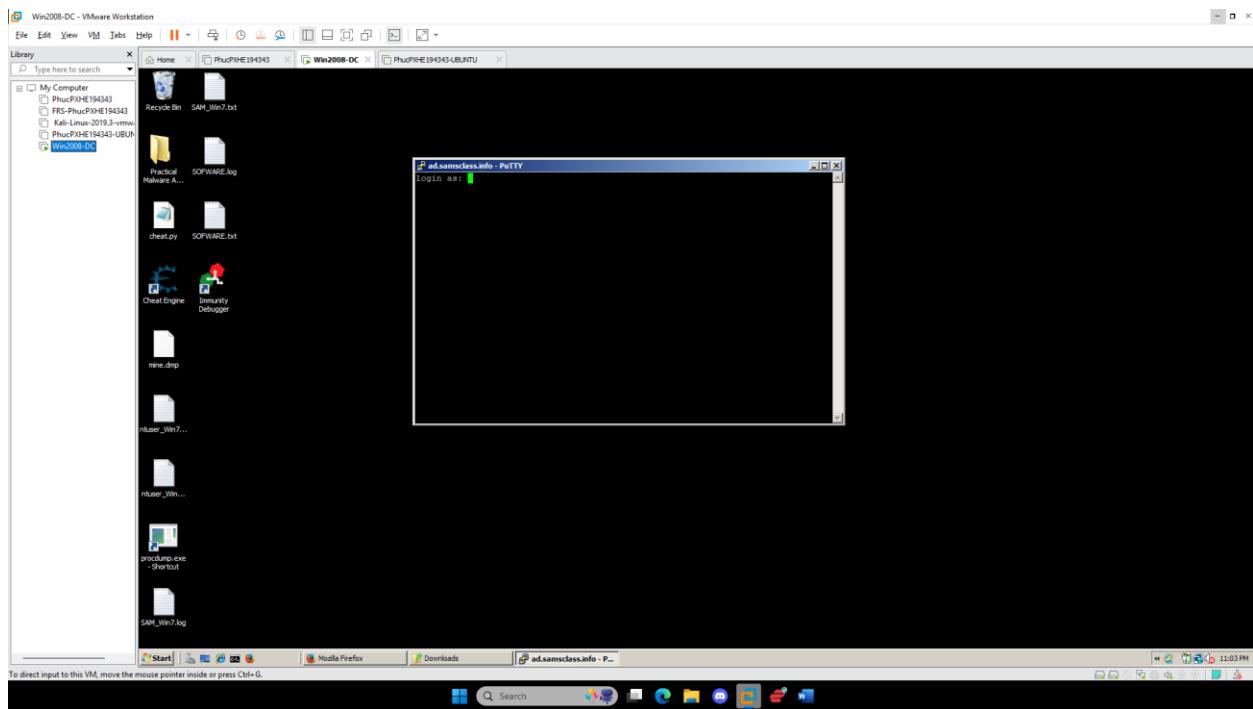
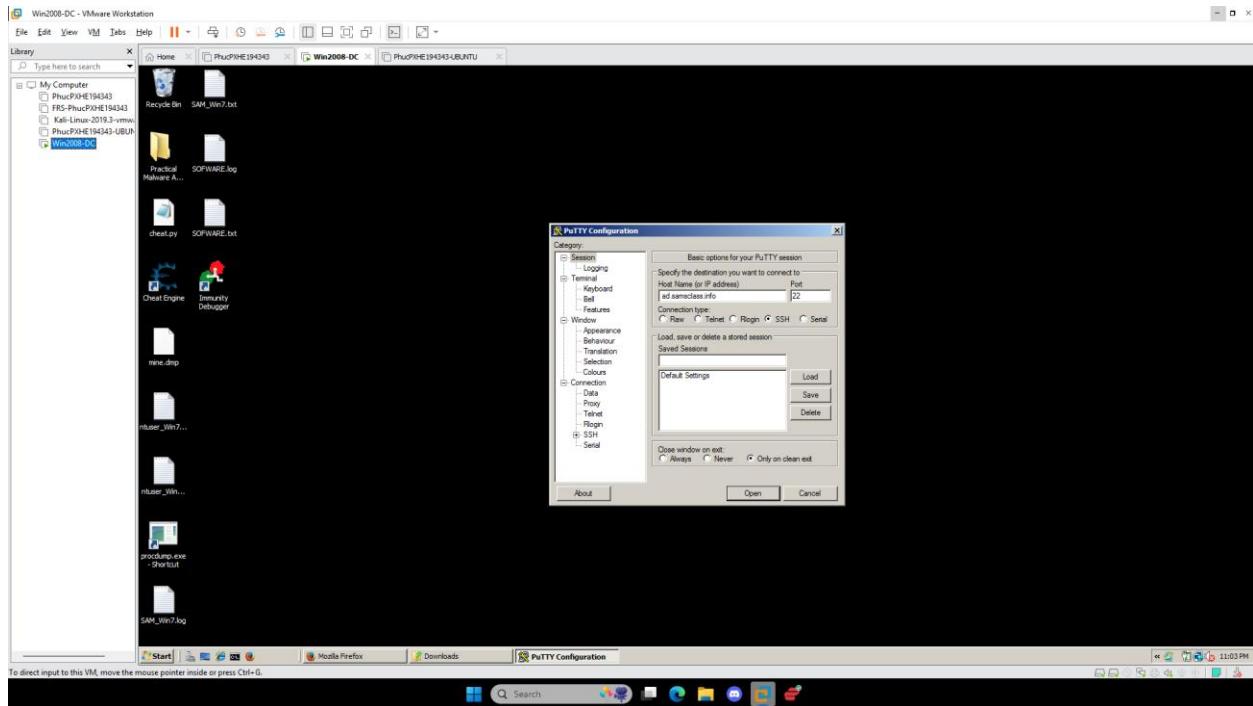
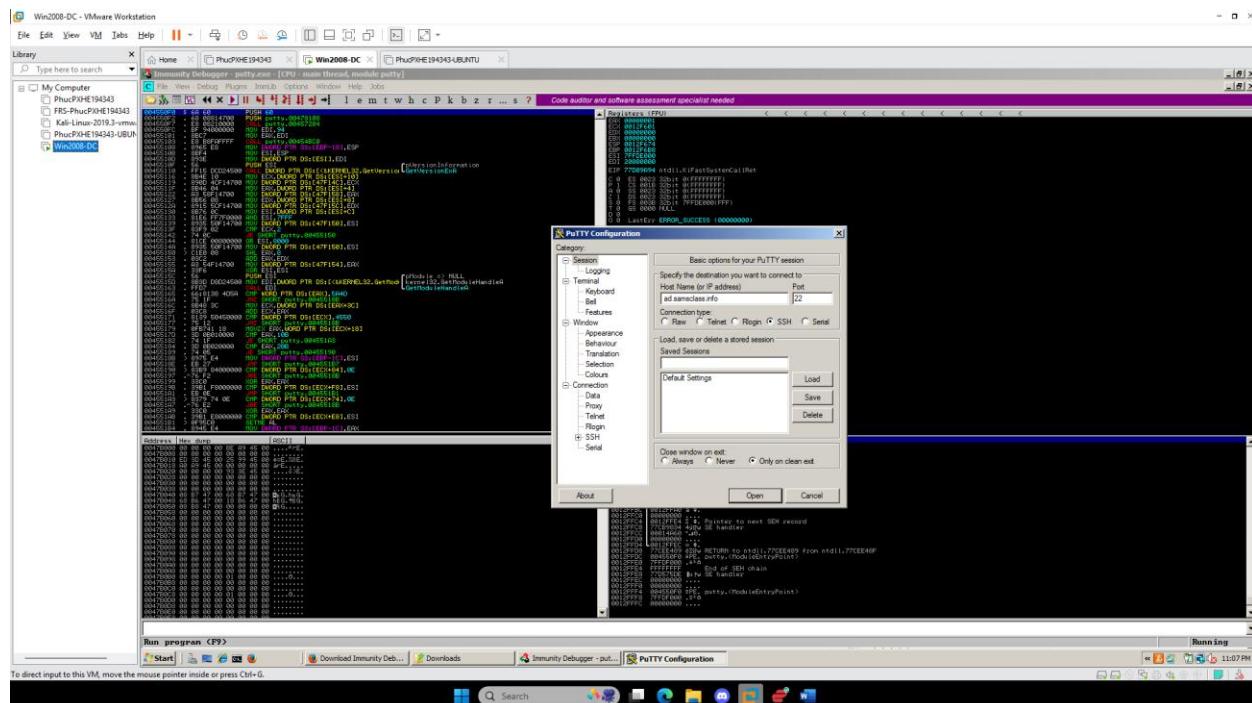
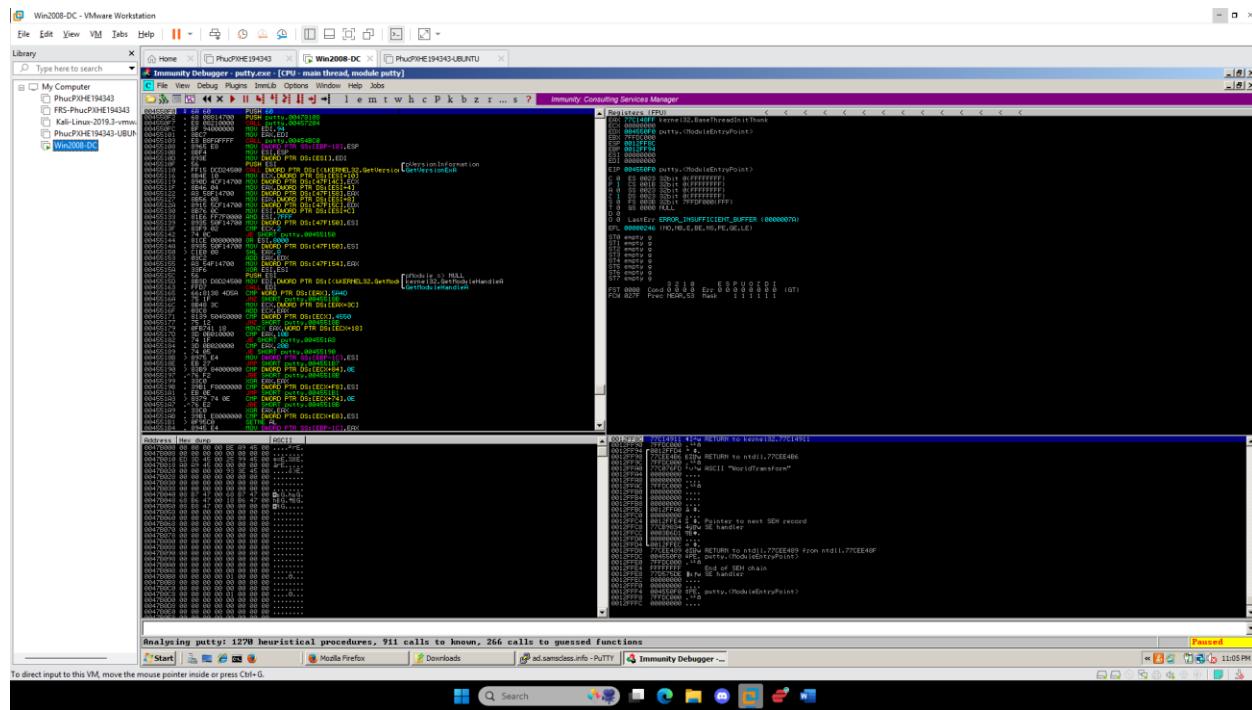
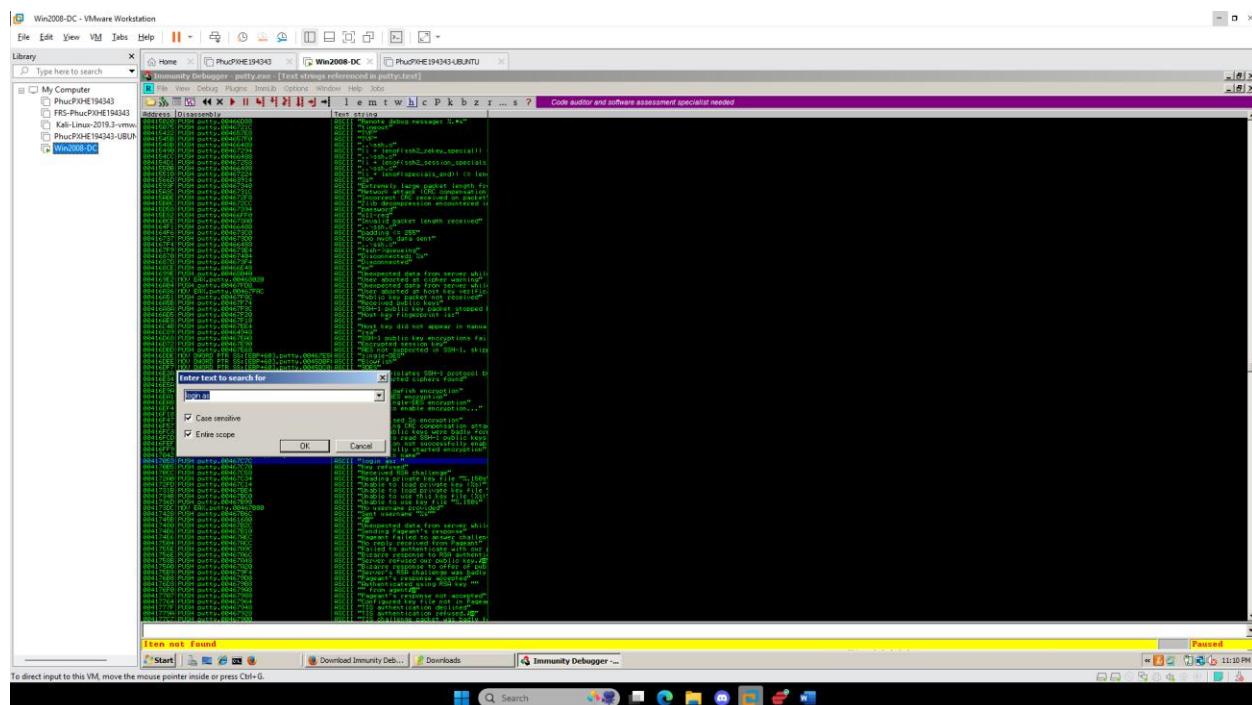
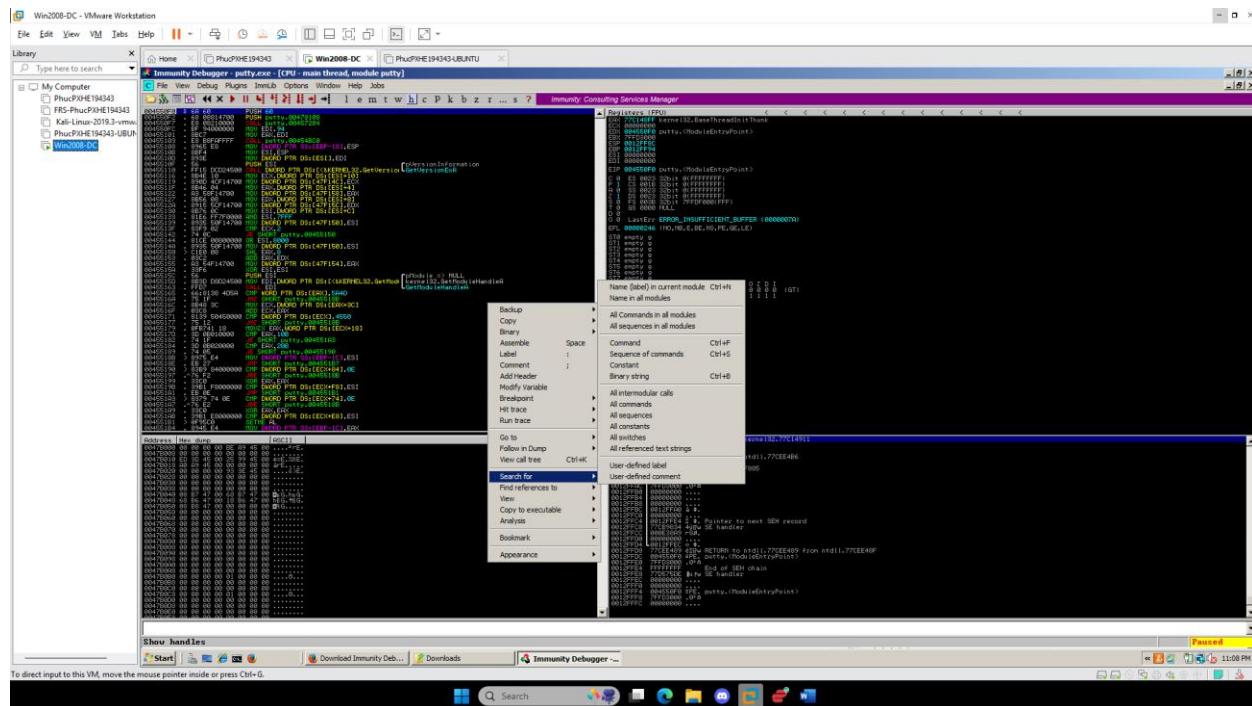


