25 Fixes in Version 1 Release 1 Modification 0 Level 90

Failure of allocation of simple section of array causes exception during free of the array
Disclose of empty nested array tries to build multiple children
Combine rank checks into routine to count number of records

2015/11/10 Fixes in Version 1 Release 1 Modification 0 Level 89

Reduce default maximum size of entry fields from 50% of screen to 35% of screen
First mouse click should select array but not position input caret.

2015/11/08 Fixes in Version 1 Release 1 Modification 0 Level 88

Add Enable undo choice on Options pull-down menu
Add key combinations to toolbar button tooltips
Add shortcut keys for inserting items
Format number of elements and shape correctly for values over $2*32$
Disclose of vector of vectors with first vector empty yields garbage first row
Reverse of Boolean vector causes exception
Keep caret within window when scrolling
Scrollbar thumbs did not work after turning on rank 1 scrollbars while focus in edit window
Paste array should not restore minimized and maximized sibling arrays

2013/08/20 Fixes in Version 1 Release 1 Modification 0 Level 87

Maximize/restore on double-click
Correct help to indicate empty nested arrays show only the prototype
Rank not preserved on changed numeric scalar
Changing numeric scalar to subtraction expression causes memory leak
Inactive scrolled large simple arrays are not drawn properly
Inactive large simple arrays' scrollbar thumbs are wrong size
Query Dyalog version before setting message vendor
Define DebugBreak macro
Remove aedit includes from dldump.h
Rework debug exception to prevent linker message

2013/04/24 Fixes in Version 1 Release 1 Modification 0 Level 86

Array Editor Version 1 Release 1 Modification 0 Level 91

Correct maximum NELM check in 64 bit versions of APLX and Dyalog

2013/04/23 Fixes in Version 1 Release 1 Modification 0 Level 85

Make CTN return scalar if input is scalar

Build command log and memory leak report files in user's Documents folder

2013/04/22 Fixes in Version 1 Release 1 Modification 0 Level 84

Log commands for display during exception handling recovery

Improve fix for check and align changing rank of modified scalar items

2013/04/19 Fixes in Version 1 Release 1 Modification 0 Level 83

Use periods in About box version

Ruler is not always width of selected array

Do not allow insertion of record delimiters in scalars and numeric vectors.

Check and align changes rank of modified scalar items

Green flash when focus first moves to rank 1 array

Status bar does not redraw properly if editor window width changed

Disable Page Setup and Print if there is no default printer

2013/04/12 Fixes in Version 1 Release 1 Modification 0 Level 82

Remove support for dialect dependent record delimiters

Add counters for number of times window classes are registered

Remove support for arrow visual cues

Remove bitmap logo

2013/04/06 Fixes in Version 1 Release 1 Modification 0 Level 81

Do not display close confirmation prompt on interrupt

2013/04/03 Fixes in Version 1 Release 1 Modification 0 Level 80

Resource leak when changing font

2013/04/03 Fixes in Version 1 Release 1 Modification 0 Level 79

Remove __declspec(thread) from CurrentFile and CurrentRoutine. Does not work in DLLs on XP

2013/04/03 Fixes in Version 1 Release 1 Modification 0 Level 78

Add visual cue for arrays with rank greater than 2

Array Editor Version 1 Release 1 Modification 0 Level 91

Move Accel into FunEnv
Move CurrentFile and CurrentRoutine into thread local storage
Add DumpAERect

2013/03/29 Fixes in Version 1 Release 1 Modification 0 Level 77

Use dialect-dependent record delimiter when building array in workspace

2013/03/29 Fixes in Version 1 Release 1 Modification 0 Level 76

On Enter, paste dialect-dependent record delimiter

2013/03/27 Fixes in Version 1 Release 1 Modification 0 Level 75

Disable Find next and Find Previous when Find dialog is not visible
Rework help file name handling

