

DYALOG

Elsinore 2019



The Road Ahead

Morten Kromberg, CTO, Dyalog Ltd.

Dyalog's Goals

Make it easier to ...

- ◆ Discover and Acquire Dyalog APL
- ◆ Learn how to Create and Deploy solutions
- ◆ Develop Competitive Solutions in APL
- ◆ Integrate ...
 - ◆ Solutions into other applications or frameworks
 - ◆ Dyalog APL into development processes
- ◆ Maintain ...
 - ◆ Applications written in APL
 - ◆ The APL system itself
- ◆ Have Fun, Make Money



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Easier to Discover & Learn Dyalog APL

- Adam's "APL Orchard"
 - Already brought several new people into the community (we hired one: Nathan)



J. Sallé  @Adám question: can @ change the shape of an array? E.g.: I want to transform the vector 0 1 2 3 into 0 1 1 2 3; can I make it work with something like 2p@2+vector (this one gives me a length error)? Wed 20:47

dzaima  @J.Sallé no, but Adám's had ideas for how it could do so

J. Sallé  @dzaima hm, thanks. I think I've found a way to work around that an interleave primitive/function would come in handy right about now :/



Adám

39.8k


@J.Sallé Why not use replicate? (/)

Wed 21:03

 ←←2(←p)@2+0 1 2 3

Dyalog APL 

@Adám 0 1 1 2 3

J. Sallé  @Adám I don't think I can do that because I don't know what the mask (left arg) would be
@Adám this one might work though

Adám 

 ←←{ω/↗2@2{1}~ω}0 1 2 3

Dyalog APL 

@Adám 0 1 1 2 3

all rooms site rooms search

The APL Orchard

Learn and teach, questions about both golfing and general coding. Email support@dyalog.com for write access. Enter)about for chatbot info.

apl array-manipulation j k tips

leave (all) room▼ info



not the room you are looking for?

There are other rooms, with 47 users currently talking in 44 rooms.

starred show 6 more / show all 98

★ now i want n f\ to be i↗fn f/ :| - aug 5 at 6:54 by dzaima

★ 3 Slash-functions may only be in our trains when accompanied by a calming constant or a responsible operator. - jun 6 at 16:06 by Adám

★ 5 Introducing: ↗ APLcart - may 3 at 16:42 by Adám

★ chat.stackexchange.com/transcript/message/49016235 #49016235 - jul 10 at 9:01 by Adám

enable desktop notification

send upload...



help | faq | legal | privacy policy | mobile

Easier to Discover & Learn Dyalog APL

- Adam's "APL Orchard"
 - Already brought several new people into the community (we hired one: Nathan)
- Open-Source APL Projects
 - Acre, Link, MiServer, JSONServer, RESTServer, many more to come





Dyalog

Official Dyalog Repository tree (for Raspberry Pi specific repositories see <https://github.com/aplpi>)

United Kingdom <http://www.dyalog.com>

Repositories 53

Packages

People 19

Teams 28

Projects

Settings

Type: All

Language: All

Customize pins

New

TamStat

Private

A cross-platform front end for the statistical software "TamStat". This was developed using MiServer/DUI. Installation-instructions to follow...

JavaScript 0 1 41 0 Updated 2 days ago



Top languages

APL JavaScript Shell C
Python

dyalog-jupyter-kernel

A Jupyter kernel for Dyalog APL

jupyter-kernels apl dyalog

Python 4 15 6 0 Updated 2 days ago



Most used topics

Manage

apl dyalog dyalog-apl
dyalogapl

MiServer

MiServer- an APL-based web server - requires Dyalog APL available from <http://www.dyalog.com>

apl

APL MIT 8 25 7 0 Updated 3 days ago

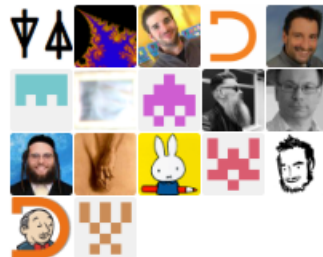


link

Code for linking a namespace to a directory

People

19 >





Why GitHub? ▾ Enterprise Explore ▾ Marketplace Pricing ▾

Sign in

Sign up



The Carlisle Group, Inc

 Dunmore, Pennsylvania

<https://www.carlislegroup...>

✉ support@carlislegroup.com

Verified


Repositories 14

 Packages

People

 Projects

Pinned repositories

 Acre-Desktop

A simple Dyalog APL IDE plugin that introduces "projects" and allows you to keep your source code in Unicode text files.

