

Updates Planned for the APL64 2024.0.8 Update

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Overview

This document describes the enhancements and bug fixes that are planned for the APL64 2024.0.5 Update.

Interpreter Modifications

[Speed up scalar function for small arrays](#)

The update has significantly speeded up scalar function execution for small arguments that make APL64 perform about the same speed (or maybe a little faster).

[New `□WSE` system function: APL64 workspace engine object](#)

The `□WSE` system function exposes the APL64 workspace engine object. `□WSE` instances may be created which can be used as independent APL64 engines from a controlling APL64 instance. A `□WSE` workspace engine instance is an in-process server of the APL64 developer or runtime version which created it. All `□WSE` instances are contained with the `□WSE` object.

The `□WSE` system function is designed to be used from an APL64 developer or runtime version instance. The `□WSE` system function may be used in an APL64 developer version instance, an APL64 Windows Runtime Executable (WRE) instance and an APL64 Cross-platform Component (CPC) instance.

The `□WSE` system function is designed to be a cross-platform feature of APL64. When an APL64 Cross-platform Component (CPC) is used in a non-Windows environment, the Windows-only features of APL64 should not be used in a `□WSE` instance.

Refer to **Help | APL Language | Using `□WSE`** for additional information.

[New `□AES` system function: Encryption and Decryption](#)

The `□AES` system function supports the encryption and decryption of text using the [AES cryptographic algorithm](#), implemented in the Microsoft [System.Security.Cryptography](#) toolkit.

Refer to `□AES` in **Help | APL Language | System Function** for additional information.

[New `□BROTLI` system function: A better alternative to gzip inflate/deflate](#)

Brotli is a lossless data compression algorithm developed by Google. It uses a combination of the general-purpose LZ77 lossless compression algorithm, Huffman coding and 2nd-order context modelling. Brotli is primarily used by web servers and content delivery networks to compress HTTP content, making internet websites load faster. A successor to gzip, it is supported by all major web browsers and has become increasingly popular, as it provides better compression than gzip.

Refer to `□BROTLI` in **Help | APL Language | System Function** for additional information.

New ☐XML methods: JsonToXml and XmlToJson methods

These methods are helpful when accessing web services which use json format in APL64.

Refer to ☐XML in [Help | APL Language | Using ☐XML](#) for additional information.

APL64 Developer Version GUI Modifications

Bookmarks (ctrl+F2) did not work in a new editable classic history session

WRE and CPC Utility

Name validations for 'Runtime Executable Name', 'Company Name' and 'Copyright' fields

The Digital signature command and digital signature checkbox are on the same line in the utility

The screenshot shows the 'APL64: Create Windows Runtime Executable' utility window. The 'EXECUTABLE CONTENT' section is expanded, showing various configuration fields. A red rectangle highlights the 'Digital signature command' field and the 'Digitally sign output' checkbox, which are now on the same line. Below this, there are sections for 'Additional Files Required for the Application' and 'ASSEMBLY META-DATA'.

Runtime Workspace Filename: * Browse

EXECUTABLE CONTENT

Runtime Windows Executable Target Folder: * Browse

Runtime Executable Name: * ☒ Same as Runtime Workspace Name

Digital signature command: ☐ Digitally sign output

APL64 xml-format Configuration File: Browse ☒ Include APL64 xml-format Configuration File

APLNow32 adf-format Configuration File: C:\Program Files\APLNow\LLC\APL64\APLNow32.adf Browse ☒ Include APLNow32 adf-format Configuration File

APLNow32 ini-format Configuration File: C:\Program Files\APLNow\LLC\APL64\APLNow32.ini Browse ☒ Include APLNow32 ini-format Configuration File

APLNow32 Manifest File: C:\Program Files\APLNow\LLC\APL64\APLNow32.exe.Manifest Browse ☒ Include APLNow32 manifest File

Additional Files Required for the Application

Source Path Base Target Path Target Path Suffix Overwrite

ASSEMBLY META-DATA

Properties.Details: File Description:

Properties.Details: Product Name:

Properties.Details: Copyright: * ©

Properties.Details: File Version:

Properties.Details: Version: ☒ Same as File Version

Assembly.Info: Company Name:

Assembly.Info: Application Description: ☐ Same as File Description

Assembly.Info: Version: ☒ Same as File Version

Assembly.Info: Neutral Language:

Assembly.Info: Description: ☒ Same as File Description

Application Icon File: Browse

Create Exit New WRE Info Load WRE Info Save WRE Info * Required entries

Entry added for the APLNow32.exe.manifest file*

APL64: Create Windows Runtime Executable

Runtime Workspace Filename: * Browse

EXECUTABLE CONTENT

Runtime Windows Executable Target Folder: * Browse

Runtime Executable Name: * ☒ Same as Runtime Workspace Name

Digital signature command: ☐ Digitally sign output

APL64 xml-format Configuration File: Browse ☒ Include APL64 xml-format Configuration File

APLNow32 adf-format Configuration File: C:\Program Files\APLNow\LLC\APL64\APLNow32.adf Browse ☒ Include APLNow32 adf-format Configuration File

APLNow32 ini-format Configuration File: C:\Program Files\APLNow\LLC\APL64\APLNow32.ini Browse ☒ Include APLNow32 ini-format Configuration File

APLNow32 Manifest File: C:\Program Files\APLNow\LLC\APL64\APLNow32.exe.Manifest Browse ☒ Include APLNow32 manifest File

Additional Files Required for the Application

Source Path	Base Target Path	Target Path Suffix	Overwrite
Add One Required File Add Multiple Required Files Add Folder of Required Files Remove All Required Files			

ASSEMBLY META-DATA

Properties.Details: File Description:

Properties.Details: Product Name:

Properties.Details: Copyright: *

Properties.Details: File Version:

Properties.Details: Version: ☒ Same as File Version

Assembly.Info: Company Name:

Assembly.Info: Application Description: ☐ Same as File Description

Assembly.Info: Version: ☒ Same as File Version

Assembly.Info: Neutral Language:

Assembly.Info: Description: ☒ Same as File Description

Application Icon File: Browse

Create Exit New WRE Info Load WRE Info Save WRE Info * Required entries

*The APLNow32.exe.manifest file should be included in an APL64 WRE when some ☐wi controls like CommandBars and CommandButtons are used.

Miscellaneous

[Saving and Retrieving Unicode Data in APL64](#)

Refer to new **Help | APL Language | ☐NFE | Save Unicode Data** menu for information on handling application-specific text data that may contain Unicode code points which are not in ☐AV.

[Use an APL64 CPC in Excel](#)

Refer to **Help | Developer Version GUI | Cross-platform Component | Cross-platform Component in Excel** for information on creating an APL64 cross-platform component (CPC) that can support application-specific Excel functions, which are transparently available for use in Excel worksheet cells or macros.

Bug Fixes

The outer product example, $R \leftarrow \Delta B \circ * \Delta P$, caused APL64 to hang

Any ☐WI commands didn't not execute in the history while a ☐WI form was in a Wait method

Documentation corrections to the 'ToApl' action in the ☐XL system function

Also described is that the ☐XL 'ToApl' action returned Excel text data as APL64 string or Unicode character data instead of bytes (☐DR type 82).

The ☐EXEPATH system variable was relocated to the System Variable manual

CommandBars and CommandButtons ☐wi controls did not display in WRE runtime