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lietxia / XiaoXinAir14IML_2019_hackintosh

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DVMT

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lietxia edited this page on 11 Apr · 8 revisions

为什么需要修改DVMT?

修改DVMT可以让HDMI更好的工作。

工具

1. Universal BIOS Backup ToolKit 2.0.exe <https://www.softpedia.com/get/System/Back-Up-and-Recovery/Universal-BIOS-Backup-ToolKit.shtml>
2. UEFITool <https://github.com/LongSoft/UEFITool/releases>
3. Universal-IFR-Extractor <https://github.com/LongSoft/Universal-IFR-Extractor/releases>
4. InsydeH2OUE
http://en.inspur.com/eportal/fileDir/en_active_download/biosbmc/Inspur%20TS860M5/TS860M5_BIOS_4.0.04_20190424.zip

1.提取BIOS

1. 具体方法可参考-> <https://www.bilibili.com/read/CV4646116> 或
<https://www.misonsky.cn/115.html>

2. 提取有用的信息：



DVMT Pre-Allocated, VarStoreInfo: 0x107, VarStore: 0x2
 DefaultId: 0x0, Value: 0x1

其中, VarStore:0x2 指明了该变量所在的空间(表格), VarStoreInfo:0x107 指明了该变量在表格中的偏移地址(offset), DefaultId:0x0, Value:0x1 指明了该变量的初始值, 通过下表可知, 0x1 代表 32M, 我们需要的 64M 对应的值为 0x2;

3. 通过查找高级菜单(Advanced)所在的表单, 找出该变量所在变量空间(0x2)的名称

```
One Of Option: 0M, Value (8 bit): 0x0 {09 07 4D 11 00 00 00}
One Of Option: 32M, Value (8 bit): 0x1 {09 07 4E 11 00 00 01}
One Of Option: 64M, Value (8 bit): 0x2 {09 07 4F 11 00 00 02}
One Of Option: 4M, Value (8 bit): 0xF0 {09 07 50 11 00 00 F0}
One Of Option: 8M, Value (8 bit): 0xF1 {09 07 51 11 00 00 F1}
One Of Option: 12M, Value (8 bit): 0xF2 {09 07 52 11 00 00 F2}
One Of Option: 16M, Value (8 bit): 0xF3 {09 07 53 11 00 00 F3}
One Of Option: 20M, Value (8 bit): 0xF4 {09 07 54 11 00 00 F4}
One Of Option: 24M, Value (8 bit): 0xF5 {09 07 55 11 00 00 F5}
One Of Option: 28M, Value (8 bit): 0xF6 {09 07 56 11 00 00 F6}
One Of Option: 32M/F7, Value (8 bit): 0xF7 {09 07 57 11 00 00 F7}
One Of Option: 36M, Value (8 bit): 0xF8 {09 07 58 11 00 00 F8}
One Of Option: 40M, Value (8 bit): 0xF9 {09 07 59 11 00 00 F9}
One Of Option: 44M, Value (8 bit): 0xFA {09 07 5A 11 00 00 FA}
One Of Option: 48M, Value (8 bit): 0xFB {09 07 5B 11 00 00 FB}
One Of Option: 52M, Value (8 bit): 0xFC {09 07 5C 11 00 00 FC}
One Of Option: 56M, Value (8 bit): 0xFD {09 07 5D 11 00 00 FD}
One Of Option: 60M, Value (8 bit): 0xFE {09 07 5E 11 00 00 FE}
```

