



VINCENT'S CABIN OF CURIOSITIES

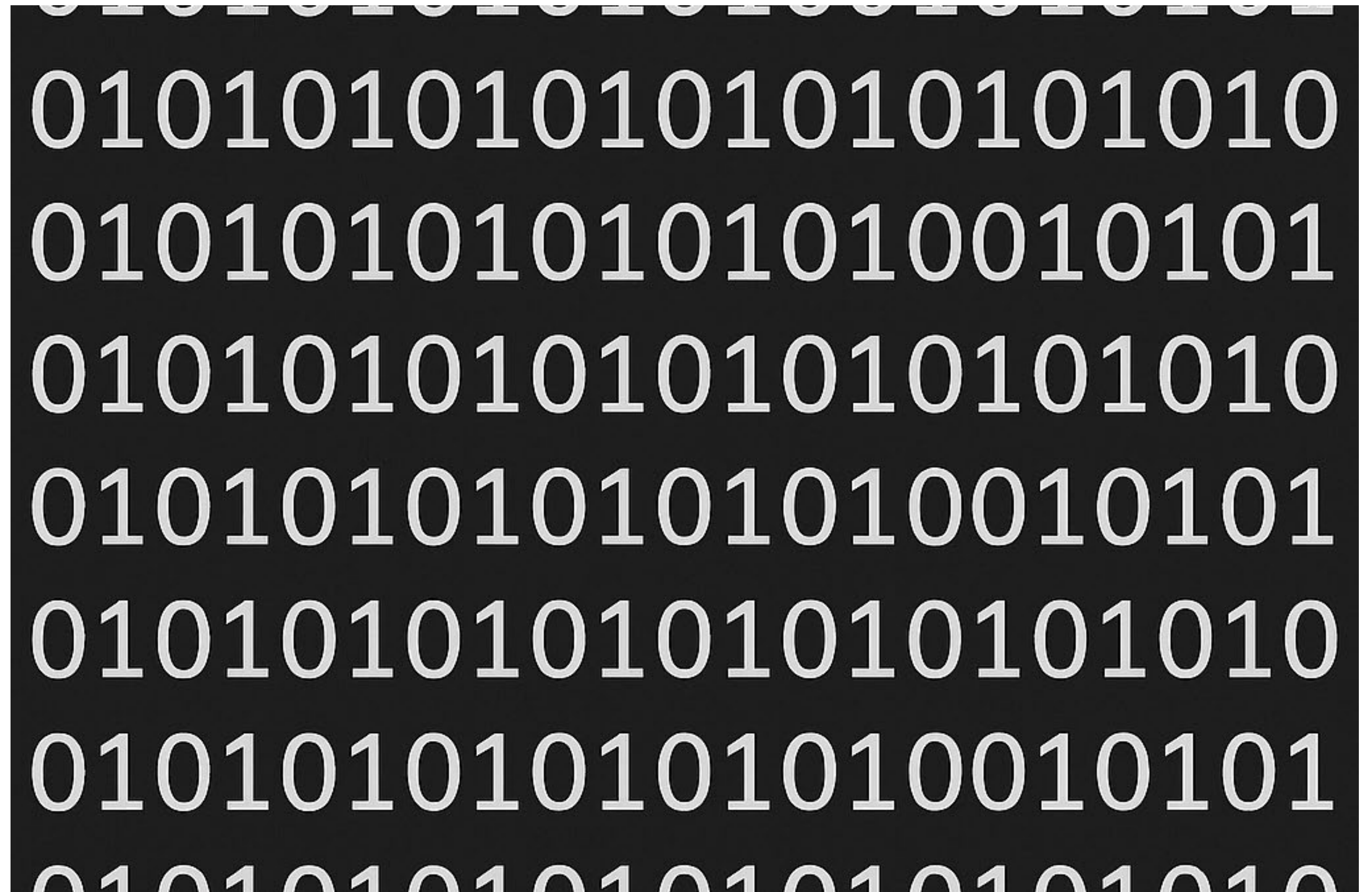


VINCENT
OORSPRONG

STORE / USE AN API KEY

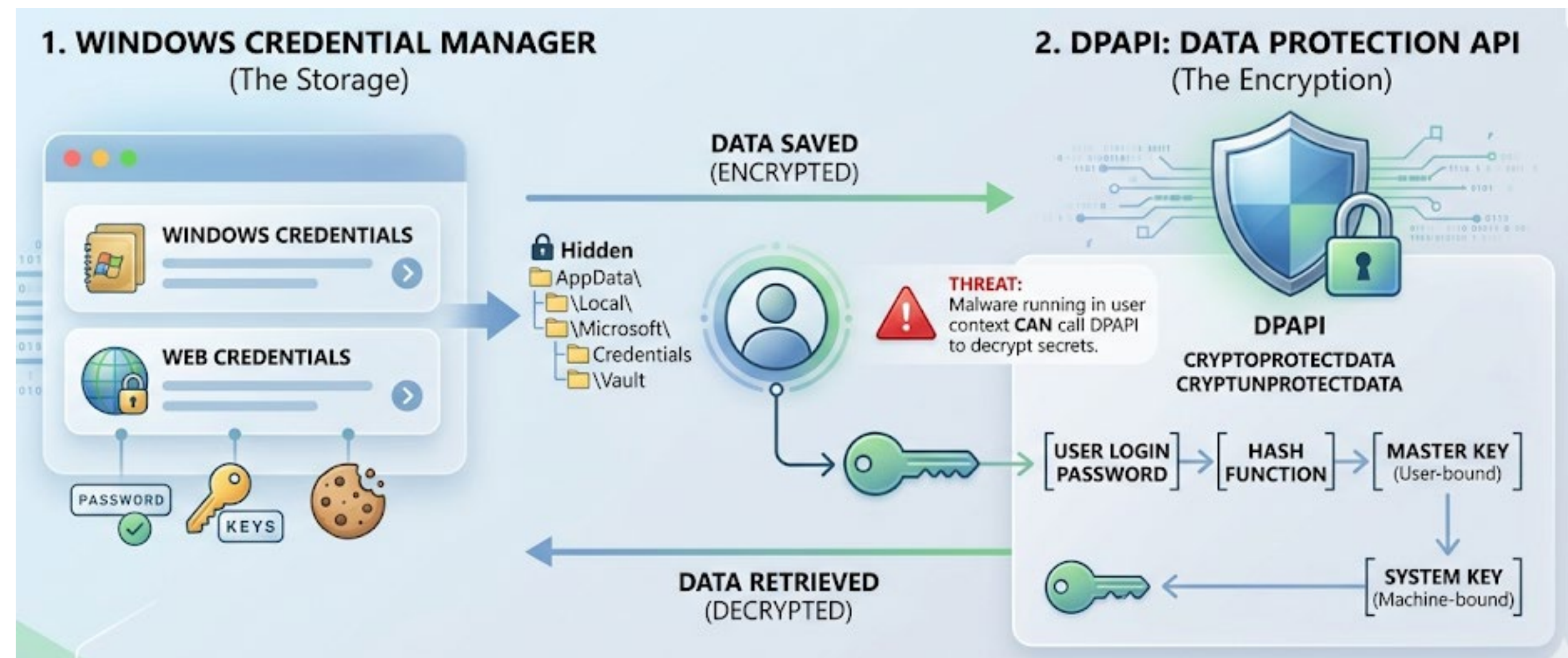
API KEY USAGE

- For communication between DataFlex Reports Studio and Server we use an API key
- Where should we store this key?
- Registry?



API KEY STORE AS WINDOWS CREDENTIAL

- Windows Credentials are the “the” place used for storage of login information to authenticate you when accessing systems, networks or websites
- Use DPAPI
 - Data Protection Application Programming Interface
 - Cryptographic toolset for Windows
- Used by browsers to encrypt saved passwords and session cookies



WINDOWS CREDENTIALS CREDENTIAL MANAGER

- Use credential Manager to view, add, delete, edit secrets

git:https://github.com

Internet or network address: git:https://github.com

User name:

Password: ••••••••

Persistence: Local computer

[Edit](#) [Remove](#)