LAB 19





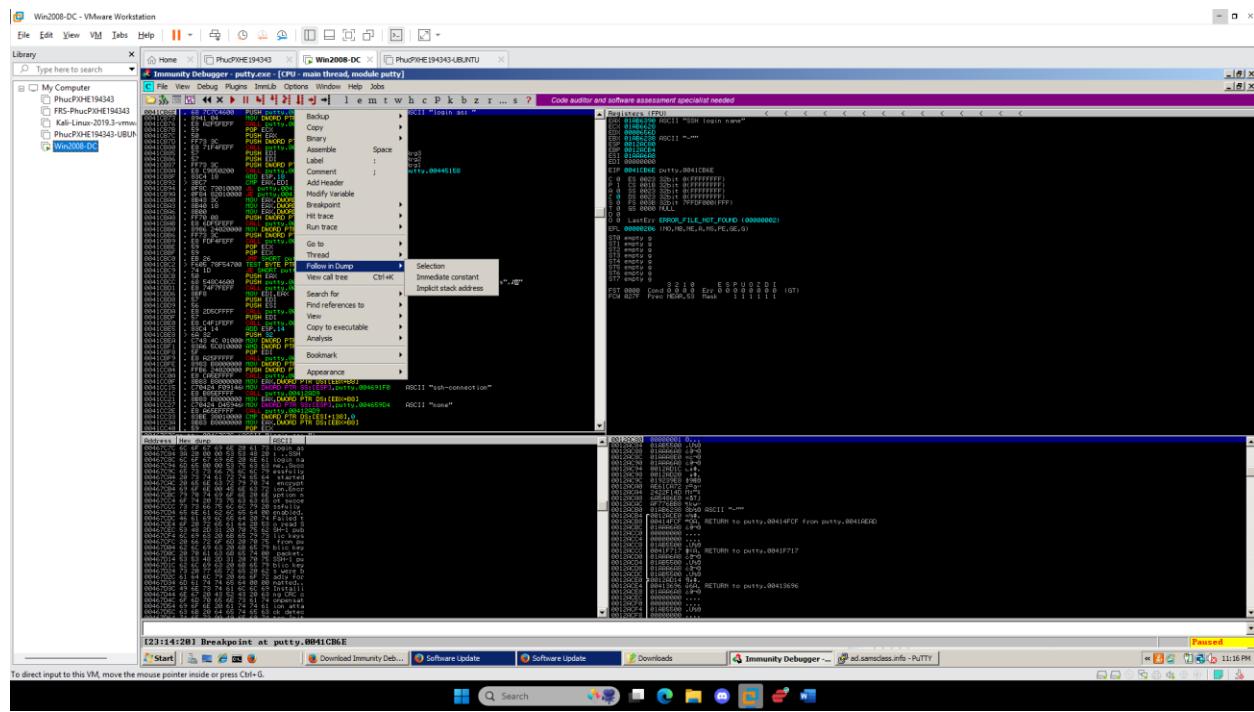
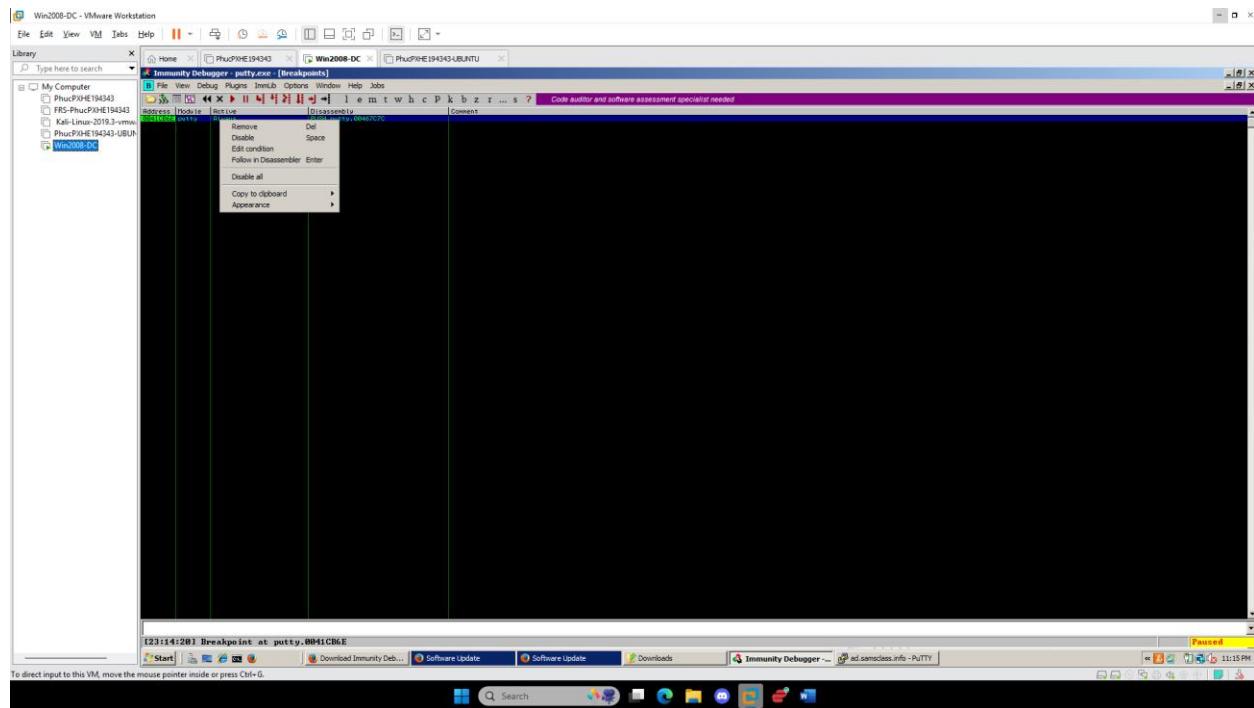


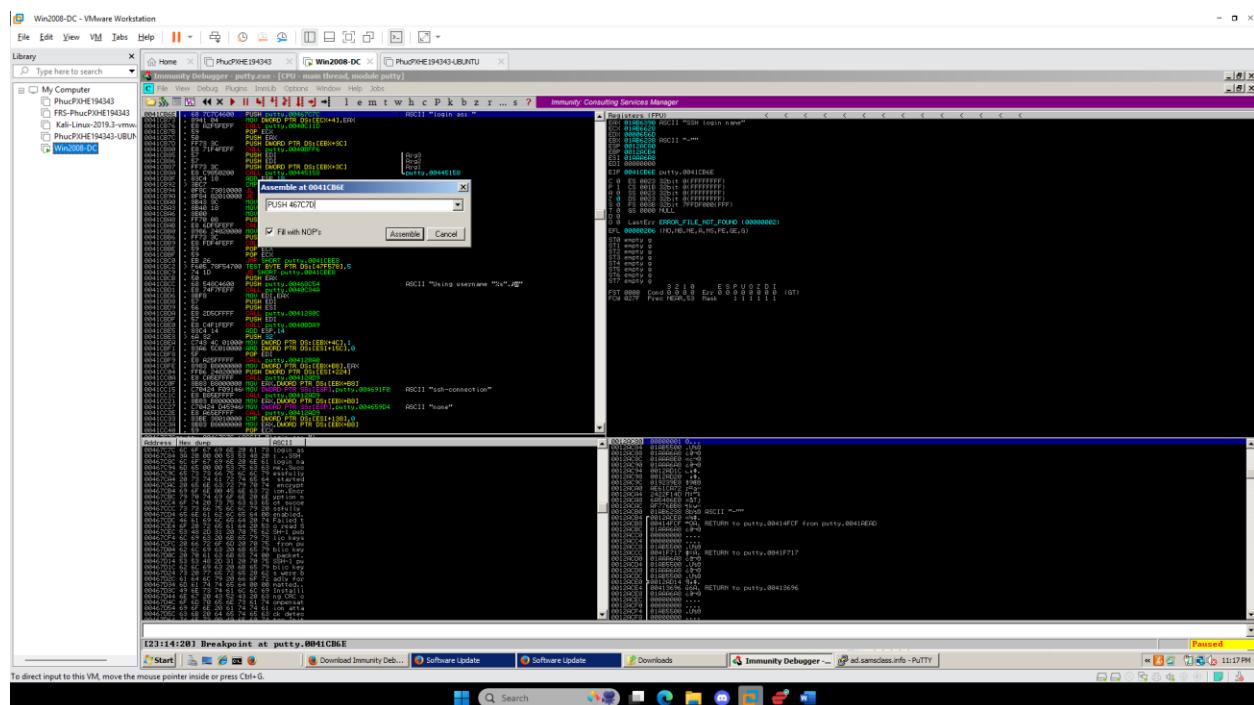
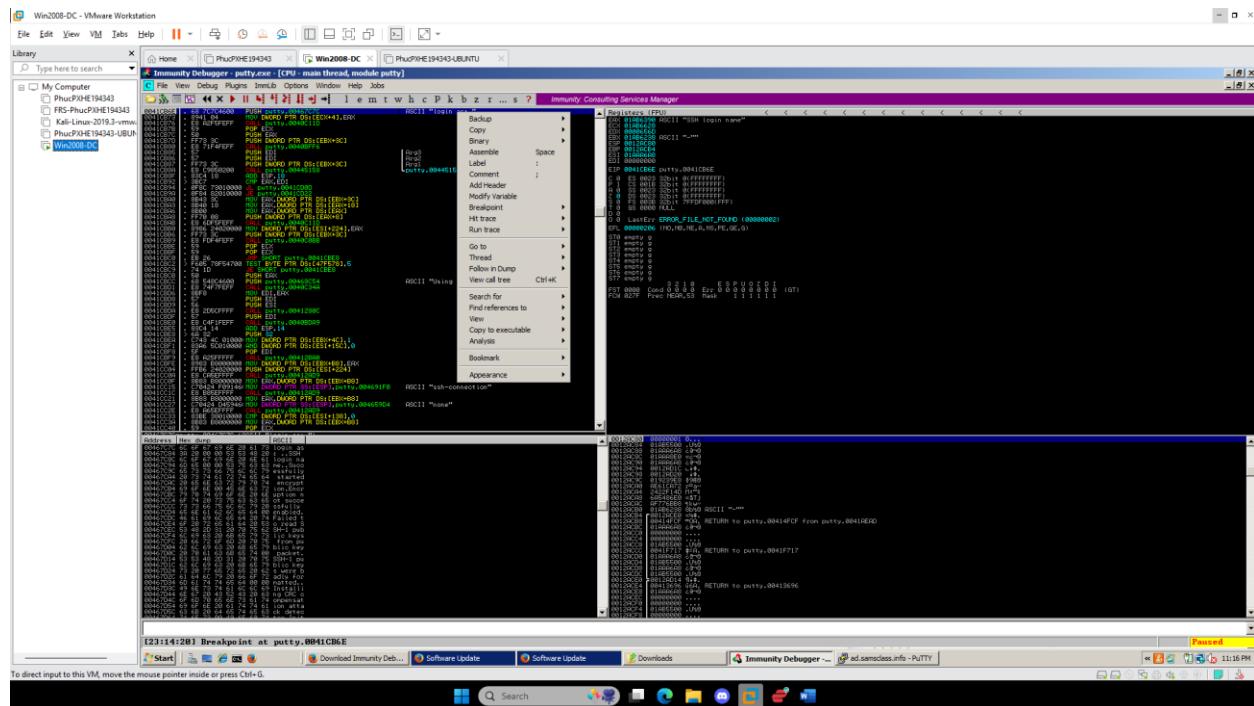
A screenshot of the Immunity Debugger interface. The title bar shows "Win2008-DC - VMware Workstation". The menu bar includes File, Edit, View, VBA, Tools, Help, and several icons. The toolbar has buttons for File, View, Debug, Plugins, ImmLib, Options, Window, and Tools. A search bar at the top says "Type here to search". The left sidebar shows a library with entries like "My Computer", "HuaweiPXE194343", "FRS-HuaweiPXE194343", "Kali-Linux-2019.3-vmware", "HuaweiPXE194343-UBUNTU", and "Win2008-DC". The main window has tabs for "Immunity Debugger", "putty.exe - [Text strings referenced in putty.exe]", and "Win2008-DC". The "putty.exe" tab displays assembly code with labels such as "main", "main+10", "main+11", etc., and various comments. The "Win2008-DC" tab shows memory dump sections like "Text", "String", "Data", "BSS", "Stack", and "Heap". The bottom status bar says "Item not found", "Start", "Downloads", "Immunity Debugger", and "Paused". The taskbar at the bottom includes icons for Start, Search, Task View, Edge, File Explorer, File History, Task Scheduler, Task Manager, and Control Panel.