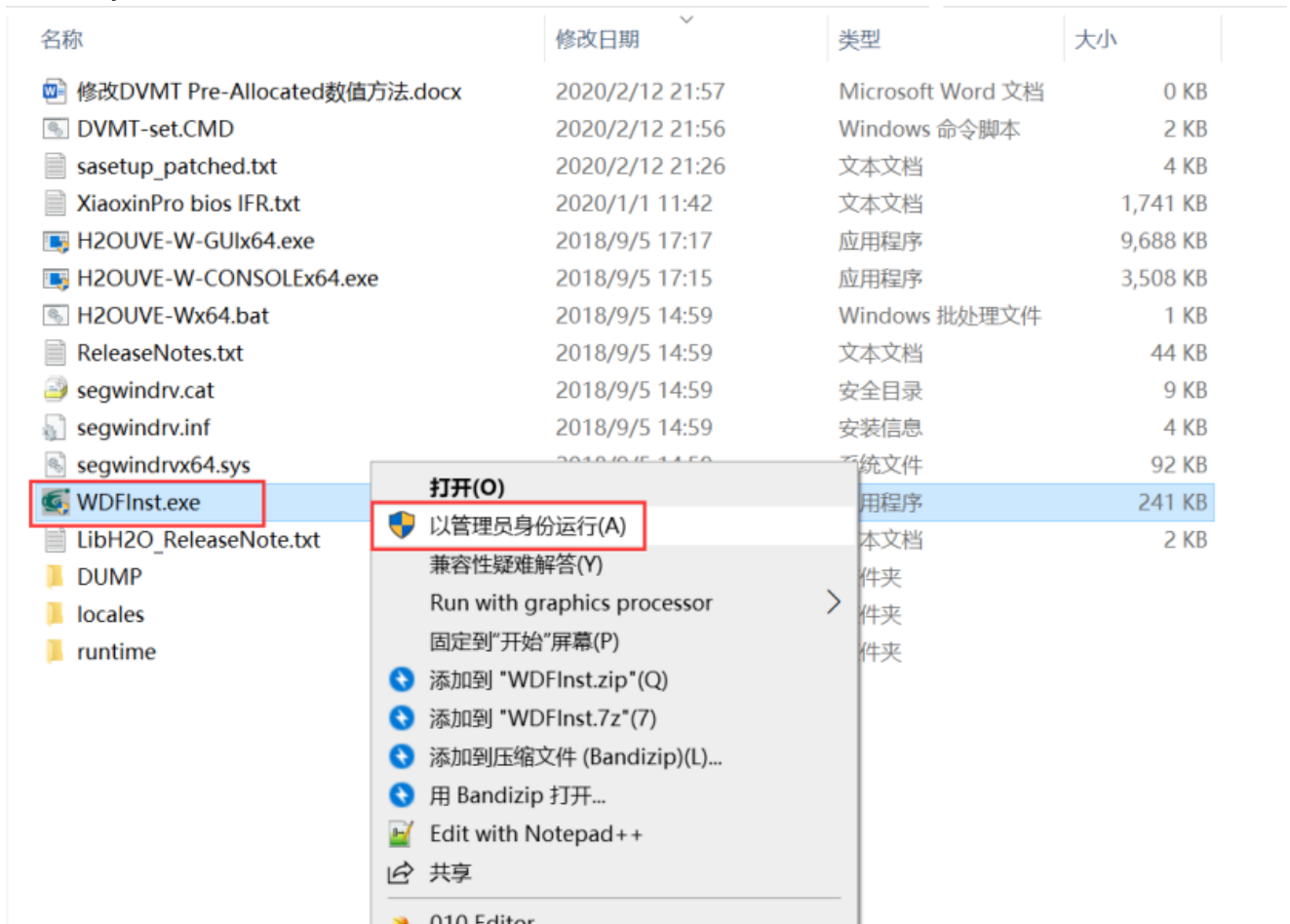
4. 从图可知，0x2 对应的变量空间名称为 SaSetup，大小为：0x22B

```
Form Set: Advanced [C6D4769E-7F48-4D2A-98E9-87ADCCF35CCC], ClassGuid0 [9F85453E-2F03-4989-AD3B-4A840791AF3A] {0E A7 9E 76 D4 C6 48 7
Guid: [0F0B1735-87A0-4193-B266-538C38AF48CE] {5F 15 35 17 0B 0F A0 87 93 41 B2 66 53 8C 38 AF 48 CE 03 01 00}
Guid: [0F0B1735-87A0-4193-B266-538C38AF48CE] {5F 15 35 17 0B 0F A0 87 93 41 B2 66 53 8C 38 AF 48 CE 04 05 00}
Default Store: Standard Default, DefaultId: 0x0 {5C 06 4A 17 00 00}
Default Store: , DefaultId: 0x1 {5C 06 00 00 01 00}
Image: Id: 0x2 {04 04 02 00}
VarStore: VarStoreId: 0x1234 [A04A27F4-DF00-4D42-B552-39511302113D], Size: 0x4B0, Name: SystemConfig {24 23 F4 27 4A A0 00 DF 42
VarStore: VarStoreId: 0x1233 [A04A27F4-DF00-4D42-B552-39511302113D], Size: 0x8, Name: AdvanceConfig {24 24 F4 27 4A A0 00 DF 42
VarStore: VarStoreId: 0x2 [72C5E28C-7783-43A1-8767-FAD73FCCAFA4], Size: 0x22B, Name: SaSetup {24 1E 8C E2 C5 72 83 77 A1 43 87 6
VarStore: VarStoreId: 0x4 [5432122D-D034-49D2-A6DE-65A829EB4C74], Size: 0x2D, Name: MeSetup {24 1E 2D 12 32 54 34 D0 D2 49 A6 DE
VarStore: VarStoreId: 0x3 [B08F97FF-E6E8-4193-A997-5E9E9B0ADB32], Size: 0x22B, Name: CpuSetup {24 1F FF 97 8F B0 E8 E6 93 41 A9
VarStore: VarStoreId: 0x5 [4570B7F1-ADE8-4943-8DC3-406472842384], Size: 0x6EB, Name: PchSetup {24 1F F1 B7 70 45 E8 AD 43 49 8D
VarStore: VarStoreId: 0x6 [AAF8E719-48F8-4099-A6F7-645FBD694C3D], Size: 0x2, Name: SiSetup {24 1E 19 E7 F8 AA F8 48 99 40 A6 F7
VarStore: VarStoreId: 0x1 [EC87D643-EBA4-4BB5-A1E5-3F3E36B20DA9], Size: 0x68C, Name: Setup {24 1C 43 D6 87 EC A4 EB B5 4B A1 E5
VarStoreEFI: VarStoreId: 0x7 [EC87D643-EBA4-4BB5-A1E5-3F3E36B20DA9], Attributes: 3, Size: 1, Name: PciBusSetup {26 26 07 00 43 D
VarStore: VarStoreId: 0x100B [EC87D643-EBA4-4BB5-A1E5-3F3E36B20DA9], Size: 0x97, Name: SetupVolatileData {24 28 43 D6 87 EC A4 E
VarStore: VarStoreId: 0x8 [E59376D7-2DD9-42A3-9EC8-1D71D5E3C1EC], Size: 0x2, Name: OsProfile {24 20 D7 76 93 E5 D9 2D A3 42 9E C
VarStore: VarStoreId: 0x100C [EC87D643-EBA4-4BB5-A1E5-3F3E36B20DA9], Size: 0x30, Name: SetupCpuFeatures {24 27 43 D6 87 EC A4 EB
VarStore: VarStoreId: 0x13BD [B08F97FF-E6E8-4193-A997-5E9E9B0ADB32], Size: 0xC, Name: CpuSetupVolatileData {24 2B FF 97 8F B0 E8
VarStoreEFI: VarStoreId: 0x9 [B08F97FF-E6E8-4193-A997-5E9E9B0ADB32], Attributes: 3, Size: 10, Name: CpuSetupSgxEpochData {26 2F
VarStore: VarStoreId: 0x13DC [EC87D643-EBA4-4BB5-A1E5-3F3E36B20DA9], Size: 0x3, Name: TbtSetupVolatileData {24 2B 43 D6 87 EC A4
VarStore: VarStoreId: 0x1108 [5432122D-D034-49D2-A6DE-65A829EB4C74], Size: 0xD, Name: MeSetupStorage {24 25 2D 12 32 54 34 D0 D2
VarStore: VarStoreId: 0xA [64192DCA-D034-49D2-A6DE-65A829EB4C74], Size: 0x8, Name: IccAdvancedSetupDataVar {24 2E CA 2D 19 64 34
Form: Advanced, FormId: 0x1 {01 86 01 00 CC 16}
Subtitle: Statement.Prompt: , Flags: 0x0 {02 87 B6 16 00 00 00}
End {29 02}
Ref: Boot Configuration. VarStoreInfo (VarOffset/VarName): 0xFFFF. VarStore: 0x0. QuestionId: 0x1. FormId: 0x21 {0F 0F CE 16
```