WINDOWS CREDENTIALS

API KEY

- Create the API key as random data

DataFlex.Reports:http://localhost/DataFlexReports/

Internet or network address:

DataFlex.Reports:http://localhost/DataFlexReports/

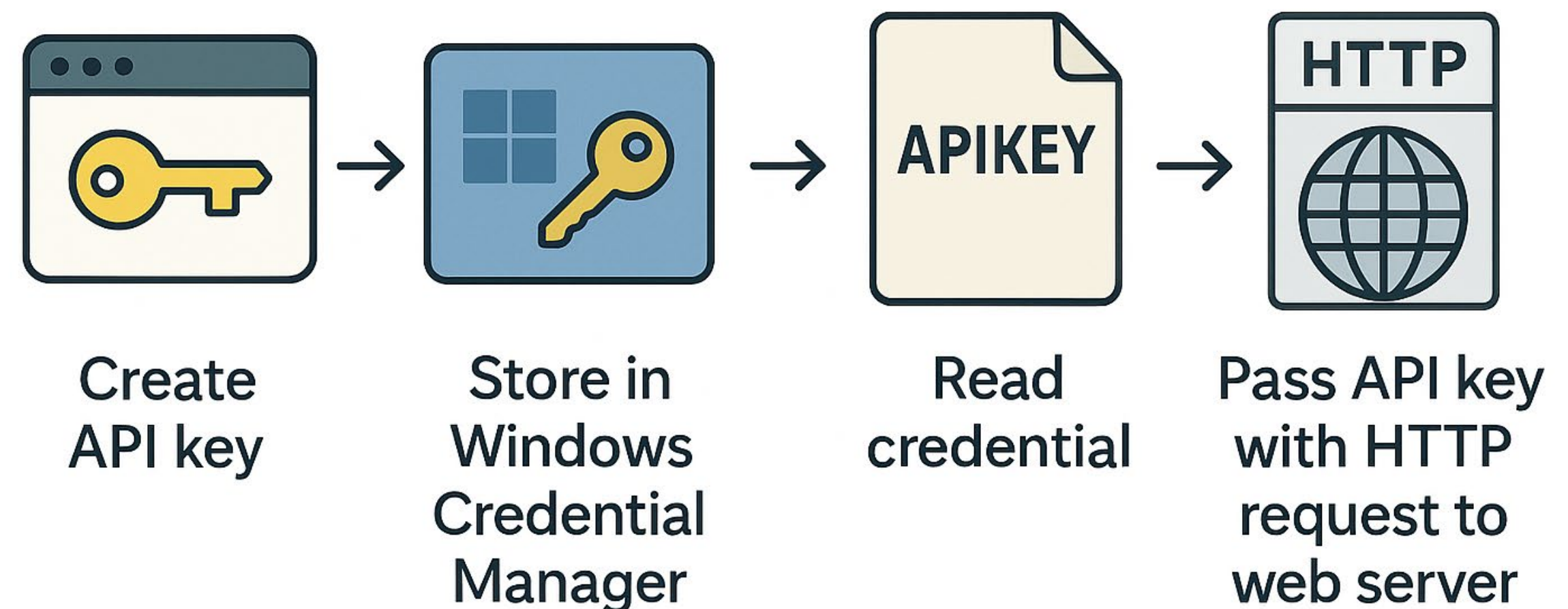
User name:

Password:

Persistence: Local computer

[Edit](#) [Remove](#)

- The password is a blob containing the API key to communicate with DR Server



WINDOWS CREDENTIALS IS IT SAFE ?

- Encryption key provided by Windows
 - User or System level
- Yes as in when your drive is stolen the thieves cannot read your Credential Manager passwords to unlock the DPAPI key
- No as is infostealers or malicious scripts running under your account can read the data