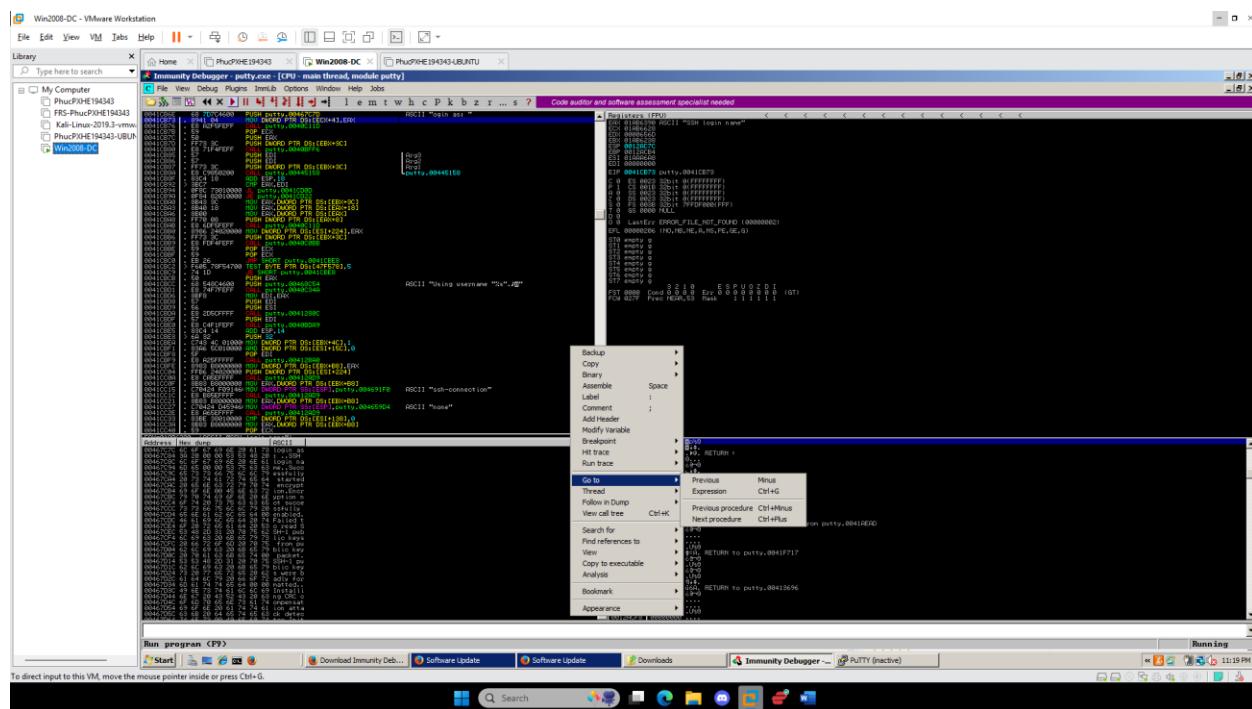
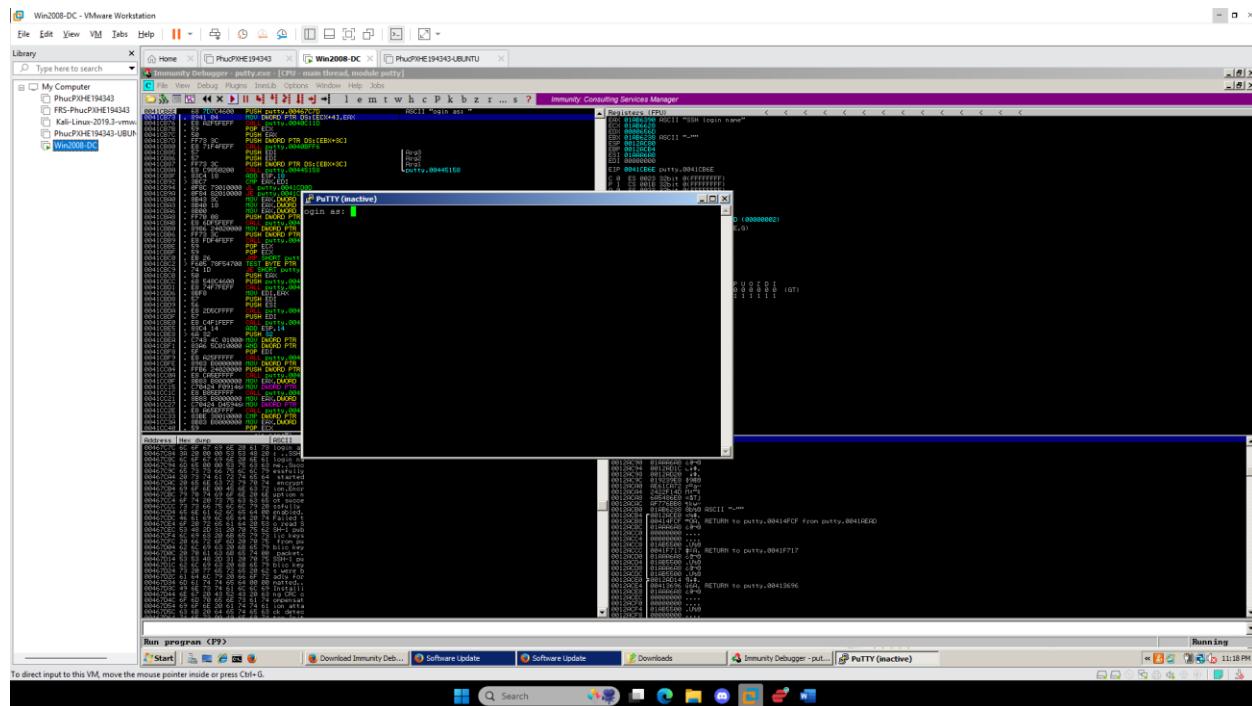
The screenshot shows the Immunity Debugger interface with multiple tabs open. The main window displays assembly code for a process named 'putty.exe'. The assembly code includes various instructions like ADD, SUB, XOR, and CMP, along with comments and labels. Below the assembly window, there is a memory dump tab showing memory contents at address 00467090. The dump shows binary data followed by the string 'putty' and some other characters. The bottom status bar indicates 'Paused'.

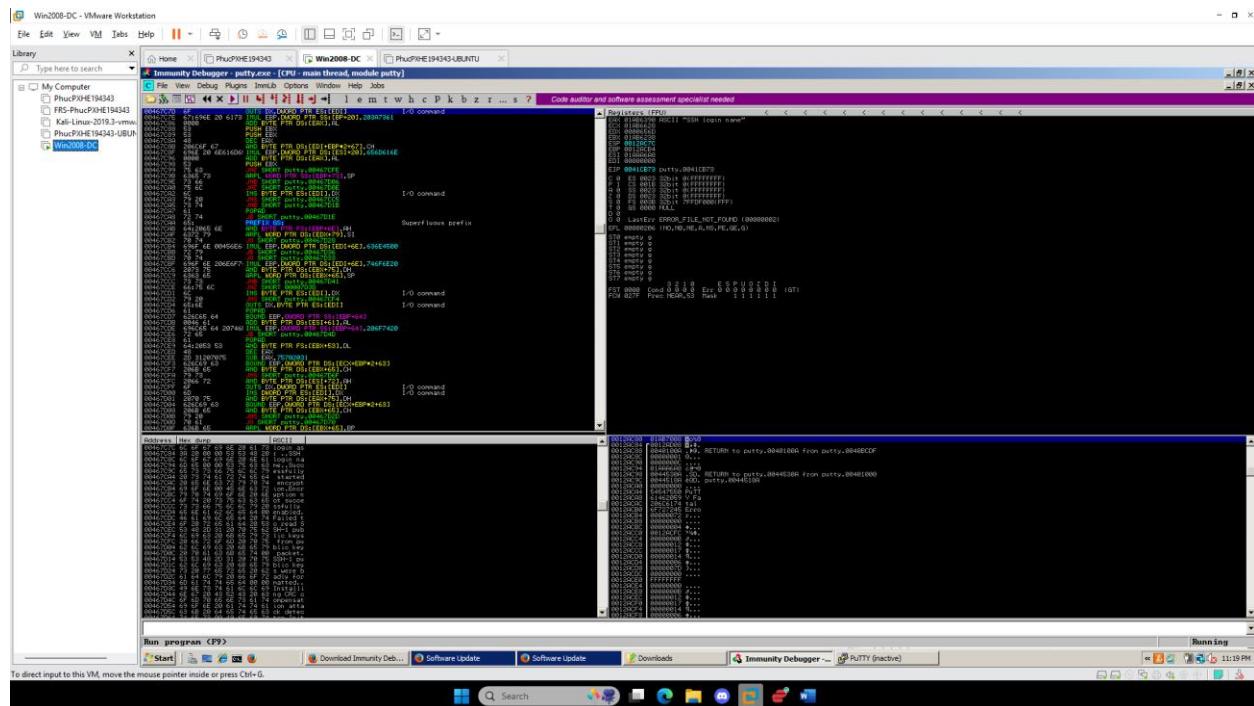
The screenshot shows the Immunity Debugger interface running on a Win2008-DC VM. The assembly dump window displays a sequence of CPU instructions, primarily NOPs (opcode 90), interspersed with various system calls and memory operations. A specific section of assembly code is highlighted in red, showing a password entry sequence. The registers pane shows the current state of CPU registers. The status bar at the bottom indicates the debugger is currently paused.

The screenshot shows the Immunity Debugger interface with two windows open. The left window displays the assembly code for the Putty executable (putty.exe), showing various instructions and memory addresses. The right window shows a memory dump for the Win2008-DC system, with the address 00414CDE highlighted. The bottom status bar indicates a breakpoint at 00414CDE and shows the current assembly instruction: ADD EDI,EDI. The taskbar at the bottom includes icons for Start, File Explorer, Immunity Debugger, Software Update, Downloads, and a browser tab for ad.samcode.info - PUTTY.

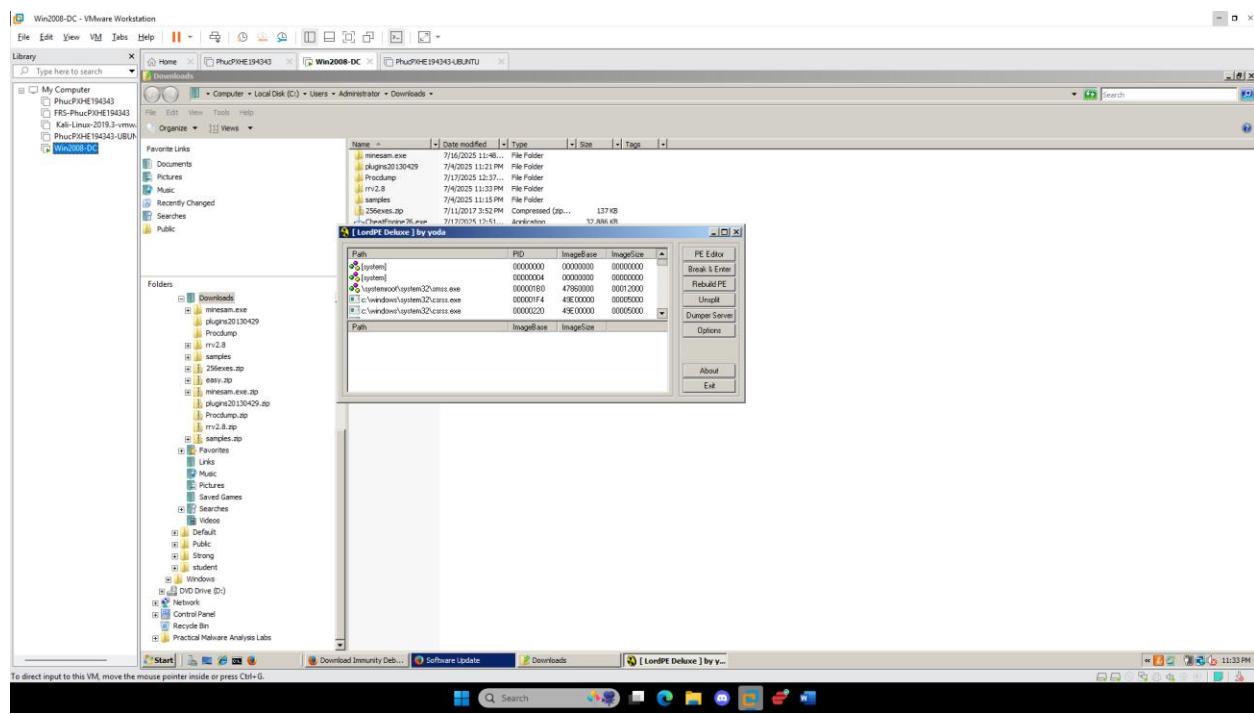
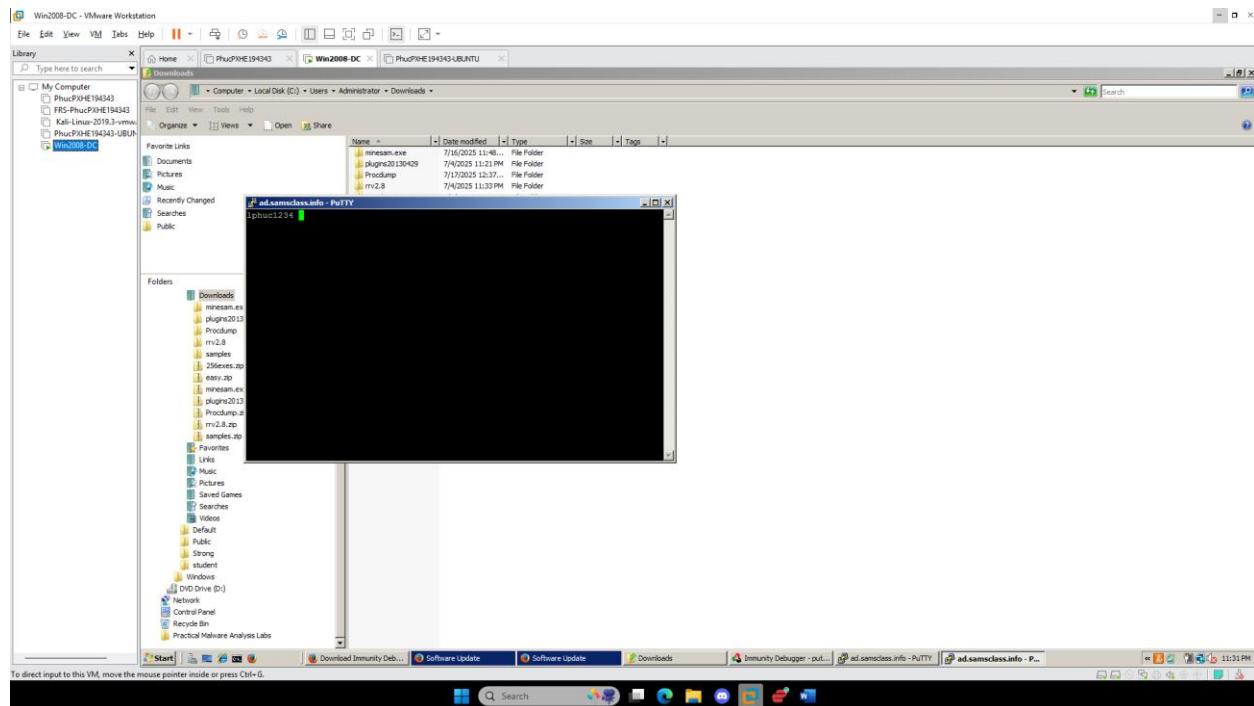


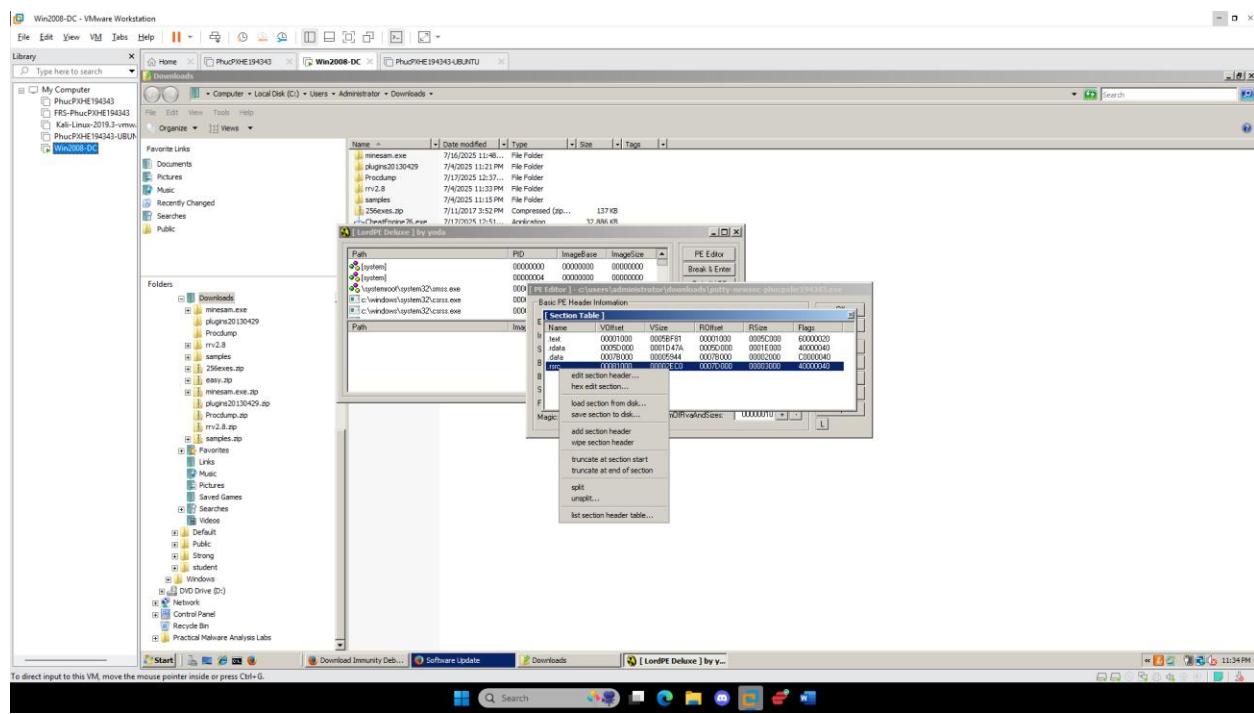
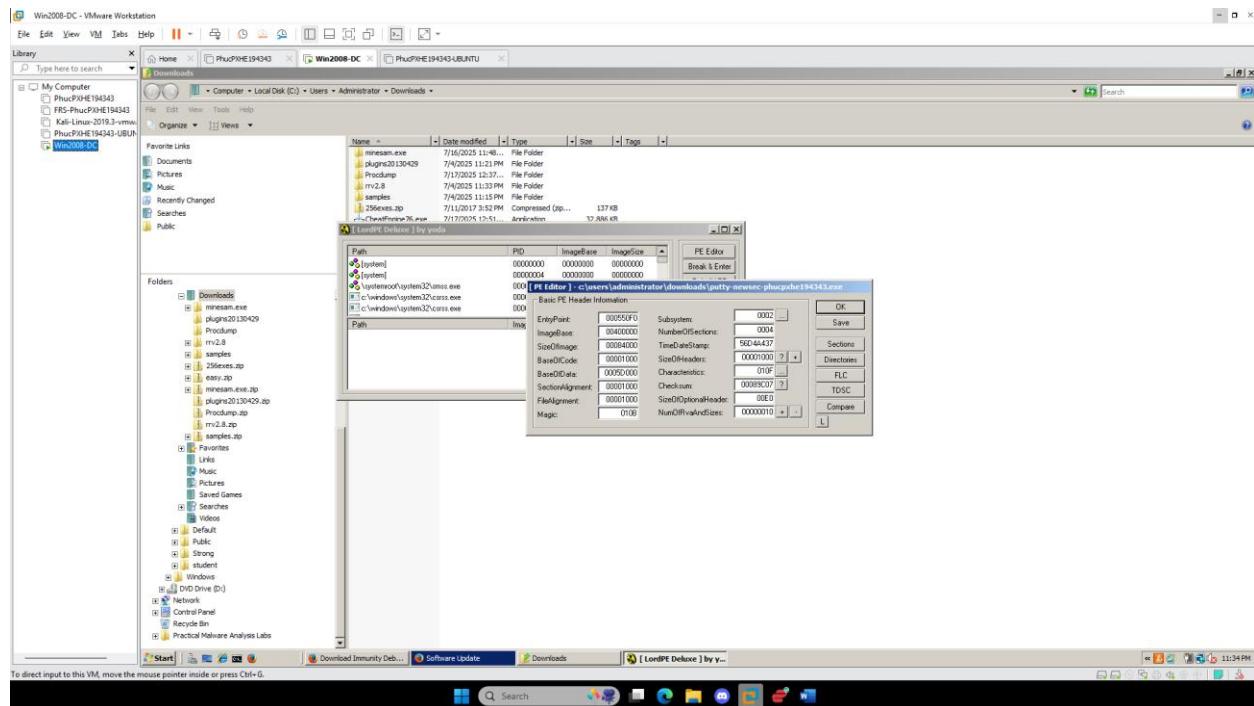