● APL ★ 6 ✂ 1

★ 6

1

Find a repository...

Type: All ▼

Language: All ▾

Rumba

A Web Server for Dyalog APL

● APL ⚖ MIT 🔗 1 ★ 1 ⓘ 9 🔒 1 Updated 3 hours ago

Top languages

● APL ● JavaScript

Most used topics

Easier to Discover & Learn Dyalog APL

- Adam's "APL Orchard"
 - Already brought several new people into the community (we hired one: Nathan)
- Open-Source APL Projects
 - Acre, Link, MiServer, JSONServer, RESTServer, many more to come
- Webinars and Webcasts
 - Richard Park driving production of new training and marketing materials





Molecular Dynamics in Dyalog APL

File Edit View Run Kernel Tabs Settings Help

LJmelt.ipynb Python.ipynb

```
phicutoff ← -/4÷rcutoff*12 6
ELJshift ← ELJ - phicutoff
plot (←ELJ,r),(←ELJshift,r)
```

[4]:

Lennard-Jones potential

Play (k)

Coming up

Molecular Dynamics in Dyalog APL
Richard Park

Previous Webinars

Source Code Management with Dyalog v17.1
Morten Kromberg

Introducing the 2019 APL Problem Solving Competition
Richard Park

TryAPL - The Next Generation
Richard Park

Adventures in Advent of Code
Jay Foad

Jupyter Notebook support for Dyalog APL
Adam Brudzewsky

Cross-Platform Charting
Brian Becker



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- Webinars and Webcasts
 - Richard Park driving production of new training and marketing materials
- Talks outside the APL Community
 - Marshall, Aaron, Morten, Roger at LambdaConf (Boulder, Colorado) and FunctionalConf (Bangalore)
 - Guest lectures at Universities