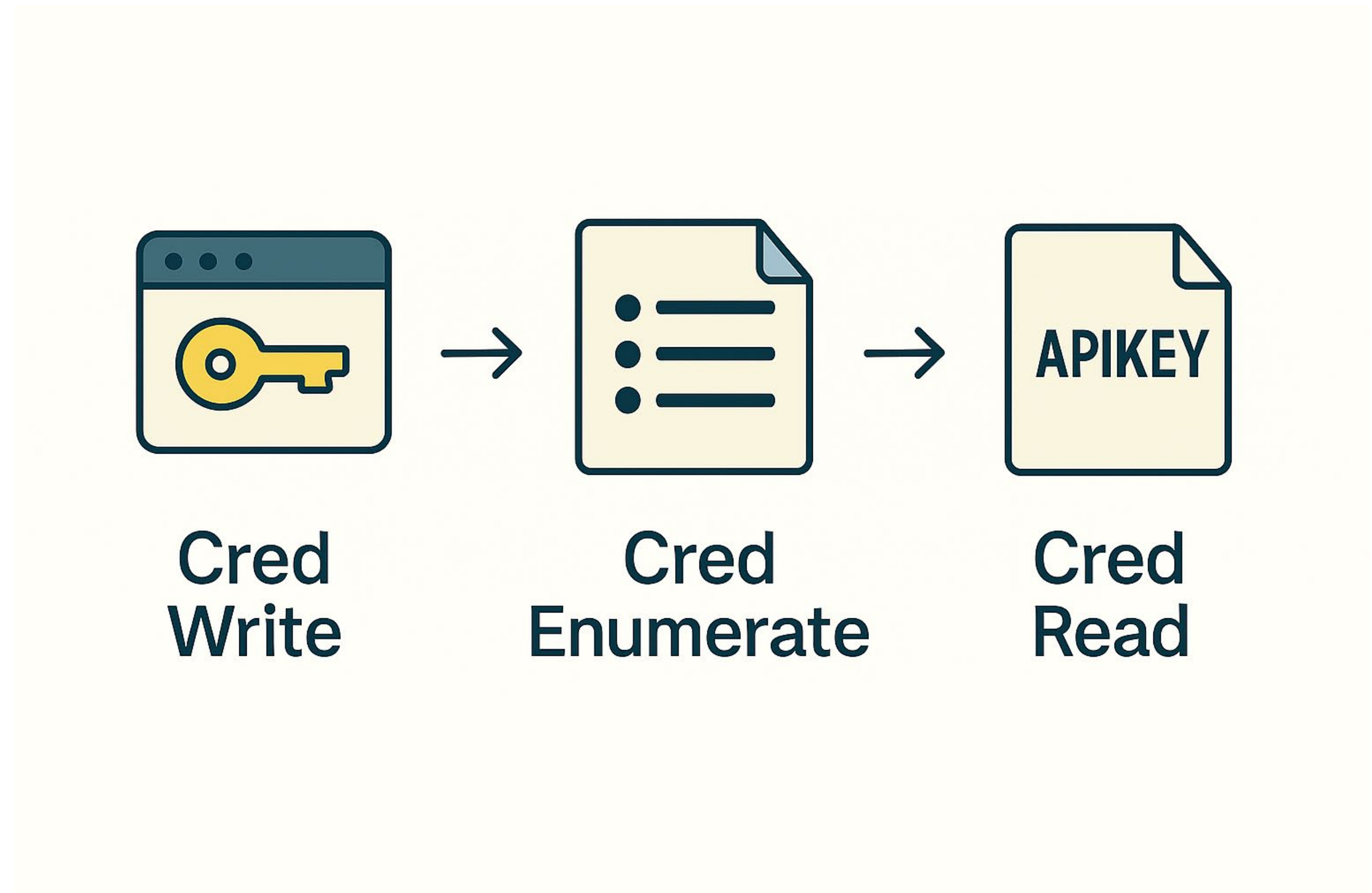
WINDOWS CREDENTIALS

API KEY EXTRA SAFE

```
Get GenerateRandomString of oCrypto iLength to sAPIKey
Get Create (RefClass (cJsonObject)) to hoJson
Send InitializeJsonType of hoJson jsonTypeObject
Send SetMemberValue of hoJson "APIKey" jsonTypeString sAPIKey
Get StringifyUtf8 of hoJson to ucSecret
Send Destroy of hoJson
Get EncryptionPassword to ucPassword
Get Encrypt of oCrypto ucPassword ucSecret to ucSecret
Get Base64EncodeUCharArray of oCharTranslate ucSecret to ucSecret
Send WriteUCharArraySecret of oCredentialManager sSecret
```