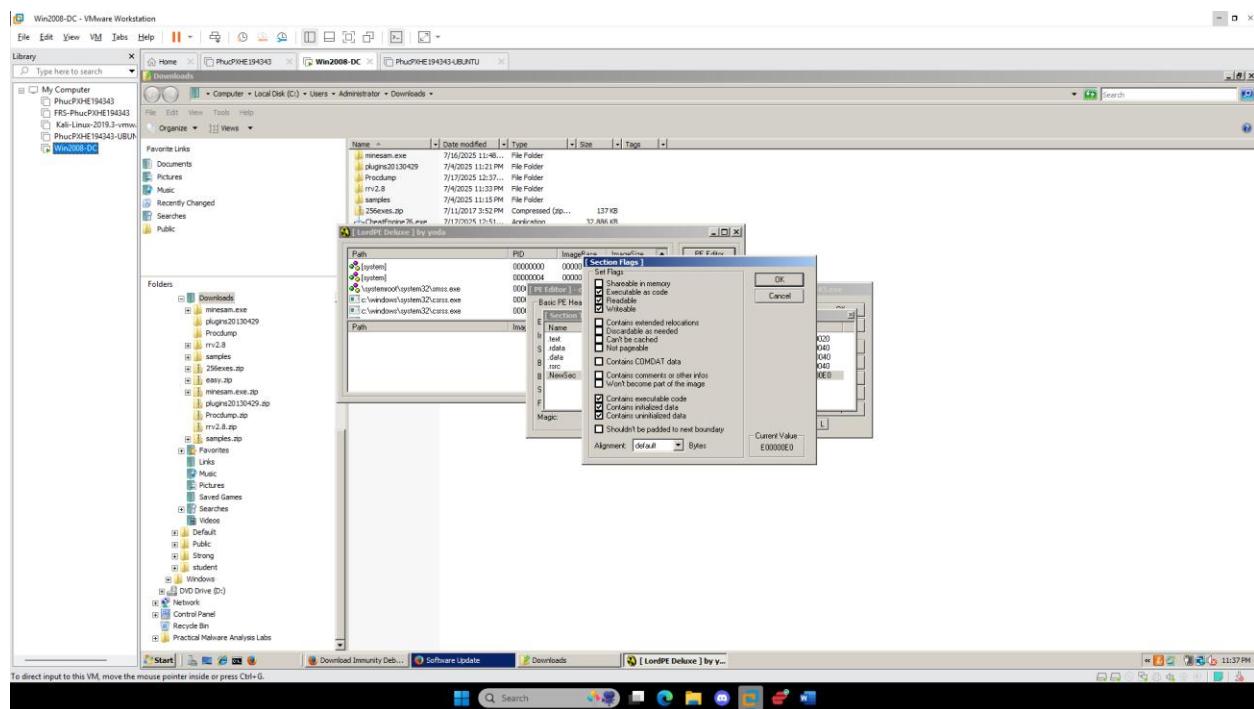
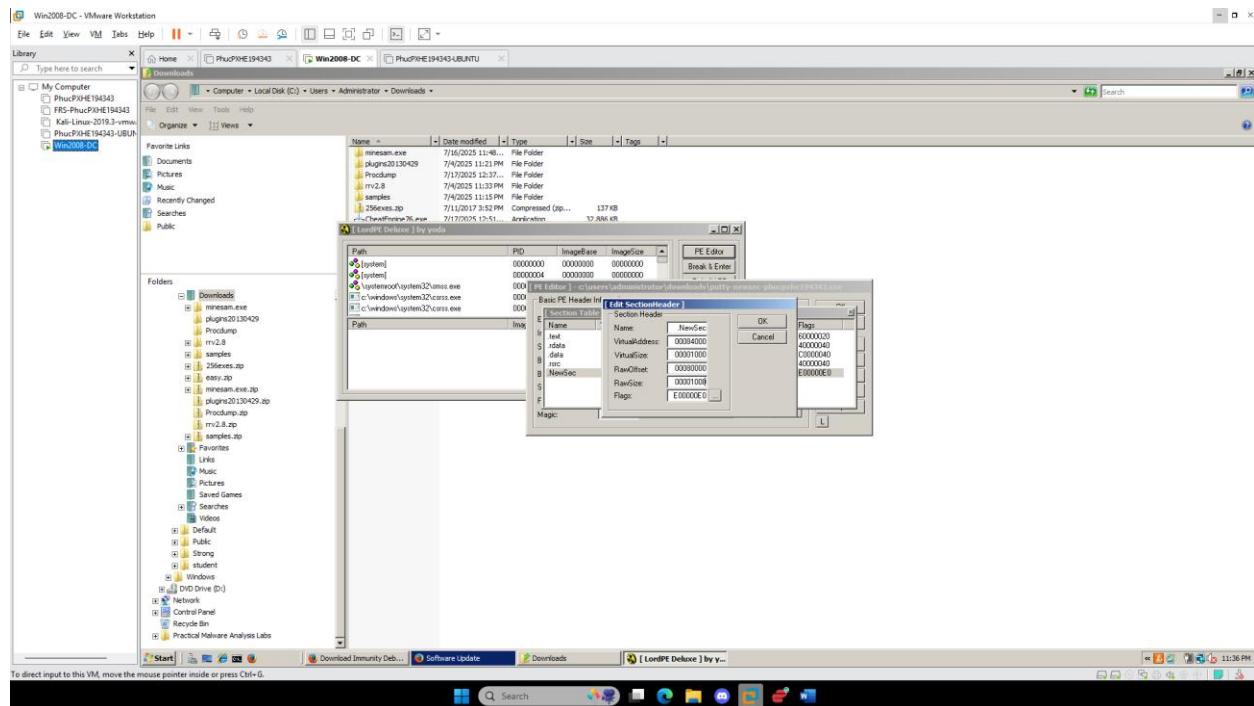


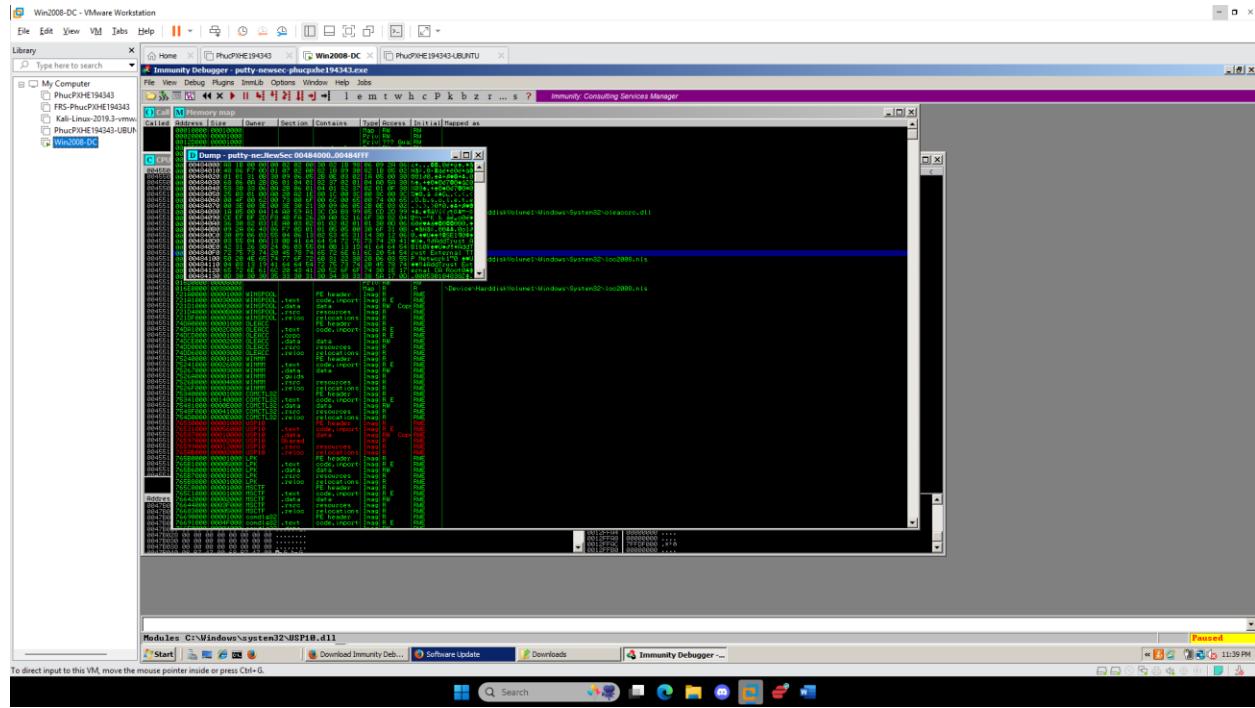
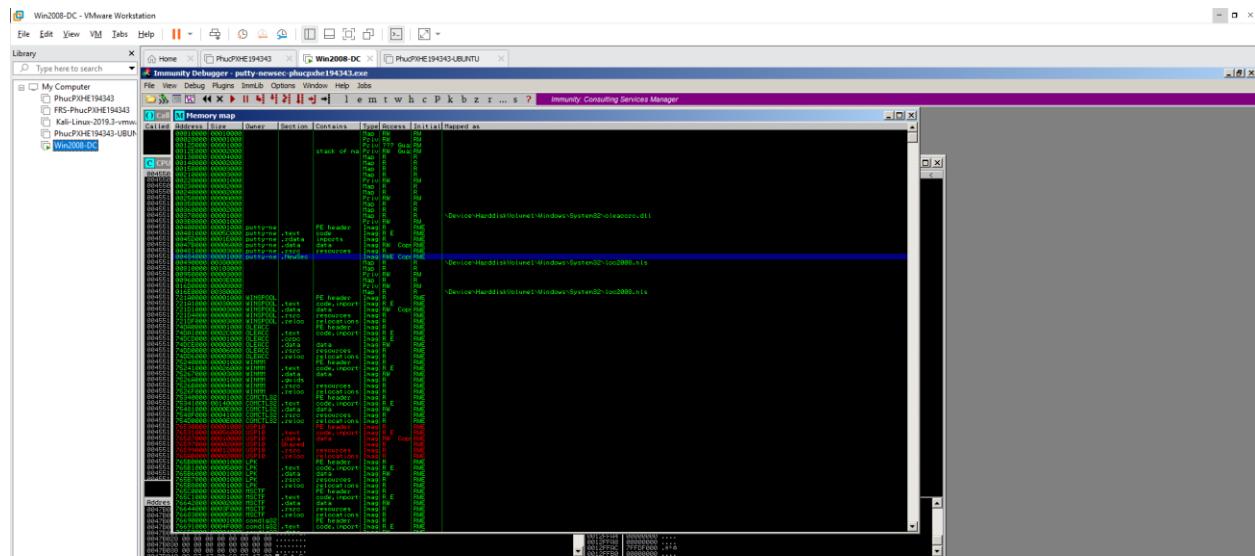


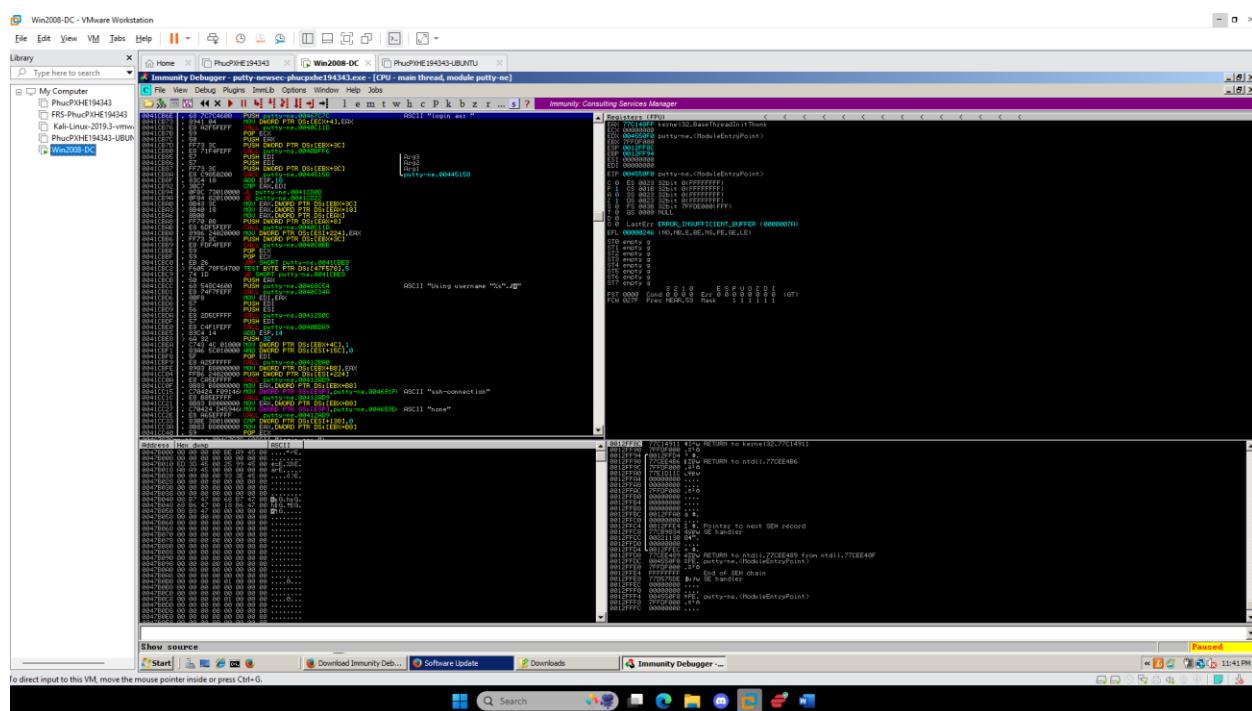
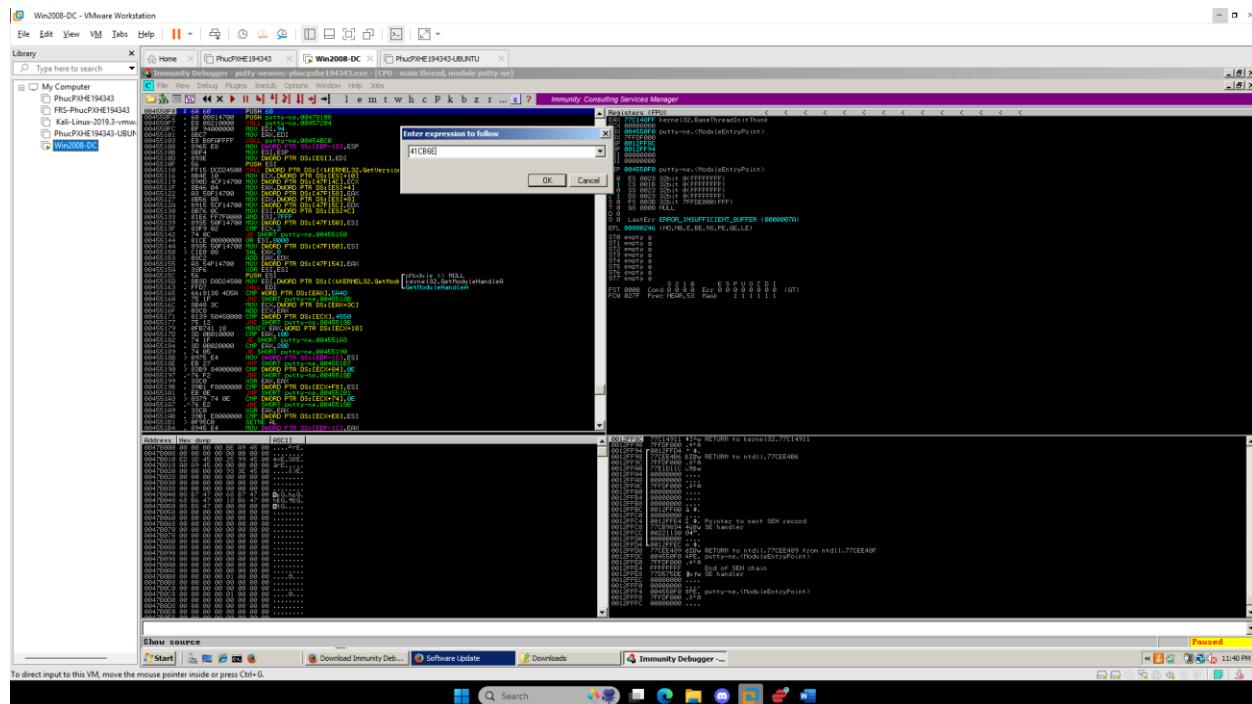
The screenshot displays a dual-monitor setup of a Windows 2008 DC virtual machine. On the left monitor, two Immunity Debugger windows are open, both connected to the same target process Phu3RHE19433-UBUNTU. The top Immunity Debugger window shows assembly code with several memory dump operations (e.g., EDI, ECX, ECX+480, ECX+481) being performed. The bottom Immunity Debugger window shows the same assembly code, but with a context menu open over the assembly pane, specifically highlighting the 'Binary' option. Both windows also have a terminal window at the bottom showing command-line interactions. The taskbar at the bottom of the screen shows various icons and the current time as 11:23 PM.

