C# for PenTest

Joas Antonio

https://www.linkedin.com/in/joas-antonio-dos-santos

C# TOOLS - BOH

- CasperStager
  - PoC for persisting .NET payloads in Windows Notification Facility (WNF) state names using low-level Windows Kernel API calls.
- CSExec
  - An implementation of PSExec in C#
- CSharpCreateThreadExample
  - C# code to run PIC using CreateThread
- CSharpScripts
  - Collection of C# scripts
- CSharpSetThreadContext
  - C# Shellcode Runner to execute shellcode via CreateRemoteThread and SetThread Context to evade Get-InjectedThread
- CSharpWinRM
  - .NET 4.0 WinRM API Command Execution
- PrintNightmare in CSharp
  - C# and Impacket implementation of PrintNightmare CVE-2021-1675/CVE-2021-34527
- DnsCache
  - This is a reference example for how to call the Windows API to enumerate cached DNS records in the Windows resolver. Proof of concept or pattern only.
- Farmer
  - Farmer is a project for collecting NetNTLM hashes in a Windows domain. Farmer achieves this by creating a local WebDAV server that causes the WebDAV Mini Redirector to authenticate from any connecting clients.
- FreshCookees
  - C# .NET 3.5 tool that keeps proxy auth cookies fresh by maintaining a hidden IE process that navs to your hosted auto refresh page. Uses WMI event listeners to monitor for InstanceDeletionEvents of the Internet Explorer process, and starts a hidden IE process via COM object if no other IE processes are running.

C# TOOLS - BOH

- GoldenTicket
  - This .NET assembly is specifically designed for creating Golden Tickets. It has been built with a custom version of SharpSploit and an old 2.0 alpha (x64) version of Powerkatz.
- Grouper2
  - Find vulnerabilities in AD Group Policy
- HTTPS_CSharp_Server
  - Implementing a Multithreaded HTTP/HTTPS Debugging Proxy Server in C# xref.
- Inception
  - Provides In-memory compilation and reflective loading of C# apps for AV evasion.
- InveighZero
  - Windows C# LLMNR/mDNS/NBNS/DNS/DHCPv6 spoofer/man-in-the-middle tool
- KittyLitter
  - Credential Dumper. It is comprised of two components, KittyLitter.exe and KittyScooper.exe. This will bind across TCP, SMB, and MailSlot channels to communicate credential material to lowest privilege attackers.
- LittleCorporal
  - LittleCorporal: A C# Automated Maldoc Generator
- Lockless
  - Lockless allows for the copying of locked files.

C# TOOLS - BOH

- MaliciousClickOnceMSBuild
  - Basic C# Project that will take an MSBuild payload and run it with MSBuild via ClickOnce.
- Minidump
  - The program is designed to dump full memory of the process by specifing process name or process id.
- MiscTools
  - Miscellaneous Tools
- NamedPipes
  - A pattern for client/server communication via Named Pipes via C#
- nopowershell
  - PowerShell rebuilt in C# for Red Teaming purposes
- OffensiveCSharp
  - Collection of Offensive C# Tooling
- PurpleSharp
  - PurpleSharp is a C# adversary simulation tool that executes adversary techniques with the purpose of generating attack telemetry in monitored Windows environments.
- Reg_Built
  - C# Userland Registry RunKey persistence

C# TOOLS - BOH

- RemoteProcessInjection
  - C# remote process injection utility for Cobalt Strike
- Rubeus
  - Rubeus is a C# toolset for raw Kerberos interaction and abuses.
- RunProcessAsTask
- RunasCs
  - RunasCs - Csharp and open version of windows builtin runas.exe
- RunSharp
  - Simple program that allows you to run commands as another user without being prompted for their password. This is useful in cases where you don't always get feedback from a prompt, such as the case with some remote shells.
- SafetyDump
  - SafetyDump is an in-memory process memory dumper.
- SafetyKatz
  - SafetyKatz is a combination of slightly modified version of @gentilkiwi's Mimikatz project and @subTee's .NET PE Loader
- Seatbelt
  - Seatbelt is a C# project that performs a number of security oriented host-survey "safety checks" relevant from both offensive and defensive security perspectives.