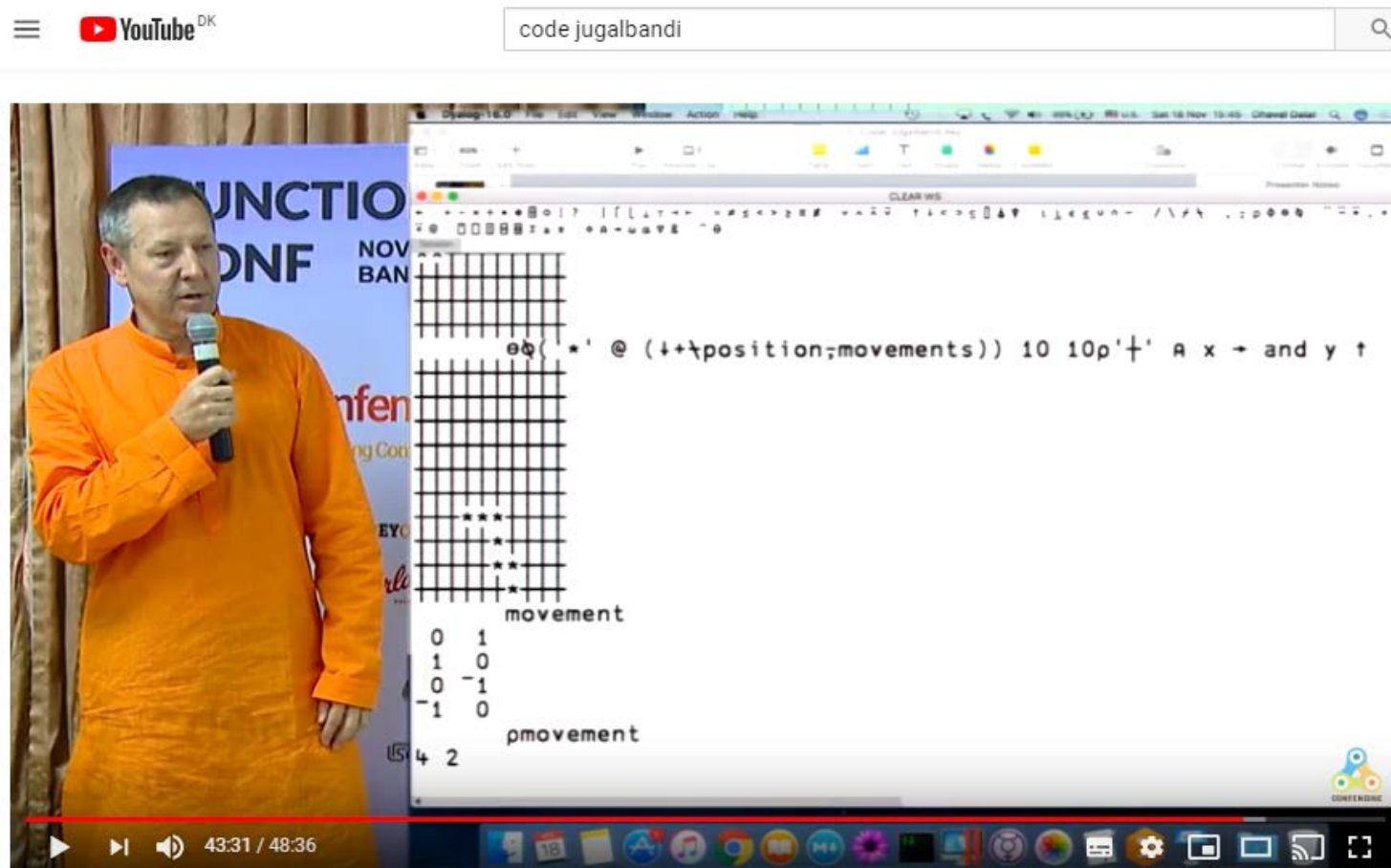
Talks@Dyalog'19

Tue 20:00 Richard Park
Molecular Dynamics in APL

Thu 09:30 Adam Brudzewsky
APLcart: A Novel Approach to
Finding Your Way in APL

Thu 10:00 Richard Park
Creating your first Dyalog
Jupyter Notebook







- Home
- About Us
- Meetings
- Information for Speakers
- Community

Topic

Array Oriented Functional Programming in APL

Speaker

Morten Kromberg

When

Tuesday, September 17, 2019 7:30 PM

Where

Marist College, **Hancock Center** (Building 14 on [map](#)), **Room 2023**. We thank Marist College for hosting the chapter's meetings. **Parking:** 1) Lot north of Hancock Center. We are permitted to park there in spite of the signs. 2) Lot on south-east corner of Route 9 and Fulton Street. Take staircase at south-west corner of lot, and tunnel under Route 9.

Easier to Acquire Dyalog APL



- So you saw a presentation about APL... what next?
- From v17.1, Dyalog APL is available for experimentation *without* registration under W/L/M*
- Public Linux Docker Containers available
 - Just type `$ docker run dyalog/dyalog`
 - Containers with pre-installed application frameworks: `dyalog/jsonserver`, `/miserver`, `/jupyter`, `/restserver`
- Dyalog APL is NOT FREE SOFTWARE, unregistered versions are for non-commercial use only!


* W/L/M = Windows / Linux / macOS



Easier to Acquire Dy

- So you saw a presentation about A
- From v17.1, Dyalog APL is available *without* registration under W/L/M
- Public Linux Docker Containers available
 - Just type `$ docker run dyalog/`
 - Containers with pre-installed applications: `/jsonserver, /miserver, /jupyter`
- Dyalog APL is NOT FREE SOFTWARE. Free versions are for non-commercial use

* W/L/M = Windows / Linux / macOS



sales@dyalog.com

To sales@dyalog.com

↩

↶

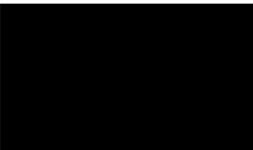
→

⋮

02:17

There is a new application for a Personal licence.

Request filed: Thu 29 Aug 2019 01:17



Phoenix, AZ
85029
United States

t 0

Operating System: Windows

GDPR Opt-in: no

Additional comments:
I regularly use and develop for all three systems (Windows, Linux, MacOS) and would appreciate licenses for all 3, if possible. I have just started learning APL and would appreciate the opportunity to ensure whatever code I write works "everywhere".



