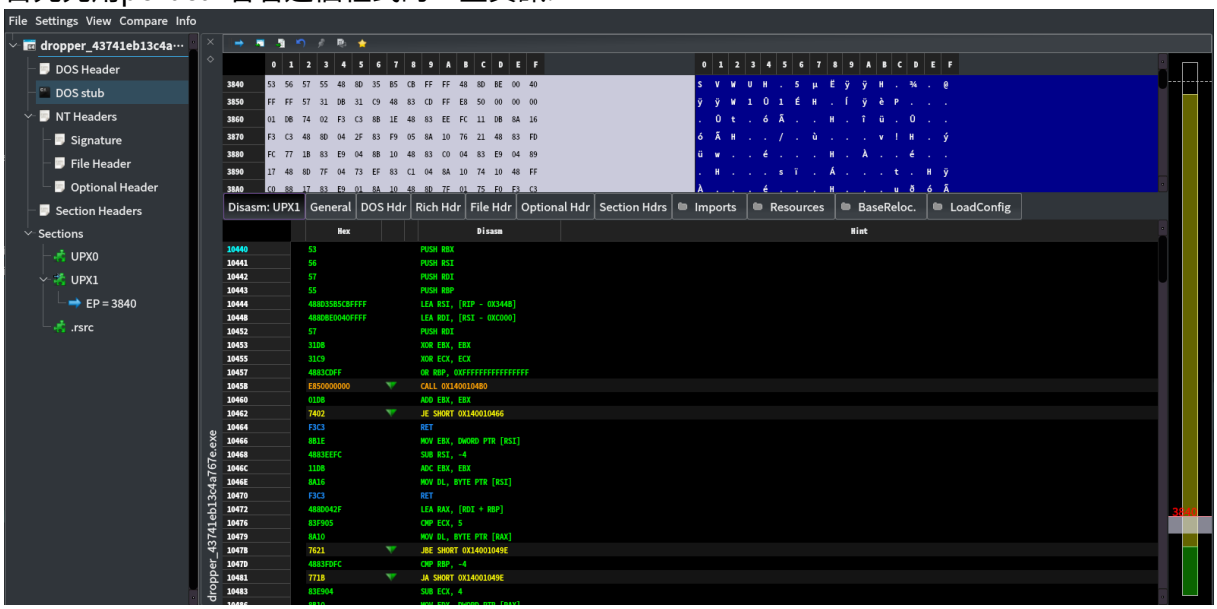
## dropper

首先先用pe-bear看看這個程式的一些資訊:




這邊看到比較有用的資訊是他是被UPX加殼過的，因此先把殼解開再反組譯才看得到原本的程式。

## UPX

使用upx把殼解開:

```
$ upx -d dropper_43741eb13c4a767e.exe -o dropper
                       Ultimate Packer for eXecutables
                          Copyright (C) 1996 - 2020
UPX 3.96        Markus Oberhumer, Laszlo Molnar & John Reiser   Jan 23rd 2020

        File size         Ratio      Format      Name
   --------------------   ------   -----------   -----------
     39424 <-     16896   42.86%    win64/pe     dropper

Unpacked 1 file.
```