2013/03/27 Fixes in Version 1 Release 1 Modification 0 Level 74

Shortcut key changes

Change Save from F2 to Ctrl+S
Change Close from F3 to Alt+F4
Make F3 perform Find Next
Make Shift+F3 perform Find Previous
No longer support a Save and Close shortcut
Make Ctrl+O perform Open
Make Shift+Ctrl+O perform Open object
Add dialect-dependent shortcuts

Enhancements

Add Open object choice to File pull-down menu for dialects that support variables
Add Find Next and Find Previous to Edit pull-down menu
Add Restore, Minimize, and Maximize to simple array popup menus
Add simple data clipboard commands to Edit pull-down menu.
Add array clipboard commands to simple arrays' popup menu.
Add Show rank 1 array scrollbars choice on Options pull-down menu
Add visual cue when simple rank 1 arrays are larger than input area.
Add mnemonic for Graphics choice on menu bar
Save real part of complex arrays in APLX if imaginary part is zero

Defect fixes

Make Find dialog start new search if data changes rather than if direction changes
Reorder Axes dialog comes up off screen if array is scrolled right
Paste spreadsheet data without trailing CRLF causes editor to crash on close
Break character vectors at carriage returns with trailing line feeds

Array Editor Version 1 Release 1 Modification 0 Level 91

Validate dialect supports array's rank, nelm, and dimension lengths
Validate dialect supports variable name's length
Restore code to override Windows default show processing

Internal changes

Do not export SystemArrayEditorCount
Add support for dialect-dependent accelerator table extensions
Add support for dialect dependent record delimiters
Add ScdrToUnicode
Add IsObjectValidName
Rename IsObjectNameValid to IsUnicodeValidName
Rename ScdrToText to ScdrRecordsToText
Remove IsObjectCharacterScalarOrVector functions
Rename Array Editor types to AEI4, AEF8, AERECT etc.
Use enum for SCDR types so they appear nice in debugger
Rework how PRERELEASE works
Add array name to DumpXcdrIUO output
Remove unnecessary includes in dlapl2x.h

2013/02/13 Fixes in Version 1 Release 1 Modification 0 Level 73

Do not check for interrupt or close while mouse is captured

2013/02/11 Fixes in Version 1 Release 1 Modification 0 Level 72

Unicode edition tries to blow down characters to Classic Edition characters

2013/02/05 Fixes in Version 1 Release 1 Modification 0 Level 71

Unicode clipboard format does not include null terminator

2013/02/03 Fixes in Version 1 Release 1 Modification 0 Level 70

Release support for MATLAB
Remove horizontal scrollbar from main page of CHM file
Make small enclose and disclose boxes thinner
Put dialect name second in title
Cut of contents of scalar nested array builds wrong rank array
Prevent starting new action before previous action is complete
Disable menu choices and toolbar buttons while editor is busy
When rejecting unsupported data, return informative message
Initialize simple children in make array of rows that has zero rows
Support F1 to request contextual help
Process mouse movements while editor is busy
MATLAB Save As says variable already exists

Array Editor Version 1 Release 1 Modification 0 Level 91

Do not use support@dyalog.com in Dyalog Classic edition
Remove creation of grade's left argument from atomic vector
Add description of sounds to help

2013/01/27 Fixes in Version 1 Release 1 Modification 0 Level 69

Use icons rather than APL characters in toolbar with MATLAB
Restore enclose and disclose in MATLAB
Change order of actions and toolbar buttons

2013/01/26 Fixes in Version 1 Release 1 Modification 0 Level 68

Change color of toolbar bitmaps to white
Remove toolbar border

2013/01/25 Fixes in Version 1 Release 1 Modification 0 Level 67

Prevent saving characters that are not in atomic vector in 1 byte

2013/01/25 Fixes in Version 1 Release 1 Modification 0 Level 66

Support Dyalog Classic Edition
Remove word forthcoming for Dyalog 13.2
Reorganize documentation of restrictions