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S

sales@dyalog.com
To sales@dyalog.com

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Browser tabs: dyalog's Profile - Docker

Address bar: <https://hub.docker.com/u/dyalog>

Navigation: Explore Sign In Pricing **Get Started**

Search: Search for great content (e.g., mysql)


dialo

[Edit profile](#)

Community Organization Dyalog Ltd Bramley, UK <https://www.dyalog.com> Joined January 5, 2018

Repositories


Displaying 6 of 6 repositories



dyalog/jupyter 72 Downloads

By [dyalog](#) • Updated a month ago

Container



dyalog/miserver 939 Downloads

By [dyalog](#) • Updated a month ago

Dyalog MiServer

Container



Easier to Deploy Dyalog APL

v17.1:

- Public Docker Containers
- Support for "Headless" operations
- (RIDE for debugging headless processes)

v18.0:

- Cross-Platform Configuration Files
- Ability to launch APL directly from APL source files – no workspace required

Talks@Dyalog'19

Mon 16:30 Geoff Streeter

Shared Code Files

Tue 20:00 Richard Smith

Cross-Platform Configuration Files



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Competitive Solutions in APL

v17.1:

- ✧ Portable UI: HTMLRenderer for Windows, macOS, Linux

v18.0

- ✧ A significant "performance release"



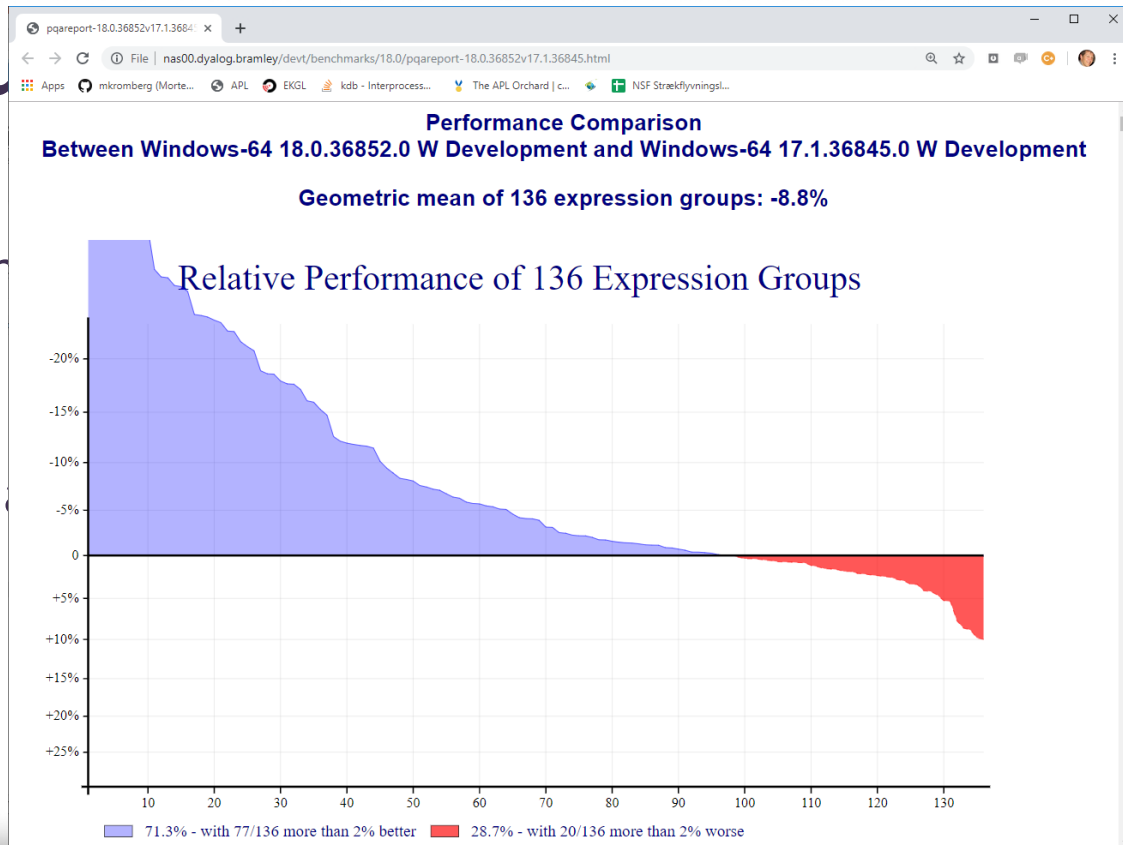
Competitive Solu

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v18.0

- A significant "perform



Competitive Solutions in APL

v17.1:

- Portable UI: HTMLRenderer for Windows, macOS, Linux

v18.0

- A significant "performance release"
- Date/Time conversion tools
- Case mapping and folding
- APL2XL Project

Talks@Dyalog'19

Mon 17:00 Richard Smith

Is it Christmas Yet?

