SECURE CODING LAB11

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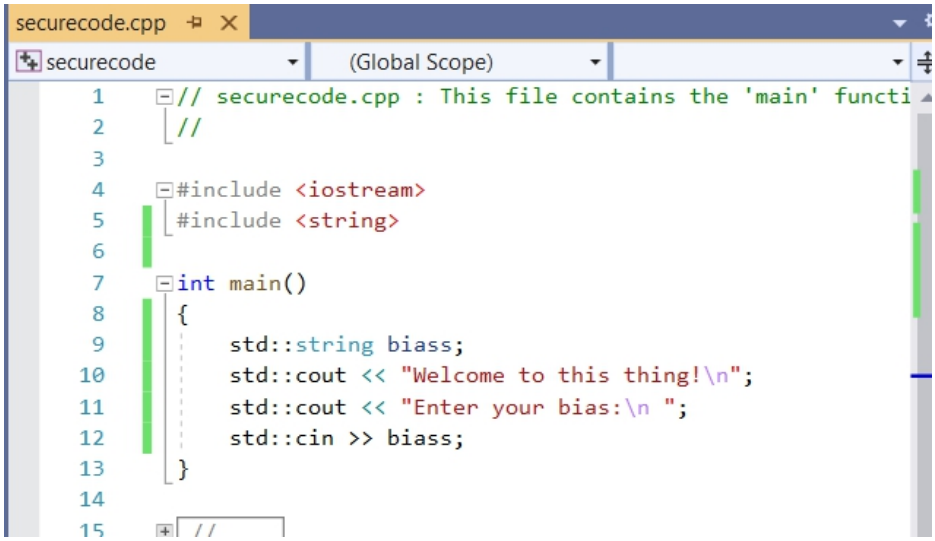
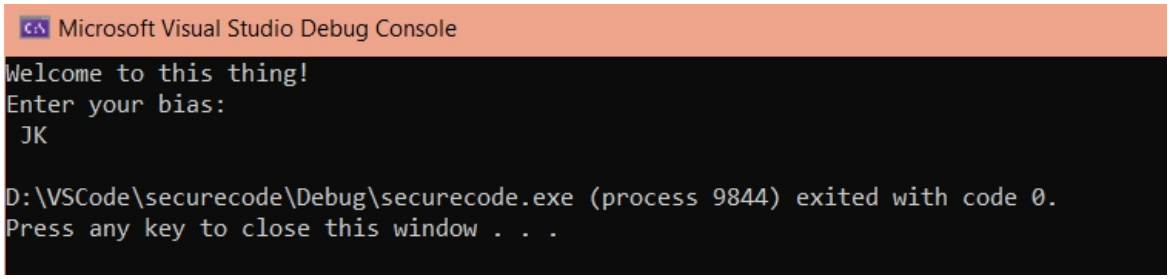
18BCE7036 DATE: 26-04-2021

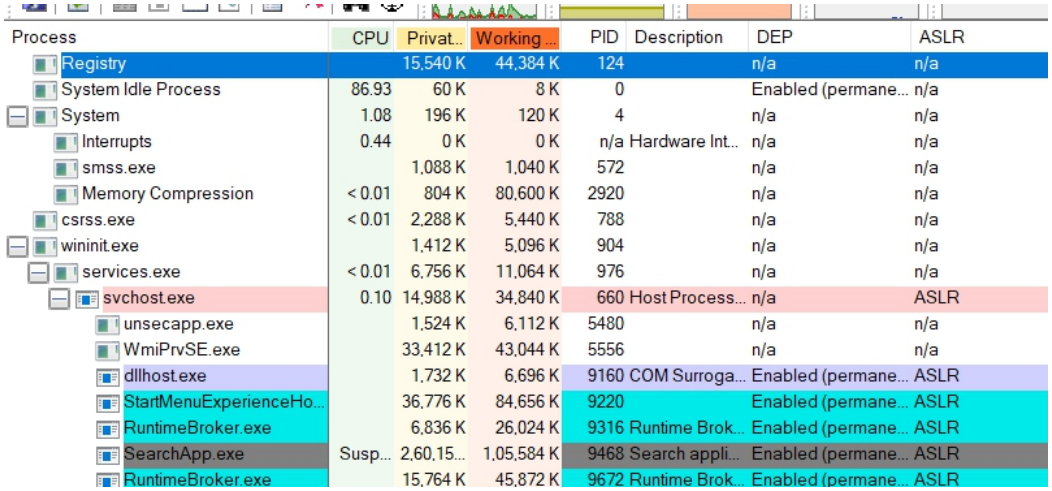
First we work on building an executable on Visual Studio. (C++)
(for this we write the script, build the console application and run it)



