

DYALOG

2021



Highlights of Dyalog v18.2

Adám Brudzewsky



18 news items
in 30 minutes

	Added	Enhanced
IDE & RIDE	Dark themes	
User Commands		
Utilities		

```

APLcart x
[0] v APLcart←{
[1]   α←0 A all columns
[2]   terms←ε ' (≠ε┐)×(' 'εω),ω
[3]   Filter←{
[4]     regex←'//'≡(,∘∘φ)α
[5]     pat←regex┐(-regex)┐α
[6]     pat ⅈS'%⊔'Regex'(regex 1)⊔'ML' 1⊔1┐ω
[7]   }
[8]   26::⊔SIGNAL←⊔DMX.(( 'EN'EN)('EM'EM)('Message'Message))
[9]   noUrls←'(\t)(http\S+)\t(http\S+)?$'⊔R'\1\1'┐APLcartTable 0
[10]  i←noUrls⊔Filter/terms,←noUrls
[11]  r←i┐"┐APLcartTable 0
[12]  2┐ö1×(∼α)⊔CSV⊔'Separator' (⊔UCS 9)⊔'QuoteChar' ' '⊔'DoubleQuote' 0┐r
[13] }

```



```

APLcart
File Edit Syntax Refactor View
Search...
[0] APLcart←{
[1]   α←0 A all columns
[2]   terms←ε ' (≠ε┐)×(' 'εω),ω
[3]   Filter←{
[4]     regex←'//'≡(,∘∘φ)α
[5]     pat←regex┐(-regex)┐α
[6]     pat ⅈS'%⊔'Regex'(regex 1)⊔'ML' 1⊔1┐ω
[7]   }
[8]   26::⊔SIGNAL←⊔DMX.(( 'EN'EN)('EM'EM)('Message'Message))
[9]   noUrls←'(\t)(http\S+)\t(http\S+)?$'⊔R'\1\1'┐APLcartTable 0
[10]  i←noUrls⊔Filter/terms,←noUrls
[11]  r←i┐"┐APLcartTable 0
[12]  2┐ö1×(∼α)⊔CSV⊔'Separator' (⊔UCS 9)⊔'QuoteChar' ' '⊔'DoubleQuote' 0┐r
[13] }

```

Nord

Added

Enhanced

IDE & RIDE

Dark themes

Help menu



Getting Started

Dyalog Help

Language Elements

GUI Overview

Documentation Centre

Dyalog Web Site

Email Dyalog

Latest Enhancements

Read Me

Third Party Licences

About



Getting Started

Dyalog Help

Language Elements

Documentation Centre

Dyalog Website

Email Dyalog

Latest Enhancements

Read Me

Third Party Licences

About

Shift+F1

Resources to help you take your first APL steps:

- [Tips](#) is a page of "useful to know" suggestions from previous beginners.
- [Mastering Dyalog APL](#) by Bernard Legrand is a complete guide to the use of Dyalog, beginning with a thorough introduction to the APL programming language and progressing to worked examples. The book is available for purchase through [Amazon](#); a [free PDF download](#) and an [online revision](#) (currently under development) are also available.
- [TryAPL](#) offers an interactive environment that allows users to play with simple APL expressions. Its [Learn tab](#) includes tutorials in which various scenarios are explored.
- [APL Wiki](#) includes [simple examples](#) of APL in action (as well as some [more advanced ones](#)).
- [APL Cultivation](#) is a series of chat lessons that were run through the [APL Orchard](#) chat room.
- [APL Course](#) is a self-study introduction to Dyalog with exercises.
- [APL Tutor](#) is an online system that takes a complete novice through the terminology, conventions and functionality of APL (not specific to Dyalog's dialect) – it looks a little dated but is a useful introduction.

Advancing your Knowledge

Resources to use as you become more familiar with APL:

- A complete [Dyalog documentation set](#) is provided and regularly updated. Documents can be downloaded as PDFs and a subset can be [purchased as printed manuals](#) or [viewed as online documentation](#).
- A [library of Dyalog's webinars](#) covers materials as diverse as in-depth investigations of individual primitives, source code management and creating custom user commands.
- [APL Cart](#) is a searchable collection of over two thousand short APL phrases intended for both beginners and professionals, with content provided by the community.
- [APL practice problems](#) with automated solution testing provide an opportunity to test your increasing knowledge (these are [APL problem solving competition](#) phase I questions)
- The [2016 Year Game](#) provides an opportunity to practice your command of primitive functions and operators.

	Added	Enhanced
IDE & RIDE	Dark themes	Help menu
User Commands		
Utilities		



	Added	Enhanced
IDE & RIDE	Dark themes	Help menu
User Commands	Accessing <code>□DMX</code>	
	<pre> (a,b,r,a)+(c,a,d)-(a,b,r,a) VALUE ERROR: Undefined name: c (a,b,r,a)+(c,a,d)-(a,b,r,a) ^ □DMX.Message Undefined name: c </pre>	
Utilities	<pre>]disp (a,b,r,a)+(c,a,d)-(a,b,r,a) * Command Execution Failed: VALUE ERROR □SE.SALTUtils.dmx.Message Undefined name: c </pre>	

Debugger

Tools View

Search...

SE.SALTUtils.c.Summa

```

ml+3  io+1
OS=SE.SALTUtils.OS
AllCmds='Summary' 'Calls' 'Xref' 'CD' 'Display' 'Disp' 'ToHex' 'FromHex' 'Factors' '

[0]  r+List;i
[1]  r+[NS]"(pAllCmds)p="
[2]  r.Group+'NS' 'FN' 'NS' 'File' 'Output' 'Output' 'Calc' 'Calc' 'Calc' 'File' 'Calc'
[3]  r.Parse+'1L -file' '1-2L -details -treeview -file -full -ns[=]' '1L -file -raw' '1SL
[4]  r.Name+AllCmds
[5]  i+0 A i+i+1 allows inserting new cmds w/o renumbering
[6]  r[i+i+1].Desc='Summarise (scope, size, syntax) the functions in a namespace/class/sc
[7]  r[i+i+1].Desc='Produce the calling tree of a function in a class/namespace/scriptfil
[8]  r[i+i+1].Desc='Describe the inter-object cross-references in a class/namespace/scip
[9]  r[i+i+1].Desc='Report (and, optionally, change) the current directory'
[10] r[i+i+1].Desc='Display specified array with borders indicating array and sub-array s
[11] r[i+i+1].Desc='Display specified array with borders indicating sub-array shape and t
[12] r[i+i+1].Desc='Convert integer(s) to a vector of text vectors containing the hexadec
[13] r[i+i+1].Desc='Convert a list of hexadecimal representations of integers to a numeri
[14] r[i+i+1].Desc='Determine the prime factors of the argument'
[15] r[i+i+1].Desc='Convert a component file timestamp (single float number) to TS forma
[16] r[i+i+1].Desc='Create a pivot table from an appropriate matrix'
[17]

[0]  r+Run(Cmd Args);ct;ns;sw;sp;file;arg;tmpNS;fn;nsname;Cn;b;ok;PP
[1]  A Execute cmd for all the defined commands
[2]
[3]  :If 4>Cn+AllCmds;C=Cmd
[4]  fn=file+1>ct+Args.Arguments
[5]  :If ok+Cn=2 A Cmd='FnCalls'
[6]  :If ok+1=pct
[7]  :If ok+&+b+'.'+file
[8]  file='this'
[9]  :Else
[10] file4+--+1+pf+(-1+2b)+file A accept ns.fn
[11] :EndIf
[12] :Else file+2>ct
[13] :EndIf
[14] :EndIf
[15] :If ~Args.file A get the space
[16] 'Only for [name]spaces' SIGNAL 11/2ok(9=##.THIS.ONC file)~('SE'(',')+'#')~THI
[17] tmpNS=##.THIS+file
[18] :Else
[19] r SIGNAL 11420epr+tmpNS+SE.SALT.Load''',file,''' -noname'
[20] :EndIf
[21] ct+SE.SALT.New'tools/code/callingTree'tmpNS
[22] :EndIf
[23]
[24] :Select Cn
[25] :Case 1+'Summary'
[26] r+format ct FnBefr