5. 总结：修改DVMT Pre-Allocated的值需要在BIOS变量中找到名为 SaSetup 的空间，并把偏移量为 0x107 的数值由 0x1 改成 0x2。

2-1. GUI方法

1. 打开InsydeH2OUIVE文件夹，先以管理员身份运行 WDFInst.exe 安装工具驱动



2. 以管理员身份运行 H2OUVE-W-GUIx64.exe 程序

名称	修改日期	类型	大小
修改DVMT Pre-Allocated数值方法.docx	2020/2/12 21:57	Microsoft Word 文档	0 KB
DVMT-set.CMD	2020/2/12 21:56	Windows 命令脚本	2 KB
sasetup_patched.txt	2020/2/12 21:26	文本文档	4 KB
XiaoxinPro bios IFR.txt	2020/1/1 11:42	文本文档	1,741 KB
H2OUVE-W-GUIx64.exe	2018/9/5 17:17	应用程序	9,688 KB
H2OUVE-W-GUIx64.exe		应用程序	3,508 KB
H2OUVE-Wx64.bat		Windows 批处理文件	1 KB
ReleaseNotes.txt		文本文档	44 KB
segwindrv.cat		安全目录	9 KB
segwindrv.inf		安装信息	4 KB
segwindrvx64.exe		系统文件	92 KB
WDFInst.exe		应用程序	241 KB
LibH2O_ReleaseNotes.txt		文本文档	2 KB
DUMP		文件夹	
locales		文件夹	
runtime		文件夹	

打开(O)

以管理员身份运行(A)

兼容性疑难解答(Y)

Run with graphics processor

固定到“开始”屏幕(P)

添加到 "H2OUVE-W-GUIx64.zip"(Q)

添加到 "H2OUVE-W-GUIx64.7z"(7)

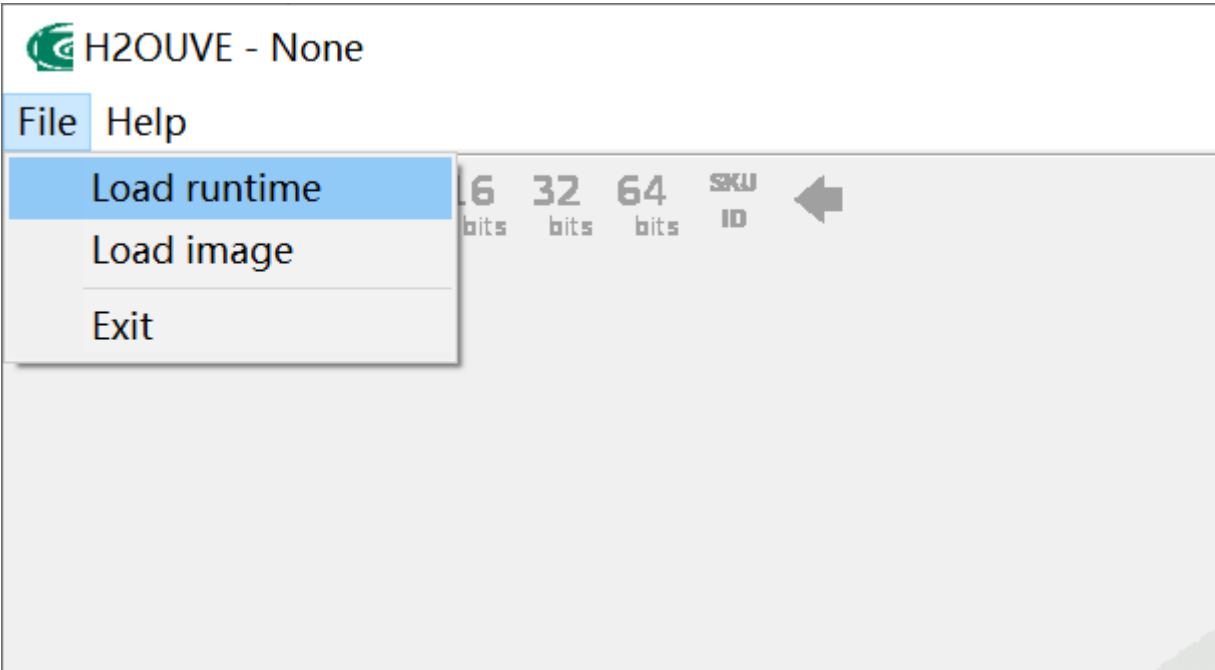
添加到压缩文件 (Bandizip)(L)...