Below, is the script when run from the IDE



For the purpose of this analysis, we have also dowloaded and installed Process Explorer.
Here, we enable the DEP(Data Execution Prevention) and ASLR (Address Space Layout Randomization) columns.

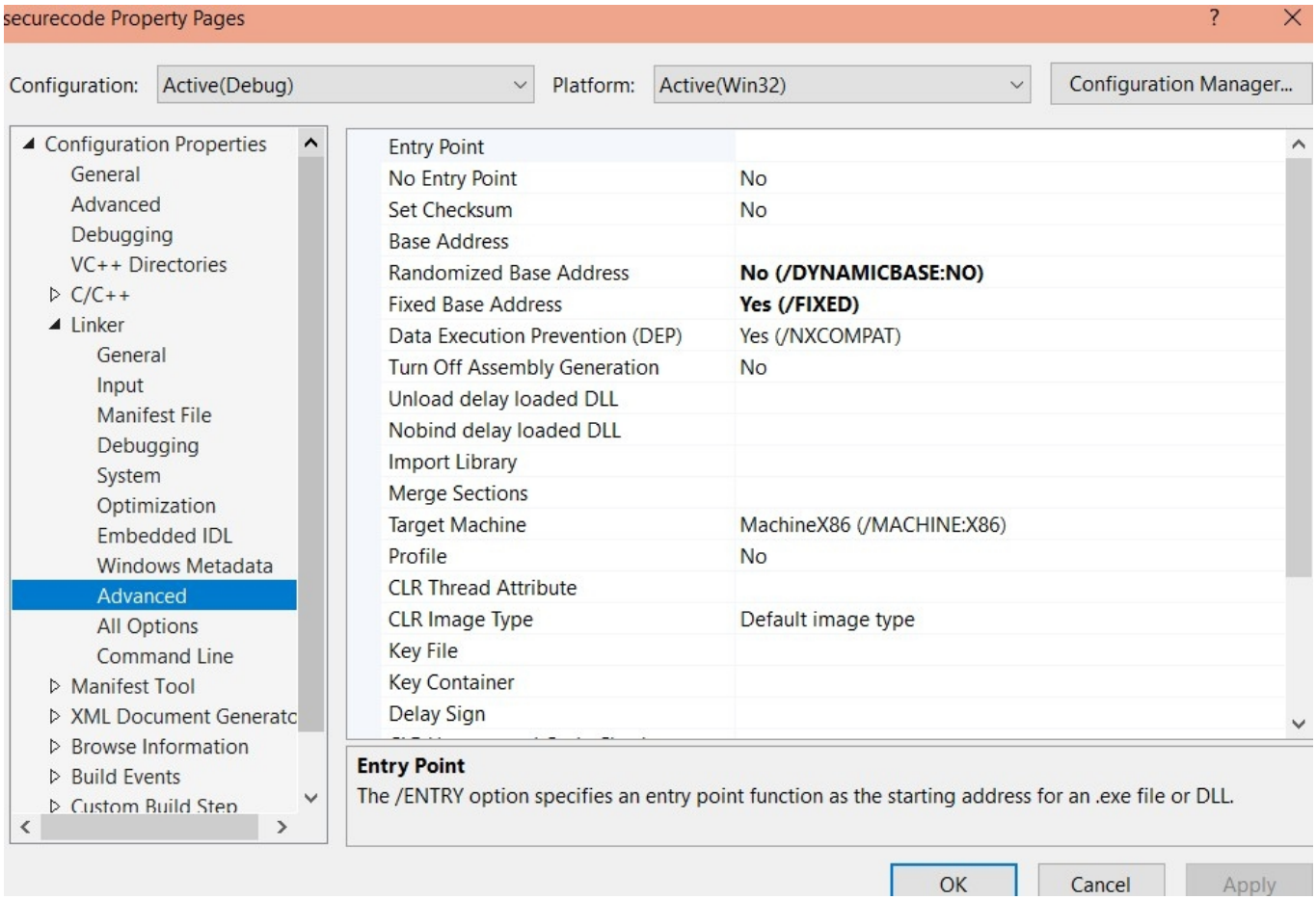


Process	CPU	Privat...	Working ...	PID	Description	DEP	ASLR
Registry		15,540 K	44,384 K	124		n/a	n/a
System Idle Process	86.93	60 K	8 K	0		Enabled (permane...	n/a
System	1.08	196 K	120 K	4		n/a	n/a
Interrupts	0.44	0 K	0 K	n/a	Hardware Int...	n/a	n/a
smss.exe		1,088 K	1,040 K	572		n/a	n/a
Memory Compression	< 0.01	804 K	80,600 K	2920		n/a	n/a
csrss.exe	< 0.01	2,288 K	5,440 K	788		n/a	n/a
wininit.exe		1,412 K	5,096 K	904		n/a	n/a
services.exe	< 0.01	6,756 K	11,064 K	976		n/a	n/a
svchost.exe	0.10	14,988 K	34,840 K	660	Host Process...	n/a	ASLR
unsecapp.exe		1,524 K	6,112 K	5480		n/a	n/a
WmiPrvSE.exe		33,412 K	43,044 K	5556		n/a	n/a
dllhost.exe		1,732 K	6,696 K	9160	COM Surroga...	Enabled (permane...	ASLR
StartMenuExperienceHo...		36,776 K	84,656 K	9220		Enabled (permane...	ASLR
RuntimeBroker.exe		6,836 K	26,024 K	9316	Runtime Brok...	Enabled (permane...	ASLR
SearchApp.exe	Susp...	2,60,15...	1,05,584 K	9468	Search appli...	Enabled (permane...	ASLR
RuntimeBroker.exe		15,764 K	45,872 K	9672	Runtime Brok...	Enabled (permane...	ASLR

