Họ và tên: Trần Trí Dũng

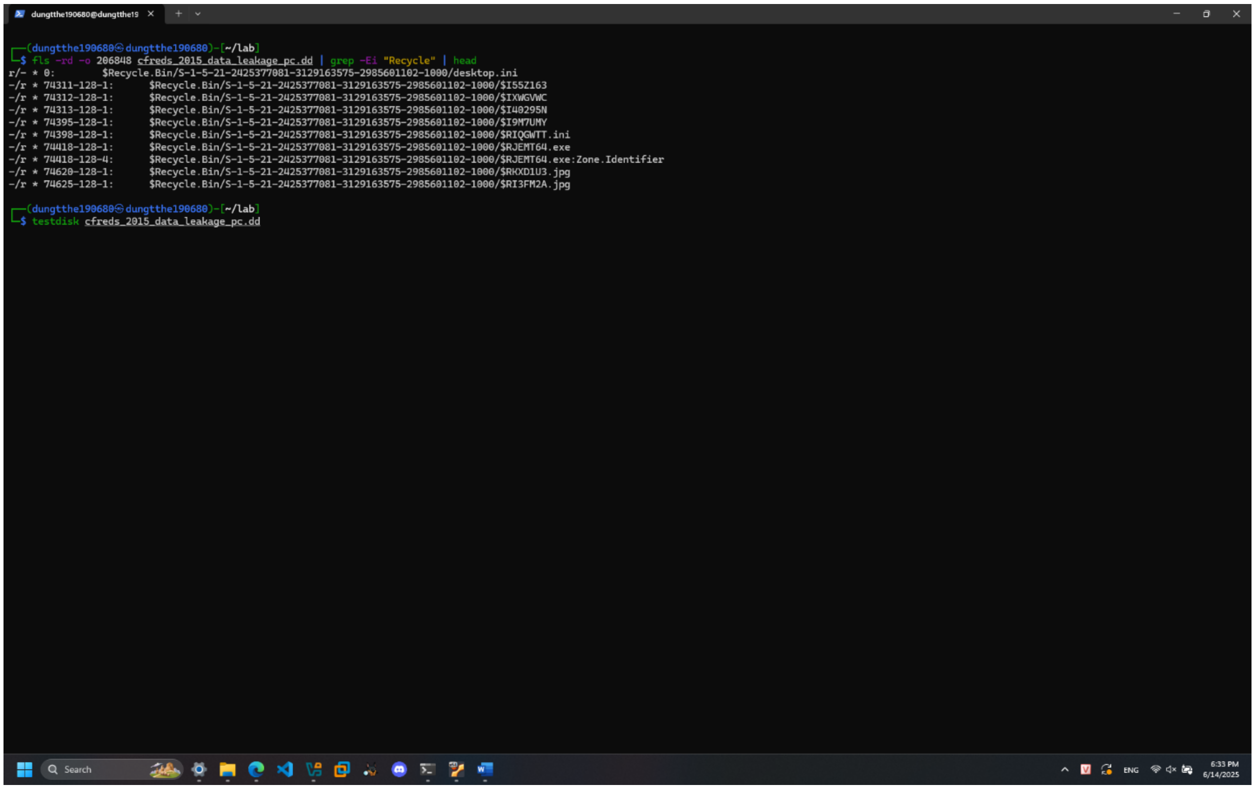
Mã số sinh viên: HE190680

Lớp: IA1901

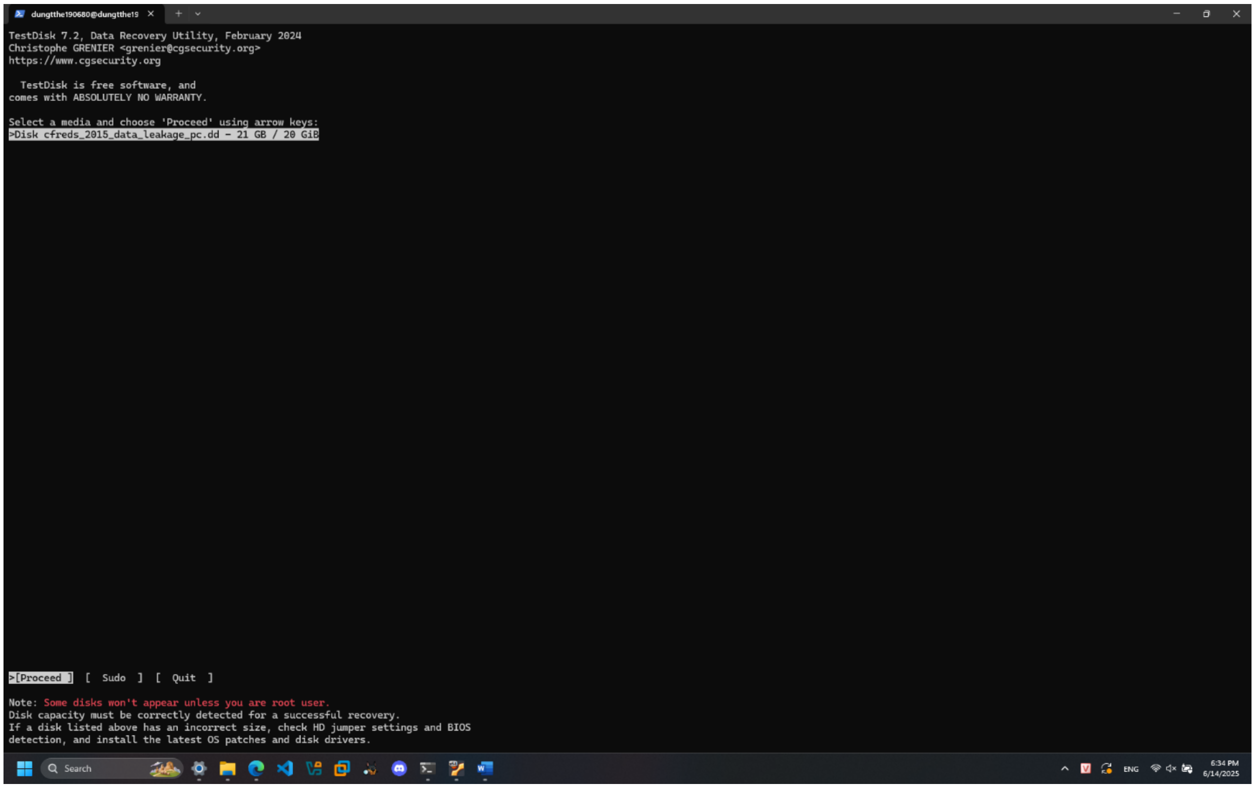
Lab 7: Recycle Bin and Anti-forensics

1. Recycle Bin

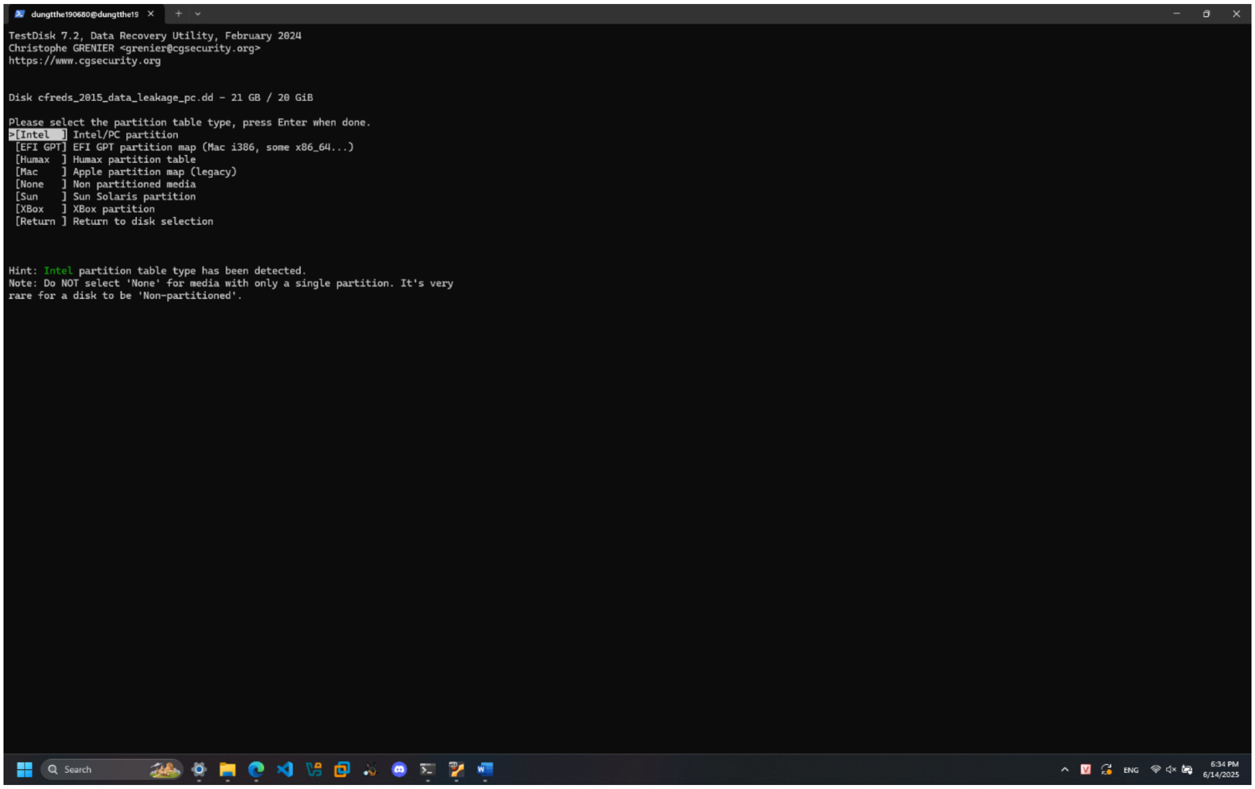
Step 1 -> Step 2:



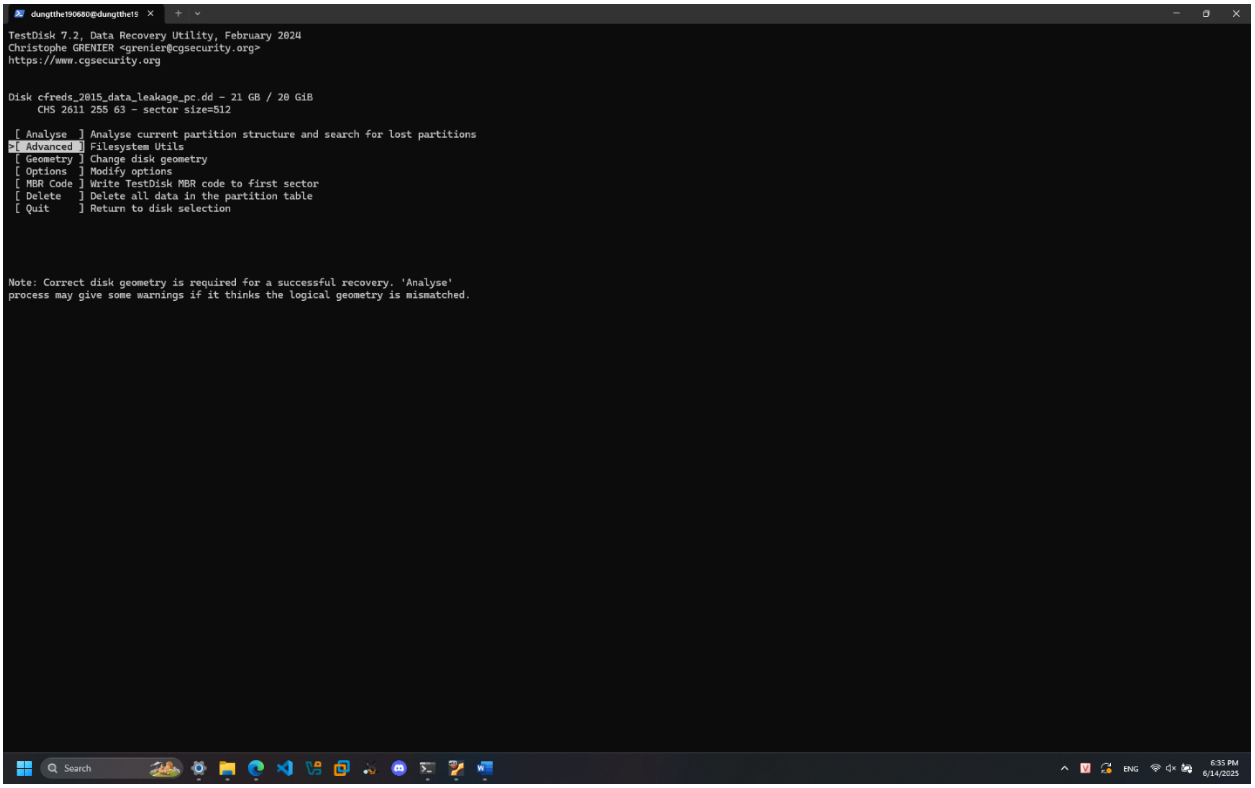
```
┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
└─$ fls -rd -o 206848 cfreds_2015_data_leakage_pc.dd | grep -Ei "Recycle" | head
r/- * 0:        $Recycle.Bin/S-1-5-21-2425377081-3129163575-2985601102-1000/desktop.ini
-/r * 74311-128-1:      $Recycle.Bin/S-1-5-21-2425377081-3129163575-2985601102-1000/$I55Z163
-/r * 74312-128-1:      $Recycle.Bin/S-1-5-21-2425377081-3129163575-2985601102-1000/$IXWGVWC
-/r * 74313-128-1:      $Recycle.Bin/S-1-5-21-2425377081-3129163575-2985601102-1000/$I40295N
-/r * 74395-128-1:      $Recycle.Bin/S-1-5-21-2425377081-3129163575-2985601102-1000/$I9M7UMY
-/r * 74398-128-1:      $Recycle.Bin/S-1-5-21-2425377081-3129163575-2985601102-1000/$RIQGWTT.ini
-/r * 74418-128-1:      $Recycle.Bin/S-1-5-21-2425377081-3129163575-2985601102-1000/$RJEMT64.exe
-/r * 74418-128-4:      $Recycle.Bin/S-1-5-21-2425377081-3129163575-2985601102-1000/$RJEMT64.exe:Zone.Identifier
-/r * 74620-128-1:      $Recycle.Bin/S-1-5-21-2425377081-3129163575-2985601102-1000/$RKXD1U3.jpg
-/r * 74625-128-1:      $Recycle.Bin/S-1-5-21-2425377081-3129163575-2985601102-1000/$RI3FM2A.jpg

┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
└─$ testdisk cfreds_2015_data_leakage_pc.dd
```



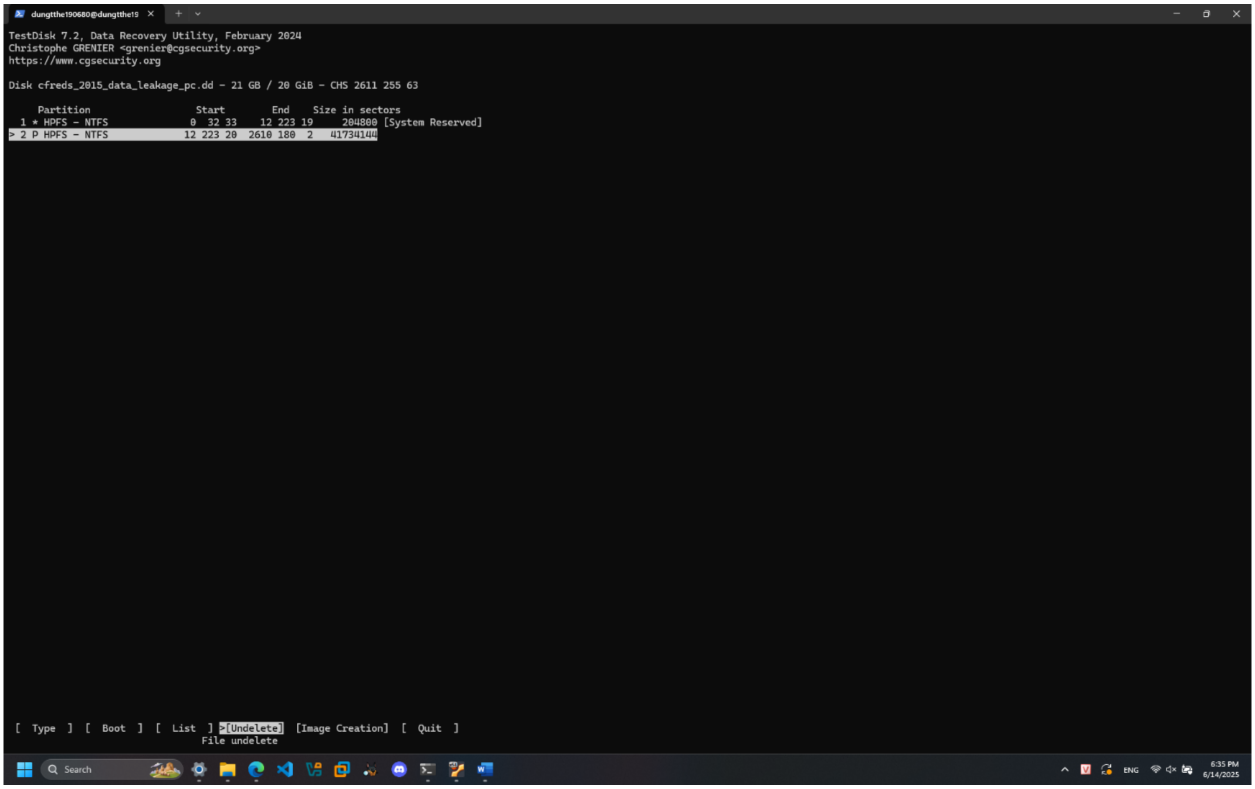
```
TestDisk 7.2, Data Recovery Utility, February 2024
Christophe GRENIER <grenier@cgsecurity.org>
https://www.cgsecurity.org

  TestDisk is free software, and
comes with ABSOLUTELY NO WARRANTY.

Select a media and choose 'Proceed' using arrow keys:
>Disk cfreds_2015_data_leakage_pc.dd - 21 GB / 20 GiB




>[Proceed ]  [  Sudo  ]  [  Quit  ]

Note: Some disks won't appear unless you are root user.
Disk capacity must be correctly detected for a successful recovery.
If a disk listed above has an incorrect size, check HD jumper settings and BIOS
detection, and install the latest OS patches and disk drivers.
```