Tue 09:00 Marshall Lochbaum

Implementing Reduction

Tue 15:00 Brian Becker

Whats new with HTMLRenderer

Tue 15:30 Josh David

Easy Cross-Platform GUI

Tue 17:00 Nathan Rogers

Exporting Excel Tables from APL



Dyalog's Goals

Make it easier to ...

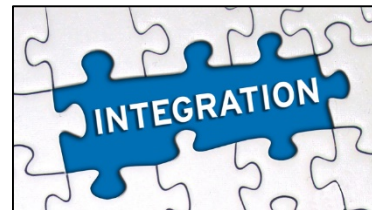
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Integrate with Apps and Frameworks

v17.1

- Tools to wrap APL code as a Shared Library *on any platform*
 - Easy inter-operation no longer limited to Microsoft COM/OLE or .NET
 - JSON_APL.dll (or .JSON_APL.so)
 - Provides a Foreign Function Interface to any APL application using JSON-encoded arguments and results.



Integrate withNET

- The **Microsoft.NET Framework** v1.0 was released in February 2002 for Windows XP
 - Supported by Dyalog APL v9.5 in September 2002
 - Current .NET Framework version numbers are v4.x
- The **Microsoft .NET Core** v1.0 was released in 2016 as an open source replacement targeting mobile devices, for W/L/M (Windows, Linux, macOS)
 - v3.0 is appearing now.
- **Microsoft .NET 5.0** (NB no "Core" or "Framework") will replace both of the above.



Integrate withNET

- Dyalog v18.0 will support .NET Core 3.0 and the future .NET 5.0 under W/L/M.
 - Perhaps Xamarin/Mono on Android
 - Not sure about IBM POWER Linux
- This will make a HUGE collection of libraries available for APL application development.



Talks@Dyalog'19
Mon 10:00 John Daintree
Cor(e) Blimey!
What's He Up To Now?



Integrate with Dev[Ops] Processes

APL needs to integrate with tools for

- Source Code Management (SCM)
- Building, Testing and Deploying

v17.1:

- Link replaces SALT as the recommended interface to SCM (also available for 17.0)

Next:

- Packaging the APL interpreter itself for "Continuous Integration" pipelines
 - Linux Apt-get, Windows NuGet(?)



Integrate with Dev[Ops]: Link

- ◆ Dyalog is expecting widespread adoption of Link and the use of text files for APL source
- ◆ Next Steps
 - ◆ APL Package Repository
 - ◆ Dependency Management
 - ◆ [Unit] Test Framework
- ◆ Dyalog aims to participate in and co-fund collaborative open source projects



Talks@Dyalog'19

Mon 13:15 Adam + Morten

Link

Mon 13:45 Paul Mansour

A Git Workflow for Dyalog APL

Also expect more Webinars!



Dyalog's Goals

Make it easier to ...