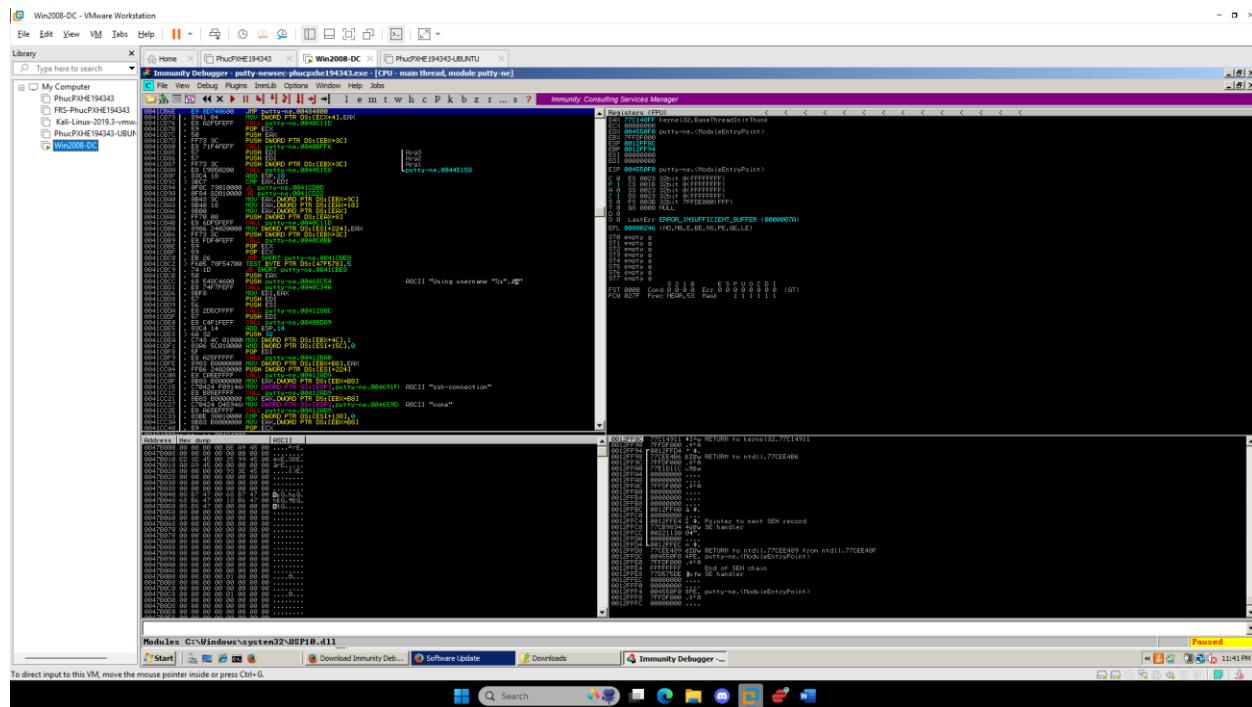
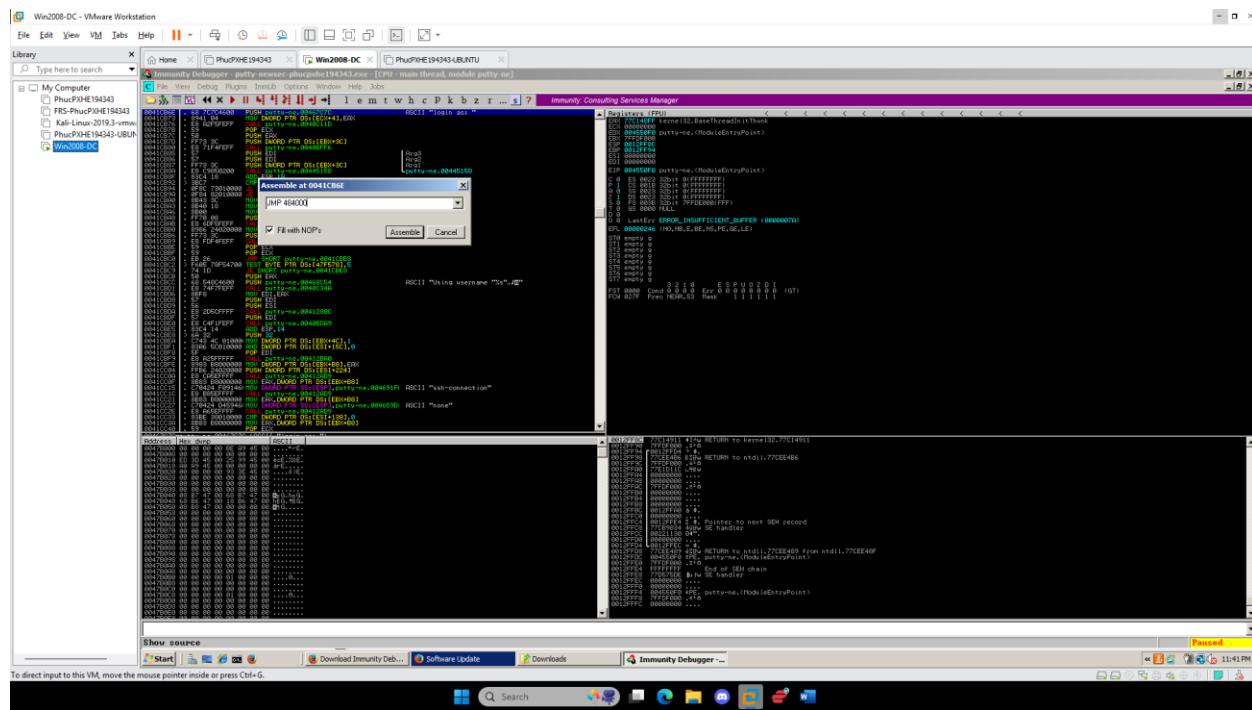


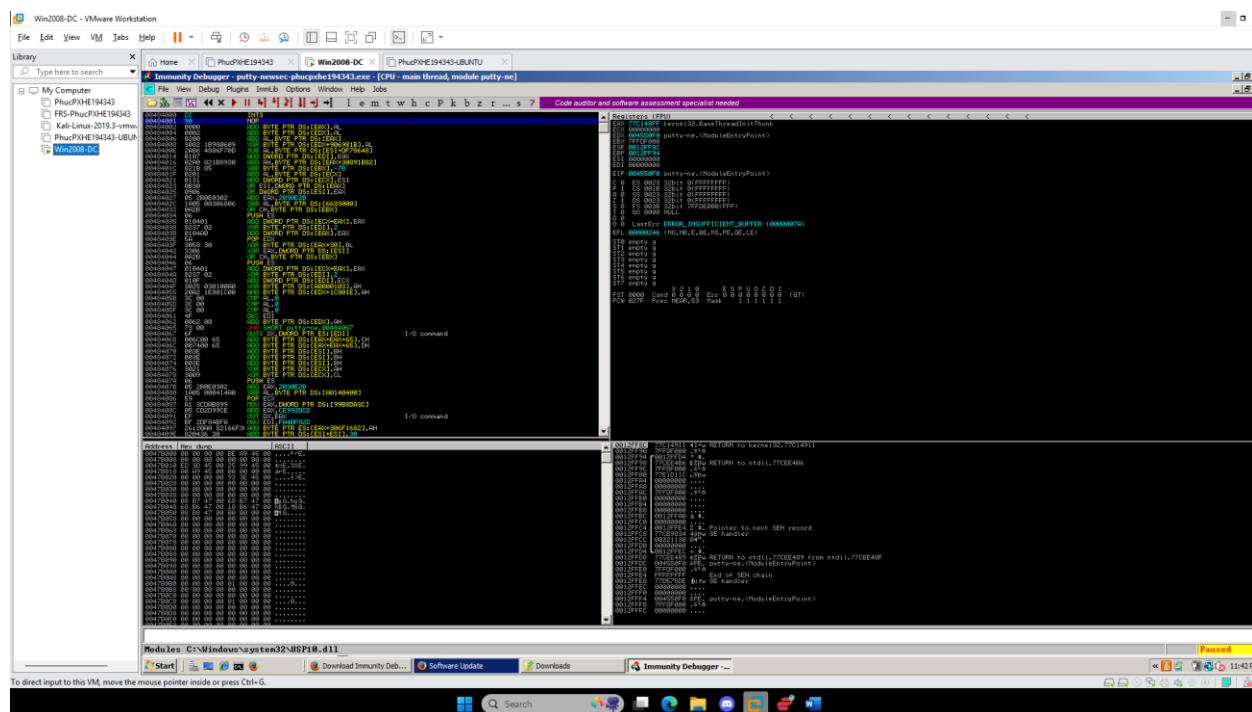
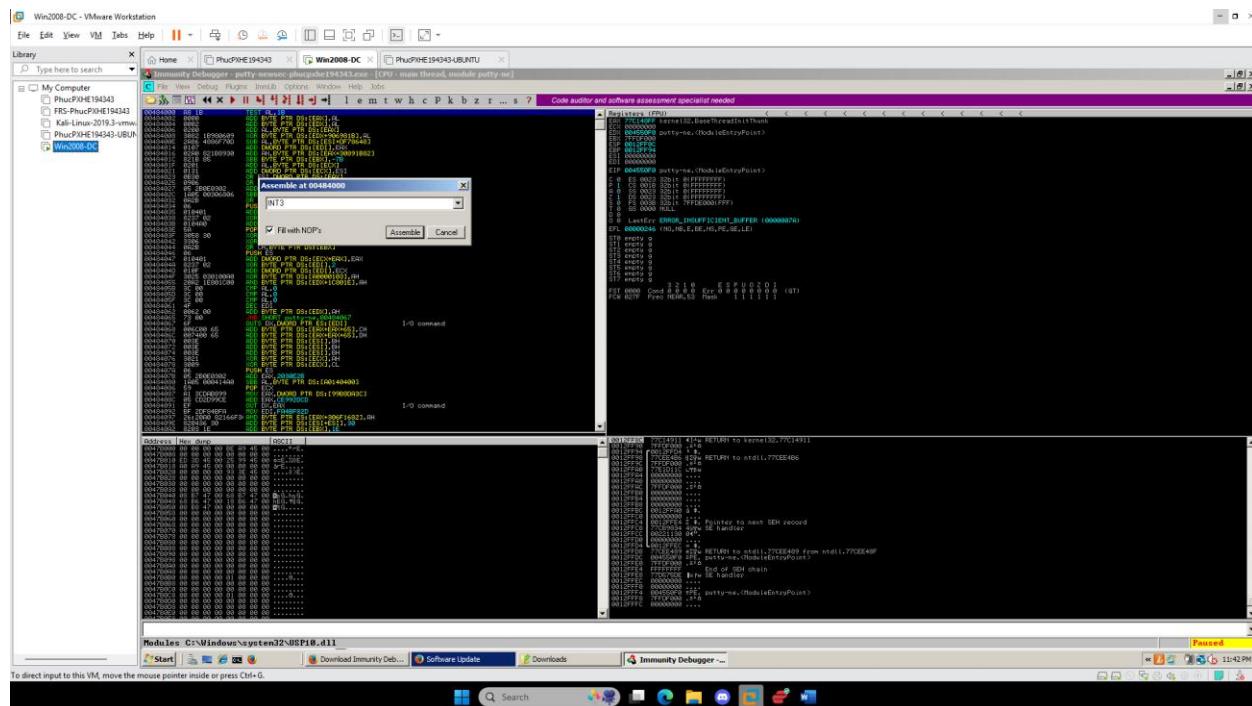