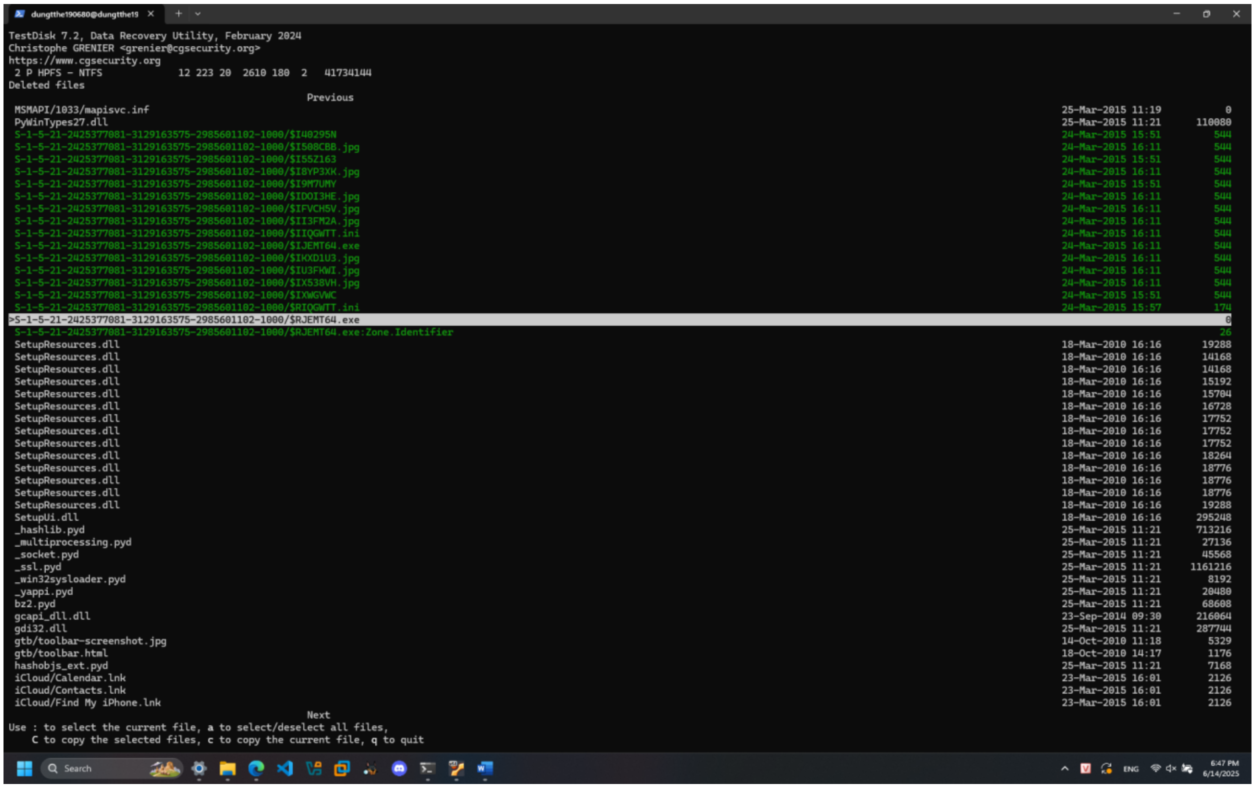
```
TestDisk 7.2, Data Recovery Utility, February 2024
Christophe GRENIER <grenier@cgsecurity.org>
https://www.cgsecurity.org


Disk cfreds_2015_data_leakage_pc.dd - 21 GB / 20 GiB

Please select the partition table type, press Enter when done.
>[Intel  ] Intel/PC partition
 [EFI GPT] EFI GPT partition map (Mac i386, some x86_64...)
 [Humax  ] Humax partition table
 [Mac    ] Apple partition map (legacy)
 [None   ] Non partitioned media
 [Sun    ] Sun Solaris partition
 [XBox   ] XBox partition
 [Return ] Return to disk selection



Hint: Intel partition table type has been detected.
Note: Do NOT select 'None' for media with only a single partition. It's very
rare for a disk to be 'Non-partitioned'.
```



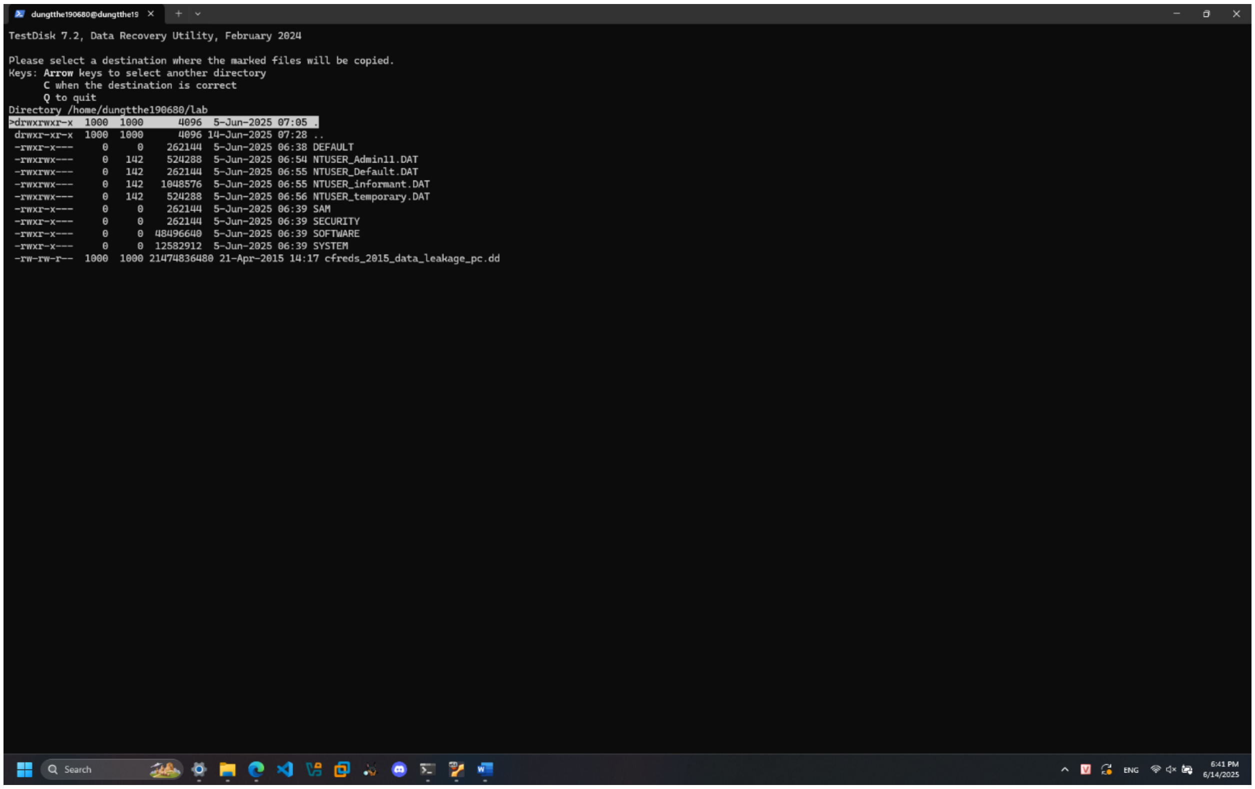
```
TestDisk 7.2, Data Recovery Utility, February 2024
Christophe GRENIER <grenier@cgsecurity.org>
https://www.cgsecurity.org


Disk cfreds_2015_data_leakage_pc.dd - 21 GB / 20 GiB
     CHS 2611 255 63 - sector size=512

 [ Analyse  ] Analyse current partition structure and search for lost partitions
>[ Advanced ] Filesystem Utils
 [ Geometry ] Change disk geometry
 [ Options  ] Modify options
 [ MBR Code ] Write TestDisk MBR code to first sector
 [ Delete   ] Delete all data in the partition table
 [ Quit     ] Return to disk selection





Note: Correct disk geometry is required for a successful recovery. 'Analyse'
process may give some warnings if it thinks the logical geometry is mismatched.
```