WINDOWS CREDENTIALS ADVAPI

- AdvApi32.dll contains
 - CredWrite
 - CredRead
 - CredFree
 - CredDelete
 - CredEnumerate
 - CredRename
- And more



WINDOWS CREDENTIALS ENUMERATE SECRETS

```
Function ServerLocations Returns String[]
    String[] sTargetNames
    Integer iElements iElement iPos

    Get EnumerateSecrets of oCredentialManager "DataFlex.Reports*" to sTargetNames
    Move (SizeOfArray (sTargetNames)) to iElements
    If (iElements > 0) Begin
        Decrement iElements
        For iElement from 0 to iElements
            Move (Pos (":", sTargetNames[iElement])) to iPos
            If (iPos > 0) Begin
                Move (Right (sTargetNames[iElement], Length (sTargetNames[iElement]) - iPos)) to sTargetNames[iElement]
            End
        Loop
    End

    Function_Return sTargetNames
End_Function
```

WINDOWS CREDENTIALS READING API KEY

- Set TargetName of secret

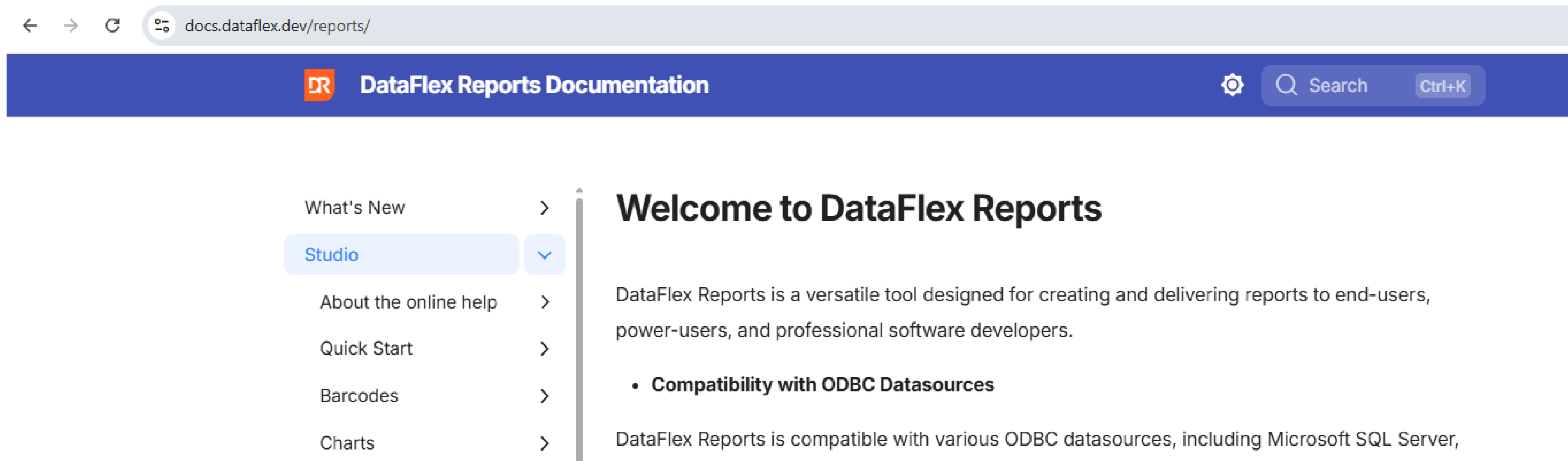
```
Set psTargetName of oCredentialManager to ("DataFlex.Reports:" - sDRServerLocation)
```

- Call ReadSecret to retrieve the blob

```
Get ReadSecret of oCredentialManager to sSecret
```

DATAFLEX REPORTS DOCS

- The DataFlex Reports Documentation is online!
- Docs are now fully in markdown format and can be online produced in minutes
- <https://docs.dataflex.dev/reports>



The screenshot shows a web browser window with the address bar displaying `docs.dataflex.dev/reports/`. The page header is dark blue with the DataFlex logo (DR) and the text "DataFlex Reports Documentation". On the right side of the header, there is a search bar with a magnifying glass icon, the text "Search", and the keyboard shortcut "Ctrl+K".