2013/01/24 Fixes in Version 1 Release 1 Modification 0 Level 65

Set correct number of planes when disclose yields empty rank>2 array

2013/01/24 Fixes in Version 1 Release 1 Modification 0 Level 64

Reverse along last axis crashes if length of last axis is 0

2013/01/24 Fixes in Version 1 Release 1 Modification 0 Level 63

Reverse along first axis crashes if length of first axis is 0

2013/01/23 Fixes in Version 1 Release 1 Modification 0 Level 62

Force window to foreground during initialization
Respond to window close requests during format
Exception closing window during initialization
Close all windows on interrupt
Use Cells rather than Nested in the status bar and print jobs in MATLAB

Array Editor Version 1 Release 1 Modification 0 Level 91

2013/01/22 Fixes in Version 1 Release 1 Modification 0 Level 61

Add Page Setup and Print to File pull-down menu
Fix trace's handling of CRLF
Correct grammar in readme discussion of APLX PATH
Remove personal data from PATH function in DEMOAE .atf

2013/01/21 Fixes in Version 1 Release 1 Modification 0 Level 60

Execute bare branch causes crash
Toolbar is wrapped on open
Delete toolbar buttons at creation, not at menu initialization

2013/01/21 Fixes in Version 1 Release 1 Modification 0 Level 59

Use system bitmaps for sort up and down buttons
Use letters for toolbar buttons in MATLAB
Format using low minus in MATLAB
Improve aedemo.m

2013/01/20 Fixes in Version 1 Release 1 Modification 0 Level 58

Enlist empty nested array containing non-empty prototypes yields garbage
Improve performance finding character widths
Update caret position on font change
Rename grade to sort
Rename Reverse to Reverse along last axis
Rename Dyadic Transpose to Reorder axes
Rename Ravel and Enlist in MATLAB
Remove Enclose and Disclose from MATLAB

2013/01/20 Fixes in Version 1 Release 1 Modification 0 Level 57

Child is not drawn for empty rank>2 nested array with >1 plane
Crash in disclose of 1 element vector of empty nested arrays
Disclose has no effect empty nested matrix
Font dialog has no effect until window redrawn
Automate creation of PDF files
Reduce range of menu item identifiers

2013/01/18 Fixes in Version 1 Release 1 Modification 0 Level 56

Do not allow editing arrays that are inside empty arrays
Remove structure flag in ravel
Memory leak in ravel

Array Editor Version 1 Release 1 Modification 0 Level 91

Crash in MATLAB on exit after ravel structure
Document restriction for empty arrays with rank \geq 2
Support calling dlaedit from MATLAB function
Add aedit.m and vedit.m

2013/01/18 Fixes in Version 1 Release 1 Modification 0 Level 55

First produces garbage for empty simple arrays
Document handling of scalars and vectors in MATLAB

2013/01/17 Fixes in Version 1 Release 1 Modification 0 Level 54

Copy axes names after nested array offsets in clipboard copy
Allow blanks in non-scalar numeric values
Memory leak if window closed during numeric format
Memory leak if window closed during initial format
Exception if reject bad data is set and out of memory occurs
Process accelerators while polling for interrupts
Show calculating size progress for simple arrays
Add Open choice to File menu for APL2 and MATLAB

2013/01/16 Fixes in Version 1 Release 1 Modification 0 Level 53

Handle MATLAB cell array elements that are zero

2013/01/16 Fixes in Version 1 Release 1 Modification 0 Level 52

Accept lower case j in complex numbers
Document negative numbers must use high minus sign on Dyalog
Save and restore multiple window positions
Reduce small and large margins to 5 and 10 pixels

2013/01/15 Fixes in Version 1 Release 1 Modification 0 Level 51

Support pasting APL2 arrays with rank greater than 0
Support copying and pasting data to and from Excel

2013/01/15 Fixes in Version 1 Release 1 Modification 0 Level 50

Use Dyalog getaplversion to verify Unicode edition
Discuss registry entries in readme file
Rework dialect-dependent help infrastructure