### reverse

首先看到main function(太長了沒辦法截圖):

```
void main(void)

{
  int iVar1;
  undefined auStack1592 [32];
  undefined8 local_618;
  uint *local_610;
  uint local_608;
  longlong *buf;
  code *local_5f0;
  char *local_5e8;
  undefined8 *local_5e0;
  code *local_5d8;
  code *local_5d0;
  code *local_5c8;
  code *local_5c0;
  undefined8 *local_5b8;
  void **local_5b0;
  undefined8 *local_5a8;
  void **local_5a0;
  void **local_598;
  void **local_590;
  void **local_588;
  undefined8 *local_580;
  void **local_578;
  void **local_570;
  undefined8 *local_568;
  void **local_560;
  undefined8 *local_558;
  void **local_550;
  void **local_548;
  undefined8 *local_540;
  void **local_538;
  undefined8 *local_530;
  code *local_528;
  void **local_520;
  undefined8 *local_518;
  void **local_510;
  undefined8 *local_508;
  void **local_500;
  void **local_4f8;
  undefined8 *local_4f0;
```

```
void **local_4e8;
undefined8 *local_4e0;
void **local_4d8;
void **local_4d0;
undefined8 *local_4c8;
void **local_4c0;
undefined8 *local_4b8;
void **local_4b0;
void **local_4a8;
undefined8 *local_4a0;
void **local_498;
undefined8 *local_490;
void **local_488;
void **local_480;
undefined8 *local_478;
void **local_470;
undefined8 *local_468;
void **local_460;
void **local_458;
undefined8 *local_450;
void **local_448;
undefined8 *local_440;
void **local_438;
void **local_430;
undefined8 *local_428;
void **local_420;
undefined8 *local_418;
void **local_410;
void **local_408;
code *local_400;
code *local_3f8;
code *local_3f0;
code *local_3e8;
code *local_3e0;
undefined8 local_3d8 [4];
undefined8 local_3b8 [4];
undefined8 local_398 [4];
undefined8 local_378 [4];
undefined8 local_358 [4];
undefined8 local_338 [4];
undefined8 local_318 [4];
undefined8 local_2f8 [4];
```

```
undefined8 local_2d8 [4];
undefined8 local_2b8 [4];
undefined8 local_298 [4];
undefined8 local_278 [4];
undefined8 local_258 [4];
undefined8 local_238 [4];
undefined8 local_218 [4];
undefined8 local_1f8 [4];
undefined8 local_1d8 [4];
undefined8 local_1b8 [4];
undefined8 local_198 [4];
undefined8 local_178 [4];
undefined8 local_158 [4];
undefined8 local_138 [4];
uint local_118 [2];
undefined8 local_110;
undefined advapi32dll;
undefined local_107;
undefined local_106;
undefined local_105;
undefined local_104;
undefined local_103;
undefined local_102;
undefined local_101;
undefined local_100;
undefined local_ff;
undefined local_fe;
undefined local_fd;
undefined local_fc;
undefined Sleep;
undefined local_f7;
undefined local_f6;
undefined local_f5;
undefined local_f4;
undefined local_f3;
undefined kernel32dll;
undefined local_ef;
undefined local_ee;
undefined local_ed;
undefined local_ec;
undefined local_eb;
undefined local_ea;
```

```
undefined local_e9;
undefined local_e8;
undefined local_e7;
undefined local_e6;
undefined local_e5;
undefined local_e4;
undefined RegCloseKey;
undefined local_df;
undefined local_de;
undefined local_dd;
undefined local_dc;
undefined local_db;
undefined local_da;
undefined local_d9;
undefined local_d8;
undefined local_d7;
undefined local_d6;
undefined local_d5;
undefined CryptEncrypt;
undefined local_cf;
undefined local_ce;
undefined local_cd;
undefined local_cc;
undefined local_cb;
undefined local_ca;
undefined local_c9;
undefined local_c8;
undefined local_c7;
undefined local_c6;
undefined local_c5;
undefined local_c4;
undefined GetLastError;
undefined local_bf;
undefined local_be;
undefined local_bd;
undefined local_bc;
undefined local_bb;
undefined local_ba;
undefined local_b9;
undefined local_b8;
undefined local_b7;
undefined local_b6;
```

```
undefined local_b5;
undefined local_b4;