用 Bandizip 打开...

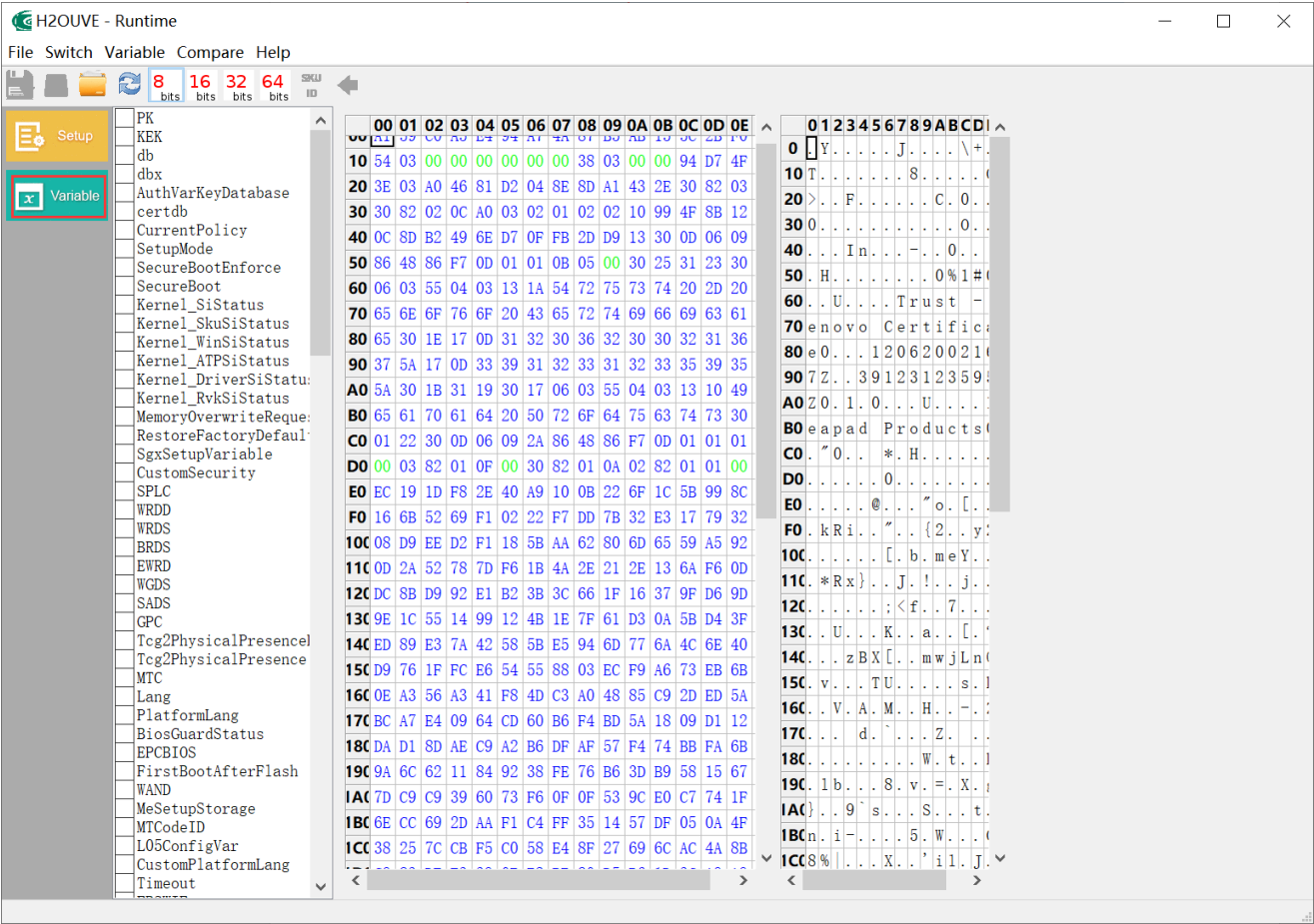
Edit with Notepad++

共享

3. 选择 File -> Load runtime 读取当前BIOS状态



4. 选择左侧 Variable 菜单，获取当前BIOS变量



5. 找到名称为SaSetup的空间（双击后可看到该空间内的所有变量，可根据最后一个变量所在的偏移地址得出空间大小，与步骤0中的空间大小比对，从而确定找到的空间是正确的），并找到偏移量为0x107的数值（可与步骤0中的初始值比对，进一步确认是否需要修改的变量）。