2013/01/14 Fixes in Version 1 Release 1 Modification 0 Level 49

Array Editor Version 1 Release 1 Modification 0 Level 91

- Allow input of low minus in numeric arrays
- Use words rather than APL symbols in status area in MATLAB
- Adjust overview documentation for MATLAB users
- Document pull-down menus using appropriate terminology for MATLAB users
- Document complex number syntax
- Document negative numbers are displayed with high minus

2013/01/14 Fixes in Version 1 Release 1 Modification 0 Level 48

- Applying CTN or execute to modified array and then undo does not restore modifications
- Closing help window causes shutdown performance degradation
- Size to definition too large if simple array has been selected
- Small margins leaves calculating array sizes message
- Use builtin convert to number for APL2
- Add Execute action for APL2
- Support lower case j and e in numbers
- Remove dummy window
- Add infrastructure for dialect-dependent help
- Don't support function, index, object, opaque, unknown, void class arrays in MATLAB.
- Don't support Nan and infinite numbers in MATLAB
- Remove Debug menu; use Pause accelerator

2013/01/10 Fixes in Version 1 Release 1 Modification 0 Level 47

- Store maximum length of variable names in dialect structure
- Improve help for using parentheses in pick index
- Add Dialogs section to help TOC
- Correct list of characters used to validate names in MATLAB
- Initialize atomic vector used for sorting in MATLAB

2013/01/08 Fixes in Version 1 Release 1 Modification 0 Level 46

- Set simplest type when validating rank 0 numeric array
- Pasting array containing nested arrays does not work
- Changing font does not resize cells
- Add title to close confirmation message box
- Document MATLAB syntax for variable name: `dlaedit('varname',") ;`
- Editing zero by zero nested array in MATLAB leads to crash
- Support Save As in MATLAB
- Support editing variable by name in MATLAB

2013/01/05 Fixes in Version 1 Release 1 Modification 0 Level 45

- Only reorder axes names in monadic transpose for arrays with rank > 2
- Disable reorder axes for arrays with rank < 3

Array Editor Version 1 Release 1 Modification 0 Level 91

Add DEMOAE transfer file

2013/01/04 Fixes in Version 1 Release 1 Modification 0 Level 44

Add version to clipboard array structure
Preserve axes names on enclose, disclose, transpose
Preserve axes names on clipboard operations
Set axis name length limit
Standardize handling of axes' names and order
Use consistent capitalization for Reorder Axes
Add dialog help pages to table of contents
When deleting element of vector, decrement vector length correctly

2013/01/04 Fixes in Version 1 Release 1 Modification 0 Level 43

Prevent crash in mouse operations after bad data detected
Disable toolbar items when bad data detected
Preserve axes names for change, format, execute, rotate, transpose, grade
Make version info in About box copyable
Update copyrights
Rename Reject bad data option to Reject unsupported data
Change Reject unsupported data option default to TRUE
Change Registry version to 1.1
Make contact address in exception box dialect dependent
Initialize DIALECT_FUNCTIONS
Disable Graphics using dialect flag
Disable SaveAs using dialect flag
Remove MATLAB Transpose option
Define MatLabEditArray

2012/12/19 Fixes in Version 1 Release 1 Modification 0 Level 42

Make built-in Transpose support dyadic calls
Add Reorder axes action
Graphics menu appears in APL2 if MATLAB loaded first

2012/12/12 Fixes in Version 1 Release 1 Modification 0 Level 41

Make APL2 use built-in primitives
Distinguish nonhomogeneous and nested arrays in attributes
Enable Cut Array for elements of arrays with rank == 2 and only 1 row or column

2012/12/12 Fixes in Version 1 Release 1 Modification 0 Level 40

Built-in execute routines threw error if record had trailing blank
Array Editor Version 1 Release 1 Modification 0 Level 91

2012/12/11 Fixes in Version 1 Release 1 Modification 0 Level 39

Free of temporary array can lead to exception when purging undo and redo chains
Free transposed Scdr if malloc fails
Rename SIMPLE_ constants to DIALECT_

