ClrMD workshop – Lab 5 | String duplicates in WinDBG

The goal of this lab is to write a WinDBG extension that leverages ClrMD.

1. Create a class library with a class named “DebuggerExtensions” (needed to be able to extend the partial class defined in common.cs)
2. Create an x64 target instead of AnyCPU
3. Add the ClrMD (Microsoft.diagnostics.runtime) nuget
4. Reference the existing shared\common.cs file
    1. Change the namespace of the class library to be “WindbgExtension” to be able to write a partial class extended by the DebuggerExtensions class defined in common.cs
5. Add a reference to the UnmanagedExports nuget by Robert Giesecke (1.2.7)
    1. Expect compilation error if using .NET 4.6+
    2. Add manually <DllExportTargetFrameworkVersion>v4.0</DllExportTargetFrameworkVersion> to the project file
6. Add multiple methods with the naming you want to expose a StringDuplicate command:
    1. public static void sd(IntPtr client, [MarshalAs(UnmanagedType.**LPStr**)] string args)
    2. Decorate them with [DllExport("sd")] [DllExport("stringduplicates")] [DllExport(“StringDuplicates")]
    3. Implement a common method that is called by the command functions based on second lab
    4. Call InitApi to setup the binding with WinDBG and ClrMD
    5. Reuse the code written in first lab to compute the string duplicates
    6. Accept an integer as parameter to filter out duplicates with less occurences than the threshold passed in args
7. Test it with a dump containing string duplicates