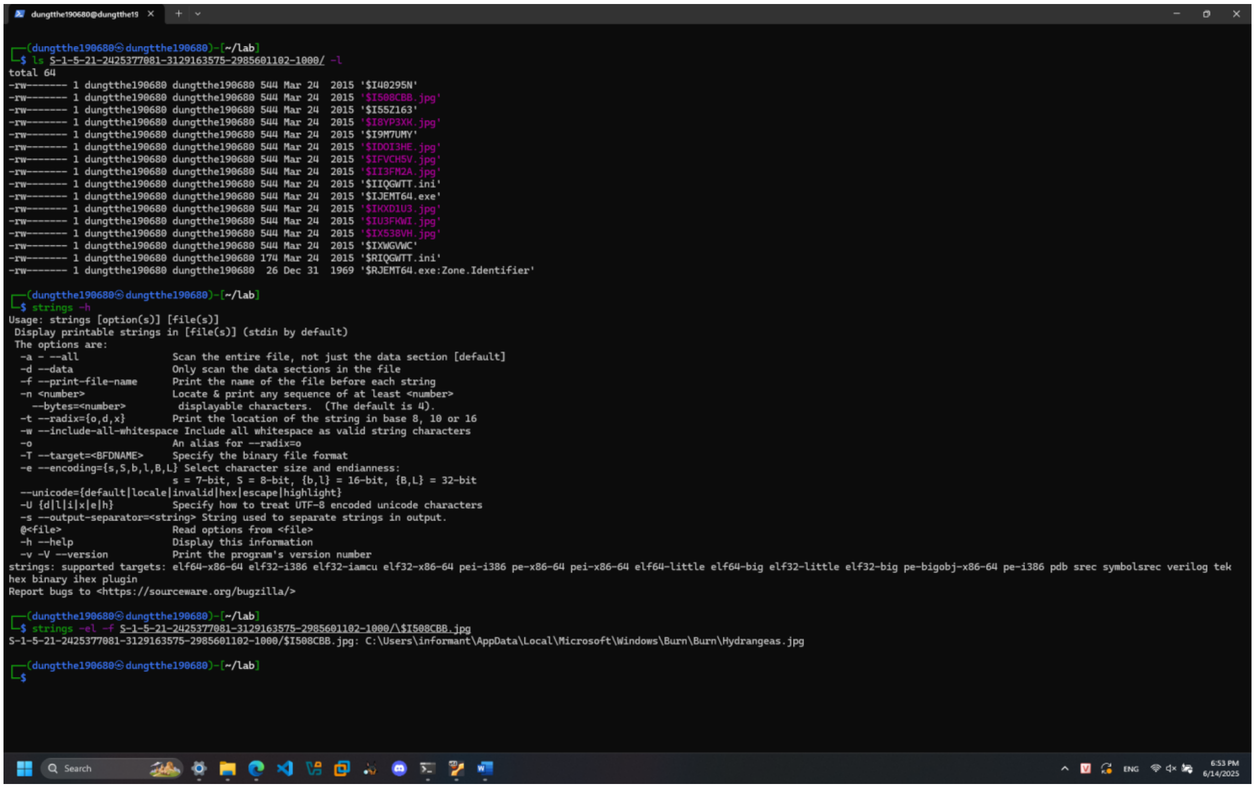
```
TestDisk 7.2, Data Recovery Utility, February 2024
Christophe GRENIER <grenier@cgsecurity.org>
https://www.cgsecurity.org

Disk cfreds_2015_data_leakage_pc.dd - 21 GB / 20 GiB - CHS 2611 255 63

     Partition                  Start        End    Size in sectors
  1 * HPFS - NTFS              0  32 33    12 223 19     204800 [System Reserved]
> 2 P HPFS - NTFS             12 223 20  2610 180  2   41734144




 [  Type  ]  [  Boot  ]  [  List  ] >[Undelete]  [Image Creation]  [  Quit  ]
                                 File undelete
```



```
TestDisk 7.2, Data Recovery Utility, February 2024
Christophe GRENIER <grenier@cgsecurity.org>
https://www.cgsecurity.org
 2 P HPFS - NTFS           12 223 20  2610 180  2   41734144
Deleted files
                                                   Previous
 MSMAPI/1033/mapisvc.inf                                              25-Mar-2015 11:19          0
 PyWinTypes27.dll                                                     25-Mar-2015 11:21     110080
 S-1-5-21-2425377081-3129163575-2985601102-1000/$I40295N              24-Mar-2015 15:51        544
 S-1-5-21-2425377081-3129163575-2985601102-1000/$I508CBB.jpg          24-Mar-2015 16:11        544
 S-1-5-21-2425377081-3129163575-2985601102-1000/$I55Z163              24-Mar-2015 15:51        544
 S-1-5-21-2425377081-3129163575-2985601102-1000/$I8YP3XK.jpg          24-Mar-2015 16:11        544
 S-1-5-21-2425377081-3129163575-2985601102-1000/$I9M7UMY              24-Mar-2015 15:51        544
 S-1-5-21-2425377081-3129163575-2985601102-1000/$IDOI3HE.jpg          24-Mar-2015 16:11        544
 S-1-5-21-2425377081-3129163575-2985601102-1000/$IFVCH5V.jpg          24-Mar-2015 16:11        544
 S-1-5-21-2425377081-3129163575-2985601102-1000/$II3FM2A.jpg          24-Mar-2015 16:11        544
 S-1-5-21-2425377081-3129163575-2985601102-1000/$IIQGWTT.ini          24-Mar-2015 16:11        544
 S-1-5-21-2425377081-3129163575-2985601102-1000/$IJEMT64.exe          24-Mar-2015 16:11        544
 S-1-5-21-2425377081-3129163575-2985601102-1000/$IKXD1U3.jpg          24-Mar-2015 16:11        544
 S-1-5-21-2425377081-3129163575-2985601102-1000/$IU3FKWI.jpg          24-Mar-2015 16:11        544
 S-1-5-21-2425377081-3129163575-2985601102-1000/$IX538VH.jpg          24-Mar-2015 16:11        544
 S-1-5-21-2425377081-3129163575-2985601102-1000/$IXWGVWC              24-Mar-2015 15:51        544
 S-1-5-21-2425377081-3129163575-2985601102-1000/$RIQGWTT.ini          24-Mar-2015 15:57        174
>S-1-5-21-2425377081-3129163575-2985601102-1000/$RJEMT64.exe                                     0
 S-1-5-21-2425377081-3129163575-2985601102-1000/$RJEMT64.exe:Zone.Identifier                    26
 SetupResources.dll                                                   18-Mar-2010 16:16      19288
 SetupResources.dll                                                   18-Mar-2010 16:16      14168
 SetupResources.dll                                                   18-Mar-2010 16:16      14168
 SetupResources.dll                                                   18-Mar-2010 16:16      15192
 SetupResources.dll                                                   18-Mar-2010 16:16      15704
 SetupResources.dll                                                   18-Mar-2010 16:16      16728
 SetupResources.dll                                                   18-Mar-2010 16:16      17752
 SetupResources.dll                                                   18-Mar-2010 16:16      17752
 SetupResources.dll                                                   18-Mar-2010 16:16      17752
 SetupResources.dll                                                   18-Mar-2010 16:16      18264
 SetupResources.dll                                                   18-Mar-2010 16:16      18776
 SetupResources.dll                                                   18-Mar-2010 16:16      18776
 SetupResources.dll                                                   18-Mar-2010 16:16      18776
 SetupResources.dll                                                   18-Mar-2010 16:16      19288
 SetupUi.dll                                                          18-Mar-2010 16:16     295248
 _hashlib.pyd                                                         25-Mar-2015 11:21     713216
 _multiprocessing.pyd                                                 25-Mar-2015 11:21      27136
 _socket.pyd                                                          25-Mar-2015 11:21      45568
 _ssl.pyd                                                             25-Mar-2015 11:21    1161216
 _win32sysloader.pyd                                                  25-Mar-2015 11:21       8192
 _yappi.pyd                                                           25-Mar-2015 11:21      20480
 bz2.pyd                                                              25-Mar-2015 11:21      68608
 gcapi_dll.dll                                                        23-Sep-2014 09:30     216064
 gdi32.dll                                                            25-Mar-2015 11:21     287744
 gtb/toolbar-screenshot.jpg                                           14-Oct-2010 11:18       5329
 gtb/toolbar.html                                                     18-Oct-2010 14:17       1176
 hashobjs_ext.pyd                                                     25-Mar-2015 11:21       7168
 iCloud/Calendar.lnk                                                  23-Mar-2015 16:01       2126
 iCloud/Contacts.lnk                                                  23-Mar-2015 16:01       2126
 iCloud/Find My iPhone.lnk                                            23-Mar-2015 16:01       2126
                                                   Next
Use : to select the current file, a to select/deselect all files,
    C to copy the selected files, c to copy the current file, q to quit
```