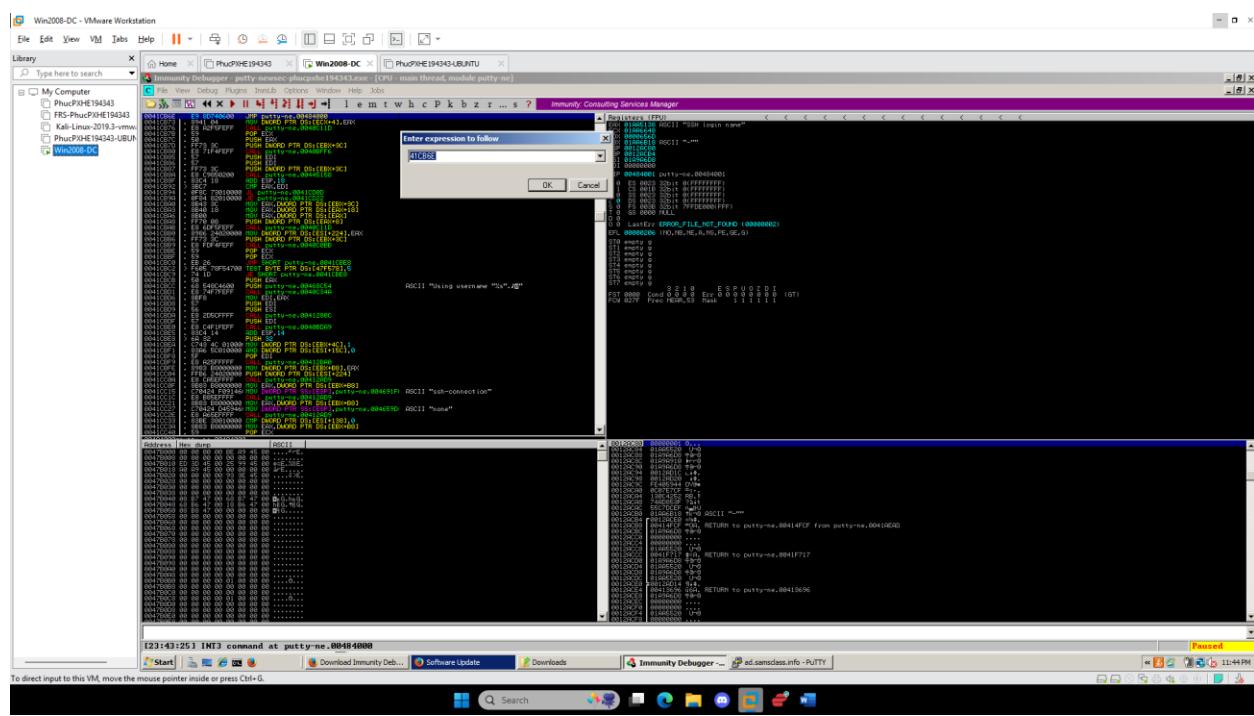
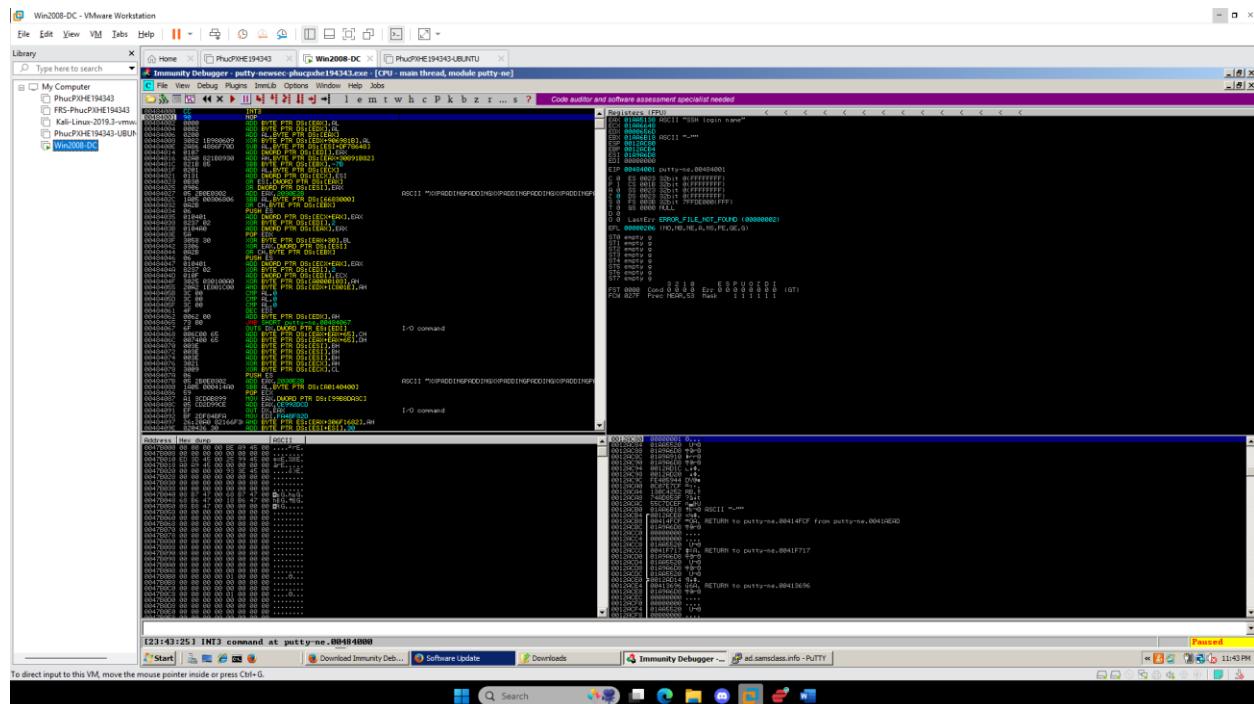


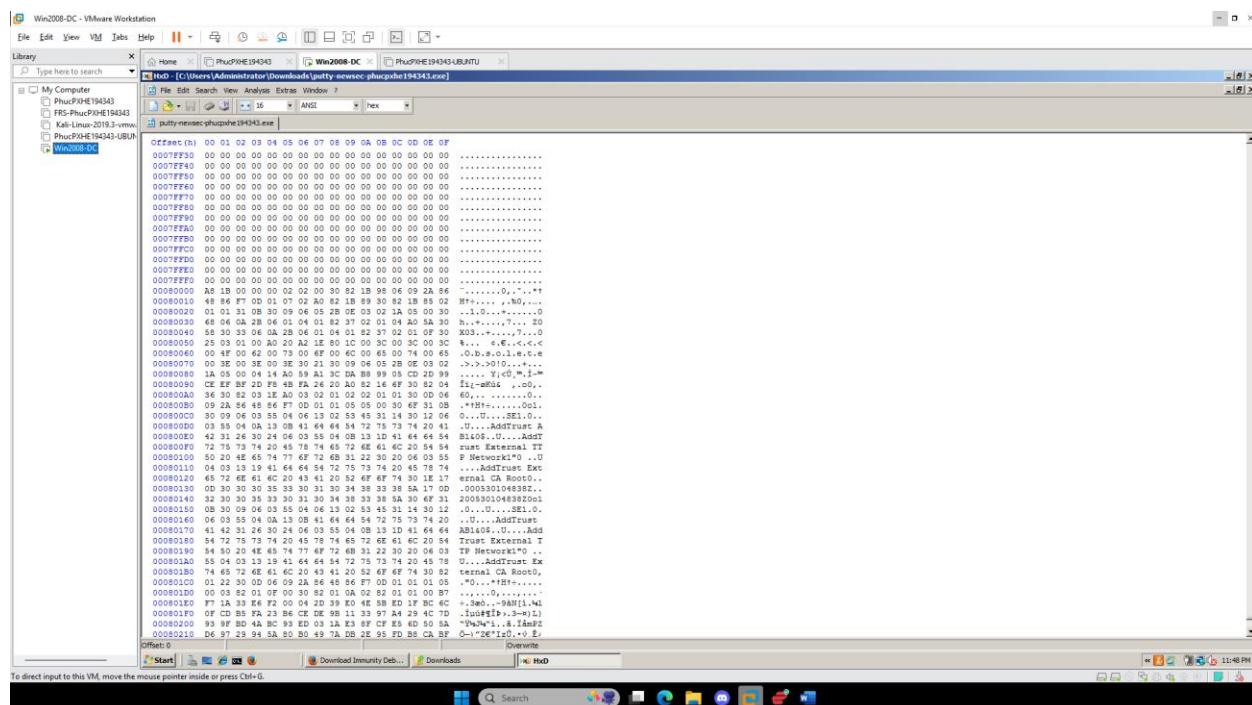
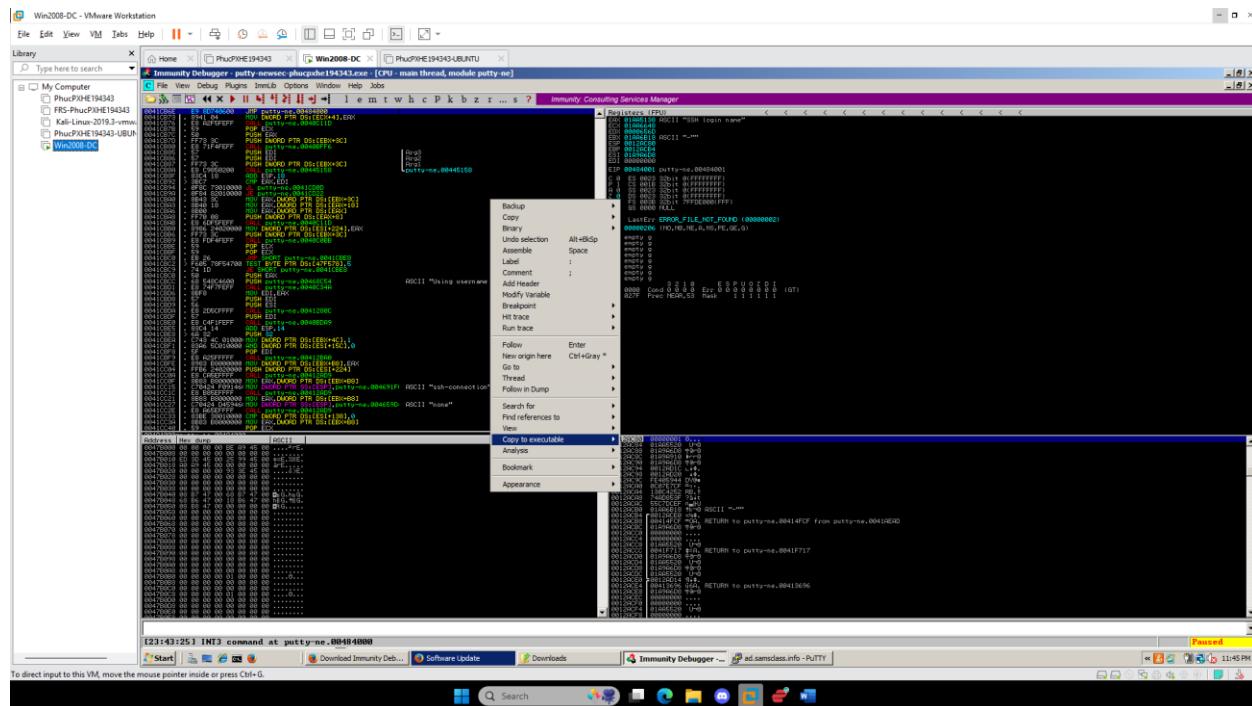






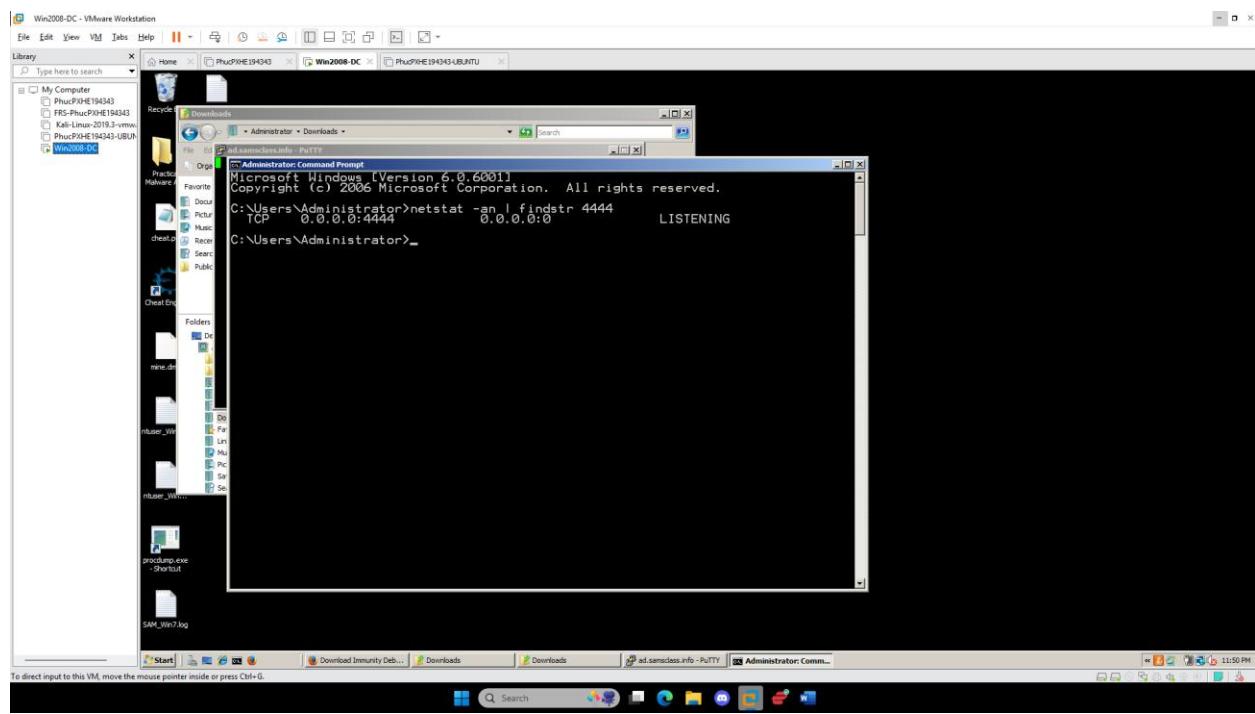
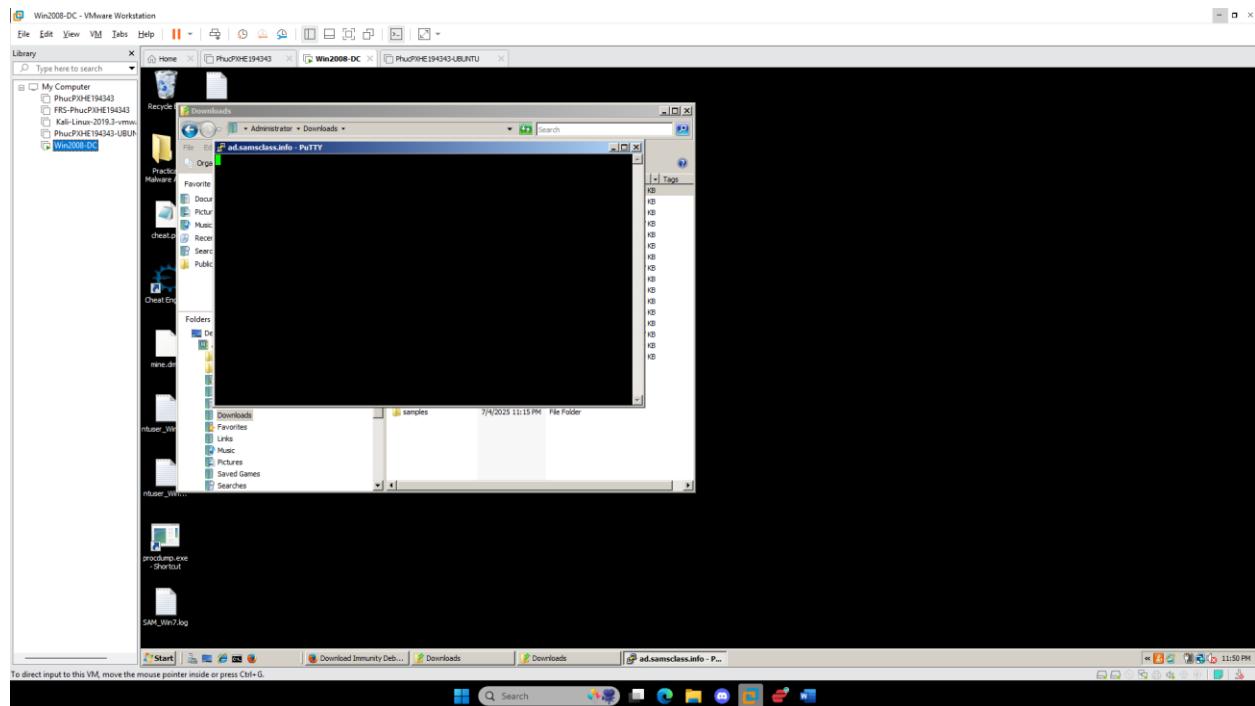


