SECURE CODING LAB-11
26-04-2021

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Lab experiment - Creating secure and safe executable

QUESTION

Download and install visual studio (recent edition)

Write a C++ code of your own to build an executable and run the same.

Download process explorer and verify the DEP & ASLR status

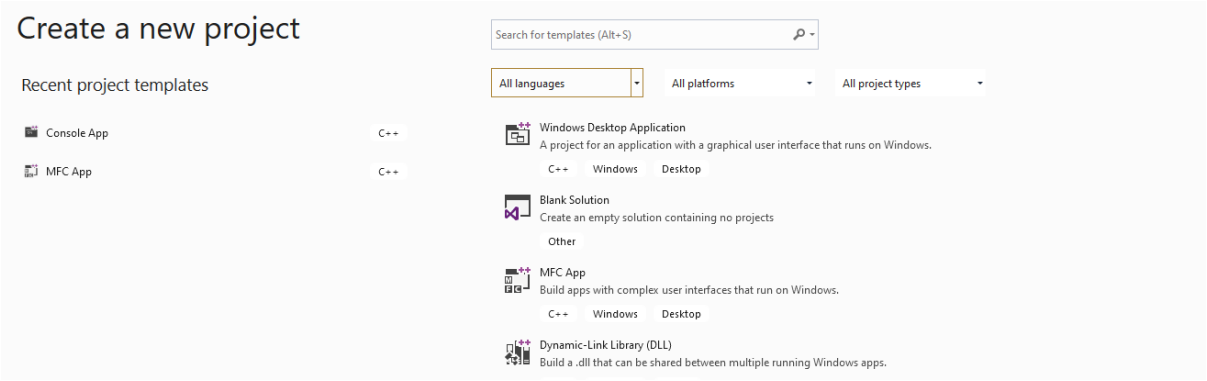
Enable software DEP, ASLR and SEH in the visual studio and rebuild the same executable

Again, verify the DEP & ASLR status in the process explorer

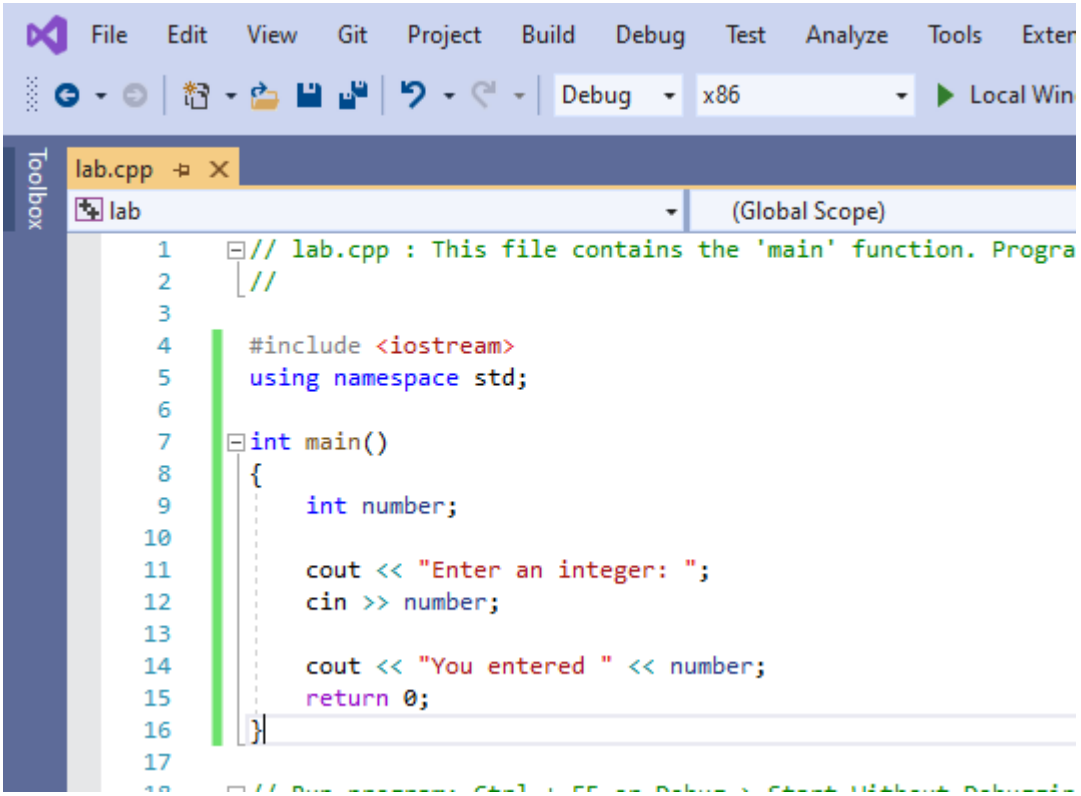
Report the same with separate screenshot - before and after enabling DEP & ASLR.