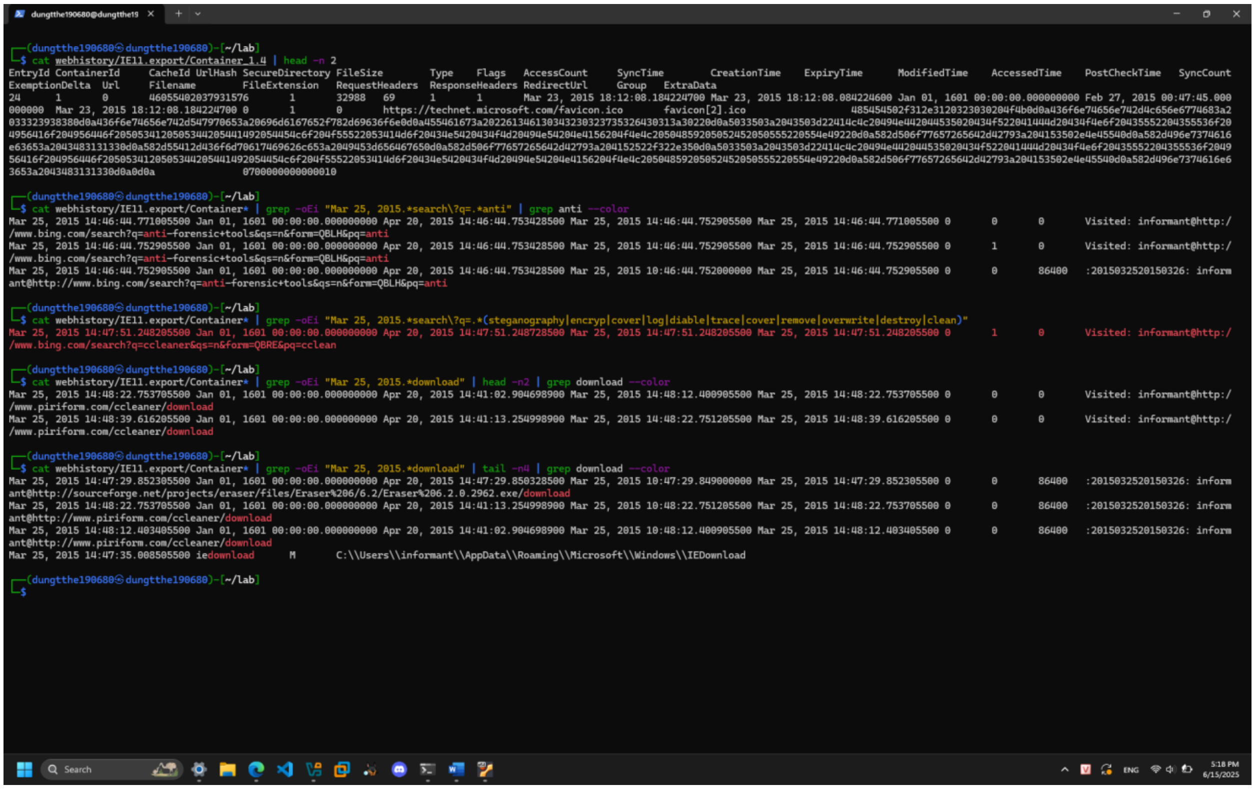
```
TestDisk 7.2, Data Recovery Utility, February 2024

Please select a destination where the marked files will be copied.
Keys: Arrow keys to select another directory
      C when the destination is correct
      Q to quit
Directory /home/dungtthe190680/lab
>drwxrwxr-x  1000  1000        4096  5-Jun-2025 07:05 .
 drwxr-xr-x  1000  1000        4096 14-Jun-2025 07:28 ..
 -rwxr-x---     0     0      262144  5-Jun-2025 06:38 DEFAULT
 -rwxrwx---     0   142      524288  5-Jun-2025 06:54 NTUSER_Admin11.DAT
 -rwxrwx---     0   142      262144  5-Jun-2025 06:55 NTUSER_Default.DAT
 -rwxrwx---     0   142     1048576  5-Jun-2025 06:55 NTUSER_informant.DAT
 -rwxrwx---     0   142      524288  5-Jun-2025 06:56 NTUSER_temporary.DAT
 -rwxr-x---     0     0      262144  5-Jun-2025 06:39 SAM
 -rwxr-x---     0     0      262144  5-Jun-2025 06:39 SECURITY
 -rwxr-x---     0     0    48496640  5-Jun-2025 06:39 SOFTWARE
 -rwxr-x---     0     0    12582912  5-Jun-2025 06:39 SYSTEM
 -rw-rw-r--  1000  1000 21474836480 21-Apr-2015 14:17 cfreds_2015_data_leakage_pc.dd
```



```
┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
└─$ ls S-1-5-21-2425377081-3129163575-2985601102-1000/ -l
total 64
-rw------- 1 dungtthe190680 dungtthe190680 544 Mar 24  2015 '$I40295N'
-rw------- 1 dungtthe190680 dungtthe190680 544 Mar 24  2015 '$I508CBB.jpg'
-rw------- 1 dungtthe190680 dungtthe190680 544 Mar 24  2015 '$I55Z163'
-rw------- 1 dungtthe190680 dungtthe190680 544 Mar 24  2015 '$I8YP3XK.jpg'
-rw------- 1 dungtthe190680 dungtthe190680 544 Mar 24  2015 '$I9M7UMY'
-rw------- 1 dungtthe190680 dungtthe190680 544 Mar 24  2015 '$IDOI3HE.jpg'
-rw------- 1 dungtthe190680 dungtthe190680 544 Mar 24  2015 '$IFVCH5V.jpg'
-rw------- 1 dungtthe190680 dungtthe190680 544 Mar 24  2015 '$II3FM2A.jpg'
-rw------- 1 dungtthe190680 dungtthe190680 544 Mar 24  2015 '$IIQGWTT.ini'
-rw------- 1 dungtthe190680 dungtthe190680 544 Mar 24  2015 '$IJEMT64.exe'
-rw------- 1 dungtthe190680 dungtthe190680 544 Mar 24  2015 '$IKXD1U3.jpg'
-rw------- 1 dungtthe190680 dungtthe190680 544 Mar 24  2015 '$IU3FKWI.jpg'
-rw------- 1 dungtthe190680 dungtthe190680 544 Mar 24  2015 '$IX538VH.jpg'
-rw------- 1 dungtthe190680 dungtthe190680 544 Mar 24  2015 '$IXWGVWC'
-rw------- 1 dungtthe190680 dungtthe190680 174 Mar 24  2015 '$RIQGWTT.ini'
-rw------- 1 dungtthe190680 dungtthe190680  26 Dec 31  1969 '$RJEMT64.exe:Zone.Identifier'

┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
└─$ strings -h
Usage: strings [option(s)] [file(s)]
 Display printable strings in [file(s)] (stdin by default)
 The options are:
  -a - --all                Scan the entire file, not just the data section [default]
  -d --data                 Only scan the data sections in the file
  -f --print-file-name      Print the name of the file before each string
  -n <number>               Locate & print any sequence of at least <number>
    --bytes=<number>         displayable characters.  (The default is 4).
  -t --radix={o,d,x}        Print the location of the string in base 8, 10 or 16
  -w --include-all-whitespace Include all whitespace as valid string characters
  -o                        An alias for --radix=o
  -T --target=<BFDNAME>     Specify the binary file format
  -e --encoding={s,S,b,l,B,L} Select character size and endianness:
                            s = 7-bit, S = 8-bit, {b,l} = 16-bit, {B,L} = 32-bit
  --unicode={default|locale|invalid|hex|escape|highlight}
  -U {d|l|i|x|e|h}          Specify how to treat UTF-8 encoded unicode characters
  -s --output-separator=<string> String used to separate strings in output.
  @<file>                   Read options from <file>
  -h --help                 Display this information
  -v -V --version           Print the program's version number
strings: supported targets: elf64-x86-64 elf32-i386 elf32-iamcu elf32-x86-64 pei-i386 pe-x86-64 pei-x86-64 elf64-little elf64-big elf32-little elf32-big pe-bigobj-x86-64 pe-i386 pdb srec symbolsrec verilog tek
hex binary ihex plugin
Report bugs to <https://sourceware.org/bugzilla/>

┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
└─$ strings -el -f S-1-5-21-2425377081-3129163575-2985601102-1000/\$I508CBB.jpg
S-1-5-21-2425377081-3129163575-2985601102-1000/$I508CBB.jpg: C:\Users\informant\AppData\Local\Microsoft\Windows\Burn\Burn\Hydrangeas.jpg

┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
└─$
```

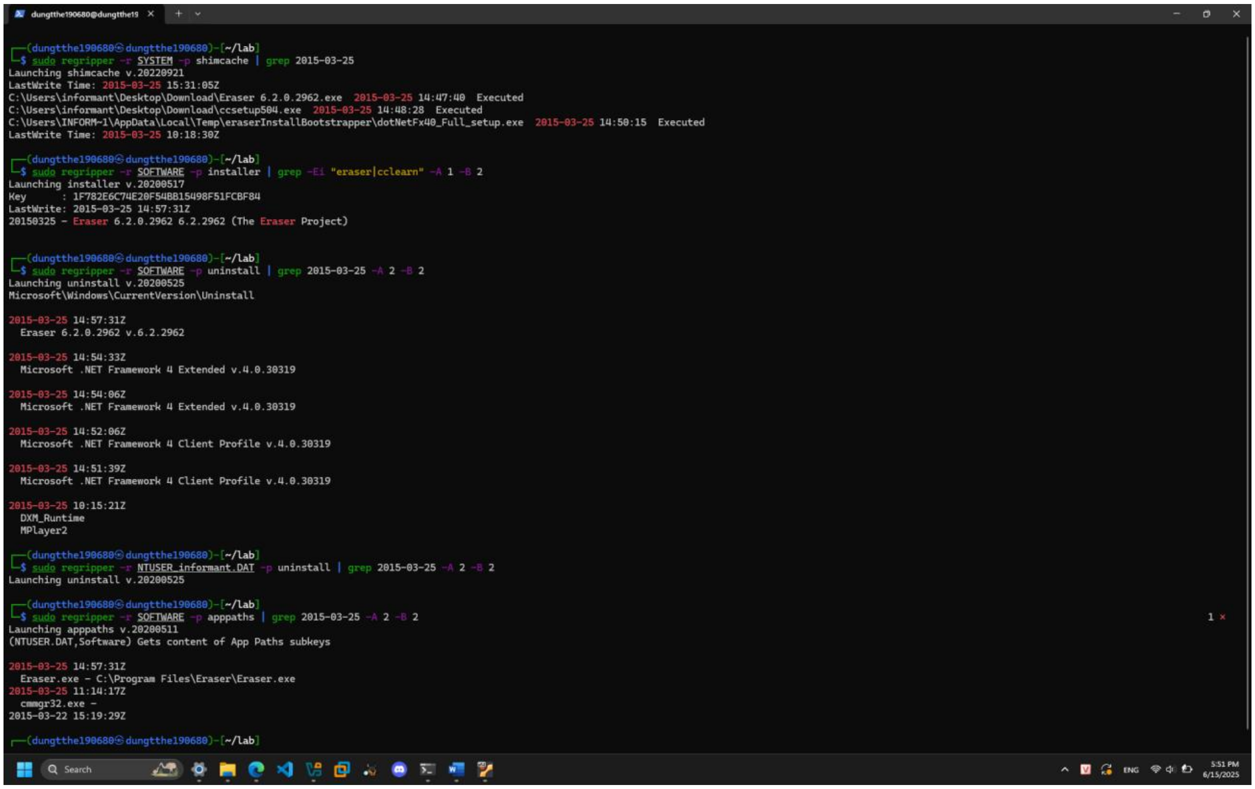
2. What actions were performed for anti-forensics on PC at the last day ‘2015-03-25’?