The main content area is divided into two sections. On the left is a navigation menu with the following items: "What's New", "Studio" (highlighted in light blue), "About the online help", "Quick Start", "Barcodes", and "Charts". Each item has a right-pointing chevron. On the right is the main content area with the heading "Welcome to DataFlex Reports". Below the heading is a paragraph: "DataFlex Reports is a versatile tool designed for creating and delivering reports to end-users, power-users, and professional software developers." Below this paragraph is a bulleted list item: "• **Compatibility with ODBC Datasources**". Below the list item is another paragraph: "DataFlex Reports is compatible with various ODBC datasources, including Microsoft SQL Server,".

ARCHIVE FILES

ARCHIVE FILES

ZIP FILES

- Report Magic zipped results
- Zip DLL only 32 bit, EOL
- New solution was using libarchive, an open source environment
- Many archive formats available
 - Zip, Tar etc
- API for read and write



ARCHIVE FILES

ZIP RESULTS

Move “c:\tmp\file1.dr” to sFileNames[-1]

Move “c:\tmp\file1.xml” to sFileNames[-1]

Send Init of oFilesArchiver

Set peArchiveFormat of oFilesArchiver to ARCHIVE_FORMAT_ZIP

Set psArchiveFileName of oFilesArchiver to “c:\tmp\results.zip”

Send AddMultipleFiles of oFilesArchiver sFileNames

Send WriteFilesToArchive of oFilesArchiver

TRANSLATION

TRANSLATION DEEPL

- DeepL is a German company specialized in more technical text translations
- The translation API is http based
- Can be used in your application for instance translation



TRANSLATION DEEPL

- Free API version lets you translate up to 500 thousand characters per month
- Language of source can be auto detected or explicitly specified

Translate

Text to translate

FlexRoads is de nieuwe naam voor de ontwikkelaars conferentie die voor de DataFlex ontwikkelaars wordt georganiseerd.

Translated Text

FlexRoads is the new name for the developer conference organized for DataFlex developers.