OUTPUT

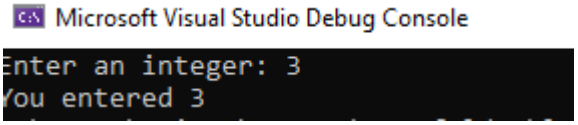
- **Download and installing visual studio**

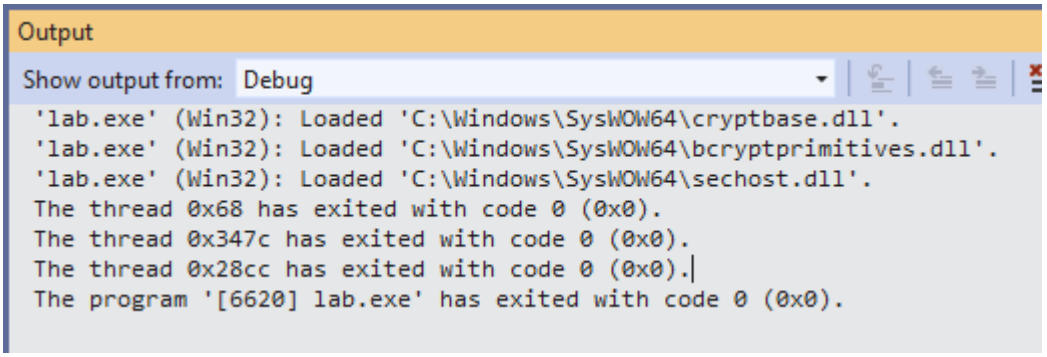


C++ code

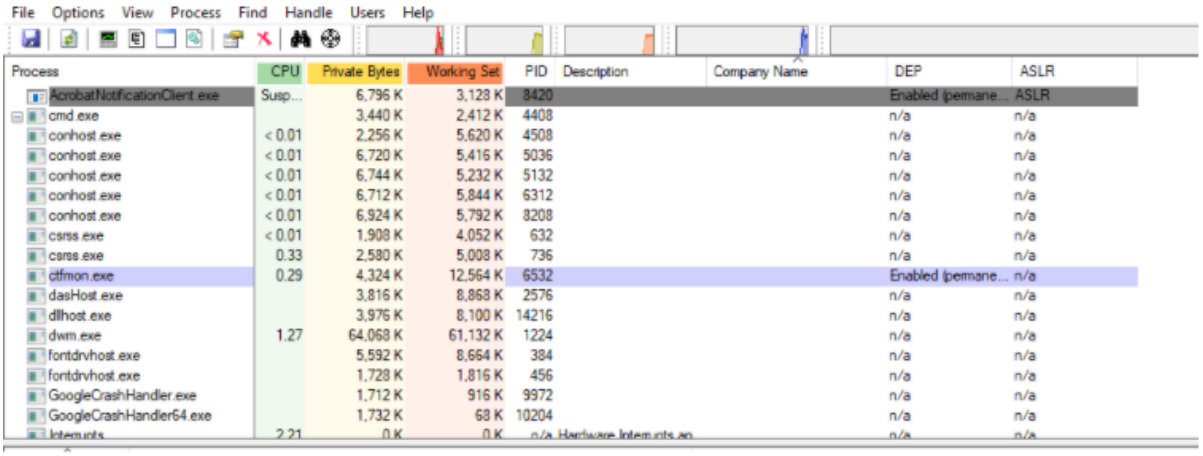


Run and executing the code:

