

## 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](mailto: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 coolbar.

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, access and use – MathWorks® MATLAB®

### 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 □SV0 '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

### **2018/03/02 Fixes in Version 1 Release 1 Modification 0 Level 94**

Make array of rows of Boolean array yields garbage

### **2018/02/28 Fixes in Version 1 Release 1 Modification 0 Level 93**

Enlist of nested array containing Boolean arrays yields garbage

Define About dialog's copyright notice in header file

### **2017/09/15 Fixes in Version 1 Release 1 Modification 0 Level 92**

Up, down, left, and right cursor keys scroll general array data one character rather than one pixel.

Marking text in rank>2 array causes data from next plane to be displayed.

Adjust build for MATLAB R2015b, the last version with 32 bit support.

### **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

Array Editor Version 1 Release 1 Modification 0 Level 94

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**

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  
Array Editor Version 1 Release 1 Modification 0 Level 94



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  
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

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- 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
- 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
- Array Editor Version 1 Release 1 Modification 0 Level 94

### **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

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**

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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

#### **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  
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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

Crash in MATLAB on exit after ravel structure

Document restriction for empty arrays with rank>=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

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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**

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

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- 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
- 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
- Array Editor Version 1 Release 1 Modification 0 Level 94

### **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

### **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
- Array Editor Version 1 Release 1 Modification 0 Level 94



Use Dyalog gem 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 l8 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**

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

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### **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  
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  
Array Editor Version 1 Release 1 Modification 0 Level 94

- Pick index less than 0 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 %PP and that precision may be lost if set below maximum
- Document %ML 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**

- 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

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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 ovrtype 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

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

Array Editor Version 1 Release 1 Modification 0 Level 94

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 94

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**

Array Editor Version 1 Release 1 Modification 0 Level 94

Add Overtyping option

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**