undefined CryptHashData;
undefined local_af;
undefined local_ae;
undefined local_ad;
undefined local_ac;
undefined local_ab;
undefined local_aa;
undefined local_a9;
undefined local_a8;
undefined local_a7;
undefined local_a6;
undefined local_a5;
undefined local_a4;
undefined local_a3;
undefined RegCreateKeyA;
undefined local_9f;
undefined local_9e;
undefined local_9d;
undefined local_9c;
undefined local_9b;
undefined local_9a;
undefined local_99;
undefined local_98;
undefined local_97;
undefined local_96;
undefined local_95;
undefined local_94;
undefined local_93;
undefined RegSetValueExA;
undefined local_8f;
undefined local_8e;
undefined local_8d;
undefined local_8c;
undefined local_8b;
undefined local_8a;
undefined local_89;
undefined local_88;
undefined local_87;
undefined local_86;
undefined local_85;
```

```
undefined local_84;
undefined local_83;
undefined local_82;
undefined CryptDeriveKey;
undefined local_7f;
undefined local_7e;
undefined local_7d;
undefined local_7c;
undefined local_7b;
undefined local_7a;
undefined local_79;
undefined local_78;
undefined local_77;
undefined local_76;
undefined local_75;
undefined local_74;
undefined local_73;
undefined local_72;
undefined CryptCreateHash;
undefined local_6f;
undefined local_6e;
undefined local_6d;
undefined local_6c;
undefined local_6b;
undefined local_6a;
undefined local_69;
undefined local_68;
undefined local_67;
undefined local_66;
undefined local_65;
undefined local_64;
undefined local_63;
undefined local_62;
undefined local_61;
undefined CryptDestroyHash;
undefined local_5f;
undefined local_5e;
undefined local_5d;
undefined local_5c;
undefined local_5b;
undefined local_5a;
undefined local_59;
```

```
undefined local_58;
undefined local_57;
undefined local_56;
undefined local_55;
undefined local_54;
undefined local_53;
undefined local_52;
undefined local_51;
undefined local_50;
undefined CryptAcquireContextW;
undefined local_47;
undefined local_46;
undefined local_45;
undefined local_44;
undefined local_43;
undefined local_42;
undefined local_41;
undefined local_40;
undefined local_3f;
undefined local_3e;
undefined local_3d;
undefined local_3c;
undefined local_3b;
undefined local_3a;
undefined local_39;
undefined local_38;
undefined local_37;
undefined local_36;
undefined local_35;
undefined local_34;
longlong local_30;
undefined8 local_28;
longlong local_20;
ulonglong canary;

canary = DAT_14000b010 ^ (ulonglong)auStack1592;
local_28 = 0;
local_118[0] = 0;
buf = (longlong *)0x0;
local_5e8 = "CS_2022";
                    // Advapi32.dll
advapi32dll = 0xbe;
```

```
local_107 = 0x9a;
local_106 = 0x8b;
local_105 = 0x9d;
local_104 = 0x8b;
local_103 = 0x93;
local_102 = 0xca;
local_101 = 0xca;
local_100 = 0xd9;
local_ff = 0x92;
local_fe = 0x99;
local_fd = 0x98;
local_fc = 0xf3;
xor((longlong)&advapi32dll,0xd);
                    // Kernel32.dll
kernel32dll = 0xb4;
local_ef = 0x9b;
local_ee = 0x8f;
local_ed = 0x92;
local_ec = 0x9e;
local_eb = 0x96;
local_ea = 0xca;
local_e9 = 0xca;
local_e8 = 0xd9;
local_e7 = 0x92;
local_e6 = 0x99;
local_e5 = 0x98;
local_e4 = 0xf3;
xor((longlong)&kernel32dll,0xd);
                    // CryptAcquireContextW
CryptAcquireContextW = 0xbc;
local_47 = 0x8c;
local_46 = 0x84;
local_45 = 0x8c;
local_44 = 0x8f;
local_43 = 0xbb;
local_42 = 0x9a;
local_41 = 0x89;
local_40 = 0x82;
local_3f = 0x9f;
local_3e = 0x87;
local_3d = 0x91;
local_3c = 0xb0;
```

```
local_3b = 0x9d;
local_3a = 0x9f;
local_39 = 0x84;
local_38 = 0x8a;
local_37 = 0x96;
local_36 = 0x99;
local_35 = 0xbb;
local_34 = 0xeb;
xor((longlong)&CryptAcquireContextW,0x15);
local_5b8 = local_1f8;
local_5a8 = local_1d8;