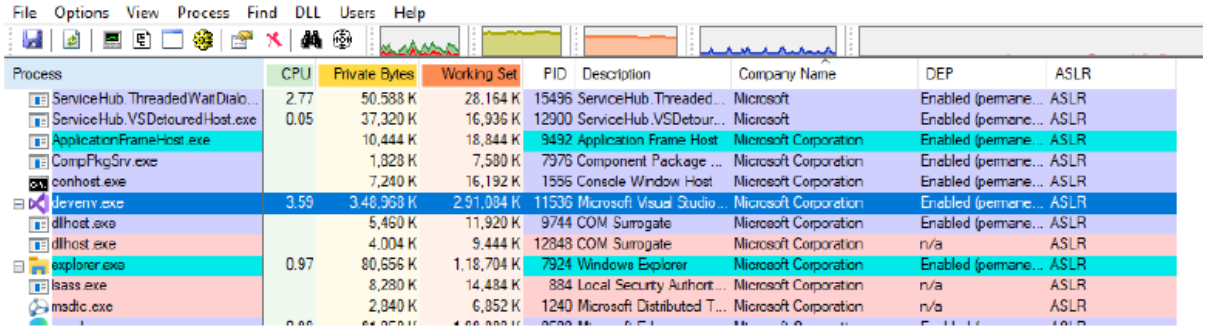




Download process explorer



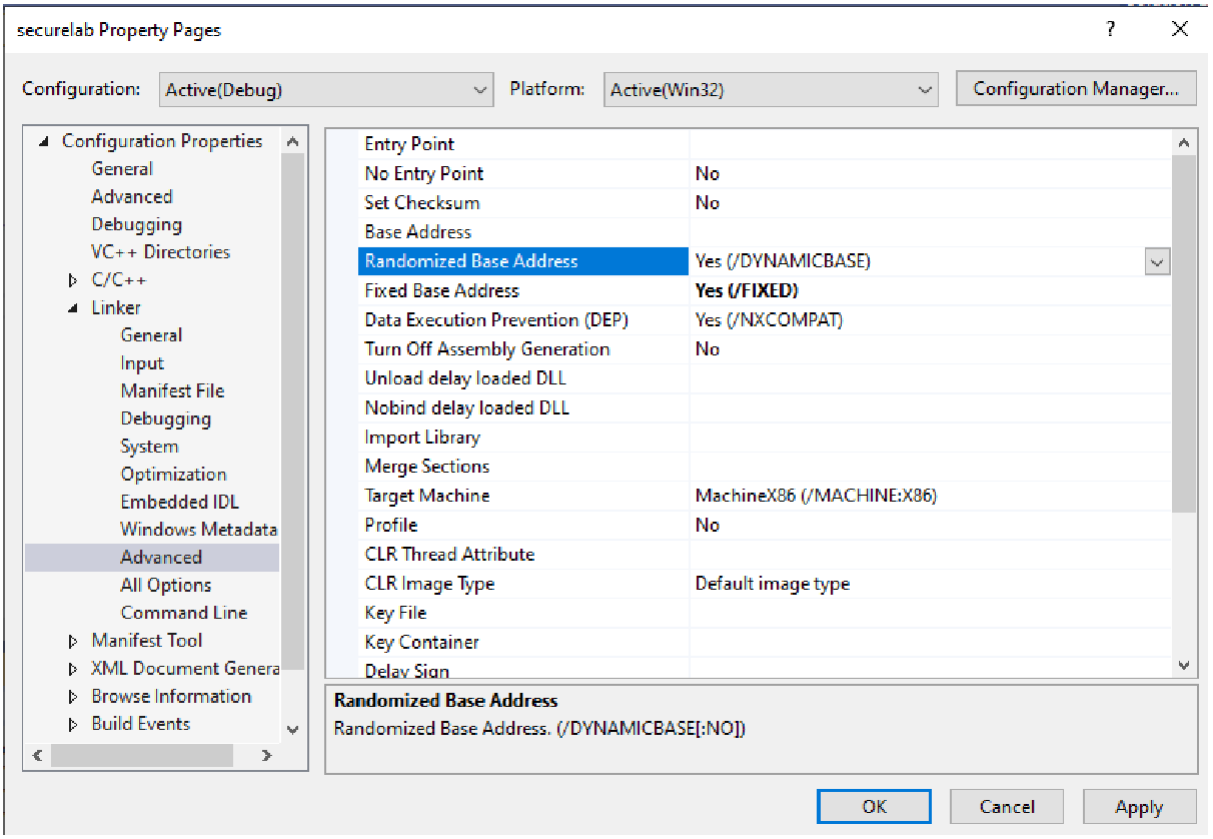
Process explorer and verify the DEP & ASLR status