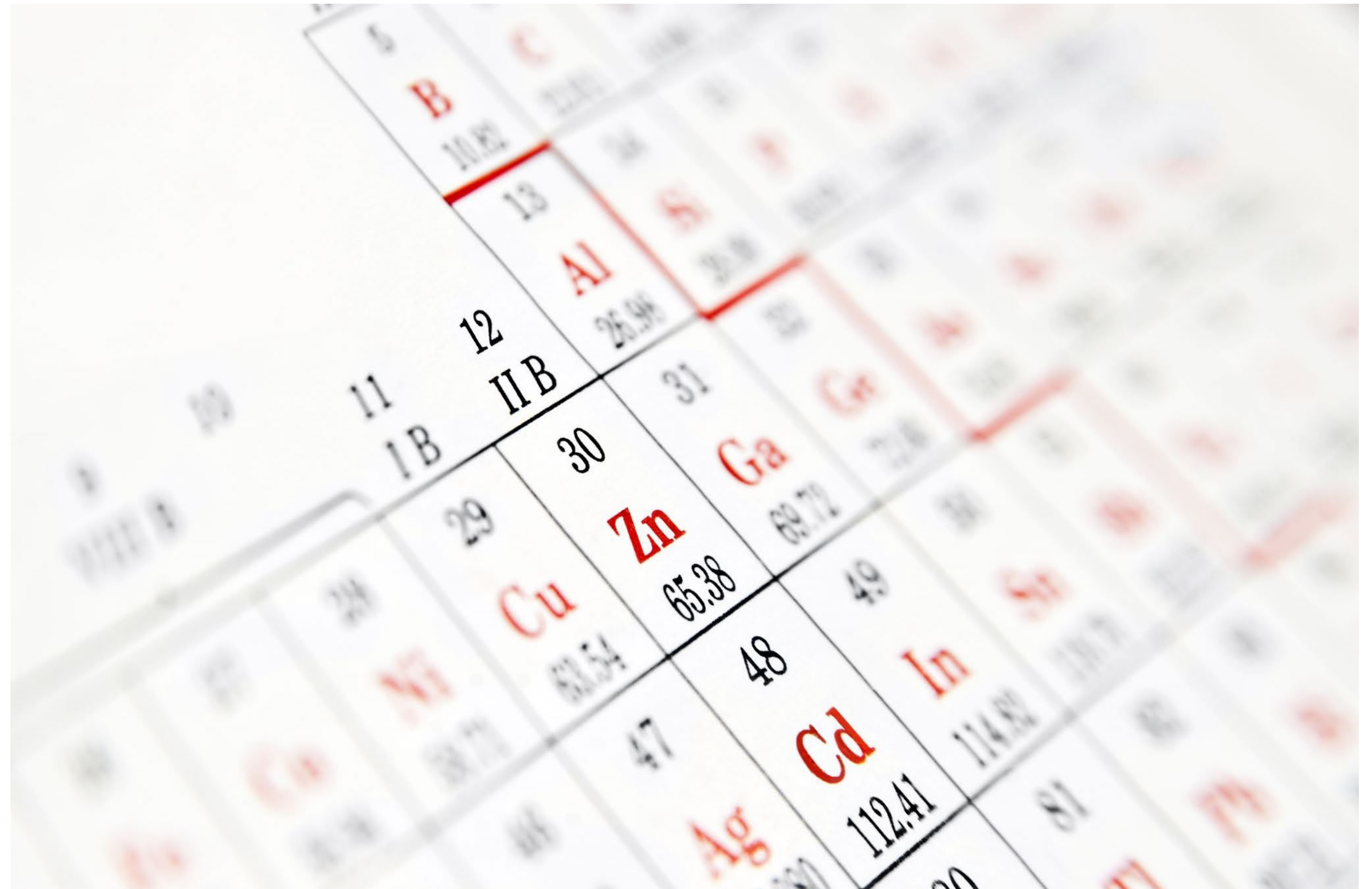
```
Get TranslateText of oDeepLTranslator ;  
    sSourceText sTargetLanguage sSourceLanguage ;  
to TranslatedText
```

```
Get TranslateText of oDeepLTranslator ;  
    sSourceText sTargetLanguage to TranslatedText
```

```
Struct tDeepLTranslation  
    { Name="detected_source_language" }  
    String sSourceLanguage  
    { Name="text" }  
    String sTargetText  
End_Struct
```

TRANSLATION DATAFLEX REPORTS

- User interface translation
- Stored in a SQLite database
- Allows tweaking
 - Length of label
 - Different word(ing)
- For editing a JSON file per language
- Build server reads this into the language.db file



SUPPORT TOPICS

SUPPORT TOPICS

RECENT DRIVE IN TOPICS

- Display a PDF file in a Windows application
- Clipboard in use error

PDF VIEWER

PDF VIEWER

HOW TO DISPLAY

- Support topic:
 - How to display a PDF in a Windows application
- Solution:
 - Use a cWebView2Browser control and send Navigate to the browser to display the PDF