local_5b0 = (void **)pass_str(local_5b8,&CryptAcquireContextW);
local_5a0 = local_5b0;
local_598 = (void **)pass_str(local_5a8,&advapi32dll);
local_5f0 = (code *)FUN_140001a00(local_598,local_5a0);
                    // GetLastError
GetLastError = 0xb8;
local_bf = 0x9b;
local_be = 0x89;
local_bd = 0xb0;
local_bc = 0x9a;
local_bb = 0x89;
local_ba = 0x8d;
local_b9 = 0xbd;
local_b8 = 0x85;
local_b7 = 0x84;
local_b6 = 0x9a;
local_b5 = 0x86;
local_b4 = 0xf3;
xor((longlong)&GetLastError,0xd);
local_5e0 = local_3d8;
local_580 = local_218;
local_588 = (void **)pass_str(local_5e0,&GetLastError);
local_578 = local_588;
local_570 = (void **)pass_str(local_580,&kernel32dll);
local_400 = (code *)FUN_140001a00(local_570,local_578);
                    // CryptCreateHash
CryptCreateHash = 0xbc;
local_6f = 0x8c;
local_6e = 0x84;
local_6d = 0x8c;
local_6c = 0x8f;
```

```
local_6b = 0xb9;
local_6a = 0x8b;
local_69 = 0x9d;
local_68 = 0x96;
local_67 = 0x82;
local_66 = 0x90;
local_65 = 0xbc;
local_64 = 0x92;
local_63 = 0x81;
local_62 = 0x99;
local_61 = 0xf0;
xor((longlong)&CryptCreateHash,0x10);
local_568 = local_238;
local_558 = local_258;
local_560 = (void **)pass_str(local_568,&CryptCreateHash);
local_550 = local_560;
local_548 = (void **)pass_str(local_558,&advapi32dll);
local_3f8 = (code *)FUN_140001a00(local_548,local_550);
                    // CryptHashData
CryptHashData = 0xbc;
local_af = 0x8c;
local_ae = 0x84;
local_ad = 0x8c;
local_ac = 0x8f;
local_ab = 0xb2;
local_aa = 0x98;
local_a9 = 0x8b;
local_a8 = 0x9f;
local_a7 = 0xb2;
local_a6 = 0x94;
local_a5 = 0x80;
local_a4 = 0x92;
local_a3 = 0xf2;
xor((longlong)&CryptHashData,0xe);
local_540 = local_278;
local_530 = local_2b8;
local_590 = (void **)pass_str(local_540,&CryptHashData);
local_538 = local_590;
local_520 = (void **)pass_str(local_530,&advapi32dll);
local_3f0 = (code *)FUN_140001a00(local_520,local_590);
                    // CryptDeriveKey
CryptDeriveKey = 0xbc;
```

```
  local_7f = 0x8c;
  local_7e = 0x84;
  local_7d = 0x8c;
  local_7c = 0x8f;
  local_7b = 0xbe;
  local_7a = 0x9c;
  local_79 = 0x8a;
  local_78 = 0x9e;
  local_77 = 0x80;
  local_76 = 0x90;
  local_75 = 0xbf;
  local_74 = 0x96;
  local_73 = 0x8b;
  local_72 = 0xf1;
  xor((longlong)&CryptDeriveKey,0xf);
  local_518 = local_298;
  local_508 = local_2f8;
  local_510 = (void **)pass_str(local_518,&CryptDeriveKey);
  local_500 = local_510;
  local_4f8 = (void **)pass_str(local_508,&advapi32dll);
  local_3e8 = (code *)FUN_140001a00(local_4f8,local_500);
                    // CryptDestroyHash
  CryptDestroyHash = 0xbc;
  local_5f = 0x8c;
  local_5e = 0x84;
  local_5d = 0x8c;
  local_5c = 0x8f;
  local_5b = 0xbe;
  local_5a = 0x9c;
  local_59 = 0x8b;
  local_58 = 0x83;
  local_57 = 0x84;
  local_56 = 0x9a;
  local_55 = 0x8d;
  local_54 = 0xbb;
  local_53 = 0x93;
  local_52 = 0x82;
  local_51 = 0x98;
  local_50 = 0xef;
  xor((longlong)&CryptDestroyHash,0x11);
  local_4f0 = local_318;
  local_4e0 = local_338;
```

```
local_4e8 = (void **)pass_str(local_4f0,&CryptDestroyHash);
local_4d8 = local_4e8;
local_4d0 = (void **)pass_str(local_4e0,&advapi32dll);
local_3e0 = (code *)FUN_140001a00(local_4d0,local_4d8);
                    // CryptEncrypt
CryptEncrypt = 0xbc;
local_cf = 0x8c;
local_ce = 0x84;
local_cd = 0x8c;
local_cc = 0x8f;
local_cb = 0xbf;
local_ca = 0x97;
local_c9 = 0x9b;
local_c8 = 0x85;
local_c7 = 0x8f;
local_c6 = 0x85;
local_c5 = 0x80;
local_c4 = 0xf3;
xor((longlong)&CryptEncrypt,0xd);
local_4c8 = local_358;
local_4b8 = local_378;
local_4c0 = (void **)pass_str(local_4c8,&CryptEncrypt);
local_4b0 = local_4c0;
local_4a8 = (void **)pass_str(local_4b8,&advapi32dll);