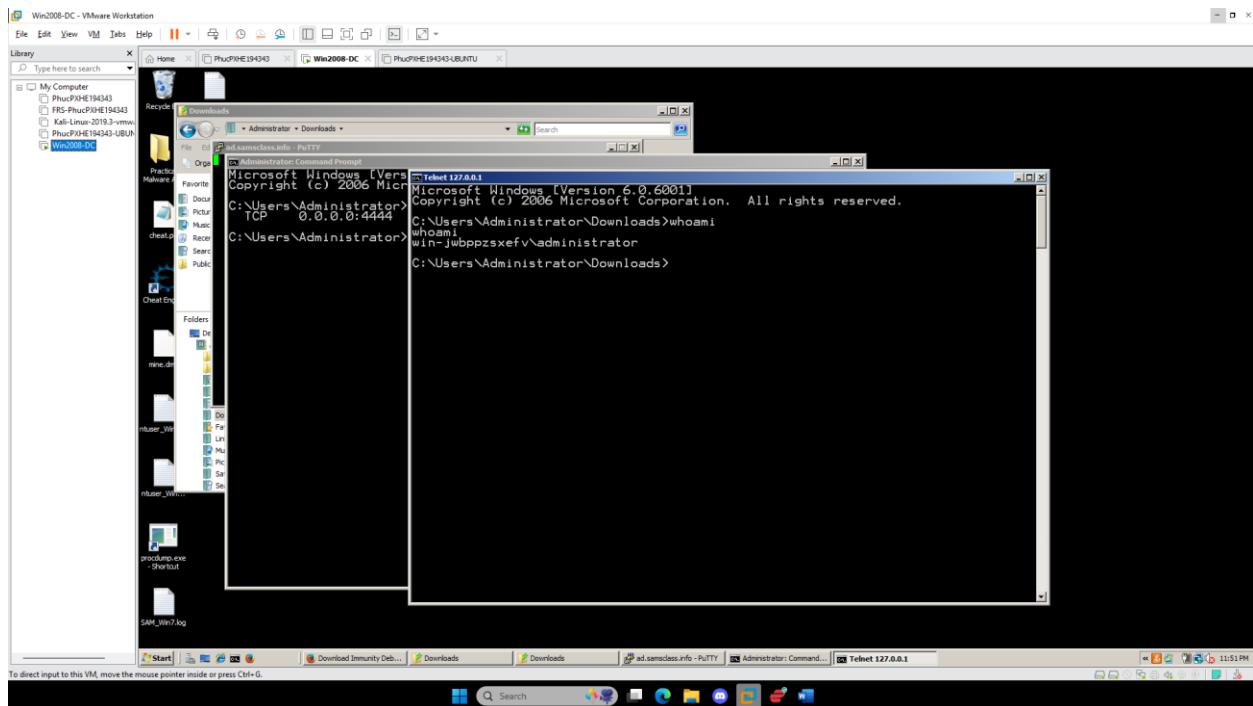




```
Win2008-DC - VMware Workstation
File Edit View VM Jobs Help | File Edit Search View Analysis Extras Window ?
Type here to search
Library [C:\Users\Administrator\Downloads\putty-sssecc-phusphe194343.exe]
PhuPXE194343 Win2008-DC PhuPXE194343-LINUX
putty-sssecc-phusphe194343.exe
Offset(h) 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F
0007FF30 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FF40 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FF50 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FF60 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FF70 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FF80 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FF90 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FFA0 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FFB0 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FFC0 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FFD0 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FFE0 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FFF0 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00080000 FC E8 82 00 14 00 00 00 00 00 00 00 00 00 00 00 00 00
00080010 52 0C 8B 52 14 00 00 00 00 00 00 00 00 00 00 00 00 00
00080020 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00080030 10 0B 4A 3C 4C 11 78 E3 E8 01 D1 51 BB 59 00
00080040 01 D3 EB 18 E3 3A 49 BB 34 BB 01 D1 51 BB 59 FF
00080050 40 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00080060 E4 59 EB 58 24 01 D3 66 BB 0C 49 EB 59 1C 01 D3
00080070 88 04 EB 58 24 24 3B 3B 61 59 5A 51 FF <..FB0081[IVYQZQ
00080080 E0 5F 82 00 12 EB 8D 50 68 33 32 00 00 00 00 00 00
00080090 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000800A0 28 C4 54 50 48 00 03 02 01 02 02 01 01 30 0D 06
000800B0 09 2A 54 56 48 86 F7 0D 01 01 05 05 00 00 00 00 00
000800C0 30 09 54 03 00 04 06 13 02 59 49 31 14 30 12 06
000800D0 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000800E0 42 31 26 30 24 06 03 58 04 08 13 1D 41 64 64 54
000800F0 72 75 73 74 20 45 78 74 65 72 62 60 20 24 54
00080100 50 20 4C 65 74 20 45 78 74 65 72 60 20 06 03 55
00080110 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00080120 65 72 62 61 8C 20 43 41 20 52 67 6F 74 30 1E 17
00080130 ..ernal CA Root0..
00080140 00 30 30 00 30 33 30 31 30 34 38 33 30 5A 30 0F 31
00080150 32 30 30 35 33 30 31 30 34 38 33 30 5A 30 0F 31
00080160 04 03 55 04 0A 13 08 41 64 64 54 72 75 73 74 20
00080170 43 42 31 26 30 24 06 03 55 04 08 13 1D 41 64 64
00080180 54 72 75 73 74 20 45 78 74 65 72 60 20 24 54
00080190 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000801A0 55 04 03 13 19 41 64 64 54 72 75 73 74 20 45 78
000801B0 01 23 22 0D 06 02 24 3B 45 54 F7 0D 01 01 05
000801C0 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000801D0 F7 1A 33 86 F2 00 04 02 39 E0 4E 50 ED IF BC EC
000801E0 ..-3B0..-9AM11,W1
000801F0 OF CD B8 FA 23 B6 CE DE 98 11 33 97 E4 29 4C TD
00080200 93 99 8D 8A 9C 93 ED 03 1A E3 8F CF B5 8D 50 00 00
00080210 DE 97 29 94 5A 50 49 7A DB 22 95 FD 88 CA BF C-)DE12d..> E
Offset: 80048
```

```
To direct input to this VM, move the mouse pointer inside or press Ctrl+G.
Start Download Immunity Deb.. Downloads RxD 11:48 PM
Win2008-DC - VMware Workstation
File Edit View VM Jobs Help | File Edit Search View Analysis Extras Window ?
Type here to search
Library [C:\Users\Administrator\Downloads\putty-sssecc-phusphe194343.exe]
PhuPXE194343 Win2008-DC PhuPXE194343-LINUX
putty-sssecc-phusphe194343.exe
Offset(h) 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F
0007FF30 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FF40 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FF50 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FF60 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FF70 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FF80 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FF90 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FFA0 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FFB0 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FFC0 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FFD0 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FFE0 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0007FFF0 ..00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00080000 FC E8 82 00 14 00 00 00 00 00 00 00 00 00 00 00 00 00
00080010 52 0C 8B 52 14 00 00 00 00 00 00 00 00 00 00 00 00 00
00080020 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00080030 10 0B 4A 3C 4C 11 78 E3 E8 01 D1 51 BB 59 00
00080040 01 D3 EB 18 E3 3A 49 BB 34 BB 01 D1 51 BB 59 FF
00080050 40 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00080060 E4 59 EB 58 24 01 D3 66 BB 0C 49 EB 59 1C 01 D3
00080070 88 04 EB 58 24 24 3B 3B 61 59 5A 51 FF <..FB0081[IVYQZQ
00080080 E0 5F 82 00 12 EB 8D 50 68 33 32 00 00 00 00 00 00
00080090 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000800A0 28 C4 54 50 48 00 03 02 01 02 02 01 01 30 0D 06
000800B0 09 2A 54 56 48 86 F7 0D 01 01 05 05 00 00 00 00 00
000800C0 30 09 54 03 00 04 06 13 02 59 49 31 14 30 12 06
000800D0 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000800E0 42 31 26 30 24 06 03 58 04 08 13 1D 41 64 64 54
000800F0 72 75 73 74 20 45 78 74 65 72 60 20 24 54
00080100 50 20 4C 65 74 20 45 78 74 65 72 60 20 06 03 55
00080110 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00080120 65 72 62 61 8C 20 43 41 20 52 67 6F 74 30 1E 17
00080130 ..ernal CA Root0..
00080140 00 30 30 00 30 33 30 31 30 34 38 33 30 5A 30 0F 31
00080150 32 30 30 35 33 30 31 30 34 38 33 30 5A 30 0F 31
00080160 04 03 55 04 0A 13 08 41 64 64 54 72 75 73 74 20
00080170 43 42 31 26 30 24 06 03 55 04 08 13 1D 41 64 64
00080180 54 72 75 73 74 20 45 78 74 65 72 60 20 24 54
00080190 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000801A0 55 04 03 13 19 41 64 64 54 72 75 73 74 20 45 78
000801B0 01 23 22 0D 06 02 24 3B 45 54 F7 0D 01 01 05
000801C0 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000801D0 F7 1A 33 86 F2 00 04 02 39 E0 4E 50 ED IF BC EC
000801E0 ..-3B0..-9AM11,W1
000801F0 OF CD B8 FA 23 B6 CE DE 98 11 33 97 E4 29 4C TD
00080200 93 99 8D 8A 9C 93 ED 03 1A E3 8F CF B5 8D 50 00 00
00080210 DE 97 29 94 5A 50 49 7A DB 22 95 FD 88 CA BF C-)DE12d..> E
Offset: 80148
```