Step 1 -> Step 2:



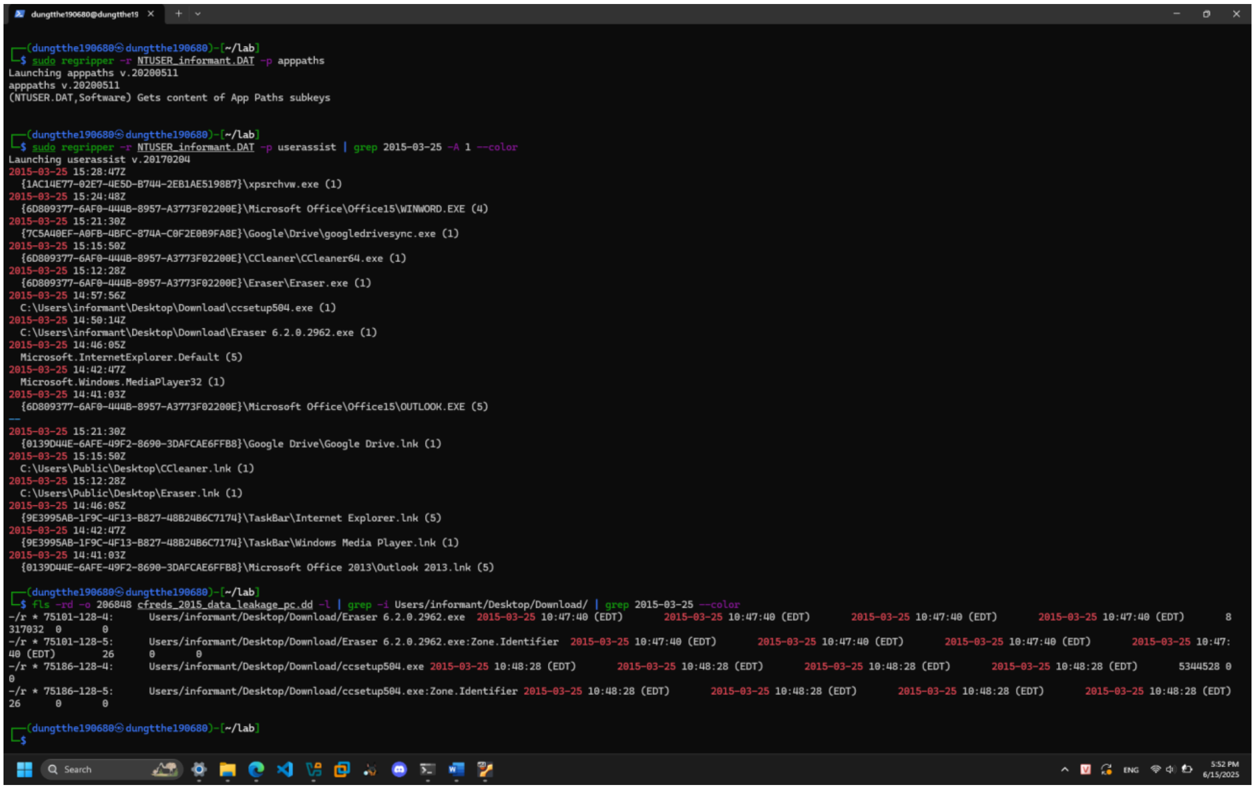
```
┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
└─$ cat webhistory/IE11.export/Container_1.4 | head -n 2
EntryId ContainerId     CacheId UrlHash SecureDirectory FileSize        Type    Flags   AccessCount     SyncTime        CreationTime    ExpiryTime      ModifiedTime    AccessedTime    PostCheckTime   SyncCount
ExemptionDelta  Url     Filename        FileExtension   RequestHeaders  ResponseHeaders RedirectUrl     Group   ExtraData
24      1       0       460554020379315 76      1       32988   69      1       1       Mar 23, 2015 18:12:08.184224700 Mar 23, 2015 18:12:08.084224600 Jan 01, 1601 00:00:00.000000000 Feb 27, 2015 00:47:45.000
000000  Mar 23, 2015 18:12:08.184224700 0       1       0       https://technet.microsoft.com/favicon.ico       favicon[2].ico          485454502f312e3120323030204f4b0d0a436f6e74656e742d4c656e6774683a2
033323938380d0a436f6e74656e742d547970653a20696d6167652f782d69636f6e0d0a455461673a202261346130343230323735326430313a30220d0a5033503a2043503d22414c4c20494e442044535020434f522041444d20434f4e6f20435552204355536f20
4956416f204956446f2050534120505344205441492054454c6f204f55522053414d6f20434e5420434f4d20494e54204e4156204f4e4c20504859205052452050555220554e49220d0a582d506f77657265642d42793a204153502e4e45540d0a582d496e7374616
e63653a2043483131330d0a582d55412d436f6d70617469626c653a2049453d656467650d0a582d506f77657265642d42793a204152522f322e350d0a5033503a2043503d22414c4c20494e442044535020434f522041444d20434f4e6f20435552204355536f2049
56416f204956446f2050534120505344205441492054454c6f204f55522053414d6f20434e5420434f4d20494e54204e4156204f4e4c20504859205052452050555220554e49220d0a582d506f77657265642d42793a204153502e4e45540d0a582d496e7374616e6
3653a2043483131330d0a0d0a                       0700000000000010

┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
└─$ cat webhistory/IE11.export/Container* | grep -oEi "Mar 25, 2015.*search\?q=.*anti" | grep anti --color
Mar 25, 2015 14:46:44.771005500 Jan 01, 1601 00:00:00.000000000 Apr 20, 2015 14:46:44.753428500 Mar 25, 2015 14:46:44.752905500 Mar 25, 2015 14:46:44.771005500 0       0       0       Visited: informant@http:/
/www.bing.com/search?q=anti-forensic+tools&qs=n&form=QBLH&pq=anti
Mar 25, 2015 14:46:44.752905500 Jan 01, 1601 00:00:00.000000000 Apr 20, 2015 14:46:44.753428500 Mar 25, 2015 14:46:44.752905500 Mar 25, 2015 14:46:44.752905500 0       1       0       Visited: informant@http:/
/www.bing.com/search?q=anti-forensic+tools&qs=n&form=QBLH&pq=anti
Mar 25, 2015 14:46:44.752905500 Jan 01, 1601 00:00:00.000000000 Apr 20, 2015 14:46:44.753428500 Mar 25, 2015 10:46:44.752000000 Mar 25, 2015 14:46:44.752905500 0       0       86400   :2015032520150326: inform
ant@http://www.bing.com/search?q=anti-forensic+tools&qs=n&form=QBLH&pq=anti

┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
└─$ cat webhistory/IE11.export/Container* | grep -oEi "Mar 25, 2015.*search\?q=.*(steganography|encryp|cover|log|diable|trace|cover|remove|overwrite|destroy|clean)"
Mar 25, 2015 14:47:51.248205500 Jan 01, 1601 00:00:00.000000000 Apr 20, 2015 14:47:51.248728500 Mar 25, 2015 14:47:51.248205500 Mar 25, 2015 14:47:51.248205500 0       1       0       Visited: informant@http:/
/www.bing.com/search?q=ccleaner&qs=n&form=QBRE&pq=cclean

┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
└─$ cat webhistory/IE11.export/Container* | grep -oEi "Mar 25, 2015.*download" | head -n2 | grep download --color
Mar 25, 2015 14:48:22.753705500 Jan 01, 1601 00:00:00.000000000 Apr 20, 2015 14:41:02.904698900 Mar 25, 2015 14:48:12.400905500 Mar 25, 2015 14:48:22.753705500 0       0       0       Visited: informant@http:/
/www.piriform.com/ccleaner/download
Mar 25, 2015 14:48:39.616205500 Jan 01, 1601 00:00:00.000000000 Apr 20, 2015 14:41:13.254998900 Mar 25, 2015 14:48:22.751205500 Mar 25, 2015 14:48:39.616205500 0       0       0       Visited: informant@http:/
/www.piriform.com/ccleaner/download

┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
└─$ cat webhistory/IE11.export/Container* | grep -oEi "Mar 25, 2015.*download" | tail -n4 | grep download --color
Mar 25, 2015 14:47:29.852305500 Jan 01, 1601 00:00:00.000000000 Apr 20, 2015 14:47:29.850328500 Mar 25, 2015 10:47:29.849000000 Mar 25, 2015 14:47:29.852305500 0       0       86400   :2015032520150326: inform
ant@http://sourceforge.net/projects/eraser/files/Eraser%206/6.2/Eraser%206.2.0.2962.exe/download
Mar 25, 2015 14:48:22.753705500 Jan 01, 1601 00:00:00.000000000 Apr 20, 2015 14:41:13.254998900 Mar 25, 2015 10:48:22.751205500 Mar 25, 2015 14:48:22.753705500 0       0       86400   :2015032520150326: inform
ant@http://www.piriform.com/ccleaner/download
Mar 25, 2015 14:48:12.403405500 Jan 01, 1601 00:00:00.000000000 Apr 20, 2015 14:41:02.904698900 Mar 25, 2015 10:48:12.400905500 Mar 25, 2015 14:48:12.403405500 0       0       86400   :2015032520150326: inform
ant@http://www.piriform.com/ccleaner/download
Mar 25, 2015 14:47:35.008505500 iedownload      M       C:\\Users\\informant\\AppData\\Roaming\\Microsoft\\Windows\\IEDownload

┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
└─$
```