local_5d0 = (code *)FUN_140001a00(local_4a8,local_4b0);
                    // RegCreateKeyA
RegCreateKeyA = 0xad;
local_9f = 0x9b;
local_9e = 0x9a;
local_9d = 0xbf;
local_9c = 0x89;
local_9b = 0x9f;
local_9a = 0x98;
local_99 = 0x8c;
local_98 = 0x92;
local_97 = 0xbd;
local_96 = 0x90;
local_95 = 0x8d;
local_94 = 0xb2;
local_93 = 0xf2;
xor((longlong)&RegCreateKeyA,0xe);
local_4a0 = local_398;
```

```
local_490 = local_3b8;
local_498 = (void **)pass_str(local_4a0,&RegCreateKeyA);
local_488 = local_498;
local_480 = (void **)pass_str(local_490,&advapi32dll);
local_5c8 = (code *)FUN_140001a00(local_480,local_488);
                    // RegSetValueExA
RegSetValueExA = 0xad;
local_8f = 0x9b;
local_8e = 0x9a;
local_8d = 0xaf;
local_8c = 0x9e;
local_8b = 0x8e;
local_8a = 0xaf;
local_89 = 0x99;
local_88 = 0x9b;
local_87 = 0x83;
local_86 = 0x90;
local_85 = 0xb1;
local_84 = 0x8b;
local_83 = 0xb3;
local_82 = 0xf1;
xor((longlong)&RegSetValueExA,0xf);
local_478 = local_1b8;
local_468 = local_198;
local_470 = (void **)pass_str(local_478,&RegSetValueExA);
local_460 = local_470;
local_458 = (void **)pass_str(local_468,&advapi32dll);
local_5c0 = (code *)FUN_140001a00(local_458,local_460);
                    // RegCloseKey
RegCloseKey = 0xad;
local_df = 0x9b;
local_de = 0x9a;
local_dd = 0xbf;
local_dc = 0x97;
local_db = 0x95;
local_da = 0x8a;
local_d9 = 0x9d;
local_d8 = 0xbc;
local_d7 = 0x93;
local_d6 = 0x8c;
local_d5 = 0xf4;
xor((longlong)&RegCloseKey,0xc);
```

```
local_450 = local_178;
local_440 = local_158;
local_448 = (void **)pass_str(local_450,&RegCloseKey);
local_438 = local_448;
local_430 = (void **)pass_str(local_440,&advapi32dll);
local_528 = (code *)FUN_140001a00(local_430,local_438);
                    // Sleep
Sleep = 0xac;
local_f7 = 0x92;
local_f6 = 0x98;
local_f5 = 0x99;
local_f4 = 0x8b;
local_f3 = 0xfa;
xor((longlong)&Sleep,6);
local_428 = local_138;
local_418 = local_2d8;
local_420 = (void **)pass_str(local_428,&Sleep);
local_410 = local_420;
local_408 = (void **)pass_str(local_418,&kernel32dll);
local_5d8 = (code *)FUN_140001a00(local_408,local_410);
local_618 = (longlong *)((ulonglong)local_618._4_4_ << 0x20);
iVar1 = (*local_5f0)(&local_28,0,0,1);
if (iVar1 == 0) {
  iVar1 = (*local_400)();
  if (iVar1 != -0x7ff6ffea) goto exit;
  local_618 = (longlong *)CONCAT44(local_618._4_4_,8);
  iVar1 = (*local_5f0)(&local_28,0,0,1);
  if (iVar1 == 0) goto exit;
}
local_618 = &local_30;
iVar1 = (*local_3f8)(local_28,0x8004,0,0);
if (((iVar1 != 0) && (local_30 != 0)) && (iVar1 =
 ↪  (*local_3f0)(local_30,&DAT_14000b048,1,0), iVar1 != 0)) {
  local_618 = &local_20;
  iVar1 = (*local_3e8)(local_28,0x6801,local_30);
  if (iVar1 != 0) {
    (*local_3e0)(local_30);
    (*local_5d8)(0x9a7ec800);
    local_118[0] = 0x1e;
    buf = (longlong *)malloc(0x1e);
    if (buf != (longlong *)0x0) {
      set_to_zero((undefined *)buf,(ulonglong)local_118[0]);
```

```
        check_valid((undefined
    *)buf,(ulonglong)local_118[0],&flag,(ulonglong)local_118[0]);
        local_608 = local_118[0];
        local_610 = local_118;
        local_618 = buf;
        iVar1 = (*local_5d0)(local_20,0,1,0);
        if ((iVar1 != 0) && (iVar1 =
            (*local_5c8)(0xffffffff80000001,local_5e8,&local_110), iVar1
            == 0)) {
          local_610 = (uint *)((ulonglong)local_610 & 0xffffffff00000000 |
    (ulonglong)local_118[0]);
          local_618 = buf;
          iVar1 = (*local_5c0)(local_110,local_5e8,0,1);
          if (iVar1 == 0) {
            (*local_528)(local_110);
            free(buf);
          }
        }
      }
    }
  }
exit:
  stack_chk(canary ^ (ulonglong)auStack1592);
  return;
}
```