```

Namespace

Pos: 55/569,0

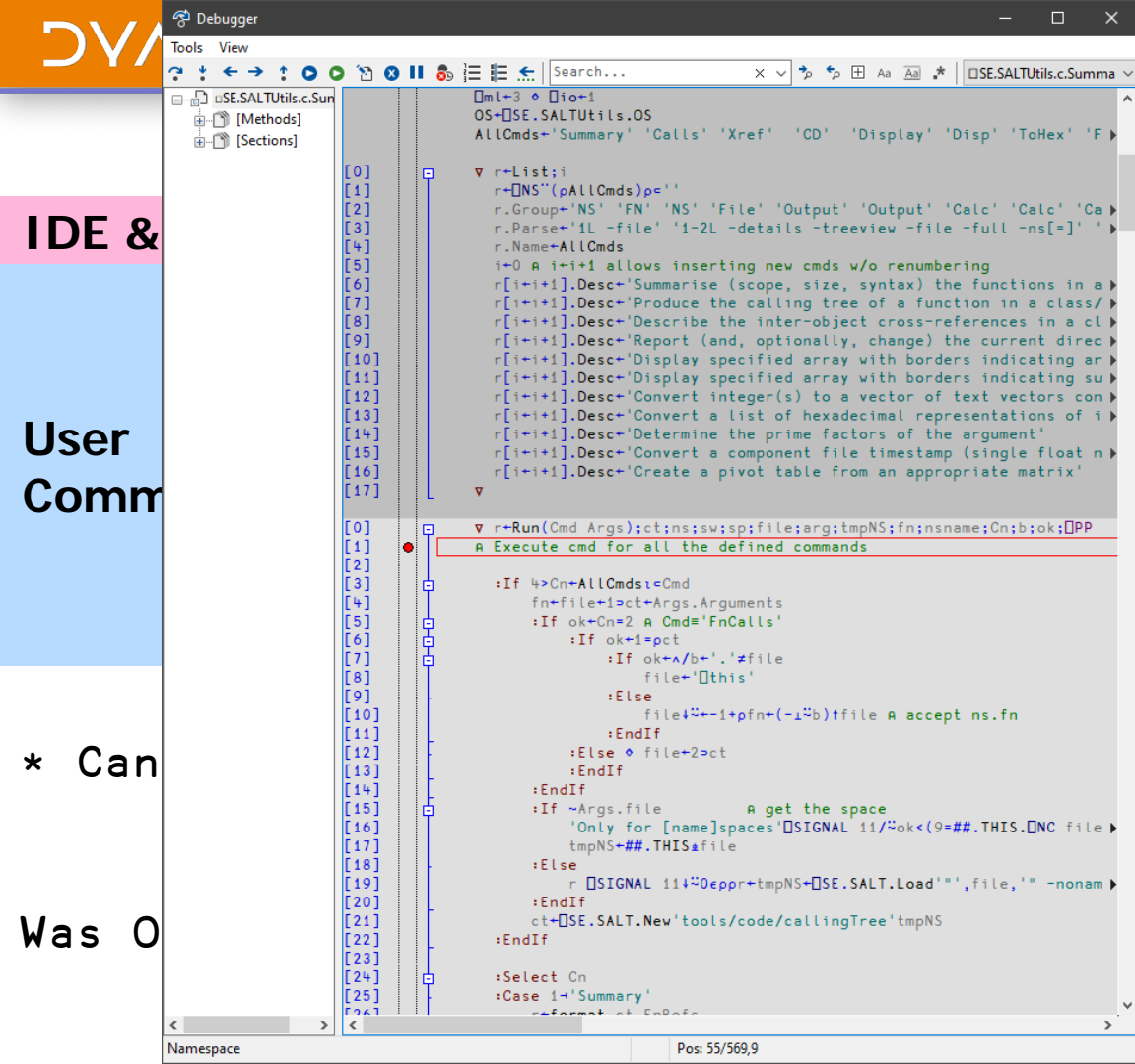
Enhanced

Help menu

Easy tracing of user code

In the beginning...





Enhanced

Help menu

Easy tracing of user code

One day...



```
OSE.input.c.Summary
File Edit Syntax Refactor View
Search... OSE.input.c.Summary.R

[0] 0ml+3 0io+1
[1] OS+OSE.SALTutils.OS
[2] AllCmds+Summary' 'Calls' 'Xref' 'CD' 'Display' 'Disp' 'ToHex' 'FromHex' 'Factors' '
[3]
[4]
[5]
[6]
[7]
[8]
[9]
[10]
[11]
[12]
[13]
[14]
[15]
[16]
[17]

v r+List;i
r+NS"(pAllCmds)pc"
r.Group+NS' 'FN' 'NS' 'File' 'Output' 'Output' 'Calc' 'Calc' 'Calc' 'File' 'Calc'
r.Parse+1L -file' '1-2L -details -treeview -file -full -ns[=]' '1L -file -raw' '1SL
r.Name+AllCmds
i+0 A i+i+1 allows inserting new cmds w/o renumbering
r[i+i+1].Desc='Summarise (scope, size, syntax) the functions in a namespace/class/sc
r[i+i+1].Desc='Produce the calling tree of a function in a class/namespace/scriptfil
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r[i+i+1].Desc='Determine the prime factors of the argument'
r[i+i+1].Desc='Convert a component file timestamp (single float number) to TS forma
r[i+i+1].Desc='Create a pivot table from an appropriate matrix'

v r+Run(Cmd.Args);ct;ns;sw;sp;file;arg;tmpNS;fn;nsname;Cn;b;ok;PP
A Execute cmd for all the defined commands

:If 4>Cn+AllCmds;Ccmd
fn+File+1>ct+Args.Arguments
:If ok+Cn=2 A Cmd='FnCalls'
:If ok+1=pct
:If ok+<A/b+'.'*file
file+[]this'
:Else
file1+--1+pfn+(-1+<b)file A accept ns.fn
:EndIf
:Else file+2>ct
:EndIf
:EndIf
:If -Args.file A get the space
'Only for [name]spaces'[]SIGNAL 11/2ok<(9=##.THIS.[]NC file)[]SE(','#')'[]THI
tmpNS+##.THIS*file
:Else
r []SIGNAL 11420eppr+tmpNS+[]SE.SALT.Load('',file,''' -noname'
:EndIf
ct+[]SE.SALT.New'tools/code/callingTree'tmpNS
:EndIf

:Select Cn
:Case 1+'Summary'
:Format ct FnDefn
```

Enhanced

Help menu

Easy tracing of user code

But now...



	Added	Enhanced
IDE & RIDE	Dark themes	Help menu
	Accessing □DMX	Easy tracing of user code
]APLCart	https://aplcart.info
User Commands		
Utilities		

X,Y,Z:any M,N:num I,J:int A,B:Bool C,D:char f,g,h:fn ax:axis s:scal v:vec m:mat

- ▶

θ
- ▶

$\vdash Y$
- ▶

$X \text{ dop } Y \vdash Z$
- ▶

$X \vdash Y$
- ▶

$X \vdash Y$
- ▶

$\neg Y$
- ▶

$X \neg Y$
- ▶

$X \rightarrow Y$
- ▶

$X \rightarrow Y$
- ▶

Empty Numeric Vector
- ▶

Same: Y
- ▶

Separate dyadic operator's right operand from its right argument (same as $(X \text{ dop } Y)Z$)
- ▶

Right: Y
- ▶

Church Boolean false (X if false, else Y)
- ▶

Same: Y
- ▶

Left: X
- ▶

Church Boolean true (X if true, else Y)

X,Y,Z:any M,N:num I,J:int A,B:Bool C,D:char f,g,h:fn ax:axis s:scal v:vec m:mat

- ▶

≠⌘!⌘□D

Meaning of life (short)
- ▶

⊕⌘⌘⌈*∘≡⊖

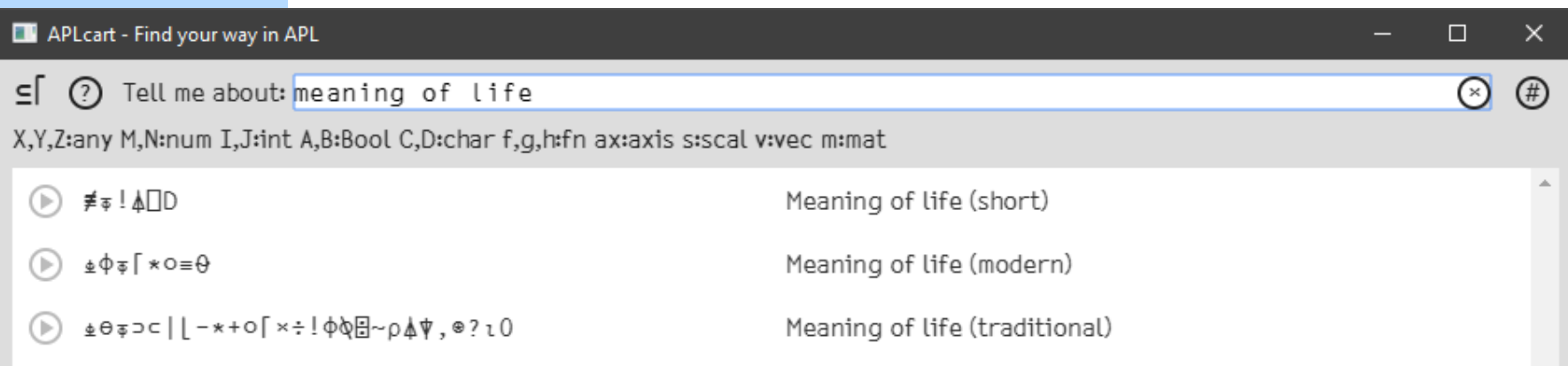
Meaning of life (modern)
- ▶

⊕⊖⌘⊃⊂|⌈-⋆+∘⌈×÷!⌘⌘⌘~ρ⌘⌘,⊗?ι0

Meaning of life (traditional)