C# TOOLS - BOH

- self-morphing-csharp-binary
  - C# binary that mutates its own code, encrypts and obfuscates itself on runtime
- Sharp-InvokeWMIExec
  - A native C# conversion of Kevin Robertsons Invoke-WMIExec powershell script
- Sharp-Suite
  - fork of FuzzySecurity/Sharp-Suite
- SharpAdidnsdump
  - c# implementation of Active Directory Integrated DNS dumping (authenticated user)
- SharpAppLocker
  - C# port of the Get-AppLockerPolicy PS cmdlet
- SharpAttack
  - SharpAttack is a console for certain things I use often during security assessments. It leverages .NET and the Windows API to perform its work. It contains commands for domain enumeration, code execution, and other fun things.
- SharpBlock
  - A method of bypassing EDR's active projection DLL's by preventing entry point exection
- SharpCat
  - C# alternative to the linux "cat" command... Prints file contents to console. For use with Cobalt Strike's Execute-Assembly

C# TOOLS - BOH

- SharpClipHistory
  - SharpClipHistory is a .NET application written in C# that can be used to read the contents of a user's clipboard history in Windows 10 starting from the 1809 Build.
- SharpCloud
  - Simple C# for checking for the existence of credential files related to AWS, Microsoft Azure, and Google Compute.
- SharpCOM
  - CSHARP DCOM Fun
- SharpCompile
  - SharpCompile is an aggressor script for Cobalt Strike which allows you to compile and execute C# in realtime. This is a more slick approach than manually compiling an .NET assembly and loading it into Cobalt Strike.
- SharpCradle
  - SharpCradle is a tool designed to help penetration testers or red teams download and execute .NET binaries into memory.
- SharpDomainSpray
  - Basic password spraying tool for internal tests and red teaming
- SharpDoor
  - SharpDoor is alternative RDPWrap written in C# to allowed multiple RDP (Remote Desktop) sessions by patching termsrv.dll file.

C# TOOLS - BOH

- SharpDPAPI
  - SharpDPAPI is a C# port of some Mimikatz DPAPI functionality.
- SharpDump
  - SharpDump is a C# port of PowerSploit's Out-Minidump.ps1 functionality.
- SharpEdge
  - C# Implementation of Get-VaultCredential
- SharpHook
  - SharpHook is inspired by the SharpRDPThief project, It uses various API hooks in order to give us the desired credentials.
- SharpChisel
  - C# Wrapper around Chisel from https://github.com/jpillora/chisel
- SharPersist
  - Windows persistence toolkit written in C#.
- SharpExcelibur
  - Read Excel Spreadsheets (XLS/XLSX) using Cobalt Strike's Execute-Assembly
- SharpExec
  - SharpExec is an offensive security C# tool designed to aid with lateral movement. WMIExec. SMBExec. PSExec. WMI.
- SharpFiles
  - C# program that takes in the file output from PowerView's Invoke-ShareFinder and will search through the network shares for files containing terms that you specify.

C# TOOLS - BOH

- SharpFinder
  - Searches for files matching specific criteria on readable shares within the domain.
- SharpFruit
  - A C# penetration testing tool to discover low-haning web fruit via web requests.
- SharpGPOAbuse
  - application written in C# that can be used to take advantage of a user's edit rights on a Group Policy Object (GPO) in order to compromise the objects that are controlled by that GPO.
- SharpHide
  - Tool to create hidden registry keys.
- SharpInvoke-SMBExec
  - SMBExec C# module
- SharpLoadImage
  - Hide .Net assembly into png images
- SharpLocker
  - SharpLocker helps get current user credentials by popping a fake Windows lock screen, all output is sent to Console which works perfect for Cobalt Strike.
- SharpLoginPrompt
  - This Program creates a login prompt to gather username and password of the current user.
- SharpLogger
  - Keylogger written in C#

C# TOOLS - BOH

- SharpMapExec
  - A sharpen version of CrackMapExec. This tool is made to simplify penetration testing of networks and to create a swiss army knife that is made for running on Windows which is often a requirement during insider threat simulation engagements.
- SharpNeedle
  - Inject C# code into a running process. Note: SharpNeedle currently only supports 32-bit processes.
- SharpMove
  - .NET Project for performing Authenticated Remote Execution (WMI, SCM, DCOM, Task Scheduler, Service DLL Hijack, DCOM Server Hijack, Modify Scheduled Task, Modify Service binpath)
- SharpPack
  - An Insider Threat Toolkit. SharpPack is a toolkit for insider threat assessments that lets you defeat application whitelisting to execute arbitrary DotNet and PowerShell tools.
- sharppcap
  - Official repository - Fully managed, cross platform (Windows, Mac, Linux) .NET library for capturing packets
- SharpPrinter
  - Discover Printers
- SharpRelay
  - Relay hashes over CobaltStrike beacon and impacket ntlmrelayx.py.
- SharpRoast
  - SharpRoast is a C# port of various PowerView's Kerberoasting functionality.
- SharpShares
  - Enumerate all network shares in the current domain. Also, can resolve names to IP addresses.
- SharpSC
  - Simple .NET assembly to interact with services.

