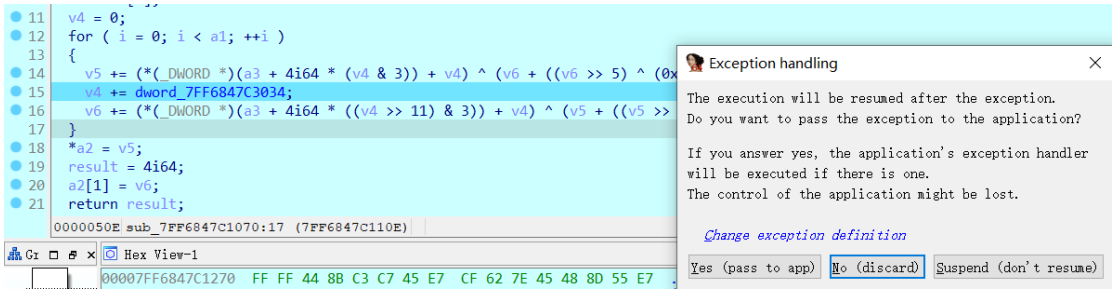
Creakme2

Ida 中找到程序伪代码

```
  sub_7FF6847C1008("%32s");
  sub_7FF6847C1070(32i64, Buf1, v11);
  sub_7FF6847C1070(32i64, v8, v11);
  sub_7FF6847C1070(32i64, v9, v11);
  sub_7FF6847C1070(32i64, v10, v11);
  Buf2[0] = 0x457E62CF;
  Buf2[1] = 0x9537896C;
  Buf2[2] = 0x1F7E7F72;
  Buf2[3] = 0xF7A073D8;
  Buf2[4] = 0x8E996868;
  Buf2[5] = 0x40AFAF99;
  Buf2[6] = 0xF990E34;
  Buf2[7] = 0x196F4086;
  v3 = memcmp(Buf1, Buf2, 0x20ui64);
  v4 = "Congratulations!";
  if ( v3 )
    v4 = "Try again!";
  puts(v4);
  return 0;
}
```

步入加密函数

```
  v5 = *a2;
  v6 = a2[1];
  v4 = 0;
  for ( i = 0; i < a1; ++i )
  {
    v5 += (*(a3 + 4i64 * (v4 & 3)) + v4) ^ (v6 + ((v6 >> 5) ^ (16 * v6)));
    v4 += dword_7FF6847C3034;
    v6 += (*(a3 + 4i64 * ((v4 >> 11) & 3)) + v4) ^ (v5 + ((v5 >> 5) ^ (16 * v5)));
  }
  *a2 = v5;
  result = 4i64;
  a2[1] = v6;
  return result;
}
```



执行第 15 行语句出现除零之后的 exception handling

```
;   __try { // __except at try_except1
;     __try { // __except at try_except2
mov     eax, cs:dword_7FF6847C3034
mov     ecx, [rsp+58h+var_38]
add     ecx, eax
mov     eax, ecx
mov     [rsp+58h+var_38], eax
mov     eax, [rsp+58h+var_38]
sar     eax, 1Fh
mov     [rsp+58h+var_28], eax
mov     eax, 1
cdq
mov     ecx, [rsp+58h+var_28]
idiv    ecx
mov     [rsp+58h+var_1C], eax
jmp     short loc_7FF6847C114E
;     } // starts at 7FF6847C1112
; ---------------------------------------------------------------------------

try_except2:                            ; DATA XREF: .rdata:00007FF6847C27C4↓o
;   __except(loc_7FF6847C1DF6) // owned by 7FF6847C1112
mov     eax, [rsp+58h+var_38]
xor     eax, 1234567h
mov     [rsp+58h+var_38], eax

loc_7FF6847C114E:                       ; CODE XREF: sub_7FF6847C1070+CF↑j
jmp     short loc_7FF6847C1158
```

```
;   } // starts at 7FF6847C1112
; ---------------------------------------------------------------------------

try_except1:                            ; DATA XREF: .rdata:00007FF6847C27D4↓o
;   __except(loc_7FF6847C1E21) // owned by 7FF6847C1112
mov     [rsp+58h+var_38], 9E3779B1h

loc_7FF6847C1158:                       ; CODE XREF: sub_7FF6847C1070:loc_7FF6847C114E↑j
mov     eax, [rsp+58h+var_34]
shl     eax, 4
mov     ecx, [rsp+58h+var_34]
shr     ecx, 5
xor     eax, ecx
add     eax, [rsp+58h+var_34]
mov     ecx, [rsp+58h+var_38]
sar     ecx, 0Bh
and     ecx, 3
movsxd  rcx, ecx
mov     rdx, [rsp+58h+arg_10]
mov     ecx, [rdx+rcx*4]
mov     edx, [rsp+58h+var_38]
add     edx, ecx
mov     ecx, edx
xor     eax, ecx
mov     ecx, [rsp+58h+var_30]
add     ecx, eax
mov     eax, ecx
mov     [rsp+58h+var_30], eax
jmp     loc_7FF6847C10BE
```