	Added	Enhanced
IDE & RIDE	Dark themes	Help menu
	Accessing <code>□DMX</code>	Easy tracing of user code
	<code>]APLCart</code>	
User Commands	<code>]aplcart meaning of life</code> <code>X,Y,Z:any M,N:num I,J:int A,B:Bool C,D:char f,g,h:fn</code>	
	<code>≠⊥!⋈□D</code>	Meaning of life (short)
	<code>⊥⊥⊥ *o≡θ</code>	Meaning of life (modern)
	<code>⊥θ⊥>c [-*+o x÷!⊥⊥⊥~ρ⋈ψ,⊥?ι0</code>	Meaning of life (traditi
Utilities	Showing 3 of 3 matches	

	Added	Enhanced
IDE & RIDE	Dark themes	Help menu
	Accessing <code>⌈DMX</code>	Easy tracing of user code
	<code>⌈APLCart</code>	
User Commands	<code>⌈aplcart meaning of life -popup -theme=w</code>	



	Added	Enhanced
IDE & RIDE	Dark themes	Help menu
	Accessing <code>⌈DMX</code>	Easy tracing of user code
	<code>⌈APLCart</code>	
User Commands	<pre> ⌈aplcart meaning of life -popup -theme=w ⌈aplcart meaning of life -url https://aplcart.info?q=meaning of life ⌈aplcart meaning of life -url -theme=w https://aplcart.info?v8q=meaning of life </pre>	

APLcart - Find your way in APL

Tell me about:

X,Y,Z:any M,N:num I,J:int A,B:Bool C,D:char f,g,h:fn ax:axis s:scal v:vec m:mat

- ⌈aplcart meaning of life (short)
- ⌈aplcart meaning of life (modern)
- ⌈aplcart meaning of life (traditional)



Added

)ns
□NS

]link.import
□SE.Link.Import

)copy
□CY

]salt.load
□SE.SALT.Load

]link.create
□SE.Link.Create

]Get

□FIX 'file:///...'
2□FIX 'file:///...'

□CSV: 'Separator'...

□NGET

]load HttpCommand
HttpCommand

□JSON

□NINFO:1

□SH
□CMD

□XML

Боже мой!



```
]Get "C:\tmp\testme.apln"  
]Get 'file://C:\tmp\Take.aplf' -sync  
]Get C:\tmp\linktest  
]Get /tmp/myapp -sync  
]Get /tmp/ima.zip  
]Get github.com/mkromberg/apldemo/blob/master/Units.csv  
]Get github.com/Dyalog/Jarvis/blob/master/Distribution/Jarvis.dws  
]Get http://github.com/json5/json5/blob/master/test/test.json5  
]Get http://github.com/json5/json5/blob/master/test/test.json5:v  
]Get https://github.com/abrudz/Kbd  
]Get raw.githubusercontent.com/Dyalog/MiServer/master/Config/Logger.xml  
]Get ftp://ftp.software.ibm.com/software/test/foo.txt  
]Get '"C:\tmp\myarray.apla"'  
]Get HttpCommand -target=SE  
]Get dfns  
]Get display -only=DISPLAY -unpack  
]Get ]box  
]Get ]box:vtv
```



	Added			Enhanced	
IDE & RIDE	Dark themes			Help menu	
User Commands	Accessing ⌈DMX			Easy tracing of user code	
]APLCart				
]Get				
]Names				
⌈CY'utils'					
]names					
APLVERSION	DISPLAY	Globals	RJUST	Time	notes
BIG_ENDIAN	DOIF	KEYPRESS	SET	WSDIFF	ss
BMVIEW	ECHO	LJUST	SETWX	WSPACK	view
CENTRE	ENLIST	MAKEMAT	SM_TS	XVAR	ΔMAPPEND
CLIP2PR	FIND	MATRIX	SNAP	XWS	ΔMPUT
DETRAIL	FNGREP	NTREE	TRAV	Z	ΔVARS
DIR	FNREPL	PROP	TREE	_finddefine	Δmappend
DISP	FTREE	PROPS	TS_SM	ltom	Δmput

	Added	Enhanced
IDE & RIDE	Dark themes	Help menu
	Accessing □DMX	Easy tracing of user code
]APLCart	
User]Get	
Commands]Names	

]names 19

— 2 —	DIR	FTREE	RJUST	WSPACK	Δmappend
Z	DISP	Globals	SET	XVAR	Δmput
— 3 —	DISPLAY	KEYPRESS	SETWX	XWS	— 4 —
APLVERSION	DOIF	LJUST	SM_TS	_finddefine	TRAV
BIG_ENDIAN	ECHO	MAKEMAT	SNAP	ltom	— 9 —
BMVIEW	ENLIST	MATRIX	TREE	ss	notes
CENTRE	FIND	NTREE	TS_SM	ΔMAPPEND	view
CLIP2PR	FNGREP	PROP	Time	ΔMPUT	
DETRAIL	FNREPL	PROPS	WSDIFF	ΔVARS	

	Added	Enhanced
IDE & RIDE	Dark themes	Help menu
User Commands	Accessing □DMX]APLCart]Get]Names	Easy tracing of user code

]names 2,9

2: Z 9: notes view

]names 3.2

— 3.2 —	DISPLAY	LJUST	SNAP	ss	Δmappend
DETRAIL	ECHO	RJUST	Time	ΔMAPPEND	Δmput
DISP	ENLIST	SETWX	WSDIFF	ΔMPUT	

]names -filter=Δ*

ΔMAPPEND ΔMPUT ΔVARS Δmappend Δmput

	Added	Enhanced
IDE & RIDE	Dark themes	Help menu
User Commands	Accessing <code>⌈DMX</code> <code>]APLCart</code> <code>]Get</code> <code>]Names</code>	Easy tracing of user code

```

]names ⌈SE.Dyalog.Utils 2 9
—— 2 ——
⌈SE.Dyalog.Utils.APLcartTableCache
⌈SE.Dyalog.Utils.APLcartTableTime
⌈SE.Dyalog.Utils.lc
⌈SE.Dyalog.Utils.uc
—— 9 ——
⌈SE.Dyalog.Utils.SALT_Data
⌈SE.Dyalog.Utils.qa

]names -?
```


Print APL code that evaluates to 1 2 3

⌈Repr 1 2 3

(2 3⍥(2⍥1) (1 2) (1 3) (1⍥≠))

Print APL Array Notation:

⌈Repr 1 2 3 -f=aplan

Create file with JavaScript code:

⌈Repr 1 2 3 -f=js -o=

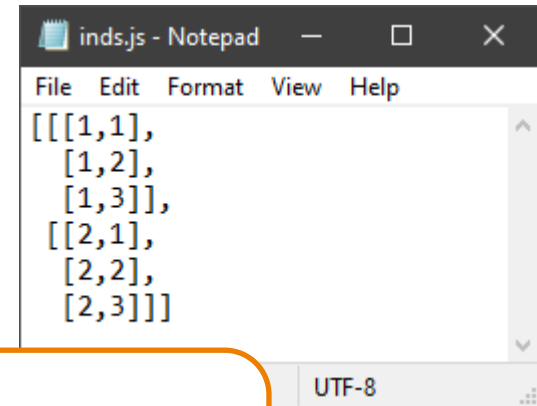
Print ⚡FX invocation to rebuild fur

⌈Repr ⚡SE.Dyalog.Utils.cut

⚡FX(,c' cut←{α←ω∈1↑ω ⚡ ML←1 ⚡

```
[
  (
    1 1
    1 2
    1 3
  )
  (
    2 1
    2 2
    2 3
  )
]
```