C# TOOLS - BOH

- SharpSniper
  - Find specific users in active directory via their username and logon IP address
- SharpSocks
  - Tunnellable HTTP/HTTPS socks4a proxy written in C# and deployable via PowerShell
- SharpSphere
  - .NET Project for Attacking vCenter
- SharpSploit
  - SharpSploit is a .NET post-exploitation library written in C# https://sharpsploit.cobbr.io/api/
- SharpSpray
  - SharpSpray a simple code set to perform a password spraying attack against all users of a domain using LDAP and is compatible with Cobalt Strike.
- SharpSSDP
  - SSDP Service Discovery
- SharpSword
  - Read the contents of DOCX files using Cobalt Strike's Execute-Assembly
- SharpTask
  - SharpTask is a simple code set to interact with the Task Scheduler service api and is compatible with Cobalt Strike.
- SharpView
  - C# implementation of harmj0y's PowerView

C# TOOLS - BOH

- SharpWeb
  - .NET 2.0 CLR project to retrieve saved browser credentials from Google Chrome, Mozilla Firefox and Microsoft Internet Explorer/Edge.
- SharpWMI
  - SharpWMI is a C# implementation of various WMI functionality.
- SharPyShell
  - SharPyShell - tiny and obfuscated ASP.NET webshell for C# web applications
- SharpZeroLogon
  - This is an exploit for CVE-2020-1472, a.k.a. Zerologon.
- SilkETW
  - SilkETW & SilkService are flexible C# wrappers for ETW, they are meant to abstract away the complexities of ETW and give people a simple interface to perform research and introspection. While both projects have obvious defensive (and offensive) applications they should primarily be considered as research tools.
- SneakyService
  - A simple, minimal C# windows service implementation that can be used to demonstrate privilege escalation from misconfigured windows services.

C# TOOLS - BOH

- SpaceRunner
  - This tool enables the compilation of a C# program that will execute arbitrary PowerShell code, without launching PowerShell processes through the use of runspace.
- Stracciatella
  - OpSec-safe Powershell runspace from within C# (aka SharpPick) with AMSI and Script Block Logging disabled at startup
- taskkill
  - This is a reference example for how to call the Windows API to enumerate and kill a process similar to taskkill.exe. This is based on (incomplete) MSDN example code. Proof of concept or pattern only.
- TCPRelayInjecter2
  - Tool for injecting a "TCP Relay" managed assembly into an unmanaged process.
- TikiTorch
  - Process Injection. The basic concept of CACTUSTORCH is that it spawns a new process, allocates a region of memory, then uses CreateRemoteThread to run the desired shellcode within that target process. Both the process and shellcode are specified by the user.
- TrustJack
  - Yet another PoC for https://www.wietzebeukema.nl/blog/hijacking-dlls-in-windows.
- Watson
  - Enumerate missing KBs and suggest exploits for useful Privilege Escalation vulnerabilities