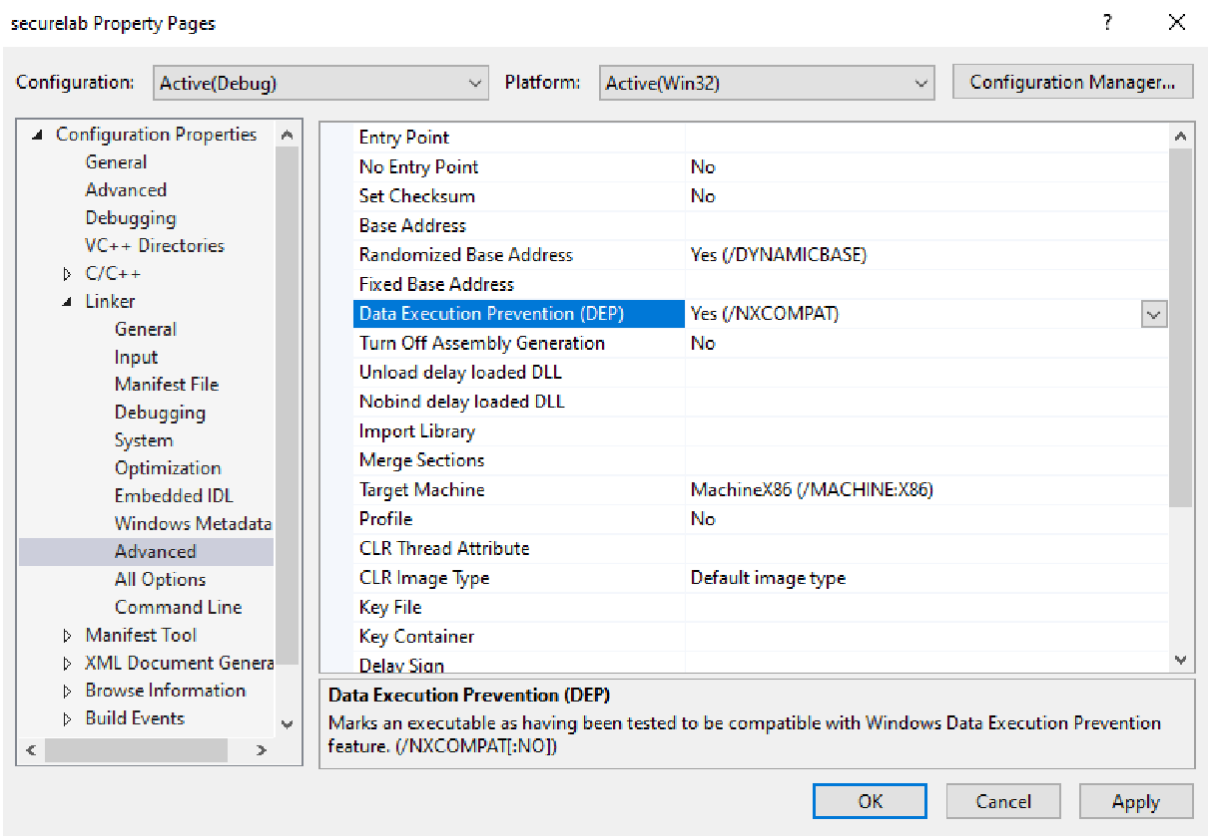


Enable software DEP, ASLR and SEH in the visual studio and rebuild the same executable

Configuration Properties > **Linker** > **Advanced** property page

Modifying the **Randomized Base Address** property.