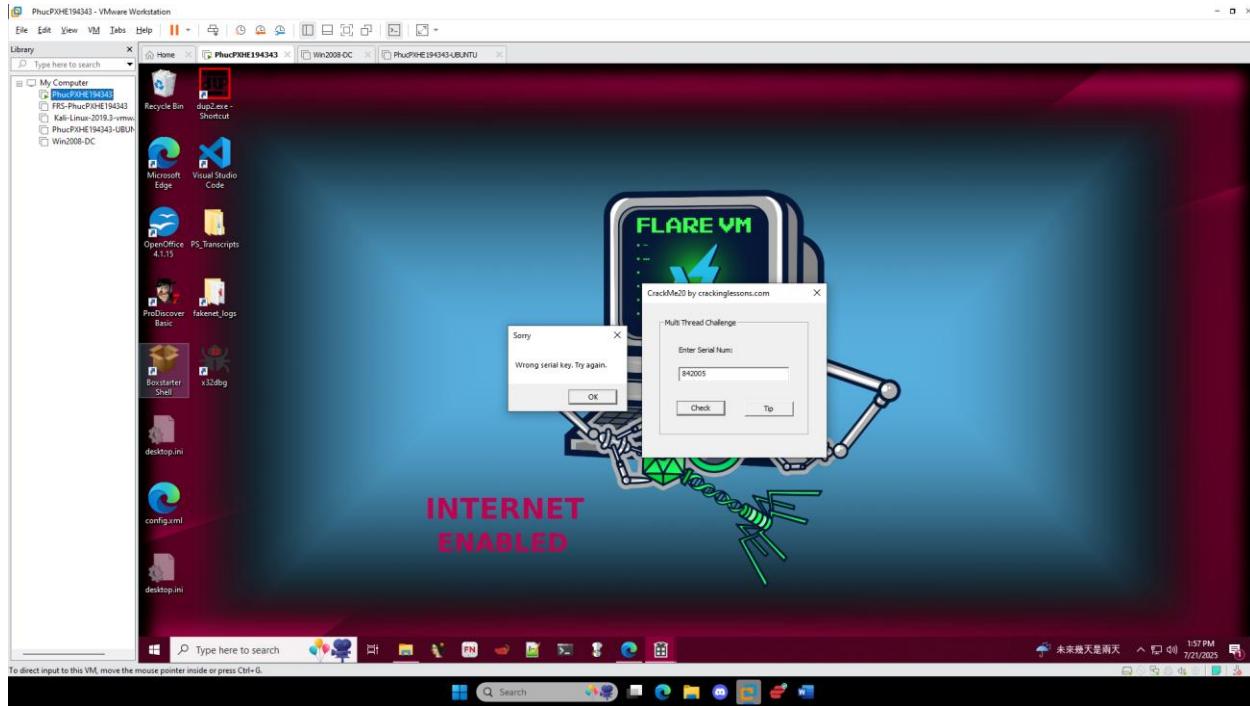




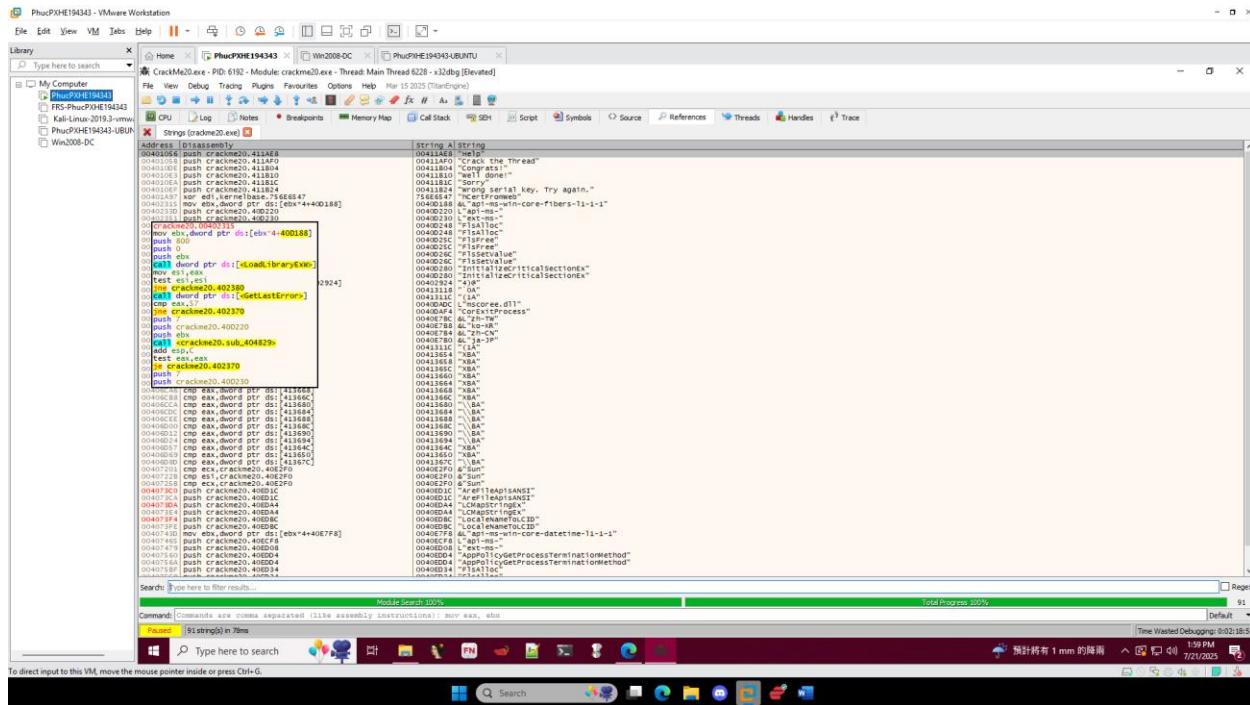
Crack Me 20

Part 1: Patch the thread that checks for the correct serial number

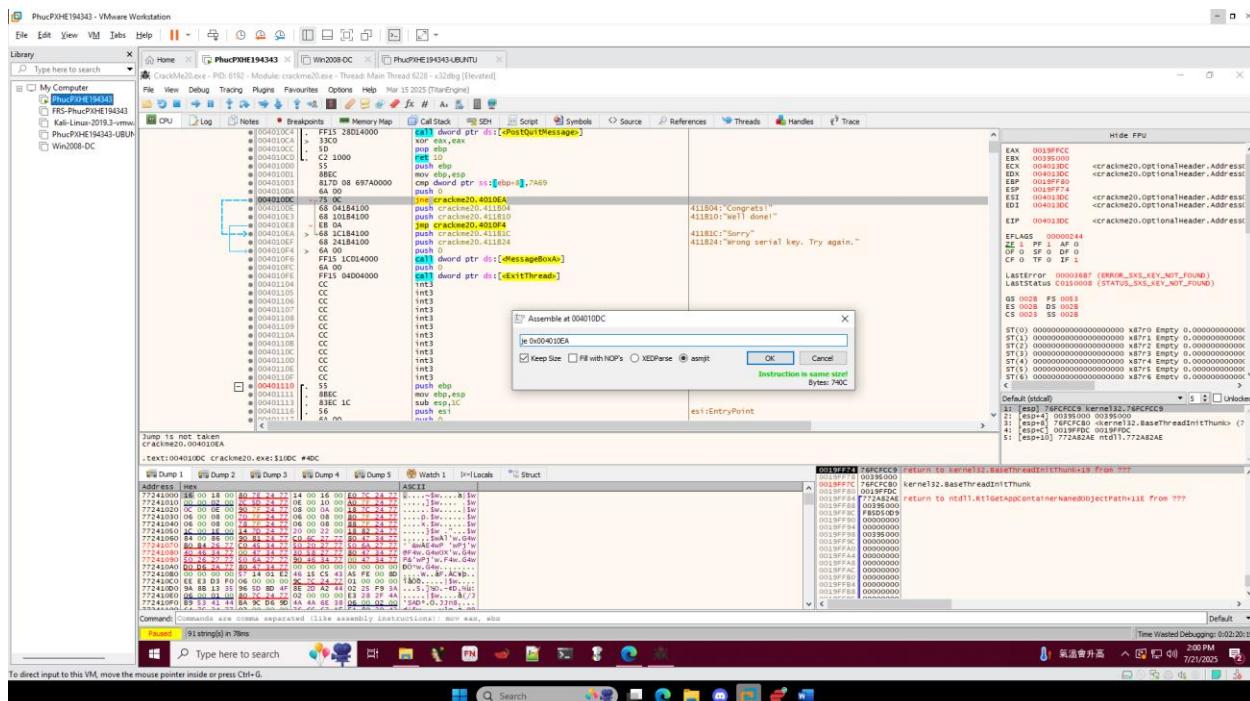
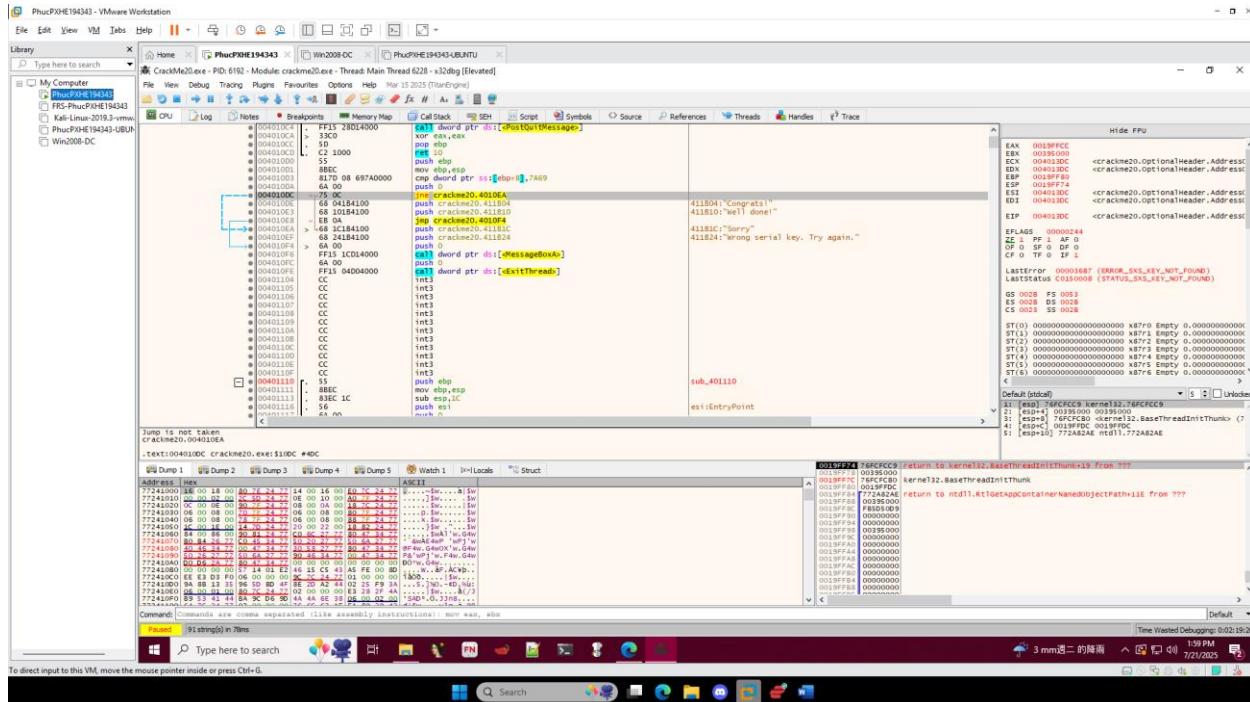
Step 1: Bài này khác những bài trước vì bài này sử dụng đa luồng (multi-thread), chương trình sẽ thực hiện nhiều tác vụ đồng thời thay vì xử lý tuần tự từng việc một.



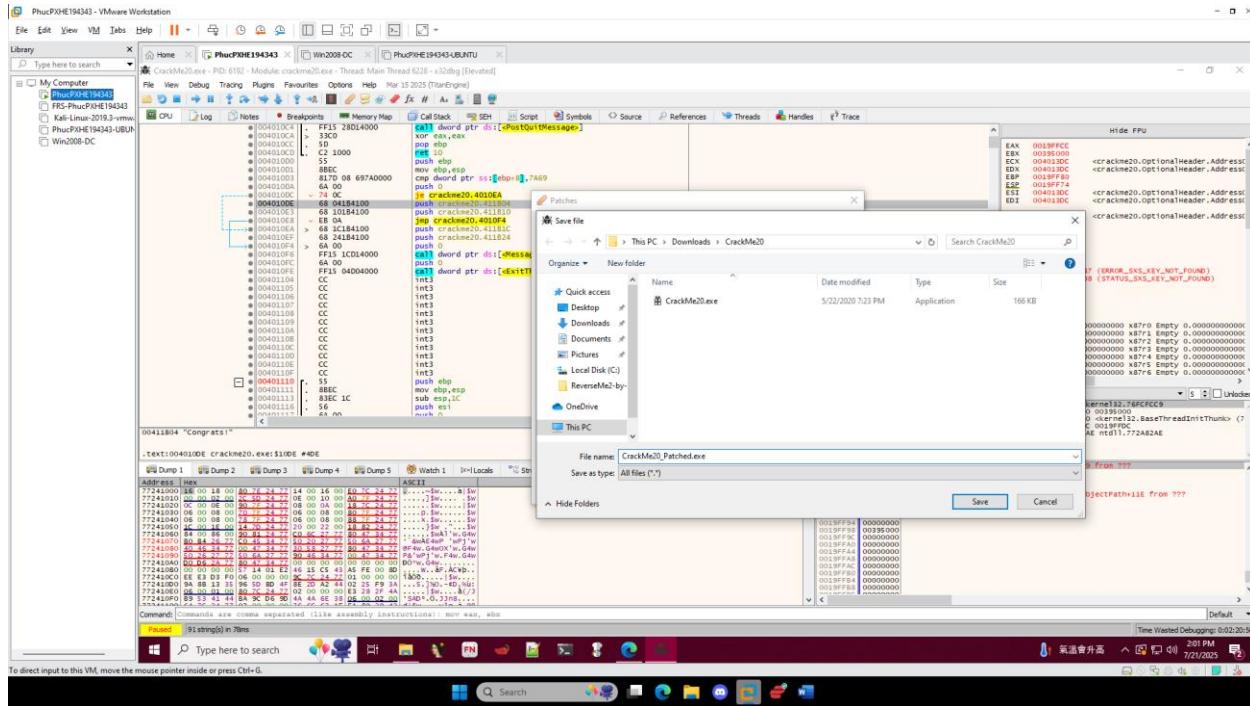
Step 2: Mở String preference



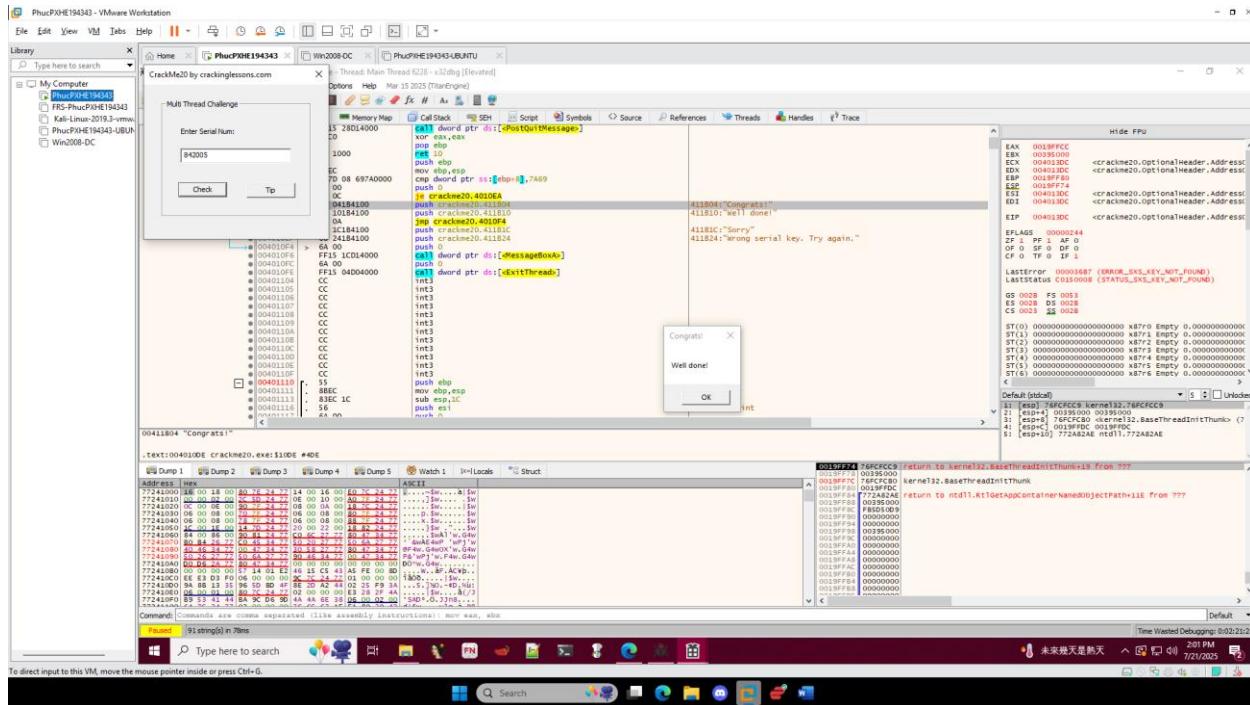
Step 3: Khi quan sát trong x32dbg, em thấy chương trình sử dụng lệnh jne để nhảy qua thông báo "success". Vì vậy, em đã sửa lệnh đó thành je để thay đổi logic: chương trình sẽ chỉ hiển thị thông báo "success" khi người dùng nhập sai, còn nếu nhập đúng thì sẽ không được chấp nhận.



Step 4: Tiến hành patch file

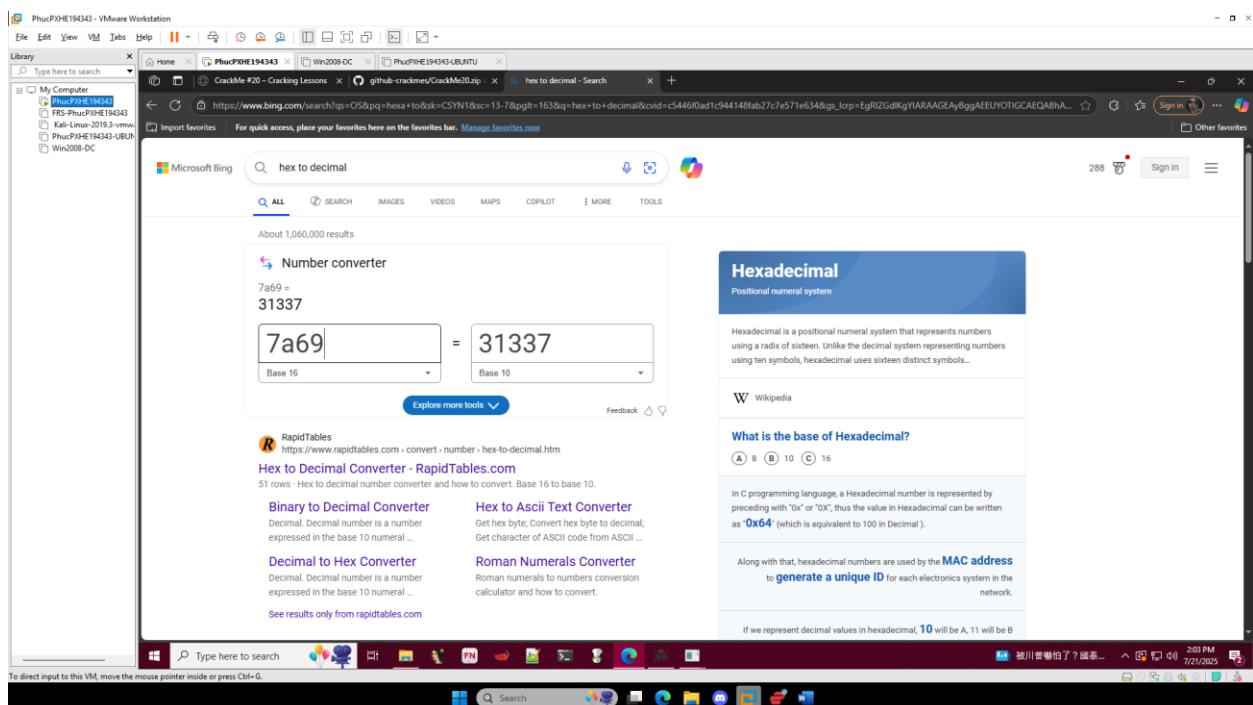
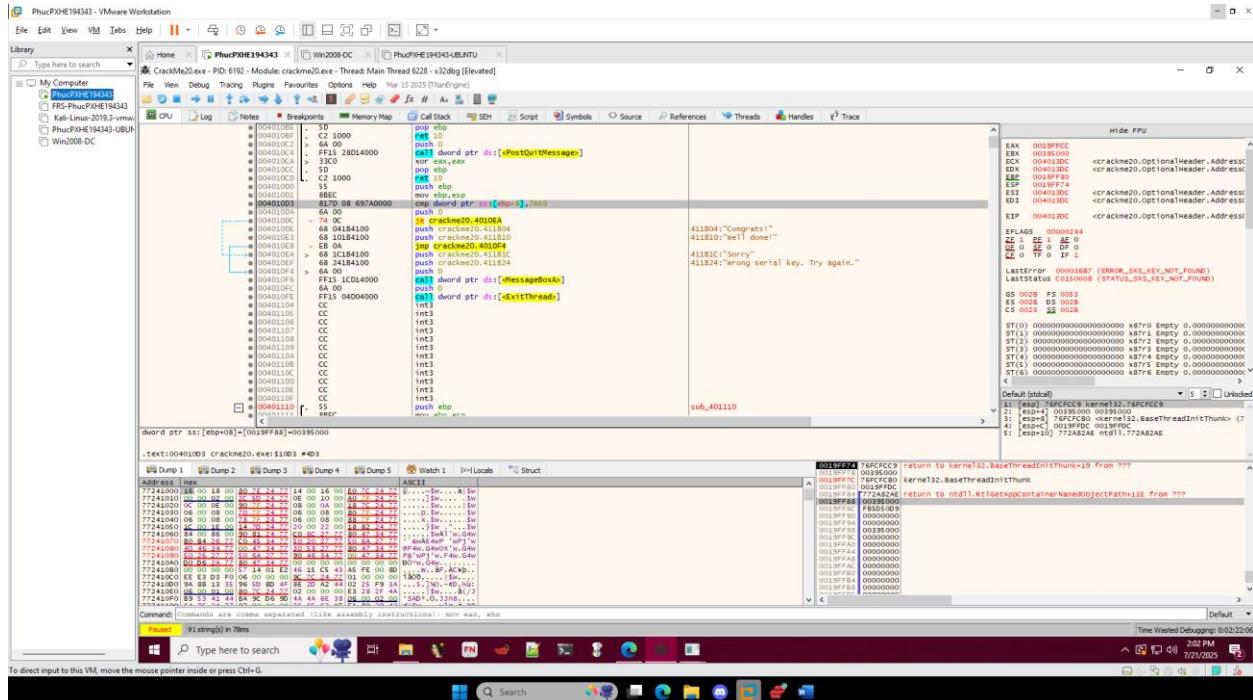


Step 5: Thử file và thành công



Part 2: Do serial fishing for the serial number

Step 1: Nếu quan sát kỹ hơn ở phía trên, ta có thể thấy chương trình thực hiện so sánh với giá trị 7A69 ở hệ thập lục phân, tương đương với 31337 ở hệ thập phân. Do đó, key hợp lệ chính là 31337.



Step 2: Thử key