Step 3:

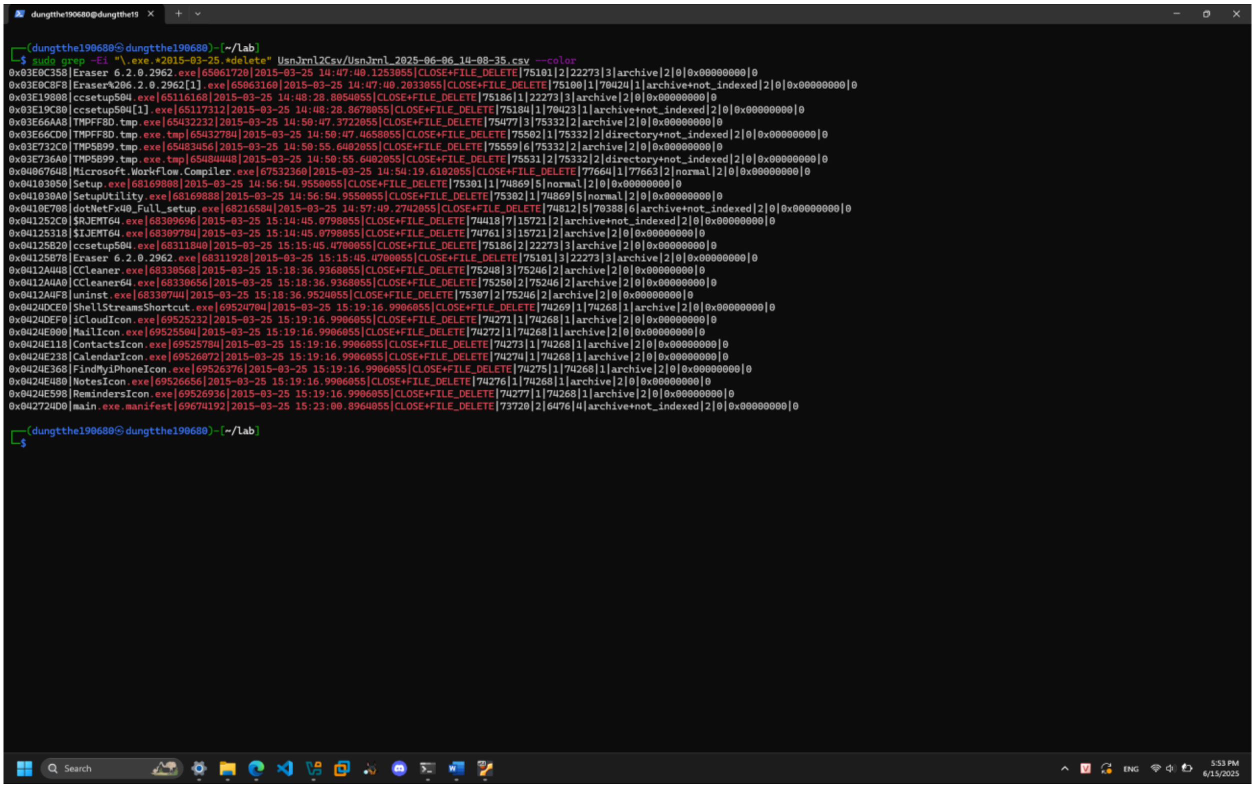


```
┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
└─$ sudo regripper -r SYSTEM -p shimcache | grep 2015-03-25
Launching shimcache v.20220921
LastWrite Time: 2015-03-25 15:31:05Z
C:\Users\informant\Desktop\Download\Eraser 6.2.0.2962.exe  2015-03-25 14:47:40  Executed
C:\Users\informant\Desktop\Download\ccsetup504.exe  2015-03-25 14:48:28  Executed
C:\Users\INFORM~1\AppData\Local\Temp\eraserInstallBootstrapper\dotNetFx40_Full_setup.exe  2015-03-25 14:50:15  Executed
LastWrite Time: 2015-03-25 10:18:30Z

┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
└─$ sudo regripper -r SOFTWARE -p installer | grep -Ei "eraser|cclearn" -A 1 -B 2
Launching installer v.20200517
Key       : 1F782E6C74E20F54BB15498F51FCBF84
LastWrite: 2015-03-25 14:57:31Z
20150325 - Eraser 6.2.0.2962 6.2.2962 (The Eraser Project)


┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
└─$ sudo regripper -r SOFTWARE -p uninstall | grep 2015-03-25 -A 2 -B 2
Launching uninstall v.20200525
Microsoft\Windows\CurrentVersion\Uninstall

2015-03-25 14:57:31Z
  Eraser 6.2.0.2962 v.6.2.2962

2015-03-25 14:54:33Z
  Microsoft .NET Framework 4 Extended v.4.0.30319

2015-03-25 14:54:06Z
  Microsoft .NET Framework 4 Extended v.4.0.30319

2015-03-25 14:52:06Z
  Microsoft .NET Framework 4 Client Profile v.4.0.30319

2015-03-25 14:51:39Z
  Microsoft .NET Framework 4 Client Profile v.4.0.30319

2015-03-25 10:15:21Z
  DXM_Runtime
  MPlayer2

┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
└─$ sudo regripper -r NTUSER_informant.DAT -p uninstall | grep 2015-03-25 -A 2 -B 2
Launching uninstall v.20200525

┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
└─$ sudo regripper -r SOFTWARE -p apppaths | grep 2015-03-25 -A 2 -B 2                                   1 ×
Launching apppaths v.20200511
(NTUSER.DAT,Software) Gets content of App Paths subkeys

2015-03-25 14:57:31Z
  Eraser.exe - C:\Program Files\Eraser\Eraser.exe
2015-03-25 11:14:17Z
  cmmgr32.exe -
2015-03-22 15:19:29Z

┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
```