"A", "B", "C"
1, 2, 3
4, 5, 6



	Added	Enhanced
IDE & RIDE	Dark themes	Help menu
User Commands	Accessing □DMX]APLCart]Get]Names]Repr -?	Easy tracing of user code
Utilities		

	Added	Enhanced
IDE & RIDE	Dark themes	Help menu
User Commands	Accessing <code>□DMX</code> <code>]APLCart</code> <code>]Get</code> <code>]Names</code> <code>]Repr</code> <code>]View</code>	Easy tracing of user code

◦ . , / `□D□A (□C□A)`

Added

IDE & RIDE

Dark themes

Accessing `[]DMX``]APLCart``]Get`User
Commands`]Names``]Repr``]View``]view o.,/[]D[]A([]C[]A)`

#dyalog21

Highlight

[Namespace].output (Tid:3)

```
File Edit Syntax Refactor View
Search...
```

2Da	2Db	2Dc	2Dd	2De	2Df	2Dg	2Dh	2Di	2Dj	2Dk	2Dl	2Dm	2Dn	2Do	2Dp	2Dq	2Dr	2Ds	2Dt	2Du	2Dv	2Dw	2Dx	2Dy	2Dz
2Ea	2Eb	2Ec	2Ed	2Ee	2Ef	2Eg	2Eh	2Ei	2Ej	2Ek	2El	2Em	2En	2Eo	2Ep	2Eq	2Er	2Es	2Et	2Eu	2Ev	2Ew	2Ex	2Ey	2Ez
2Fa	2Fb	2Fc	2Fd	2Fe	2Ff	2Fg	2Fh	2Fi	2Fj	2Fk	2Fl	2Fm	2Fn	2Fo	2Fp	2Fq	2Fr	2Fs	2Ft	2Fu	2Fv	2Fw	2Fx	2Fy	2Fz
2Ga	2Gb	2Gc	2Gd	2Ge	2Gf	2Gg	2Gh	2Gi	2Gj	2Gk	2Gl	2Gm	2Gn	2Go	2Gp	2Gq	2Gr	2Gs	2Gt	2Gu	2Gv	2Gw	2Gx	2Gy	2Gz
2Ha	2Hb	2Hc	2Hd	2He	2Hf	2Hg	2Hh	2Hi	2Hj	2Hk	2Hl	2Hm	2Hn	2Ho	2Hp	2Hq	2Hr	2Hs	2Ht	2Hu	2Hv	2Hw	2Hx	2Hy	2Hz
2Ia	2Ib	2Ic	2Id	2Ie	2If	2Ig	2Ih	2Ii	2Ij	2Ik	2Il	2Im	2In	2Io	2Ip	2Iq	2Ir	2Is	2It	2Iu	2Iv	2Iw	2Ix	2Iy	2Iz
2Ja	2Jb	2Jc	2Jd	2Je	2Jf	2Jg	2Jh	2Ji	2Jj	2Jk	2Jl	2Jm	2Jn	2Jo	2Jp	2Jq	2Jr	2Js	2Jt	2Ju	2Jv	2Jw	2Jx	2Jy	2Jz
2Ka	2Kb	2Kc	2Kd	2Ke	2Kf	2Kg	2Kh	2Ki	2Kj	2Kk	2Kl	2Km	2Kn	2Ko	2Kp	2Kq	2Kr	2Ks	2Kt	2Ku	2Kv	2Kw	2Kx	2Ky	2Kz
2La	2Lb	2Lc	2Ld	2Le	2Lf	2Lg	2Lh	2Li	2Lj	2Lk	2Ll	2Lm	2Ln	2Lo	2Lp	2Lq	2Lr	2Ls	2Lt	2Lu	2Lv	2Lw	2Lx	2Ly	2Lz
2Ma	2Mb	2Mc	2Md	2Me	2Mf	2Mg	2Mh	2Mi	2Mj	2Mk	2Ml	2Mm	2Mn	2Mo	2Mp	2Mq	2Mr	2Ms	2Mt	2Mu	2Mv	2Mw	2Mx	2My	2Mz
2Na	2Nb	2Nc	2Nd	2Ne	2Nf	2Ng	2Nh	2Ni	2Nj	2Nk	2Nl	2Nm	2Nn	2No	2Np	2Nq	2Nr	2Ns	2Nt	2Nu	2Nv	2Nw	2Nx	2Ny	2Nz
2Oa	2Ob	2Oc	2Od	2Oe	2Of	2Og	2Oh	2Oi	2Oj	2Ok	2Ol	2Om	2On	2Oo	2Op	2Oq	2Or	2Os	2Ot	2Ou	2Ov	2Ow	2Ox	2Oy	2Oz
2Pa	2Pb	2Pc	2Pd	2Pe	2Pf	2Pg	2Ph	2Pi	2Pj	2Pk	2Pl	2Pm	2Pn	2Po	2Pp	2Pq	2Pr	2Ps	2Pt	2Pu	2Pv	2Pw	2Px	2Py	2Pz
2Qa	2Qb	2Qc	2Qd	2Qe	2Qf	2Qg	2Qh	2Qi	2Qj	2Qk	2Ql	2Qm	2Qn	2Qo	2Qp	2Qq	2Qr	2Qs	2Qt	2Qu	2Qv	2Qw	2Qx	2Qy	2Qz
2Ra	2Rb	2Rc	2Rd	2Re	2Rf	2Rg	2Rh	2Ri	2Rj	2Rk	2Rl	2Rm	2Rn	2Ro	2Rp	2Rq	2Rr	2Rs	2Rt	2Ru	2Rv	2Rw	2Rx	2Ry	2Rz
2Sa	2Sb	2Sc	2Sd	2Se	2Sf	2Sg	2Sh	2Si	2Sj	2Sk	2Sl	2Sm	2Sn	2So	2Sp	2Sq	2Sr	2Ss	2St	2Su	2Sv	2Sw	2Sx	2Sy	2Sz
2Ta	2Tb	2Tc	2Td	2Te	2Tf	2Tg	2Th	2Ti	2Tj	2Tk	2Tl	2Tm	2Tn	2To	2Tp	2Tq	2Tr	2Ts	2Tt	2Tu	2Tv	2Tw	2Tx	2Ty	2Tz
2Ua	2Ub	2Uc	2Ud	2Ue	2Uf	2Ug	2Uh	2Ui	2Uj	2Uk	2Ul	2Um	2Un	2Uo	2Up	2Uq	2Ur	2Us	2Ut	2Uu	2Uv	2Uw	2Ux	2Uy	2Uz
2Va	2Vb	2Vc	2Vd	2Ve	2Vf	2Vg	2Vh	2Vi	2Vj	2Vk	2Vl	2Vm	2Vn	2Vo	2Vp	2Vq	2Vr	2Vs	2Vt	2Vu	2Vv	2Vw	2Vx	2Vy	2Vz
2Wa	2Wb	2Wc	2Wd	2We	2Wf	2Wg	2Wh	2Wi	2Wj	2Wk	2Wl	2Wm	2Wn	2Wo	2Wp	2Wq	2Wr	2Ws	2Wt	2Wu	2Wv	2Ww	2Wx	2Wy	2Wz
2Xa	2Xb	2Xc	2Xd	2Xe	2Xf	2Xg	2Xh	2Xi	2Xj	2Xk	2Xl	2Xm	2Xn	2Xo	2Xp	2Xq	2Xr	2Xs	2Xt	2Xu	2Xv	2Xw	2Xx	2Xy	2Xz
2Ya	2Yb	2Yc	2Yd	2Ye	2Yf	2Yg	2Yh	2Yi	2Yj	2Yk	2Yl	2Ym	2Yn	2Yo	2Yp	2Yq	2Yr	2Ys	2Yt	2Yu	2Yv	2Yw	2Yx	2Yy	2Yz
2Za	2Zb	2Zc	2Zd	2Ze	2Zf	2Zg	2Zh	2Zi	2Zj	2Zk	2Zl	2Zm	2Zn	2Zo	2Zp	2Zq	2Zr	2Zs	2Zt	2Zu	2Zv	2Zw	2Zx	2Zy	2Zz
3Aa	3Ab	3Ac	3Ad	3Ae	3Af	3Ag	3Ah	3Ai	3Aj	3Ak	3Al	3Am	3An	3Ao	3Ap	3Aq	3Ar	3As	3At	3Au	3Av	3Aw	3Ax	3Ay	3Az
3Ba	3Bb	3Bc	3Bd	3Be	3Bf	3Bg	3Bh	3Bi	3Bj	3Bk	3Bl	3Bm	3Bn	3Bo	3Bp	3Bq	3Br	3Bs	3Bt	3Bu	3Bv	3Bw	3Bx	3By	3Bz
3Ca	3Cb	3Cc	3Cd	3Ce	3Cf	3Cg	3Ch	3Ci	3Cj	3Ck	3Cl	3Cm	3Cn	3Co	3Cp	3Cq	3Cr	3Cs	3Ct	3Cu	3Cv	3Cw	3Cx	3Cy	3Cz