H2OUVE - Runtime

File Switch Variable Compare Help

8 bits 16 bits 32 bits 64 bits SKU ID

Setup

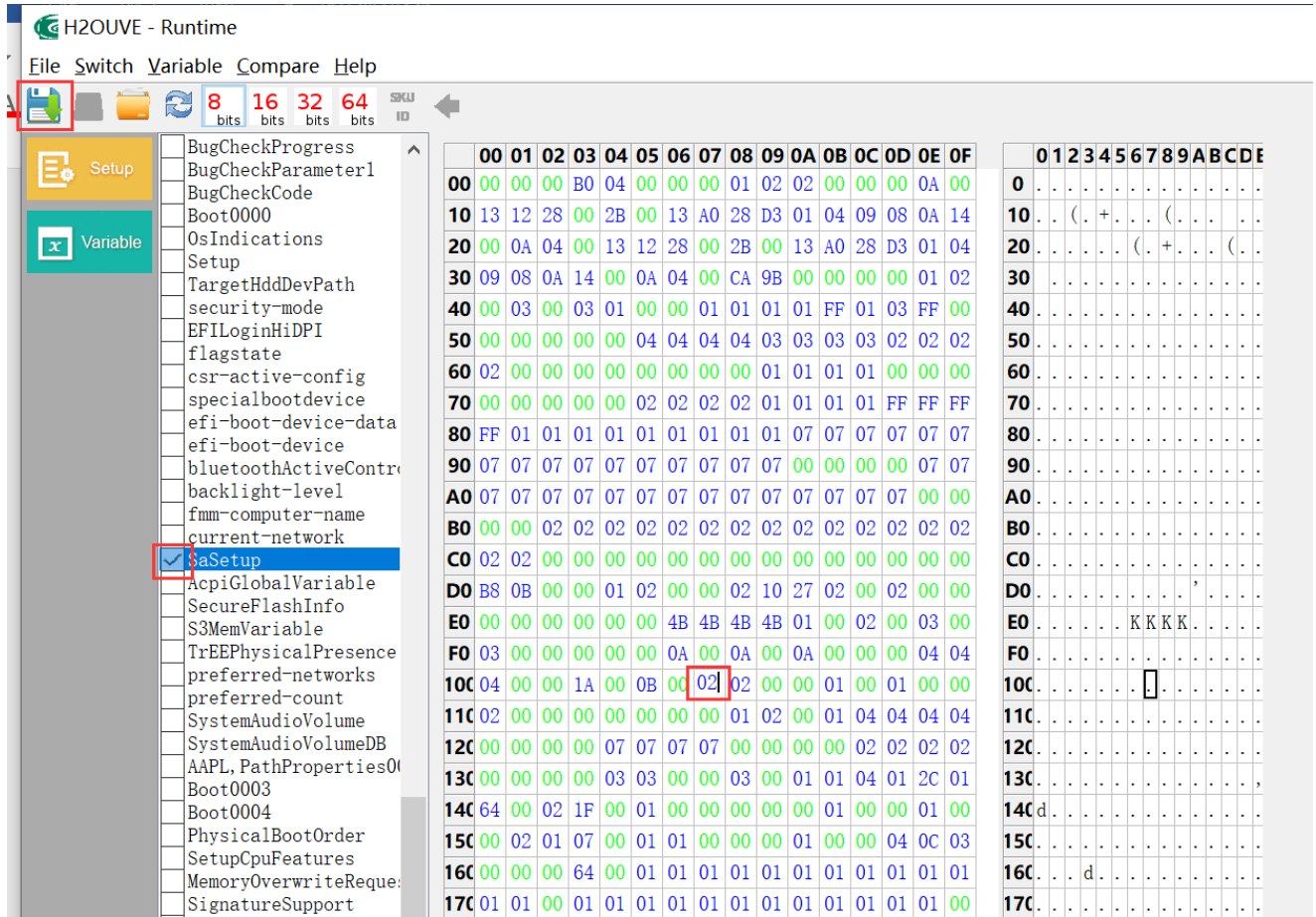
Variable

BugCheckProgress
BugCheckParameter1
BugCheckCode
Boot0000
OsIndications
Setup
TargetHddDevPath
security-mode
EFILoginHiDPI
flagstate
csr-active-config
specialbootdevice
efi-boot-device-data
efi-boot-device
bluetoothActiveContr
backlight-level
fmm-computer-name
current-network
SaSetup
AcpiGlobalVariable
SecureFlashInfo
S3MemVariable
TrEEPhysicalPresence
preferred-networks
preferred-count
SystemAudioVolume
SystemAudioVolumeDB
AAPL.PathProperties0
Boot0003
Boot0004
PhysicalBootOrder
SetupCpuFeatures
MemoryOverwriteReque
SignatureSupport
certdbv
VendorKeys
LvarSmiReadyFlag
LangCodes
PlatformLangCodes
SOFTWAREGUARDSTATUS
TbtSetupVolatileData
CpuSetupVolatileData
OsIndicationsSupport
BootOptionSupport
ConInCandidateDev
ConOutDev
ConOutCandidateDev
ActiveVgaDev
ConInDev
ErrOutDev
BootCurrent
Boot0000