Step 4 -> Step 5:



```
┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
└─$ sudo regripper -r NTUSER_informant.DAT -p apppaths
Launching apppaths v.20200511
apppaths v.20200511
(NTUSER.DAT,Software) Gets content of App Paths subkeys


┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
└─$ sudo regripper -r NTUSER_informant.DAT -p userassist | grep 2015-03-25 -A 1 --color
Launching userassist v.20170204
2015-03-25 15:28:47Z
  {1AC14E77-02E7-4E5D-B744-2EB1AE5198B7}\xpsrchvw.exe (1)
2015-03-25 15:24:48Z
  {6D809377-6AF0-444B-8957-A3773F02200E}\Microsoft Office\Office15\WINWORD.EXE (4)
2015-03-25 15:21:30Z
  {7C5A40EF-A0FB-4BFC-874A-C0F2E0B9FA8E}\Google\Drive\googledrivesync.exe (1)
2015-03-25 15:15:50Z
  {6D809377-6AF0-444B-8957-A3773F02200E}\CCleaner\CCleaner64.exe (1)
2015-03-25 15:12:28Z
  {6D809377-6AF0-444B-8957-A3773F02200E}\Eraser\Eraser.exe (1)
2015-03-25 14:57:56Z
  C:\Users\informant\Desktop\Download\ccsetup504.exe (1)
2015-03-25 14:50:14Z
  C:\Users\informant\Desktop\Download\Eraser 6.2.0.2962.exe (1)
2015-03-25 14:46:05Z
  Microsoft.InternetExplorer.Default (5)
2015-03-25 14:42:47Z
  Microsoft.Windows.MediaPlayer32 (1)
2015-03-25 14:41:03Z
  {6D809377-6AF0-444B-8957-A3773F02200E}\Microsoft Office\Office15\OUTLOOK.EXE (5)
--
2015-03-25 15:21:30Z
  {0139D44E-6AFE-49F2-8690-3DAFCAE6FFB8}\Google Drive\Google Drive.lnk (1)
2015-03-25 15:15:50Z
  C:\Users\Public\Desktop\CCleaner.lnk (1)
2015-03-25 15:12:28Z
  C:\Users\Public\Desktop\Eraser.lnk (1)
2015-03-25 14:46:05Z
  {9E3995AB-1F9C-4F13-B827-48B24B6C7174}\TaskBar\Internet Explorer.lnk (5)
2015-03-25 14:42:47Z
  {9E3995AB-1F9C-4F13-B827-48B24B6C7174}\TaskBar\Windows Media Player.lnk (1)
2015-03-25 14:41:03Z
  {0139D44E-6AFE-49F2-8690-3DAFCAE6FFB8}\Microsoft Office 2013\Outlook 2013.lnk (5)

┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
└─$ fls -rd -o 206848 cfreds_2015_data_leakage_pc.dd -l | grep -i Users/informant/Desktop/Download/ | grep 2015-03-25 --color
-/r * 75101-128-4:      Users/informant/Desktop/Download/Eraser 6.2.0.2962.exe  2015-03-25 10:47:40 (EDT)       2015-03-25 10:47:40 (EDT)       2015-03-25 10:47:40 (EDT)       2015-03-25 10:47:40 (EDT)       8
317032  0       0
-/r * 75101-128-5:      Users/informant/Desktop/Download/Eraser 6.2.0.2962.exe:Zone.Identifier  2015-03-25 10:47:40 (EDT)       2015-03-25 10:47:40 (EDT)       2015-03-25 10:47:40 (EDT)       2015-03-25 10:47:
40 (EDT)        26      0       0
-/r * 75186-128-4:      Users/informant/Desktop/Download/ccsetup504.exe 2015-03-25 10:48:28 (EDT)       2015-03-25 10:48:28 (EDT)       2015-03-25 10:48:28 (EDT)       2015-03-25 10:48:28 (EDT)       5344528 0
0
-/r * 75186-128-5:      Users/informant/Desktop/Download/ccsetup504.exe:Zone.Identifier 2015-03-25 10:48:28 (EDT)       2015-03-25 10:48:28 (EDT)       2015-03-25 10:48:28 (EDT)       2015-03-25 10:48:28 (EDT)
26      0       0

┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
└─$
```



```
┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
└─$ sudo grep -Ei "\.exe.*2015-03-25.*delete" UsnJrnl2Csv/UsnJrnl_2025-06-06_14-08-35.csv --color
0x03E0C358|Eraser 6.2.0.2962.exe|65061720|2015-03-25 14:47:40.1253055|CLOSE+FILE_DELETE|75101|2|22273|3|archive|2|0|0x00000000|0
0x03E0C8F8|Eraser%206.2.0.2962[1].exe|65063160|2015-03-25 14:47:40.2033055|CLOSE+FILE_DELETE|75100|1|70424|1|archive+not_indexed|2|0|0x00000000|0
0x03E19808|ccsetup504.exe|65116168|2015-03-25 14:48:28.8054055|CLOSE+FILE_DELETE|75186|1|22273|3|archive|2|0|0x00000000|0
0x03E19C80|ccsetup504[1].exe|65117312|2015-03-25 14:48:28.8678055|CLOSE+FILE_DELETE|75184|1|70423|1|archive+not_indexed|2|0|0x00000000|0
0x03E66AA8|TMPFF8D.tmp.exe|65432232|2015-03-25 14:50:47.3722055|CLOSE+FILE_DELETE|75477|3|75332|2|archive|2|0|0x00000000|0
0x03E66CD0|TMPFF8D.tmp.exe.tmp|65432784|2015-03-25 14:50:47.4658055|CLOSE+FILE_DELETE|75502|1|75332|2|directory+not_indexed|2|0|0x00000000|0
0x03E732C0|TMP5B99.tmp.exe|65483456|2015-03-25 14:50:55.6402055|CLOSE+FILE_DELETE|75559|6|75332|2|archive|2|0|0x00000000|0
0x03E736A0|TMP5B99.tmp.exe.tmp|65484448|2015-03-25 14:50:55.6402055|CLOSE+FILE_DELETE|75531|2|75332|2|directory+not_indexed|2|0|0x00000000|0
0x04067648|Microsoft.Workflow.Compiler.exe|67532360|2015-03-25 14:54:19.6102055|CLOSE+FILE_DELETE|77664|1|77663|2|normal|2|0|0x00000000|0
0x04103050|Setup.exe|68169808|2015-03-25 14:56:54.9550055|CLOSE+FILE_DELETE|75301|1|74869|5|normal|2|0|0x00000000|0
0x041030A0|SetupUtility.exe|68169888|2015-03-25 14:56:54.9550055|CLOSE+FILE_DELETE|75302|1|74869|5|normal|2|0|0x00000000|0
0x0410E708|dotNetFx40_Full_setup.exe|68216584|2015-03-25 14:57:49.2742055|CLOSE+FILE_DELETE|74812|5|70388|6|archive+not_indexed|2|0|0x00000000|0
0x041252C0|$RJEMT64.exe|68309696|2015-03-25 15:14:45.0798055|CLOSE+FILE_DELETE|74418|7|15721|2|archive+not_indexed|2|0|0x00000000|0
0x04125318|$IJEMT64.exe|68309784|2015-03-25 15:14:45.0798055|CLOSE+FILE_DELETE|74761|3|15721|2|archive|2|0|0x00000000|0
0x04125B20|ccsetup504.exe|68311840|2015-03-25 15:15:45.4700055|CLOSE+FILE_DELETE|75186|2|22273|3|archive|2|0|0x00000000|0
0x04125B78|Eraser 6.2.0.2962.exe|68311928|2015-03-25 15:15:45.4700055|CLOSE+FILE_DELETE|75101|3|22273|3|archive|2|0|0x00000000|0
0x0412A448|CCleaner.exe|68330568|2015-03-25 15:18:36.9368055|CLOSE+FILE_DELETE|75248|3|75246|2|archive|2|0|0x00000000|0
0x0412A4A0|CCleaner64.exe|68330656|2015-03-25 15:18:36.9368055|CLOSE+FILE_DELETE|75250|2|75246|2|archive|2|0|0x00000000|0
0x0412A4F8|uninst.exe|68330744|2015-03-25 15:18:36.9524055|CLOSE+FILE_DELETE|75307|2|75246|2|archive|2|0|0x00000000|0
0x0424DCE0|ShellStreamsShortcut.exe|69524704|2015-03-25 15:19:16.9906055|CLOSE+FILE_DELETE|74269|1|74268|1|archive|2|0|0x00000000|0
0x0424DEF0|iCloudIcon.exe|69525232|2015-03-25 15:19:16.9906055|CLOSE+FILE_DELETE|74271|1|74268|1|archive|2|0|0x00000000|0
0x0424E000|MailIcon.exe|69525504|2015-03-25 15:19:16.9906055|CLOSE+FILE_DELETE|74272|1|74268|1|archive|2|0|0x00000000|0
0x0424E118|ContactsIcon.exe|69525784|2015-03-25 15:19:16.9906055|CLOSE+FILE_DELETE|74273|1|74268|1|archive|2|0|0x00000000|0
0x0424E238|CalendarIcon.exe|69526072|2015-03-25 15:19:16.9906055|CLOSE+FILE_DELETE|74274|1|74268|1|archive|2|0|0x00000000|0
0x0424E368|FindMyiPhoneIcon.exe|69526376|2015-03-25 15:19:16.9906055|CLOSE+FILE_DELETE|74275|1|74268|1|archive|2|0|0x00000000|0
0x0424E480|NotesIcon.exe|69526656|2015-03-25 15:19:16.9906055|CLOSE+FILE_DELETE|74276|1|74268|1|archive|2|0|0x00000000|0
0x0424E598|RemindersIcon.exe|69526936|2015-03-25 15:19:16.9906055|CLOSE+FILE_DELETE|74277|1|74268|1|archive|2|0|0x00000000|0
0x042724D0|main.exe.manifest|69674192|2015-03-25 15:23:00.8964055|CLOSE+FILE_DELETE|73720|2|6476|4|archive+not_indexed|2|0|0x00000000|0

┌──(dungtthe190680㉿dungtthe190680)-[~/lab]
└─$
```

$I Name	Timestamp Deleted	Original File (or Directory) Path
$I40295N	2015-03-24 15:51:47	C:\Users\informant\AppData\Local\Microsoft\Windows\Burn\Burn\prop
$I508CBB.jpg	2015-03-24 16:11:42	C:\Users\informant\AppData\Local\Microsoft\Windows\Burn\Burn\Hydrangeas.jpg
$I55Z163	2015-03-24 15:51:47	C:\Users\informant\AppData\Local\Microsoft\Windows\Burn\Burn\pd
$I8YP3XK.jpg	2015-03-24 16:11:42	C:\Users\informant\AppData\Local\Microsoft\Windows\Burn\Burn\Jellyfish.jpg
$I9M7UMY	2015-03-24 15:51:47	C:\Users\informant\AppData\Local\Microsoft\Windows\Burn\Burn\tr
$IDOI3HE.jpg	2015-03-24 16:11:42	C:\Users\informant\AppData\Local\Microsoft\Windows\Burn\Burn\Tulips.jpg
$IFVCH5V.jpg	2015-03-24 16:11:42	C:\Users\informant\AppData\Local\Microsoft\Windows\Burn\Burn\Penguins.jpg
$II3FM2A.jpg	2015-03-24 16:11:42	C:\Users\informant\AppData\Local\Microsoft\Windows\Burn\Burn\Desert.jpg

$IIQGWTT.ini	2015-03-24 16:11:42	C:\Users\informant\AppData\Local\Microsoft\Windows\Burn\Burn\desktop.ini
$IJEMT64.exe	2015-03-24 16:11:42	C:\Users\informant\AppData\Local\Microsoft\Windows\Burn\Burn\IE11-Windows6.1-x64-en-us.exe
$IKXD1U3.jpg	2015-03-24 16:11:42	C:\Users\informant\AppData\Local\Microsoft\Windows\Burn\Burn\Chrysanthemum.jpg
$IU3FKWI.jpg	2015-03-24 16:11:42	C:\Users\informant\AppData\Local\Microsoft\Windows\Burn\Burn\Koala.jpg
$IX538VH.jpg	2015-03-24 16:11:42	C:\Users\informant\AppData\Local\Microsoft\Windows\Burn\Burn\Lighthouse.jpg
$IXWGVWC	2015-03-24 15:51:47	C:\Users\informant\AppData\Local\Microsoft\Windows\Burn\Burn\prog

Timestamp	Behavior	Description
2015-03-25 14:46:44	Search	anti-forensic tools
2015-03-25 14:47:51	Search	ccleaner
2015-03-25 14:47:29	Download	Eraser
2015-03-25 14:48:21	Download	ccleaner
2015-03-25 14:47:40	Install	Eraser
2015-03-25 14:48:28	Install	ccleaner
2015-03-25 15:12:28	Execute	Eraser
2015-03-25 15:15:50	Execute	ccleaner
2015-03-25 15:47:40	Delete	Eraser
2015-03-25 15:48:28	Delete	ccleaner