3Da	3Db	3Dc	3Dd	3De	3Df	3Dg	3Dh	3Di	3Dj	3Dk	3Dl	3Dm	3Dn	3Do	3Dp	3Dq	3Dr	3Ds	3Dt	3Du	3Dv	3Dw	3Dx	3Dy	3Dz
3Ea	3Eb	3Ec	3Ed	3Ee	3Ef	3Eg	3Eh	3Ei	3Ej	3Ek	3El	3Em	3En	3Eo	3Ep	3Eq	3Er	3Es	3Et	3Eu	3Ev	3Ew	3Ex	3Ey	3Ez
3Fa	3Fb	3Fc	3Fd	3Fe	3Ff	3Fg	3Fh	3Fi	3Fj	3Fk	3Fl	3Fm	3Fn	3Fo	3Fp	3Fq	3Fr	3Fs	3Ft	3Fu	3Fv	3Fw	3Fx	3Fy	3Fz
3Ga	3Gb	3Gc	3Gd	3Ge	3Gf	3Gg	3Gh	3Gi	3Gj	3Gk	3Gl	3Gm	3Gn	3Go	3Gp	3Gq	3Gr	3Gs	3Gt	3Gu	3Gv	3Gw	3Gx	3Gy	3Gz
3Ha	3Hb	3Hc	3Hd	3He	3Hf	3Hg	3Hh	3Hi	3Hj	3Hk	3Hl	3Hm	3Hn	3Ho	3Hp	3Hq	3Hr	3Hs	3Ht	3Hu	3Hv	3Hw	3Hx	3Hy	3Hz
3Ia	3Ib	3Ic	3Id	3Ie	3If	3Ig	3Ih	3Ii	3Ij	3Ik	3Il	3Im	3In	3Io	3Ip	3Iq	3Ir	3Is	3It	3Iu	3Iv	3Iw	3Ix	3Iy	3Iz
3Ja	3Jb	3Jc	3Jd	3Je	3Jf	3Jg	3Jh	3Ji	3Jj	3Jk	3Jl	3Jm	3Jn	3Jo	3Jp	3Jq	3Jr	3Js	3Jt	3Ju	3Jv	3Jw	3Jx	3Jy	3Jz
3Ka	3Kb	3Kc	3Kd	3Ke	3Kf	3Kg	3Kh	3Ki	3Kj	3Kk	3Kl	3Km	3Kn	3Ko	3Kp	3Kq	3Kr	3Ks	3Kt	3Ku	3Kv	3Kw	3Kx	3Ky	3Kz
3La	3Lb	3Lc	3Ld	3Le	3Lf	3Lg	3Lh	3Li	3Lj	3Lk	3Ll	3Lm	3Ln	3Lo	3Lp	3Lq	3Lr	3Ls	3Lt	3Lu	3Lv	3Lw	3Lx	3Ly	3Lz
3Ma	3Mb	3Mc	3Md	3Me	3Mf	3Mg	3Mh	3Mi	3Mj	3Mk	3Ml	3Mm	3Mn	3Mo	3Mp	3Mq	3Mr	3Ms	3Mt	3Mu	3Mv	3Mw	3Mx	3My	3Mz
3Na	3Nb	3Nc	3Nd	3Ne	3Nf	3Ng	3Nh	3Ni	3Nj	3Nk	3Nl	3Nm	3Nn	3No	3Np	3Nq	3Nr	3Ns	3Nt	3Nu	3Nv	3Nw	3Nx	3Ny	3Nz
3Oa	3Ob	3Oc	3Od	3Oe	3Of	3Og	3Oh	3Oi	3Oj	3Ok	3Ol	3Om	3On	3Oo	3Op	3Oq	3Or	3Os	3Ot	3Ou	3Ov	3Ow	3Ox	3Oy	3Oz
3Pa	3Pb	3Pc	3Pd	3Pe	3Pf	3Pg	3Ph	3Pi	3Pj	3Pk	3Pl	3Pm	3Pn	3Po	3Pp	3Pq	3Pr	3Ps	3Pt	3Pu	3Pv	3Pw	3Px	3Py	3Pz
3Qa	3Qb	3Qc	3Qd	3Qe	3Qf	3Qg	3Qh	3Qi	3Qj	3Qk	3Ql	3Qm	3Qn	3Qo	3Qp	3Qq	3Qr	3Qs	3Qt	3Qu	3Qv	3Qw	3Qx	3Qy	3Qz
3Ra	3Rb	3Rc	3Rd	3Re	3Rf	3Rg	3Rh	3Ri	3Rj	3Rk	3Rl	3Rm	3Rn	3Ro	3Rp	3Rq	3Rr	3Rs	3Rt	3Ru	3Rv	3Rw	3Rx	3Ry	3Rz
3Sa	3Sb	3Sc	3Sd	3Se	3Sf	3Sg	3Sh	3Si	3Sj	3Sk	3Sl	3Sm	3Sn	3So	3Sp	3Sq	3Sr	3Ss	3St	3Su	3Sv	3Sw	3Sx	3Sy	3Sz
3Ta	3Tb	3Tc	3Td	3Te	3Tf	3Tg	3Th	3Ti	3Tj	3Tk	3Tl	3Tm	3Tn	3To	3Tp	3Tq	3Tr	3Ts	3Tt	3Tu	3Tv	3Tw	3Tx	3Ty	3Tz
3Ua	3Ub	3Uc	3Ud	3Ue	3Uf	3Ug	3Uh	3Ui	3Uj	3Uk	3Ul	3Um	3Un	3Uo	3Up	3Uq	3Ur	3Us	3Ut	3Uu	3Uv	3Uw	3Ux	3Uy	3Uz
3Va	3Vb	3Vc	3Vd	3Ve	3Vf	3Vg	3Vh	3Vi	3Vj	3Vk	3Vl	3Vm	3Vn	3Vo	3Vp	3Vq	3Vr	3Vs	3Vt	3Vu	3Vv	3Vw	3Vx	3Vy	3Vz
3Wa	3Wb	3Wc	3Wd	3We	3Wf	3Wg	3Wh	3Wi	3Wj	3Wk	3Wl	3Wm	3Wn	3Wo	3Wp	3Wq	3Wr	3Ws	3Wt	3Wu	3Wv	3Ww	3Wx	3Wy	3Wz
3Xa	3Xb	3Xc	3Xd	3Xe	3Xf	3Xg	3Xh	3Xi	3Xj	3Xk	3Xl	3Xm	3Xn	3Xo	3Xp	3Xq	3Xr	3Xs	3Xt	3Xu	3Xv	3Xw	3Xx	3Xy	3Xz
3Ya	3Yb	3Yc	3Yd	3Ye	3Yf	3Yg	3Yh	3Yi	3Yj	3Yk	3Yl	3Ym	3Yn	3Yo	3Yp	3Yq	3Yr	3Ys	3Yt	3Yu	3Yv	3Yw	3Yx	3Yy	3Yz
3Za	3Zb	3Zc	3Zd	3Ze	3Zf	3Zg	3Zh	3Zi	3Zj	3Zk	3Zl	3Zm	3Zn	3Zo	3Zp	3Zq	3Zr	3Zs	3Zt	3Zu	3Zv	3Zw	3Zx	3Zy	3Zz
4Aa	4Ab	4Ac	4Ad	4Ae	4Af	4Ag	4Ah	4Ai	4Aj	4Ak	4Al	4Am	4An	4Ao	4Ap	4Aq	4Ar	4As	4At	4Au	4Av	4Aw	4Ax	4Ay	4Az
4Ba	4Bb	4Bc	4Bd	4Be	4Bf	4Bg	4Bh	4Bi	4Bj	4Bk	4Bl	4Bm	4Bn	4Bo	4Bp	4Bq	4Br	4Bs	4Bt	4Bu	4Bv	4Bw	4Bx	4By	4Bz
4Ca	4Cb	4Cc	4Cd	4Ce	4Cf	4Cg	4Ch	4Ci	4Cj	4Ck	4Cl	4Cm	4Cn	4Co	4Cp	4Cq	4Cr	4Cs	4Ct	4Cu	4Cv	4Cw	4Cx	4Cy	4Cz
4Da	4Db	4Dc	4Dd	4De	4Df	4Dg	4Dh	4Di	4Dj	4Dk	4Dl	4Dm	4Dn	4Do	4Dp	4Dq	4Dr	4Ds	4Dt	4Du	4Dv	4Dw	4Dx	4Dy	4Dz
4Ea	4Eb	4Ec	4Ed	4Ee	4Ef	4Eg	4Eh	4Ei	4Ej	4Ek	4El	4Em	4En	4Eo	4Ep	4Eq	4Er	4Es	4Et	4Eu	4Ev	4Ew	4Ex	4Ey	4Ez
4Fa	4Fb	4Fc	4Fd	4Fe	4Ff	4Fg	4Fh	4Fi	4Fj	4Fk	4Fl	4Fm	4Fn	4Fo	4Fp	4Fq	4Fr	4Fs	4Ft	4Fu	4Fv	4Fw	4Fx	4Fy	4Fz
4Ga	4Gb	4Gc	4Gd	4Ge	4Gf	4Gg	4Gh	4Gi	4Gj	4Gk	4Gl	4Gm	4Gn	4Go	4Gp	4Gq	4Gr	4Gs	4Gt	4Gu	4Gv	4Gw	4Gx	4Gy	4Gz
4Ha	4Hb	4Hc	4Hd	4He	4Hf	4Hg	4Hh	4Hi	4Hj	4Hk	4Hl	4Hm	4Hn	4Ho	4Hp	4Hq	4Hr	4Hs	4Ht	4Hu	4Hv	4Hw	4Hx	4Hy	4Hz
4Ia	4Ib	4Ic	4Id	4Ie	4If	4Ig	4Ih	4Ii	4Ij	4Ik	4Il	4Im	4In	4Io	4Ip	4Iq	4Ir	4Is	4It	4Iu	4Iv	4Iw	4Ix	4Iy	4Iz