https://github.com/boh/RedCsharp

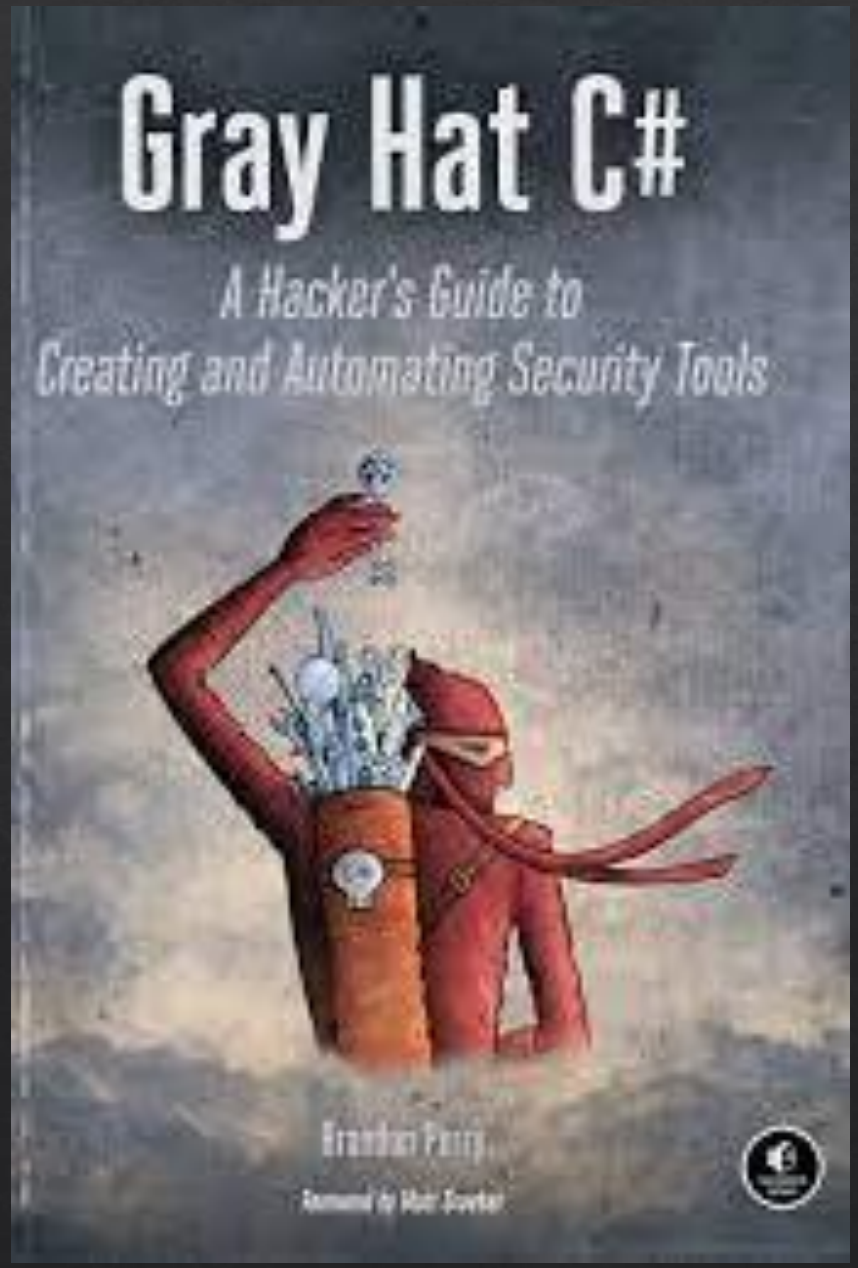
.NET Security

- https://github.com/guardrailsio/awesome-dotnet-security
- https://cheatsheetseries.owasp.org/cheatsheets/DotNet_Security_Cheat_Sheet.html
- https://visualstudiomagazine.com/articles/2019/10/22/top-net-attacks.aspx
- https://www.toptal.com/security/10-most-common-web-security-vulnerabilities
- https://beyondsecurity.com/scan-pentest-network-vulnerabilities-net-framework-allows-code-execution-ms11-028.html
- https://www.youtube.com/watch?v=anCRjM7meSo
- https://www.youtube.com/watch?v=HMEodGGpzo0
- https://resources.infosecinstitute.com/topic/net-penetration-testing-test-case-cheat-sheet/
- https://www.youtube.com/watch?v=fCfneKhiYBw
- https://www.youtube.com/watch?v=CjoAYslTKX0
- https://www.youtube.com/watch?v=ZqARpaB39TY
- https://www.youtube.com/watch?v=Ib3jnD158NI
- https://www.youtube.com/watch?v=M8VeTHB08ao

Gray Hat C#

https://github.com/brandonprry/gray_hat_csharp_code

https://github.com/tbhaxor/csharp-and-infosec



C2 – Command and Control

- https://github.com/SharpC2/SharpC2
- https://github.com/cobbr/Covenant
- https://github.com/tcostam/awesome-command-control
- https://github.com/EnginDemirbilek/NorthStarC2
- https://github.com/AdvancedHacker101
- https://github.com/madSimonJ/CSharpHacks
- https://www.zeropointsecurity.co.uk/c2-dev-csharp/overview
- https://shogunlab.gitbook.io/building-c2-implants-in-cpp-a-primer/

C# Fundamentals

- https://github.com/pwittchen/learning-csharp
- https://github.com/dotnet/training-tutorials
- https://github.com/chrisvasqm/csharp-beginners
- https://github.com/myilm/.Net-Coding-Fundamentals
- https://www.youtube.com/watch?v=GhQdlIFylQ8
- https://www.youtube.com/watch?v=gfkTfcpWqAY
- https://www.youtube.com/watch?v=pSiIHe2uZ2w
- https://www.youtube.com/watch?v=wLg-XdAmrak