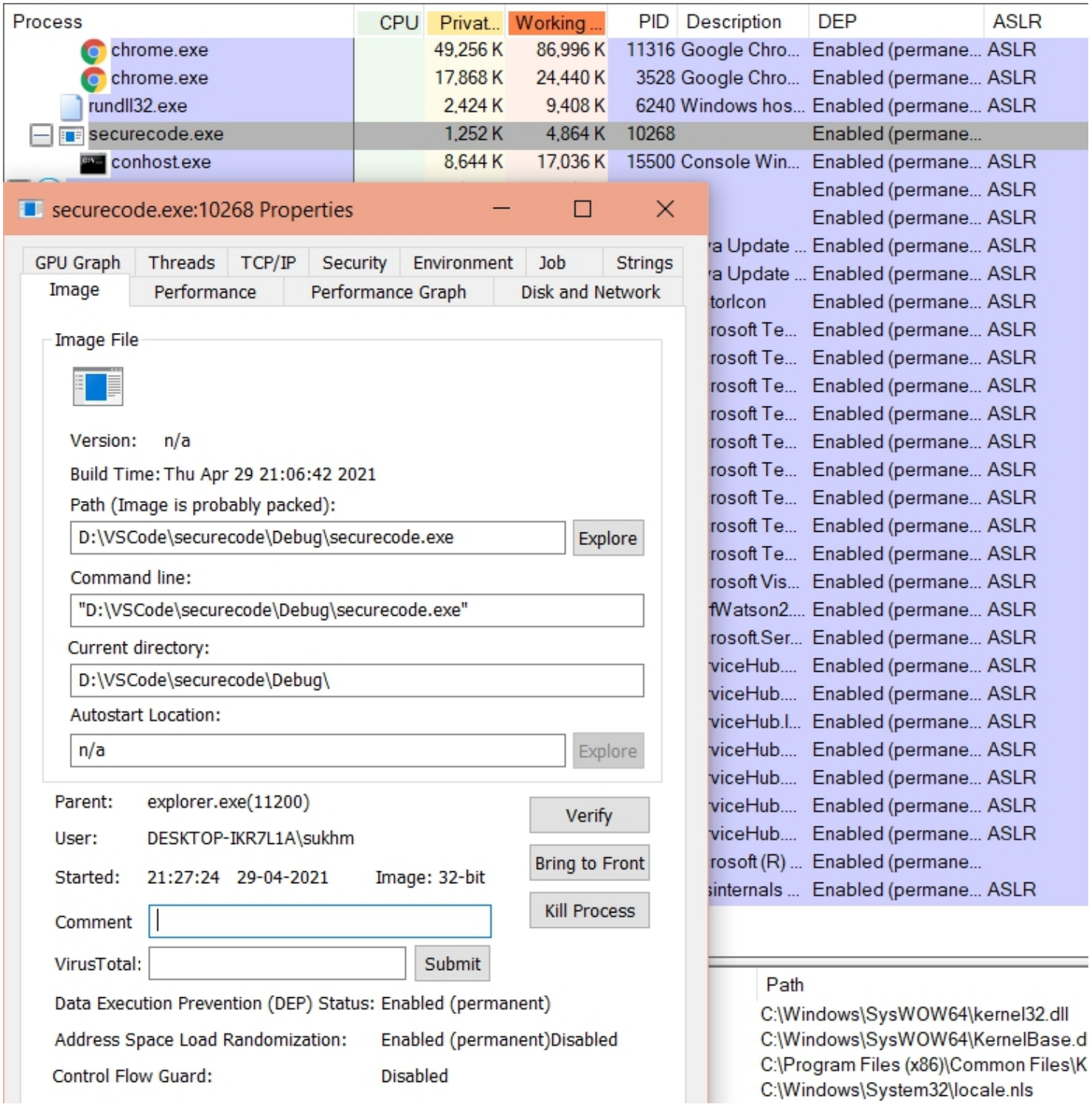
```
D:\>cd D:\VSCode\securecode\Debug

D:\VSCode\securecode\Debug>securecode.exe
Welcome to this thing!
Enter your bias:
 OT7 honestly

D:\VSCode\securecode\Debug>_
```

Additionally, we find the executable for our application and run it on the command prompt.

Going back to Visual Studio, we will enable Randomized Base Address and DEP options in the project properties like so.



We again build and run the application.


Process
CPU
Privat...
Working ...
PID
Description
DEP
ASLR
chrome.exe 49,256 K 86,996 K 11316 Google Chro... Enabled (permane... ASLR
chrome.exe 17,868 K 24,440 K 3528 Google Chro... Enabled (permane... ASLR
rundll32.exe 2,424 K 9,408 K 6240 Windows hos... Enabled (permane... ASLR
securecode.exe 1,252 K 4,864 K 10268 Enabled (permane...
conhost.exe 8,644 K 17,036 K 15500 Console Win... Enabled (permane... ASLR
securecode.exe:10268 Properties
GPU Graph
Threads
TCP/IP
Security
Environment
Job
Strings
Image
Performance
Performance Graph
Disk and Network
Image File
Version: n/a
Build Time: Thu Apr 29 21:06:42 2021
Path (Image is probably packed):
D:\VSCode\securecode\Debug\securecode.exe
Explore
Command line:
"D:\VSCode\securecode\Debug\securecode.exe"
Current directory:
D:\VSCode\securecode\Debug\
Autostart Location:
n/a
Explore
Parent: explorer.exe(11200)
User: DESKTOP-IKR7L1A\sukhm
Started: 21:27:24 29-04-2021 Image: 32-bit
Comment
VirusTotal:
Submit
Verify
Bring to Front
Kill Process
Data Execution Prevention (DEP) Status: Enabled (permanent)
Address Space Load Randomization: Enabled (permanent)Disabled
Control Flow Guard: Disabled
Path
C:\Windows\SysWOW64\kernel32.dll
C:\Windows\SysWOW64\KernelBase.d
C:\Program Files (x86)\Common Files\K
C:\Windows\System32\locale.nls