ReadyNest Nested Array Shape: (scalar)1 (Depth: 3) Pos: 0/269,0

IDE & RIDE

User
Commands

Added

Dark themes

Accessing □DMX

]APLCart

]Get

]Names

]Repr

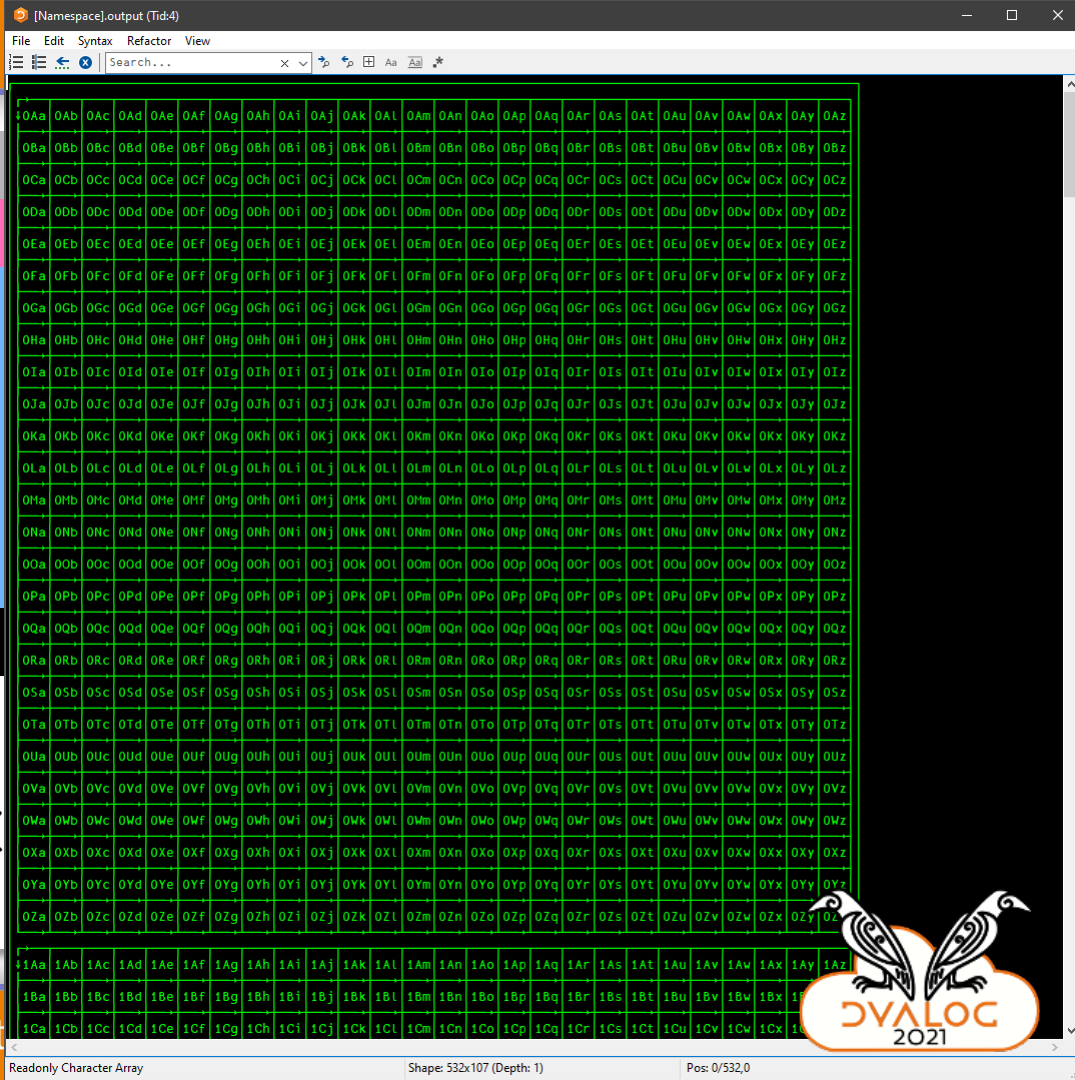
]View

]view]disp °.,/□D□A(



#dialog21

Highlight



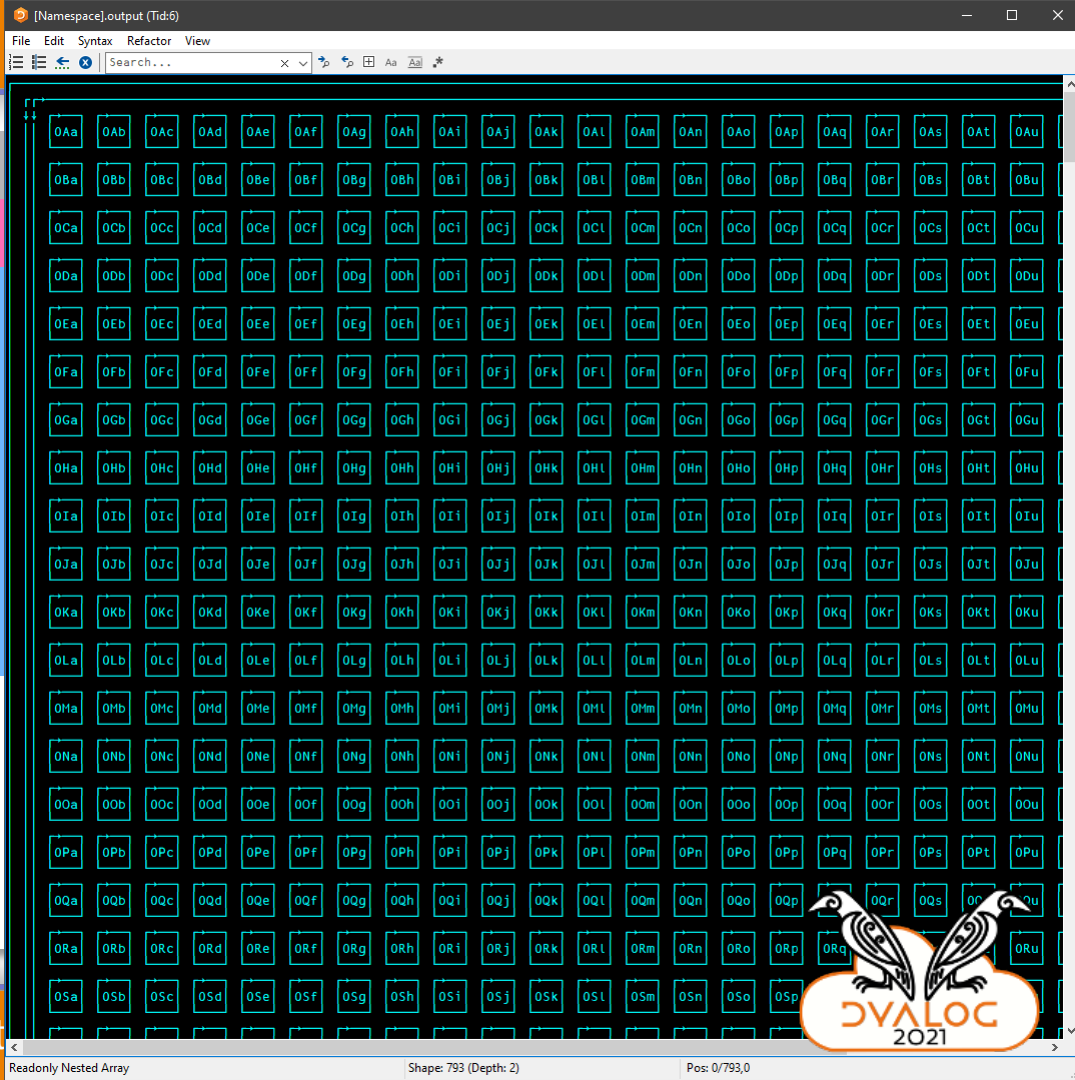
IDE & RIDE

Added

Dark themes

Accessing `□DMX``]APLCart``]Get``]Names``]Repr``]View``]box on -view=max`

Was OFF -view=min

`]view °.,/□D□A(□C□A)`

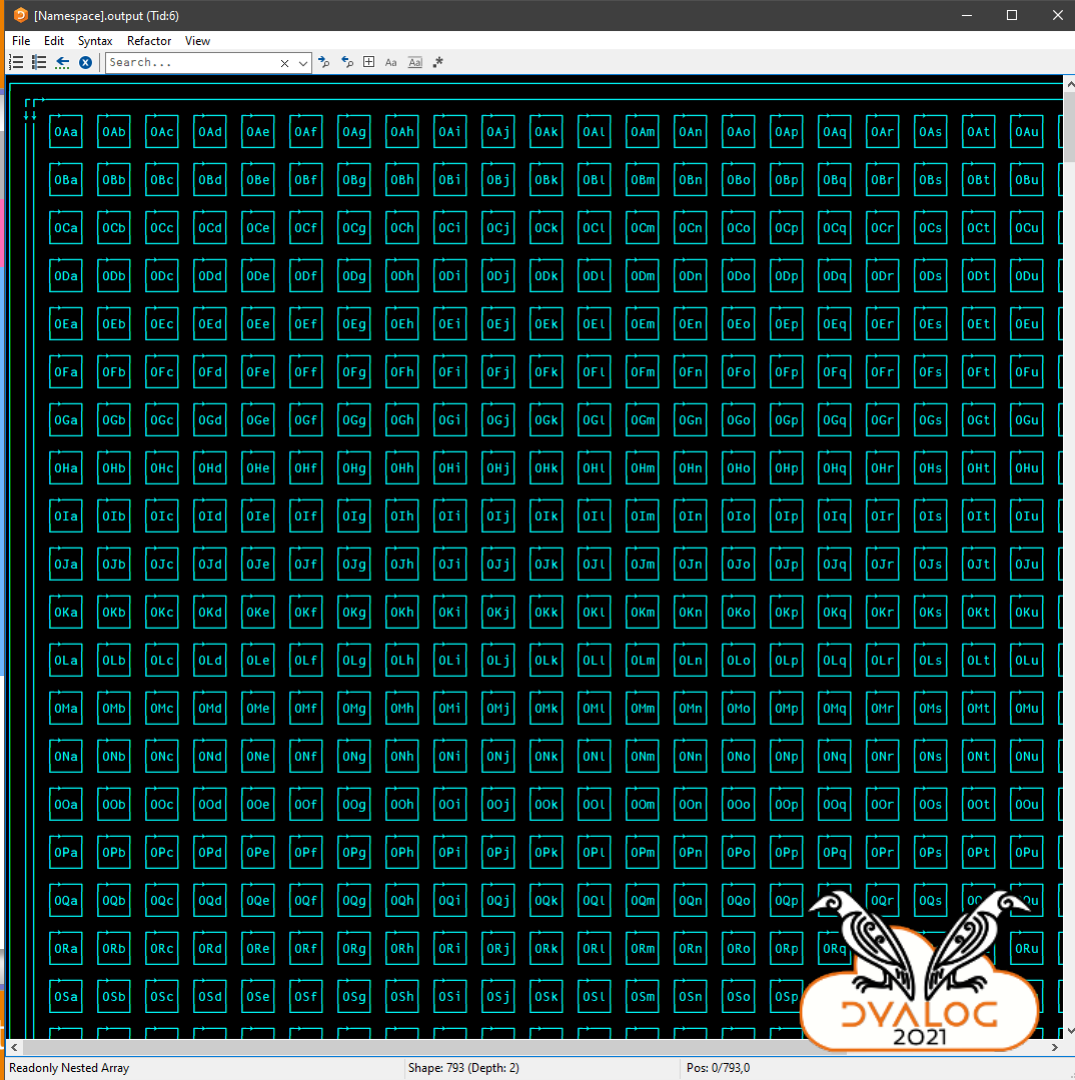
IDE & RIDE

Added

Dark themes

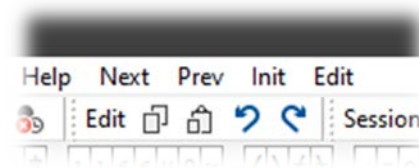
Accessing `□DMX``]APLCart``]Get``]Names``]Repr``]View``]box on -view=max`

Was OFF -view=min

`]view °.,/□D□A(□C□A)``]box -style=non`

	Added	Enhanced
IDE & RIDE	Dark themes	Help menu
User Commands	Accessing <code>[]DMX</code>	Easy tracing of user code
	<code>]APLCart</code>	<code>]Box -view= -style=non</code>
	<code>]Get</code>	<code>]Demo -quiet</code>
	<code>]Names</code>	
	<code>]Repr</code>	
	<code>]View</code>	

```
]demo /tmp/presentation
Loaded script \tmp\presentation.demo
```



	Added	Enhanced
IDE & RIDE	Dark themes	Help menu
User Commands	Accessing □DMX	Easy tracing of user code
]APLCart]Box -view= -style=non
]Get]Demo -quiet
]Names	
]Repr	
]View	

```
]demo /tmp/presentation -quiet
```



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	Added	Enhanced
IDE & RIDE	Dark themes	Help menu
User Commands	Accessing <code>□DMX</code> <code>]APLCart</code> <code>]Get</code> <code>]Names</code> <code>]Repr</code> <code>]View</code>	Easy tracing of user code <code>]Box -view= -style=non</code> <code>]Demo -quiet</code> <code>]HTML -raw</code> <code>]In -outdir=</code> <code>]OUTPUT.Find -timestamp</code>

```

▽ foo
  ?42
▽
foo

```

37

	Added	Enhanced
IDE & RIDE	Dark themes	Help menu