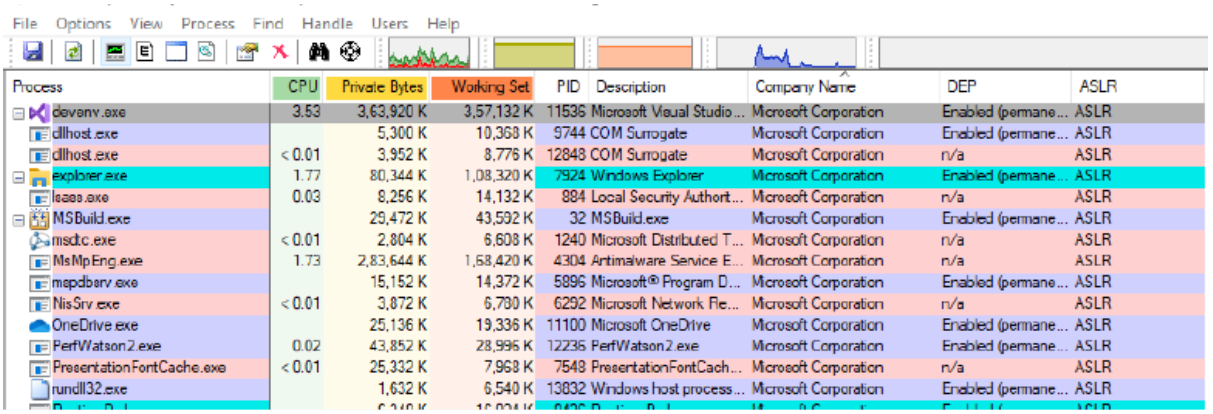


Again, running the executable

Microsoft Visual Studio Debug Console

```
Enter an integer: 5
You entered 5
```

And, verifying the DEP & ASLR status in the process explorer



File Options View Process Find Handle Users Help

Process	CPU	Private Bytes	Working Set	PID	Description	Company Name	DEP	ASLR
devenv.exe	3.53	3,63,920 K	3,57,132 K	11536	Microsoft Visual Studio ...	Microsoft Corporation	Enabled (permane...	ASLR
dllhost.exe		5,300 K	10,368 K	9744	COM Surrogate	Microsoft Corporation	Enabled (permane...	ASLR
dllhost.exe	< 0.01	3,952 K	8,776 K	12848	COM Surrogate	Microsoft Corporation	n/a	ASLR
explorer.exe	1.77	80,344 K	1,08,320 K	7924	Windows Explorer	Microsoft Corporation	Enabled (permane...	ASLR
lsass.exe	0.03	8,256 K	14,132 K	884	Local Security Authort...	Microsoft Corporation	n/a	ASLR
MSBuild.exe		29,472 K	43,592 K	32	MSBuild.exe	Microsoft Corporation	Enabled (permane...	ASLR
msdtc.exe	< 0.01	2,804 K	6,608 K	1240	Microsoft Distributed T...	Microsoft Corporation	n/a	ASLR
MsMpEng.exe	1.73	2,83,644 K	1,58,420 K	4304	Antimalware Service E...	Microsoft Corporation	n/a	ASLR
mspdbsrv.exe		15,152 K	14,372 K	5896	Microsoft® Program D...	Microsoft Corporation	Enabled (permane...	ASLR
NisSrv.exe	< 0.01	3,872 K	6,780 K	6292	Microsoft Network Re...	Microsoft Corporation	n/a	ASLR
OneDrive.exe		25,136 K	19,336 K	11100	Microsoft OneDrive	Microsoft Corporation	Enabled (permane...	ASLR
PerfWatson2.exe	0.02	43,852 K	28,996 K	12236	PerfWatson2.exe	Microsoft Corporation	Enabled (permane...	ASLR
PresentationFontCache.exe	< 0.01	25,332 K	7,968 K	7548	PresentationFontCach...	Microsoft Corporation	n/a	ASLR
rundll32.exe		1,632 K	6,540 K	13832	Windows host process ...	Microsoft Corporation	Enabled (permane...	ASLR