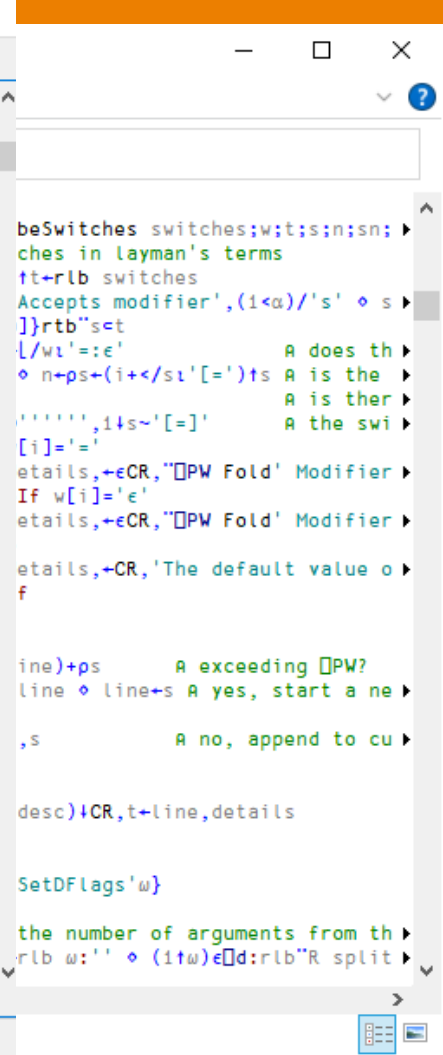
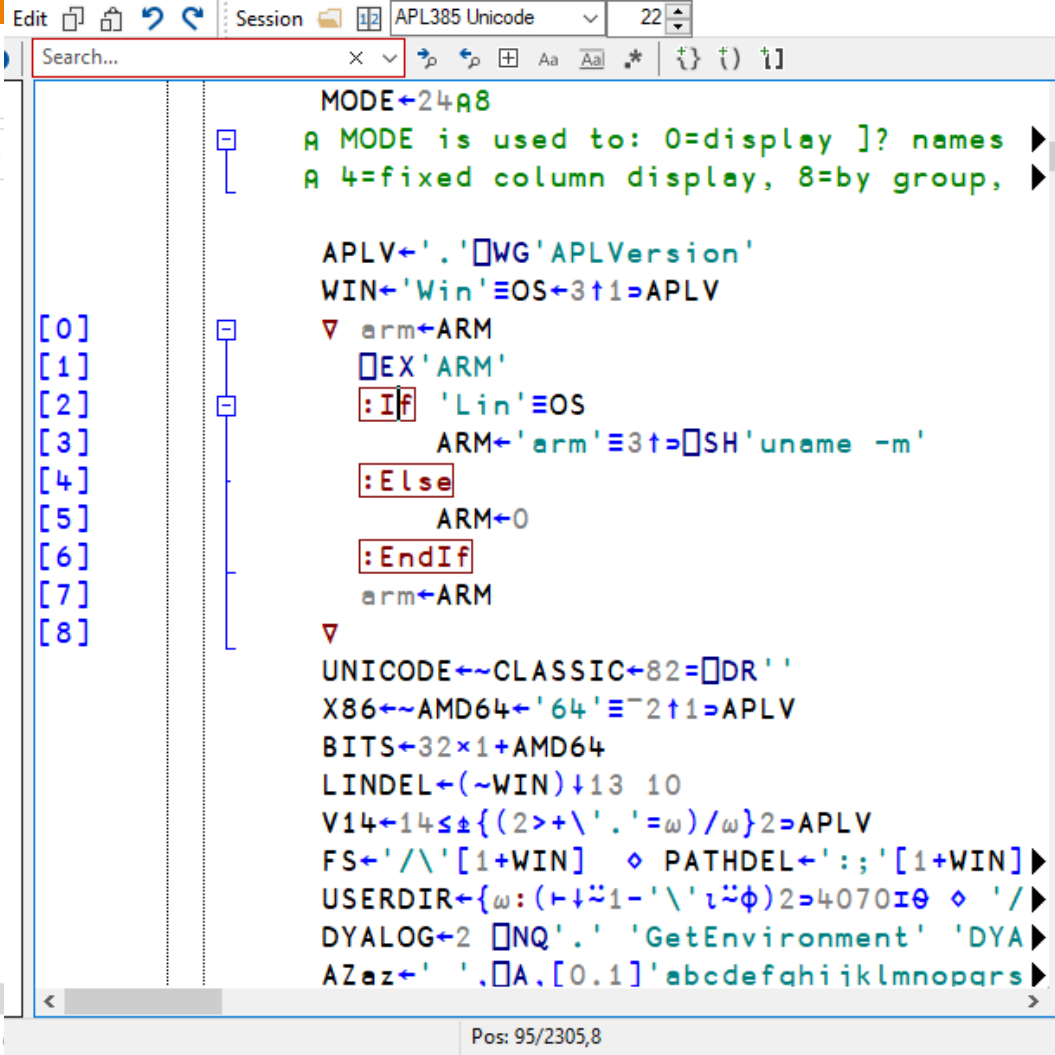
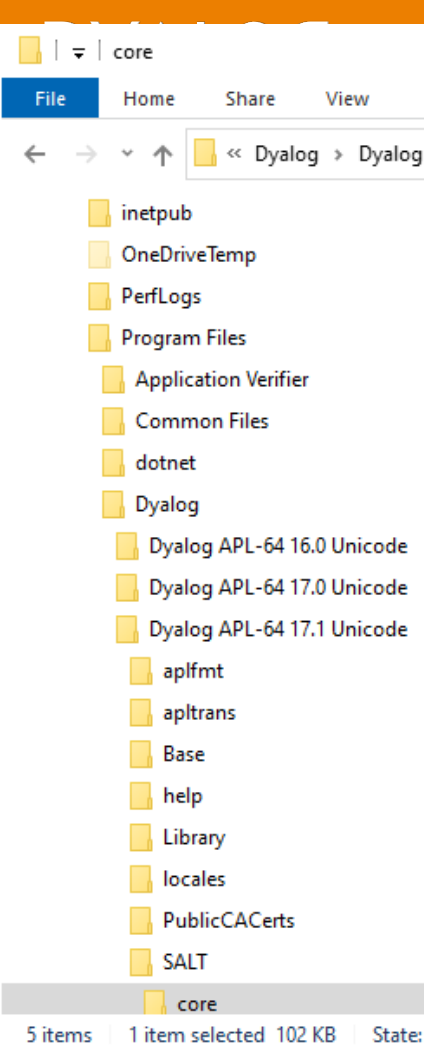
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Easier to Maintain APL Applications