User Commands	Accessing <code>□DMX</code> <code>]APLCart</code> <code>]Get</code> <code>]Names</code> <code>]Repr</code> <code>]View</code>	Easy tracing of user code <code>]Box -view= -style=non</code> <code>]Demo -quiet</code> <code>]HTML -raw</code> <code>]In -outdir=</code> <code>]OUTPUT.Find -timestamp</code>

```

    ]output.find on
Was off
    foo
>> Output from #.foo[0]
17

```

	Added	Enhanced
IDE & RIDE	Dark themes	Help menu
User Commands	Accessing <code>[]DMX</code> <code>]APLCart</code> <code>]Get</code> <code>]Names</code> <code>]Repr</code> <code>]View</code>	Easy tracing of user code <code>]Box -view= -style=non</code> <code>]Demo -quiet</code> <code>]HTML -raw</code> <code>]In -outdir=</code> <code>]OUTPUT.Find -timestamp</code>

```
]output.find on -timestamp
```

```
Was on
```

```
foo
```

```
>> Output from #.foo[0] at 2021-11-05 05:34:07.701
```

```
30
```



	Added	Enhanced
IDE & RIDE	Dark themes	Help menu
	Accessing <code>□DMX</code>	Easy tracing of user code
	<code>]APLCart</code>	<code>]Box -view= -style=non</code>
User	<code>]Get</code>	<code>□SIZE</code>
	<code>□NC⊆,</code>	<code>]in -outair=</code>
	<code>]View</code>	<code>mestamp</code>
	<code>□ATX</code>	<code>5179I''⊆</code>
Utilities	<code>□NR''⊆</code>	<code>Боже мой!</code>
	<code>□SRCö⌿''⊆</code>	

```

↑source←'r ← Foo y ; z' 'r ← z, z ← 1e3+y'
r ← Foo y ; z
r ← z, z ← 1e3+y
  2⍴FIX source
  ↑⍴NR'Foo'
r←Foo y;z
r←z,z←1000+y

```

⍴ATX

Utilities



```

      ↑source←'r ← Foo y ; z' 'r ← z, z ← 1e3+y'
r ← Foo y ; z
r ← z, z ← 1e3+y
      2□FIX source
      ↑61□ATX'Foo'
r←Foo y;z
r←z,z←1000+y
      ↑60□ATX'Foo'
r ← Foo y ; z
r ← z, z ← 1e3+y

```

□ATX

Utilities




```

      ↑source←'r ← Foo y ; z' 'r ← z, z ← 1e3+y'
r ← Foo y ; z
r ← z, z ← 1e3+y
      2□FIX source
      ↑61□ATX'Foo'
r←Foo y;z
r←z,z←1000+y
      ↑60□ATX'Foo'
r ← Foo y ; z
r ← z, z ← 1e3+y

```

```
]help □ATX
```

Utilities



[Namespace].output (Tid:5)

File Edit Syntax Refactor View

Search...

