103 – A suspicious developer

Team Information

Team Name _____

Team Member _____

_____

_____

Email Address _____

Instructions

Description The auditing department of a software development company received an internal whistleblower report stating that a developer from the development team had outsourced a project to another company for execution. The auditing department initiated an investigation to determine whether there had been a violation of internal labor and security regulations. In response, that developer claimed to have personally developed the project and submitted the program source files and the resulting executable files to the audit team as evidence. The auditing department obtained the previous deliverables (executable files) that the developer had submitted by retrieving them from company's project management server. Verify the accuracy of the internal whistleblower's claims.

Target	Hash (SHA1)
Files.zip	26B11C75AD1F469B35284A29D973B716C030C71B

Questions

Please solve all problems based on UTC+9 time zone.

1) Write the items indicating the build tool version information stored in the given two PE format executable files in the format of "[ProductID].[BuildID].[Count]". (80 points)
   - Write 9 items per file and do so for both two files. (40 points each)
2) Write the build folder paths for the given two executable files. (20 points)
   - Write the build folder paths for both files. (10 points each)

Teams must:

- Develop and document the step-by-step approach used to solve this problem to allow another examiner to replicate team actions and results.
- Specify all tools used in deriving the conclusion(s).

Tools used:

Name:		Publisher:	
Version:			
URL:			

Step-by-step methodology:

1. Write the items indicating the build tool version information stored in the given two PE format executable files in the format of "[ProductID].[BuildID].[Count]". (80 points)

메모 포함[오전1]: 주어진 두 개의 PE 형식 실행 파일에 저장된 빌드 도구 버전 정보를 b"[ProductID].[BuildID].[Count]" 형식으로 작성

제공된 파일을 HXD로 열어준다.

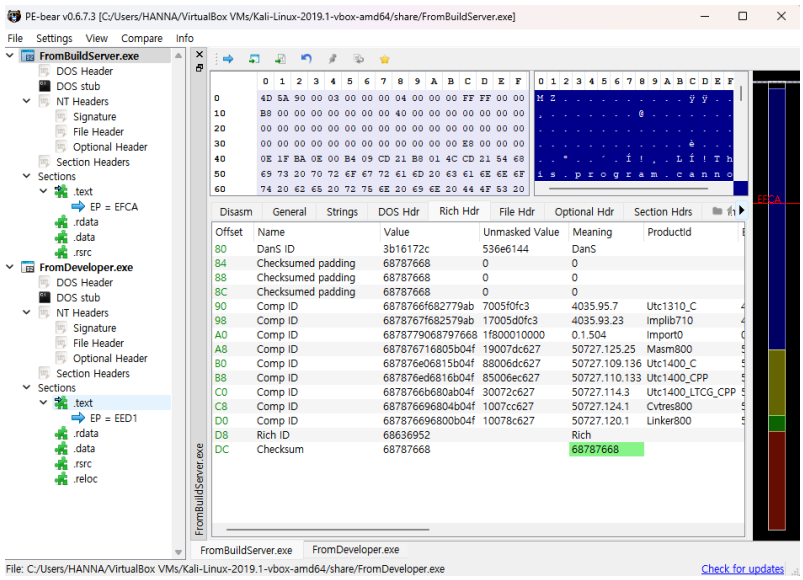
Offset(h)	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	Decoded text
00000000	4D	5A	90	00	03	00	00	00	04	00	00	00	FF	FF	00	00	MZ.....ÿÿ..
00000010	B8	00	00	00	00	00	00	00	40	00	00	00	00	00	00	00	¸.......@.....
00000020	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	....
00000030	00	00	00	00	00	00	00	00	00	00	00	00	E8	00	00	00	............è...
00000040	0E	1F	BA	0E	00	B4	09	CD	21	B8	01	4C	CD	21	54	68	..°..´.Í!¸.LÍ!Th
00000050	69	73	20	70	72	6F	67	72	61	6D	20	63	61	6E	6E	6F	is program canno
00000060	74	20	62	65	20	72	75	6E	20	69	6E	20	44	4F	53	20	t be run in DOS
00000070	6D	6F	64	65	2E	0D	0D	0A	24	00	00	00	00	00	00	00	mode....$.......
00000080	2C	17	16	3B	68	76	78	68	68	76	78	68	68	76	78	68	,..;hvxhhvxhhvxh
00000090	AB	79	27	68	6F	76	78	68	AB	79	25	68	7F	76	78	68	«y'hovxh«y%h.vxh
000000A0	68	76	79	68	90	77	78	68	4F	B0	05	68	71	76	78	68	hvyh.wxhO°.hqvxh
000000B0	4F	B0	15	68	E0	76	78	68	4F	B0	16	68	ED	76	78	68	O°.hàvxhO°.hívxh
000000C0	4F	B0	0A	68	6B	76	78	68	4F	B0	04	68	69	76	78	68	O°.hkvxhO°.hivxh
000000D0	4F	B0	00	68	69	76	78	68	52	69	63	68	68	76	78	68	O°.hivxhRichhvxh
000000E0	00	00	00	00	00	00	00	00	50	45	00	00	4C	01	04	00	........PE..L...