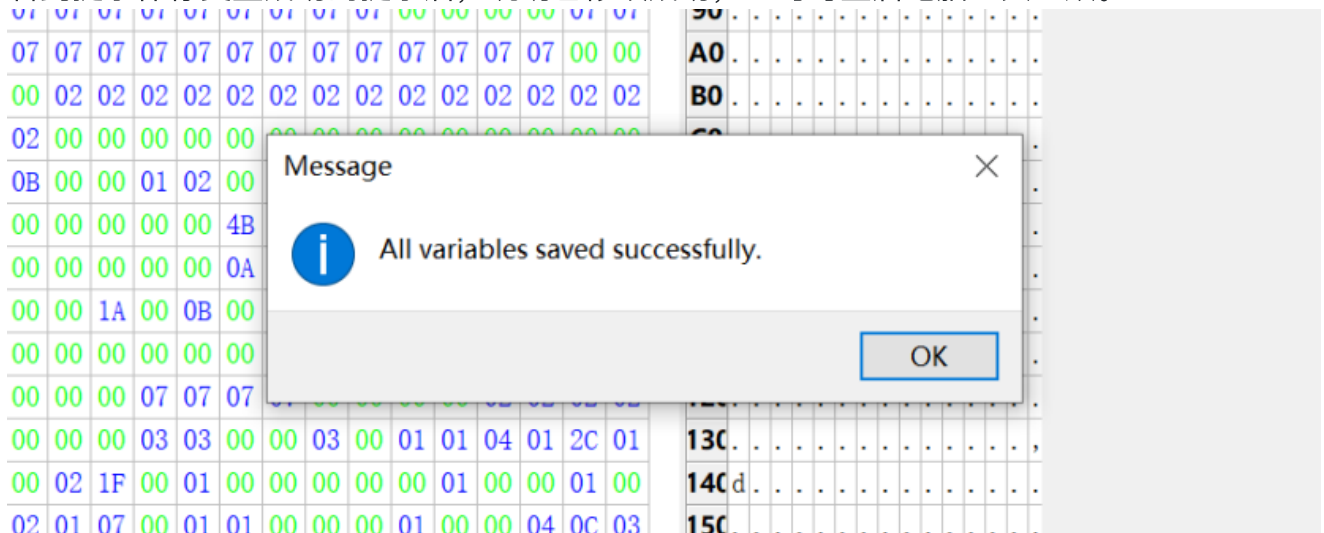
	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00	00	00	00	B0	04	00	00	00	01	02	02	00	00	00	0A	00
10	13	12	28	00	2B	00	13	A0	28	D3	01	04	09	08	0A	14
20	00	0A	04	00	13	12	28	00	2B	00	13	A0	28	D3	01	04
30	09	08	0A	14	00	0A	04	00	CA	9B	00	00	00	00	01	02
40	00	03	00	03	01	00	00	01	01	01	01	FF	01	03	FF	00
50	00	00	00	00	00	04	04	04	04	03	03	03	03	02	02	02
60	02	00	00	00	00	00	00	00	00	01	01	01	01	00	00	00
70	00	00	00	00	00	02	02	02	02	01	01	01	01	FF	FF	FF
80	FF	01	01	01	01	01	01	01	01	01	07	07	07	07	07	07
90	07	07	07	07	07	07	07	07	07	07	00	00	00	00	07	07
A0	07	07	07	07	07	07	07	07	07	07	07	07	07	07	00	00
B0	00	00	02	02	02	02	02	02	02	02	02	02	02	02	02	02
C0	02	02	00	00	00	00	00	00	00	00	00	00	00	00	00	00
D0	B8	0B	00	00	01	02	00	00	02	10	27	02	00	02	00	00
E0	00	00	00	00	00	00	4B	4B	4B	4B	01	00	02	00	03	00
F0	03	00	00	00	00	00	0A	00	0A	00	0A	00	00	00	04	04
100	04	00	00	1A	00	0B	00	01	02	00	00	01	00	01	00	00
110	02	00	00	00	00	00	00	00	01	02	00	01	04	04	04	04
120	00	00	00	00	07	07	07	07	00	00	00	00	02	02	02	02
130	00	00	00	00	03	03	00	00	03	00	01	01	04	01	2C	01
140	64	00	02	1F	00	01	00	00	00	00	00	01	00	00	01	00
150	00	02	01	07	00	01	01	00	00	00	01	00	00	04	0C	03
160	00	00	00	64	00	01	01	01	01	01	01	01	01	01	01	01
170	01	01	00	01	01	01	01	01	01	01	01	01	01	01	01	00
180	00	01	01	01	00	00	00	00	00	00	00	00	00	00	00	00
190	00	00	00	00	00	00	00	00	01	01	00	01	01	00	04	00
1A0	00	00	01	0A	00	DE	00	00	00	00	00	FF	FF	FF	FF	FF
1B0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	0A	0A	06	06
1C0	AC	AC	D4	D4	DD	DD	0A	0A	06	06	AC	AC	D4	D4	DD	DD
1D0	01	00	02	00	30	01	40	00	00	00	00	01	00	00	00	01
1E0	00	01	01	00	0B	01	00	00	01	00	00	00	00	00	00	00
1F0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
200	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
210	00	00	00	00	00	00	00	00	00	00	00	01	00	00	00	00
220	00	00	00	00	00	01	01	03	00	02	01					

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E
0
10
20
30
40
50
60
70
80
90
A0
B0
C0
D0
E0
F0
100
110
120
130
140
150
160
170
180
190
1A0
1B0
1C0
1D0
1E0
1F0
200
210
220