2012/11/27 Fixes in Version 1 Release 1 Modification 0 Level 38

Use Dyalog DWA interpreter function structure directly
Use Dyalog qem only when error code is non-zero
Use <http://www.microapl.co.uk/download/aplx.h>

2012/11/22 Fixes in Version 1 Release 1 Modification 0 Level 37

Add support for MatLab structures
Add option to transpose MatLab input and output arrays
Use built-in format in Dyalog to avoid Ws Full and Limit errors
Use DyalogHelpDir to locate help file
Minimizing nested array containing nested arrays causes crash
Make built-in format initialize result so Booleans are drawn correctly
Make arrays in MatLab have at least rank 2
Manage MatLab storage to avoid Ws Full

2012/11/08 Fixes in Version 1 Release 1 Modification 0 Level 36

Prevent resizing maximized simple arrays
Size to definition does not account for ruler or line numbers
Resize - Maximize/Minimize - Restore - Size is reset

2012/11/08 Fixes in Version 1 Release 1 Modification 0 Level 35

Make built-in disclose initialize padding elements
Display "Waiting for interpreter to process request" message
Sound beep when action completes that took more than 5 seconds
Cut Array has no effect after deleting text of numeric scalar
Paste array should select pasted array
Replace I8 loops with memset and wmemcpy
Check paste into 32 bit process does not accept data requiring 64 bit addressing
Add compile time validation of dialects' data sizes
Add compile time validation of declarations of LANG, FUNENV, and DIALECT_FUNCTIONS
Declare array type union in array structure

2012/11/07 Fixes in Version 1 Release 1 Modification 0 Level 34

Array Editor Version 1 Release 1 Modification 0 Level 91

Include number of simple array rows in calculating size progress percentage
Detect interrupt during calculating large simple array sizes
Always empty undo buffer on revert
Improve initialization performance

2012/11/06 Fixes in Version 1 Release 1 Modification 0 Level 33

Improve performance of code that determines widths of characters

2012/11/06 Fixes in Version 1 Release 1 Modification 0 Level 32

Scrollbar thumbs missing after execute of top level simple array that generates wide nested array
Use interpreter to format all arrays

2012/11/05 Fixes in Version 1 Release 1 Modification 0 Level 31

Begin implementation of visual cues for truncated vectors
Add rudimentary test suite capability
EditVariable title bar text is incorrect
Add source code filename to exception message box
Always initialize dimensions when rebuilding array from zero length records

2012/11/03 Fixes in Version 1 Release 1 Modification 0 Level 30

Correct version, release, modification, and service level numbers
Remove file last updated dates
Add Build Notes documentation

2012/11/02 Fixes in Version 1 Release 0 Modification 0 Level 29

Make array of rows of empty nested matrix crashes

2012/11/02 Fixes in Version 1 Release 0 Modification 0 Level 28

If simple array is maximized and font size changes, can scroll down too much
If simple array is maximized and font size changes, editor scrollbars reappear
Ruler height does not change when font size changed
Last row not shown if Ruler on
Last columns not shown if Line numbers on

2012/11/02 Fixes in Version 1 Release 0 Modification 0 Level 27

Add Ruler option
Add Line numbers option
Draw read-only arrays with gray background

Array Editor Version 1 Release 1 Modification 0 Level 91

Add break after calls to MakeArrayOfRows, InsertRowOrColumn, and InsertItem

2012/11/01 Fixes in Version 1 Release 0 Modification 0 Level 26

When an action makes the top level array simple and it is automatically maximized, the scroll bars disappear

Caret not redrawn when array is resized

Pick index less than $\lfloor \text{IO} \rfloor$ causes crash

Coalesce nested arrays containing only character or numeric scalars

Speed up built-in Format routine

Report interpreter error (Ws Full) on callback during initialization

Do not always initialize arrays' data storage

F5 on modified character vector does not resize

Missing focus rectangle

Document use of system colors and edge styles

Document use of $\lfloor \text{PP} \rfloor$ and that precision may be lost if set below maximum