≠!⌈⌈D	Meaning of life (short)	Constant	Expression	hitchhiker'sguidetothe galaxy hitchhikersguidetothe galaxy
⌈⌈⌈*o≡θ	Meaning of life (modern)	Constant	Expression	hitchhiker'sguidetothe galaxy hitchhikersguidetothe galaxy
⌈θ≡>= [-*+o[×÷!⌈⌈~ρ⌈ψ,θ?ι0	Meaning of life (traditional)	Constant	Expression	hitchhiker'sguidetothe galaxy hitchhikersguidetothe galaxy

Readonly Nested Array Shape: 7 (Depth: 2) Pos: 0/7,0

]view 1 ⌈SE.Dyalog.Utils.APLcart 'meaning of life'

Utilities

⌈ATX

⌈SE.Dyalog.Utils.APLcart



```
□SE.Dyalog.Utils.Config 'name'
```

Adám

```
msg←'Status for ',□SE.Dyalog.Utils.Config 'name'  
msg,←' in ',□SE.Dyalog.Utils.Config 'workdir'  
msg,←' of ',□SE.Dyalog.Utils.Config 'appdomain'  
msg,←': OK'  
msg
```

Status for Adám in /tmp of Dyalog: OK

Utilities

```
□ATX
```

```
□SE.Dyalog.Utils.APLcart
```

```
□SE.Dyalog.Utils.ExpandConfig
```



```
□SE.Dyalog.Utils.Config 'name'
```

Adám

```
'Status for ',(□SE.Dyalog.Utils.(Config 'name'),' in ',  
(Config 'workdir'),' of ',Config 'appdomain'),' : OK'
```

msg

Status for Adám in /tmp of Dyalog: OK

Utilities

```
□ATX
```

```
□SE.Dyalog.Utils.APLcart
```

```
□SE.Dyalog.Utils.ExpandConfig
```



```
□SE.Dyalog.Utils.Config 'name'
```

Adám

```
vals←□SE.Dyalog.Utils.Config''name' 'workdir' 'appdomain'  
msg←'Status for ',evals,'' in ' ' of ' ': OK'
```

msg

Status for Adám in /tmp of Dyalog: OK

Utilities

```
□ATX
```

```
□SE.Dyalog.Utils.APLcart
```

```
□SE.Dyalog.Utils.ExpandConfig
```



```
␣SE.Dyalog.Utils.Config 'name'
```

Adám

```
msg←'Status for [name] in [workdir] of [appdomain]: OK'  
msg←␣SE.Dyalog.Utils.ExpandConfig msg
```

msg

Status for Adám in /tmp of Dyalog: OK

Utilities

```
␣ATX
```

```
␣SE.Dyalog.Utils.APLcart
```

```
␣SE.Dyalog.Utils.ExpandConfig
```



POSIX

```
adam@adam1aptop: ~$ echo $names can!
```

cmd.exe

```
C:\Users\Adam>echo %name%s can!
```

PowerShell

```
PS C:\Users\Adam> echo "$env:names can!"
```

SALT

```
]list [name]s
```

Utilities

```
□ATX
```

```
□SE.Dyalog.Utils.APLcart
```

```
□SE.Dyalog.Utils.ExpandConfig
```



POSIX

```
adam@adam-laptop: ~$ echo ${name}s can!
```

cmd.exe

```
C:\Users\Adam>echo %name%s can!
```

PowerShell

```
PS C:\Users\Adam> echo "${env:name}s can!"
```

SALT

```
]list [name]s
```

Utilities

```
□ATX
```

```
□SE.Dyalog.Utils.APLcart
```

```
□SE.Dyalog.Utils.ExpandConfig
```




```
SE.DIALOG.Utils.ExpandConfig
```

```
'%name%s can!'
```

Utilities

```
ATX
```

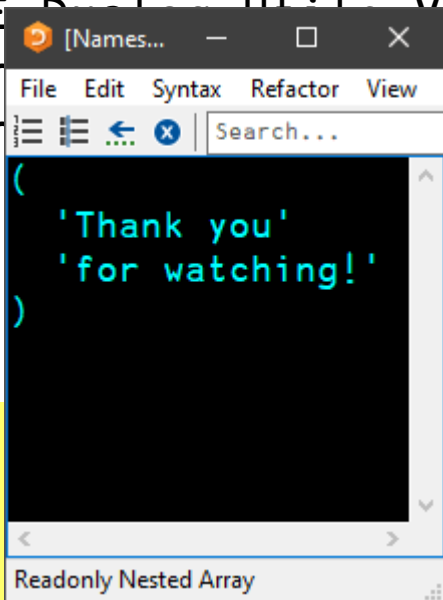
```
SE.DIALOG.Utils.APLcart
```

```
SE.DIALOG.Utils.ExpandConfig
```

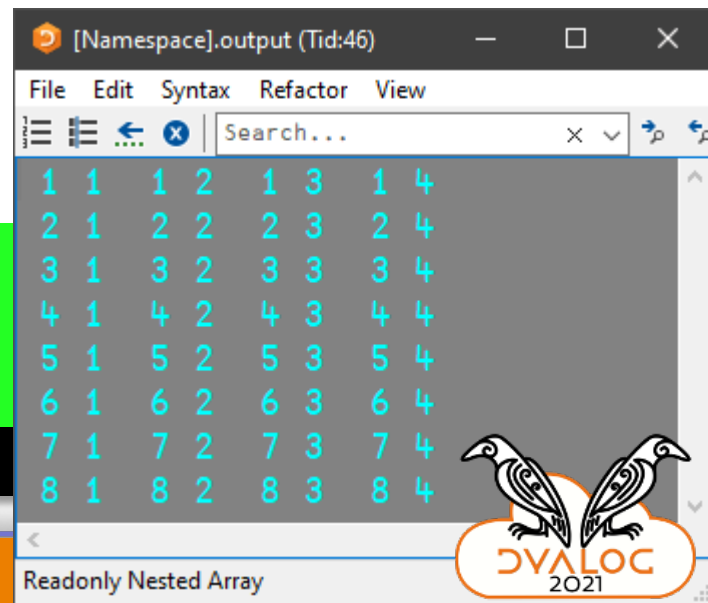


SE Dyalog Utilities View 18 4

Array log.(Utils.View Array.Serialise)
 Array you' 'for watching!'



s.APLcart
 s.ExpandConfig
 SE.Dyalog.Utils.View



Utilities

	Added	Enhanced
IDE & RIDE	Dark themes	Help menu
User Commands	Accessing <code>□DMX</code> <code>]APLCart</code> <code>]Get</code> <code>]Names</code> <code>]Repr</code> <code>]View</code>	Easy tracing of user code <code>]Box -view= -style=non</code> <code>]Demo -quiet</code> <code>]HTML -raw</code> <code>]In -outdir=</code> <code>]OUTPUT.Find -timestamp</code>
Utilities	<code>□ATX</code> <code>□SE.Dyalog.Utils.APLcart</code> <code>□SE.Dyalog.Utils.ExpandConfig</code> <code>□SE.Dyalog.Utils.View</code>	

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Utilities	<code>□ATX</code> <code>□SE.Dyalog.Utils.APLcart</code> <code>□SE.Dyalog.Utils.ExpandConfig</code> <code>□SE.Dyalog.Utils.View</code>	various minor enhancements mentioned in release notes