裡面有很多資料(其實是加密過的字串)，可以看做解密的function:

```
1
2  void xor(longlong param_1,uint param_2)
3
4  {
5    uint i;
6
7    for (i = 0; i < param_2; i = i + 1) {
8      *(byte *)(param_1 + (ulonglong)i) = *(byte *)(param_1 + (ulonglong)i) ^ 0xff ^ (byte)i;
9    }
10   return;
11 }
12
```

實際上就是簡單的XOR。

這邊我把他每一個字串都還原回來，用下面的程式碼:

```
data = [0xbe, 0x9a, 0x8b, 0x9d, 0x8b, 0x93,
        0xca, 0xca, 0xd9, 0x92, 0x99, 0x98, 0xf3]

data2 = [0xb4, 0x9b, 0x8f, 0x92, 0x9e, 0x96,
         0xca, 0xca, 0xd9, 0x92, 0x99, 0x98, 0xf3]

data3 = [0xbc, 0x8c, 0x84, 0x8c, 0x8f, 0xbb, 0x9a, 0x89, 0x82, 0x9f, 0x87,
         0x91, 0xb0, 0x9d, 0x9f, 0x84, 0x8a, 0x96, 0x99, 0xbb, 0xeb]


data4 = [0xb8, 0x9b, 0x89, 0xb0, 0x9a, 0x89,
         0x8d, 0xbd, 0x85, 0x84, 0x9a, 0x86, 0xf3]

data5 = [0xbc, 0x8c, 0x84, 0x8c, 0x8f, 0xb9, 0x8b, 0x9d,
         0x96, 0x82, 0x90, 0xbc, 0x92, 0x81, 0x99, 0xf0]

data6 = [0xbc, 0x8c, 0x84, 0x8c, 0x8f, 0xb2, 0x98,
         0x8b, 0x9f, 0xb2, 0x94, 0x80, 0x92, 0xf2]

data7 = [0xbc, 0x8c, 0x84, 0x8c, 0x8f, 0xbe, 0x9c,
         0x8a, 0x9e, 0x80, 0x90, 0xbf, 0x96, 0x8b, 0xf1]

data8 = [0xbc, 0x8c, 0x84, 0x8c, 0x8f, 0xbe, 0x9c, 0x8b,
         0x83, 0x84, 0x9a, 0x8d, 0xbb, 0x93, 0x82, 0x98, 0xef]

data9 = [0xbc, 0x8c, 0x84, 0x8c, 0x8f, 0xbf,
         0x97, 0x9b, 0x85, 0x8f, 0x85, 0x80, 0xf3]

dataa = [0xad, 0x9b, 0x9a, 0xbf, 0x89, 0x9f, 0x98,
         0x8c, 0x92, 0xbd, 0x90, 0x8d, 0xb2, 0xf2]

datab = [0xad, 0x9b, 0x9a, 0xaf, 0x9e, 0x8e, 0xaf,
         0x99, 0x9b, 0x83, 0x90, 0xb1, 0x8b, 0xb3, 0xf1]

datac = [0xad, 0x9b, 0x9a, 0xbf, 0x97, 0x95,
         0x8a, 0x9d, 0xbc, 0x93, 0x8c, 0xf4]

datad = [0xac, 0x92, 0x98, 0x99, 0x8b, 0xfa]


def do_xor(arr, length):
    res = ""
```

```
    for i in range(length):
        v = arr[i] ^ 0xff ^ i
        res += chr(v)
    return res


print(do_xor(data, 0xd))
print(do_xor(data2, 0xd))
print(do_xor(data3, 0x15))
print(do_xor(data4, 0xd))
print(do_xor(data5, 0x10))
print(do_xor(data6, 0xe))
print(do_xor(data7, 0xf))
print(do_xor(data8, 0x11))
print(do_xor(data9, 0xd))
print(do_xor(dataa, 0xe))
print(do_xor(datab, 0xf))
print(do_xor(datac, 0xc))
print(do_xor(datad, 0x6))
```