Document $\lfloor \text{ML} \rfloor 3$ is always used on call to interpreter

Empty pick index field is too small

Prototype of nested array should not have scalar children

Disable and enable menu choices and toolbar buttons appropriately when clipboard contents changes

Debug message macros do not work in 64 bit processes

2012/10/10 Fixes in Version 1 Release 0 Modification 0 Level 25

Maximize after action that yields top level simple array

Maximize simple arrays with rank > 2

Sorting 0 by 1 simple array leads to exception

Sorting Booleans corrupts array

Use 3d edges option is not initially checked even if set

Support copying and pasting arrays between different dialects

Enable formatting nested arrays for dialects that use format primitive

Issue error message if array cannot be saved into current dialect

Change text for convert type toolbar buttons to ABC and 123

Scrollbar thumbs appear when data size changes but is not larger than client area

Remove (null) from title bar in optimized version

Move focus to menu bar when simple array is selected and Alt is pressed

Fix typo on help table of contents

Reposition selected simple array when Use small margins option is changed

Use theme to draw scrollbars of unselected arrays that have rank greater than 1

Find close button drawn with wrong theme

Draw correct width edge for selected arrays that have rank greater than 1

Rework how status bar uses client font

Always use 8 byte integers internally including dragging scrollbar buttons and array resizing

2012/10/05 Fixes in Version 1 Release 0 Modification 0 Level 24

Array Editor Version 1 Release 1 Modification 0 Level 91

- Simplify allocation of array data structures
- Correct display of empty nested arrays with rank greater than 2
- Correct Make array of rows so it handles empty arrays
- Implement support for Reject bad data option in all dialects
- Validate maximum rank on input and output
- Draw plane selection in status bar for empty arrays

2012/10/04 Fixes in Version 1 Release 0 Modification 0 Level 23

- Arrays that are below the window are not drawn as they are scrolled into window
- Marking data and moving mouse above array causes exception
- Exceptions are not trapped in optimized version
- Improve reject bad data messages

2012/10/03 Fixes in Version 1 Release 0 Modification 0 Level 22

- Support scrolling and modification of data in arrays with rank greater than 2
- Reduce type of homogeneous nested arrays
- Syntax Error when complex numbers are detected in dialects which do not support them
- Add Reject bad data option
- Redraw caret when overtyping option changes

2012/09/27 Fixes in Version 1 Release 0 Modification 0 Level 21

- Character arrays are read-only when Find Numeric is checked, even after Find is closed
- Make grade support all numeric types
- Enable copy, cut, format and paste of arrays with rank greater than 2
- Built-in disclose does not correctly align nested arrays with rank greater than 2
- Built-in transpose of arrays with rank greater than 2 can cause exception
- Reset scrollbar thumb positions when arrays shrink in size
- Reject arrays containing characters that cannot be represented with single UTF-16 code units
- Change Execute and Format menu choices to Convert to character and Convert to numeric

2012/09/27 Fixes in Version 1 Release 0 Modification 0 Level 20

- Creation of Array Editor Data clipboard format crashed on depth 3 arrays

2012/09/26 Fixes in Version 1 Release 0 Modification 0 Level 19

- Initialize periods and widths in make rows of matrix
- Return convert editor error to language error before termination
- Display message on Ws Full during Save
- Change message for when unsupported data types detected
- Change tooltips for execute and format
- Support specification of title

Array Editor Version 1 Release 1 Modification 0 Level 91

2012/09/25 Fixes in Version 1 Release 0 Modification 0 Level 18

- Add sample to help file
- Add font and bitmap files to list of dependencies in makefile for help file
- Support scroll wheel in simple array
- Support Array Editor Data clipboard format

2012/09/14 Fixes in Version 1 Release 0 Modification 0 Level 17

- Exception or hang applying primitive to modified, maximized, output of primitive
- Use 8 byte integers on 64 bit
- Rework Find options
- Separate update status and update toolbar actions
- Improve interrupt handling
- Make error handling consistent
- Rename rotate and reverse
- New icon