6. 修改该数值为 02，并保存数据（保存前确认该空间被选中——前方的√打上）

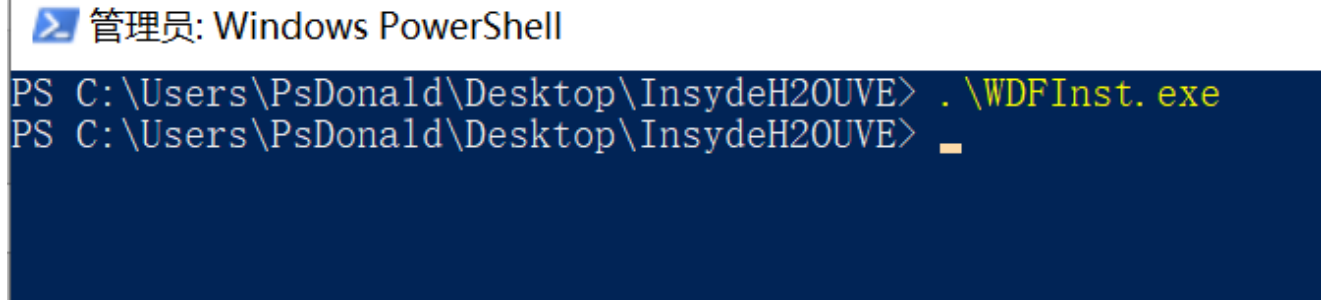


7. 看到提示保存变量成功的提示后，说明已修改成功，此时可重启电脑让其生效。



2-2. 命令行方法

1. 以管理员身份运行CMD或PowerShell，进入InsydeH2OUE所在目录，运行WDFInst.exe安装工具驱动

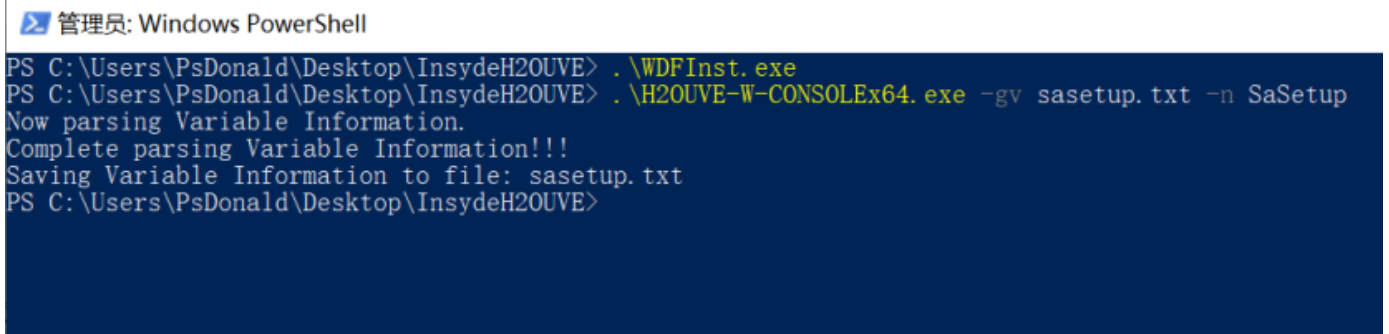


A screenshot of a Windows PowerShell window titled "管理员: Windows PowerShell". The command prompt shows the user at the directory C:\Users\Psdonald\Desktop\InsydeH2OUE. The command `.\WDFInst.exe` has been entered and executed, as indicated by a cursor on the line below.

```
管理员: Windows PowerShell
PS C:\Users\Psdonald\Desktop\InsydeH2OUE> .\WDFInst.exe
PS C:\Users\Psdonald\Desktop\InsydeH2OUE> _
```

2. 提取命名为SaSetup的变量列表到一个txt文件，输入

`.\H2OUE-W-CONSOLEx64.exe -gv sasetup.txt -n SaSetup`



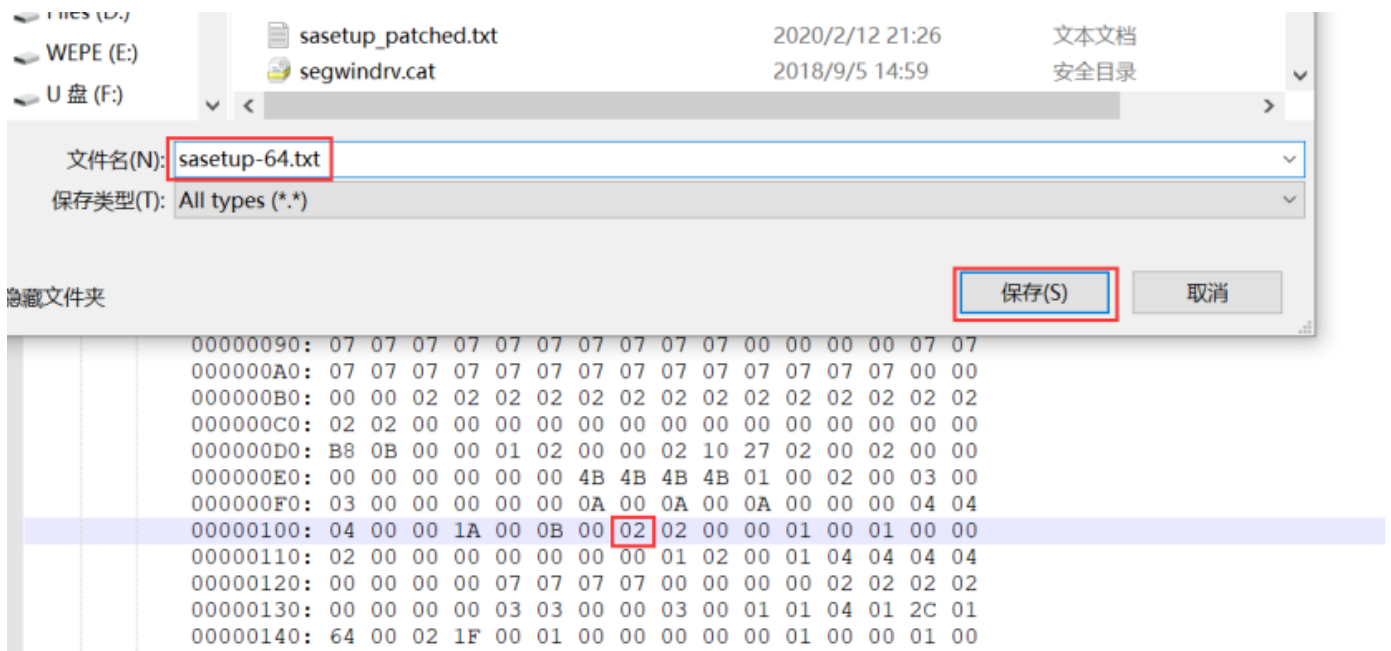
A screenshot of a Windows PowerShell window titled "管理员: Windows PowerShell". The command prompt shows the user at the directory C:\Users\Psdonald\Desktop\InsydeH2OUE. The command `.\WDFInst.exe` has been executed. Then, the command `.\H2OUE-W-CONSOLEx64.exe -gv sasetup.txt -n SaSetup` has been entered and executed. The output shows the program parsing variable information and saving it to a file named sasetup.txt.

```
管理员: Windows PowerShell
PS C:\Users\Psdonald\Desktop\InsydeH2OUE> .\WDFInst.exe
PS C:\Users\Psdonald\Desktop\InsydeH2OUE> .\H2OUE-W-CONSOLEx64.exe -gv sasetup.txt -n SaSetup
Now parsing Variable Information.
Complete parsing Variable Information!!!
Saving Variable Information to file: sasetup.txt
PS C:\Users\Psdonald\Desktop\InsydeH2OUE>
```