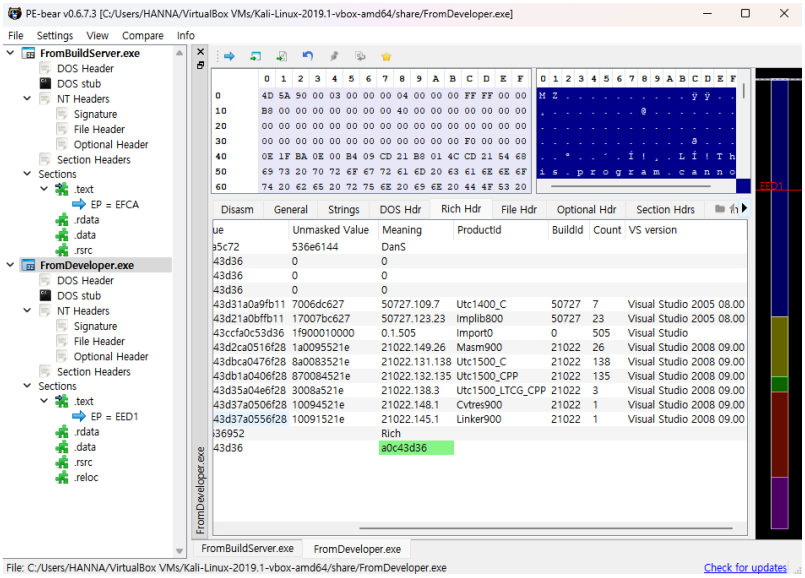
DOS코드와 NT헤더 사이에 hvxh'Rich'hvxh로 작성된 구간이 있다.

*Rich 헤더는 PE 파일의 DOS와 NT 헤더 사이의 사용되지 않는 공간에 저장되는 데이터이다.

실행에 영향을 주지 않으며 프로그램이 빌드된 환경에 대한 정보가 저장되어 사이버 위협 인텔리전스에서 활용이 된다고 한다. ex) Kaspersky lab의 GReAT팀이 Rich Header 분석을 통해 공격 그룹을 밝혀낸 사례가 있음

이를 알아보기 위해 PE-Bear의 Rich 헤더 분석 기능을 사용해보았다.





PE-bear라는 툴을 사용하였고, Rich Hdr란에서 [ProductID].[BuildIB].[Count] 값을 발견할 수 있었다.

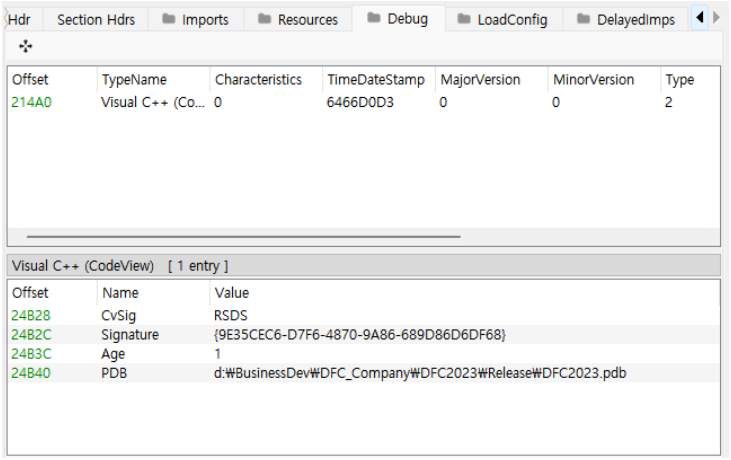
FromBuildServer.exe	FromDeveloper.exe
[Utc1310_C].[4035].[7]	[Utc1400_C].[50727].[7]
[Implib710].[4035].[23]	[Implib800].[50727].[23]
[Import0].[0].[504]	[Import0].[0].[505]
[Masm800].[50727].[25]	[Masm900].[21022].[26]
[Utc1400_C].[50727].[136]	[Utc1500_C].[21022].[138]
[Utc1400_CPP].[50727].[133]	[Utc1500_CPP].[21022].[135]
[Utc1400_LTCG_CPP].[50727].[3]	[Utc1500_LTCG_CPP].[21022].[3]
[Cvtres800].[50727].[1]	[Cvtres900].[21022].[1]
[Linker800].[50727].[1]	[Linker900].[21022].[1]

2. Write the build folder paths for the given two executable files. (20 points)

메모 포함[오전2]: 주어진 두 개의 실행 파일에 대한 빌드 폴더 경로를 작성

*PE 파일을 디버깅했을 때, 디버깅 정보에서 '빌드 폴더 경로'를 찾을 수 있으며, PDB 파일은 PE 파일에 대한 디버깅 관련 정보를 담고 있다.

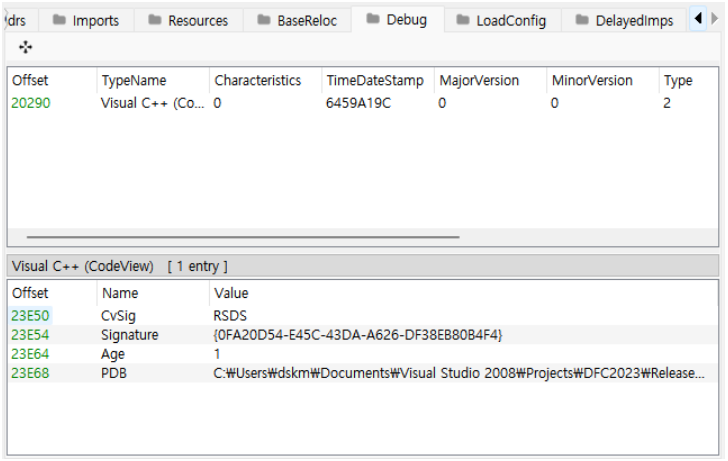
1) FromBuildServer.exe



PE-bear에서 Debug 목록을 찾아 들어가면 경로를 찾을 수 있다.

d:₩BusinessDev₩DFC_Company₩DFC2023₩Release₩DFC2023.pdb

2) FromDeveloper.exe



C:₩Users₩dskm₩Documents₩Visual Studio 2008₩Projects₩DFC2023₩Release₩DFC2023.pdb

The deadline for this problem is July 31.

Please do not post your write-up before the deadline for fair competition!

*** Delete this box when submitting your answer.**