執行上面的程式碼會輸出:

```
Advapi32.dll
Kernel32.dll
CryptAcquireContextW
GetLastError
CryptCreateHash
CryptHashData
CryptDeriveKey
CryptDestroyHash
CryptEncrypt
RegCreateKeyA
RegSetValueExA
RegCloseKey
Sleep
```

根據順序一一寫回程式中的註解，方便理解。

### Load library

遍歷反組譯的程式碼，看到這個function:

```
void load_library(void)

{
  undefined auStack72 [32];
  CHAR local_28;
  undefined local_27;
  undefined local_26;
  undefined local_25;
  undefined local_24;
  undefined local_23;
  undefined local_22;
  undefined local_21;
  undefined local_20;
  undefined local_1f;
  undefined local_1e;
  undefined local_1d;
  undefined local_1c;
  ulonglong canary;

  canary = DAT_14000b010 ^ (ulonglong)auStack72;
                    // Advapi32.dll
  local_28 = -0x42;
  local_27 = 0x9a;
  local_26 = 0x8b;
  local_25 = 0x9d;
  local_24 = 0x8b;
  local_23 = 0x93;
  local_22 = 0xca;
  local_21 = 0xca;
  local_20 = 0xd9;
  local_1f = 0x92;
  local_1e = 0x99;
  local_1d = 0x98;
  local_1c = 0xf3;
  xor((longlong)&local_28,0xd);
  LoadLibraryA(&local_28);
  stack_chk(canary ^ (ulonglong)auStack72);
  return;
}

```

這邊他會去load一個Advapi32.dll，這個dll全名是Advanced Windows 32 Base API，主要提供一些安全性與註

### DLL injection

因爲程式中有出現kernel32.dll，因此我判斷這個程式應該使用了DLL injection的技巧。

### suspended thread

使用x64dbg動態分析這個程式，發現有三個thread被suspended。

| 序號 | ID | 入口 | TEB | RIP | Suspend Count | 優先等級 | 等待原因 | 上次錯誤 | 使用者時間 | 核心時間 | 建立時間 | CPU Cycles | 名稱 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Main | 6080 | 00007FF712E363C0 | 0000007656330000 | 0000000140006160 | 1 | 普通 | Executive | 00000000 | 00:00:00.0000000 | 00:00:00.2812500 | 23:44:41.2280439 | 18FBE374 | 主執行緒 |
| 1 | 6620 | 00007FFF8C553CF0 | 0000007656332000 | 00007FFF8C5BF9F4 | 1 | 普通 | Suspended | 00000000 | 00:00:00.0000000 | 00:00:00.0000000 | 23:44:41.4393517 | 51AF34 | |
| 3 | 6832 | 00007FFF8C553CF0 | 0000007656336000 | 00007FFF8C5BF9F4 | 1 | 普通 | Suspended | 00000000 | 00:00:00.0000000 | 00:00:00.0000000 | 23:44:41.4403881 | 39E056 | |
| 2 | 6612 | 00007FFF8C553CF0 | 0000007656334000 | 00007FFF8C5BF9F4 | 1 | 普通 | Suspended | 00000000 | 00:00:00.0000000 | 00:00:00.0000000 | 23:44:41.4399702 | 44E72A | |

有點在意，感覺有什麼用。

### Failed

有點難，解不開。