3. 打开提取到的sasetup.txt文件（可通过空间名称，空间大小确认所修改变量空间正确），找到偏移量为0x107的变量

```
[001] "SaSetup"
GUID: 72C5E28C-7783-43A1-8767-FAD73FCCAFA4
Attributes: 0x7
DataSize: 0x22B
Data:
00000000: 00 00 00 B0 04 00 00 00 01 02 02 00 00 00 0A 00
00000010: 13 12 28 00 2B 00 13 A0 28 D3 01 04 09 08 0A 14
00000020: 00 0A 04 00 13 12 28 00 2B 00 13 A0 28 D3 01 04
00000030: 09 08 0A 14 00 0A 04 00 CA 9B 00 00 00 00 01 02
00000040: 00 03 00 03 01 00 00 01 01 01 01 FF 01 03 FF 00
00000050: 00 00 00 00 00 04 04 04 04 03 03 03 03 02 02 02
00000060: 02 00 00 00 00 00 00 00 00 00 01 01 01 01 00 00
00000070: 00 00 00 00 00 02 02 02 02 01 01 01 01 FF FF FF
00000080: FF 01 01 01 01 01 01 01 01 01 07 07 07 07 07 07
00000090: 07 07 07 07 07 07 07 07 07 07 07 00 00 00 07 07
000000A0: 07 07 07 07 07 07 07 07 07 07 07 07 07 07 00 00
000000B0: 00 00 02 02 02 02 02 02 02 02 02 02 02 02 02 02
000000C0: 02 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00
000000D0: B8 0B 00 00 01 02 00 00 02 10 27 02 00 02 00 00
000000E0: 00 00 00 00 00 00 4B 4B 4B 4B 01 00 02 00 03 00
000000F0: 03 00 00 00 00 00 0A 00 0A 00 0A 00 00 00 04 04
00000100: 04 00 00 1A 00 0B 00 01 02 00 00 01 00 01 00 00
00000110: 02 00 00 00 00 00 00 00 01 02 00 01 04 04 04 04
00000120: 00 00 00 00 07 07 07 07 00 00 00 00 02 02 02 02
00000130: 00 00 00 00 03 03 00 00 03 00 01 01 04 01 2C 01
00000140: 64 00 02 1F 00 01 00 00 00 00 00 01 00 00 01 00
00000150: 00 02 01 07 00 01 01 00 00 00 01 00 00 04 0C 03
00000160: 00 00 00 64 00 01 01 01 01 01 01 01 01 01 01 01
00000170: 01 01 00 01 01 01 01 01 01 01 01 01 01 01 01 00
00000180: 00 01 01 01 00 00 00 00 00 00 00 00 00 00 00 00
00000190: 00 00 00 00 00 00 00 00 01 01 00 01 01 00 04 00
000001A0: 00 00 01 0A 00 DE 00 00 00 00 00 00 FF FF FF FF
000001B0: FF FF FF FF FF FF FF FF FF FF FF 0A 0A 06 06
000001C0: AC AC D4 D4 DD DD 0A 0A 06 06 AC AC D4 D4 DD DD
000001D0: 01 00 02 00 30 01 40 00 00 00 00 01 00 00 00 01
000001E0: 00 01 01 00 0B 01 00 00 01 00 00 00 00 00 00 00
000001F0: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00000200: 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00000210: 00 00 00 00 00 00 00 00 00 00 01 00 00 00 00 00
00000220: 00 00 00 00 00 01 01 03 00 02 01
```

4. 把偏移量为0x107的变量01改成02，文件另存为 sasetup-64.txt（原文件可作为备份文件）



5. 回到CMD或PowerShell界面, 输入 `.\H2OUVE-W-CONSOLEx64.exe -sv sasetup-64.txt -n SaSetup` 把sasetup-64.txt写入BIOS

```

管理员: Windows PowerShell
PS C:\Users\Psdonald\Desktop\InsydeH2OUVE> .\WDFInst.exe
PS C:\Users\Psdonald\Desktop\InsydeH2OUVE> .\H2OUVE-W-CONSOLEx64.exe -gv sasetup.txt -n SaSetup
Now parsing Variable Information.
Complete parsing Variable Information!!!
Saving Variable Information to file: sasetup.txt
PS C:\Users\Psdonald\Desktop\InsydeH2OUVE> .\H2OUVE-W-CONSOLEx64.exe -sv sasetup-64.txt -n SaSetup
Now Parsing File From sasetup-64.txt.
Succeed to read sasetup-64.txt file.
Variable Index[001]: Set successfully!
Done.
PS C:\Users\Psdonald\Desktop\InsydeH2OUVE>

```

6. 看到 Variable Index[001]: Set successfully! 后, 说明已修改成功, 此时可重启电脑让其生效。

▼ Pages 4

Find a Page...

HOME

DVMT

声卡

读卡器

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https://github.com/lietxia/XiaoXinAir14IML_2019_hackintosh.wiki.git



