

Core Language Enhancements

PxPlus 2019 (v16)

Core Language Enhancements

- New Language Features
 - New IOL() functionality
 - Changes to SSL interface for PEM files
 - Built in PDF driver enhancements
 - Array handling changes and enhancements
- iNomads changes

IOL Function

New Capabilities for Handling IOLISTS

- Added ability to extract IOLIST from un-opened file/table
 - `IOL(FILE "path")` - Returns IOLIST from file specified in *path*
 - `IOL(TABLE "table")` - Returns IOLIST from *table*
- The `REC=` clause now applies prefix to all variables in IOLIST
 - May be used to prefix variables in IOLIST
 - Typical uses include:
 - `READ DATA` to clear record fields
 - Passing prefixed fields to a subroutine

Revised PEM files

SSL/TLS Interface Enhancement

- PxPlus 2019 enhanced to allow two PEM files
 - Certificates
 - Private key

```
SECURE=certificate_file           (defines path to certificates)  
PRIVKEY=private_key_file        (defines path to private key)
```

- Includes a new system utility to convert PFX to PEM files

```
CALL "*tools/pfxcertconvert ", pfxpath$, pfjspxwd$, pempath$
```

PDF Driver Enhancements

New *PDF* Functionality

- Now supports PNG image files in PDF
- Added Hyperlink options to both 'PICTURE' and 'RECTANGLE'

To attach HYPERLINK to a Picture

- 'PICTURE'(1,1,100,100,"C:\my_app\abc\Resources\mylogo.png , <https://www.mycompany.com>")

To attach HYPERLINK to a region in document based on Rectangle

- 'RECTANGLE'(200,200,600,600,0,"<https://www.mycompany.com>")

- Style of 'TEXT' Hyperlink (font/color) inherited by including "I" in the attributes

Passing Arrays

Now Passed by Value (Read Only)

- You can pass READ-Only array by surrounding it with parenthesis

```
CALL "someprogram", ( MyArray{ALL} )
```

- Either String or Numeric arrays can be passed
 - Associative arrays can also be passed with associated keys copied
- Only allowed to pass full array not a partial range
- System makes internal copy of array values
 - Effectively doubles memory requirements for an array

Associative Arrays

Improved Memory Management

- To remove key from an Associative array

```
X = DIM(DROP arrayName [ "keyvalue" ] )
```

- Prior to PxPlus 2019
 - Only dropped key reference to element in array
 - Left array element thus did not free memory
 - Had to use CLEAR or BEGIN to clear array elements
- PxPlus 2019 now frees element
 - Revert to old logic by issuing:

```
SETDEV (0) Set "OldDimDrop" To "Yes"
```

*i*NOMADS

iNomads

- All applicable new control options/features implemented
 - SETMOUSE hover *not* implemented
- New iNomads exclusive functionality added
 - Now supports 'PUSH' mnemonic
 - Added 'Relaunch' link on application exit pages
 - PxPlus 2019 Update 1 includes ability to change "System Loaded" message
 - New [*plus/inomads/sys_loaded.htm](#) file
 - Enhanced Drop boxes for iPhone and iPad
 - Special iNomads button classes targeting Smartphones
 - [link_mailto](#) - launches browser mail application
 - [link_tel](#) - initiates phone call
 - [link_http](#) - open URL in browser



Recap

- Core language improvements
 - IOL improvements
 - PDF file hyperlinks
 - Array handling
- Majority of product enhancements included in *iNomads*

Additional Resources

The help link(s) below refer to the current on-line help pages. The functionality may have been further updated since the PxPlus 2019 (version 16) release.

- [IOL Function](#)
- [SSL/TLS Security Certificates](#)
- [PFXCERTCONVERT Utility](#)
- [*PDF*](#)
- [CALL](#) and [ENTER](#) - Support for passing arrays
- [iNomads](#)
 - [Template Configuration](#) (Relaunch and Full Screen Options)
 - [iNomads Classes](#)