- ✧ RIDE vs Windows ODE
- ✧ Integration with VS Code and other popular development tools





File

Edit

Selection

View

Go

Debug

Terminal

Help

FileSystemWatcher.apln (0f00180) ↔ FileSystemWatcher.apln (2e934c5) - Link - Visual Studio Code

GITLENS

REPOSITORIES

Link master 251 01 • ~4 -1 • Last fetched 9:29pm...

master 251 01 ↔ origin/master

Over a month ago

Handle listing links with no linked members ...

Don't init globals +0 ~1 -0 • abrudz, 2 months...

Exception trap +0 ~1 -0 • abrudz, 2 months ago

Merge branch 'master' of https://github.com...




Add general casing util +0 ~1 -0 • abrudz, 2 ...

Actually apply the case code, not just remov...

Fix #74 +0 ~1 -0 • abrudz, 2 months ago

Fixes #75: Src files incorrectly updated after)...

Fixes #77: FileSystemWatcher threading issu...

FileSystemWatcher.apln StartupS...   

Fixed #76: Add "ViewMetaData" +1 ~0 -0 • Y...

Show More Commits

25 commits behind

5 files changed

Compare master (working) with <branch, tag, ...

FILE HISTORY

LINE HISTORY

COMPARE

SEARCH COMMITS

FileSystemWatcher.apln (0f00180) ↔ FileSystemWatcher.apln (2e934c5)

c: > Devt > Link > StartupSession > Link > FileSystemWatcher.apln

27 r+JNEW Disposable watcher A wrap a de

28 r.ODF 1φ']['.##.U.WinSlash>args

29

30

31 :Class Disposable

32 :Field Public Object

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35 :Access Public

36 :Implements Constructor

37 Object+ref

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Ln 42, Col 1 Spaces: 2 UTF-8 with BOM APL  

Easier to Maintain The APL System

- Updates to Dyalog v17.1 for Windows will be MSP files.
 - Can update all files in a Windows installation
 - Old "patch" workspace available for a year or two
- Dyalog for macOS: Install & Update using .pkg files
- Linux: .deb & .rpm installers
- Raspberry Pi + Coming on Intel Linux
 - `apt-get install|update dyalog`



Easier to Verify Installation

- All executables are signed under Microsoft Windows
- Hashes / signatures available for executables on all other platforms



Summary

Version 17.1 is easier to

- ◆ Get hold of – download and install – no registration required
- ◆ Verify, and maintain once installed
- ◆ Integrate into other applications and into development processes

Version 18.0 will bring

- ◆ Significant performance enhancements
- ◆ A cross-platform .NET bridge
- ◆ Cross-platform, cascading configuration files
- ◆ Easy launching of Dyalog APL solely from text source
- ◆ System Functions for Dates & Timestamps, and Text Case-ing



Critical Focus Areas

Dyalog

- ◆ SCM: APL Packages, Dependency Management
- ◆ Invest in tools and interfaces for cloud computing (ODATA, OAUTH)
- ◆ Understand whether .NET 5.0 really will achieve widespread adoption
- ◆ Performance

You (if I may be so bold)

- ◆ Get your source code into text files!
 - ◆ Everything else gets so much easier...
- ◆ Think about how you will add encryption and security to your application to make it cloud ready
- ◆ Take apprentices!



New Faces at Dyalog

Documentation, Samples, Webinars:

- Richard Park joined us late last year



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Interpreter Development

- We expect to have a new C developer on board before the end of 2019



And Finally, a World Premiere...



The Dyalog Jingle



Keynote:



major



The Dyalog Jingle



Original Composition by
Stefano Lanzavecchia