2012/09/07 Fixes in Version 1 Release 0 Modification 0 Level 16

- Correct reference counting error so Save can be used twice
- Correct tool tip spelling error
- Refresh status bar data on data change
- Show scrollbars when maximized simple array becomes nested

2012/09/07 Fixes in Version 1 Release 0 Modification 0 Level 15

- Progress message for calculating array sizes exceeds 100%

2012/09/06 Fixes in Version 1 Release 0 Modification 0 Level 14

- Insert item in vector does not increment shape
- Handle maximized arrays during undo and redo
- Set original filename in file version info for 64 bit version
- Separate formatting and calculating size messages
- Use consistent capitalization on menus and help pages
- Display message when Save hits Ws Full
- Make Size to definition handle toolbar wrapping
- Replace ,, and ... with ... (ellipsis character)
- Poll for window close more often
- Remove need to disclose result

2012/08/29 Fixes in Version 1 Release 0 Modification 0 Level 13

Array Editor Version 1 Release 1 Modification 0 Level 91

Improve recovery from implicit errors
Improve recovery from internal errors
Adjust scroll codes for better operation in 64 bit mode

2012/08/28 Fixes in Version 1 Release 0 Modification 0 Level 12

Undo/Redo causes crash if previous selection is in minimized array or not in maximized array

2012/07/07 Fixes in Version 1 Release 0 Modification 0 Level 11

Click in array with empty ancestor causes crash
Screen drawn incorrectly after enclose of array element
Screen drawn incorrectly after maximize and ravel

2012/07/06 Fixes in Version 1 Release 0 Modification 0 Level 10

Operation on maximized array after undo leads to crash
Remove flicker from operations on maximized arrays

2012/07/04 Fixes in Version 1 Release 0 Modification 0 Level 9

Issue more progress messages
Always draw only the first plane of nested arrays with rank > 2
Make cut replace parent rather than update it in place
On application of primitive to top level array replace top level rather than setting new top level

2012/07/04 Fixes in Version 1 Release 0 Modification 0 Level 8

Add Empty undo buffer
Revert empties undo and redo buffers
Copy reinitializes menu choices and toolbar buttons
Pasting new top level array does not empty undo and redo buffers
Application of primitive to invalid numeric value yields correct error message
Very large array yields correct error message
Copy and paste array containing empty nested arrays does not remove level of nesting

2012/07/04 Fixes in Version 1 Release 0 Modification 0 Level 7

Add Undo Array and Redo Array
Save As always prompts to replace name
Mouse pointer is clock after some commands complete

2012/07/03 Fixes in Version 1 Release 0 Modification 0 Level 6

Add Overtime option
Array Editor Version 1 Release 1 Modification 0 Level 91

Application of primitive to modified 1 column numeric matrix crashes

Always replace changed arrays; never update them in place

Convert error handling to use throw and catch

Messages distinguish between converting to internal representation, formatting arrays, and formatting for window

2012/07/02 Fixes in Version 1 Release 0 Modification 0 Level 5

Reset selection after paste

Enter in character vector no longer inserts carriage return line feed

2012/07/01 Fixes in Version 1 Release 0 Modification 0 Level 4

Ignore Enter in numeric rank < 2

Use Format and Execute primitives to convert between internal and display representations

Apply execute to rows of simple matrices

Make grade handle APVs

Improve grade error recovery

2012/06/29 Fixes in Version 1 Release 0 Modification 0 Level 3

Dragging scrollbar thumb has no effect

Cursor is I-beam over edit scrollbars

Use Format primitive for numeric arrays

2012/06/29 Fixes in Version 1 Release 0 Modification 0 Level 2

Add version and build date and time to About dialog

Check and align resets caret but does not draw it at new position

Backspace at end of row causes crash

Execute empty array leaves formatting array message

2012/06/27 Fixes in Version 1 Release 0 Modification 0 Level 1

WS FULL during callback is not reported

Enclose maximized simple array makes no visible change

2012/06/26 Initial release: Fixes in Version 1 Release 0 Modification 0 Level 0