PDF VIEWER BROWSER CONTROL

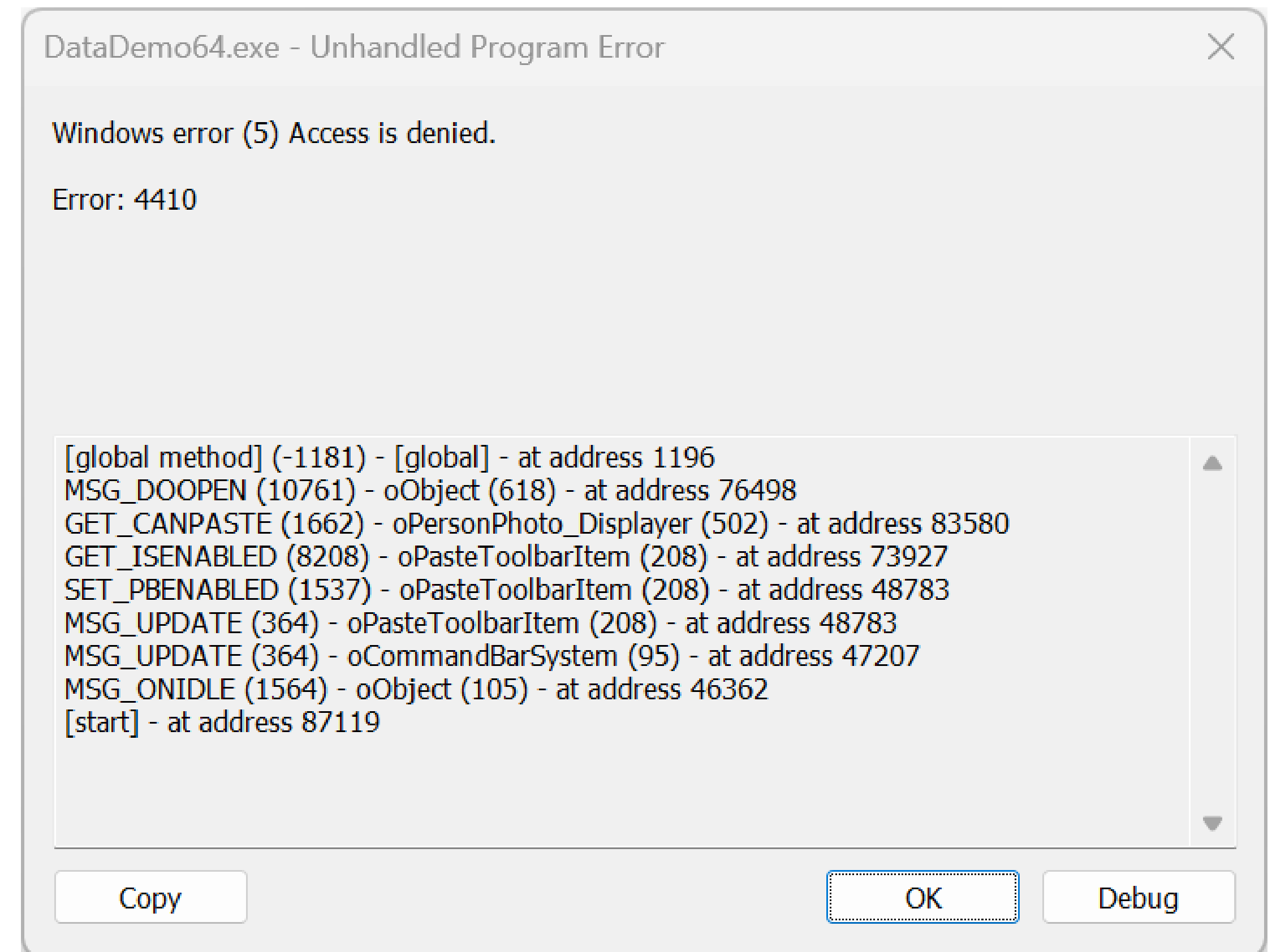
```
Object oPDFViewer is a cWebView2Browser
  Set Location to 11 124
  Set Size to 213 236
  Set peAnchors to anAll
End_Object
```

```
Send Navigate of oPDFViewer Orders.InvoicePDF
```

CLIPBOARD IN USE ERROR

CLIPBOARD IN USE ERROR REASONS

- Graphics Library shows usage of Windows clipboard
 - Copy or paste image data
- Operation may fail with error 5 (Access Denied)
 - Happens when a different application keeps the clipboard opened
 - What application is this?



CLIPBOARD IN USE ERROR

WHAT APPLICATION

- `GetOpenClipboardWindow` may return the window handle of the application
 - Nice but a window handle?
 - What if there is no window handle?
- No window handle -> retry
- Window handle
 - Use `GetWindowThreadProcessId` to get ID of the process that owns the window
 - Open the process to get its name
- The solution has been applied to the Graphics library already



AVAILABLE PACKAGE

- After the release of DataFlex v26 we will release
 - Package for Credential Manager
 - Package for LibArchive
 - Package for DeepL
- Graphics library is already available for collaboration via Github.
- Libraries for the other 3 are not yet public for collaboration