以上为 try-except 结构

Idiv ecx //ecx 为 64 位

```
sar     eax, 1Fh
mov     [rsp+58h+var_28], eax
mov     eax, 1
cdq
mov     ecx, [rsp+58h+var_28]
idiv    ecx
```

如果 eax 算数右移 0x1f 后为 0，则跳转到异常处理

```
try_except2:                            ; DATA XREF: .rdata:00007FF6847C27C4↓o
;   __except(loc_7FF6847C1DF6) // owned by 7FF6847C1112
mov     eax, [rsp+58h+var_38]
xor     eax, 1234567h
mov     [rsp+58h+var_38], eax
```

编写 c 解密代码

```
    #include<stdio.h>
int main()
{
    unsigned int buf2[8] =
{ 0x457E62CF,0x9537896C,0x1F7E7F72,0xF7A073D8,0x8E996868,0x40AFAF99,0xF990E34,0x196F408
6};
    int v4[33];
    int v11[10] = {1,2,3,4,5,6,7,8,9,0};
    int i, j;
    unsigned int  v5, v6;
    int k;
    v4[0]=0,v4[1] = 0x9E3779B1;
    for (k = 2; k <= 32; k++)
    {
        v4[k] = v4[k - 1] + 0x9E3779B1;
        if (v4[k] >> 0x1f == 0)
        {
            v4[k] ^= 0x1234567;
        }
    }
    for (j = 0; j <= 3; j++)
    {
        v5 = buf2[j * 2], v6 = buf2[j * 2 + 1];
        for (i = 31; i >= 0; i--)
        {
            v6 -= (v11[(v4[i+1] >> 11) & 3] + v4[i+1]) ^ (v5 + ((v5 >> 5) ^ (16 *
v5)));
            v5 -= (v11[v4[i] & 3] + v4[i]) ^ (v6 + ((v6 >> 5) ^ (0x10 * v6)));
        }
        printf("%x%x", v5, v6);
    }
```

```
    return 0;
}
```

```
6d61676845537b6530735f4835646e755f30355f65746e31743565727d676e69
```

得到输出
转换成字符后为 maghES{e0s_H5dnu_05_etn1t5er}gni
每四位进行倒序整理后得到 flag
hgame{SEH_s0und5_50_1ntere5ting}

fakeshell
使用 ida 打开
找到 sudo 的 password 输入后校验的值

```
23  code[0] = 0xE0B25F3D8FFA94B6LL;
24  code[1] = 0xE79D6C9866D20FEALL;
25  code[2] = 0x6D6FBEC57140081BLL;
26  code[3] = 0xF6F3BDA88D097B7CLL;
27  v8 = 0;
28  for ( i = 0; i <= 31; ++i )
29  {
30    if ( *((_BYTE *)code + i) != *((_BYTE *)input + i) )
31      return 0LL;
32  }
33  return 1LL;
34 }
```

```
17  input[0] = *a1;
18  input[1] = v2;
19  v3 = a1[3];
20  input[2] = a1[2];
21  input[3] = v3;
22  sub_5630860C8635(v9, input, 32LL);
```

22 行是加密函数，对输入进行加密

步入加密函数

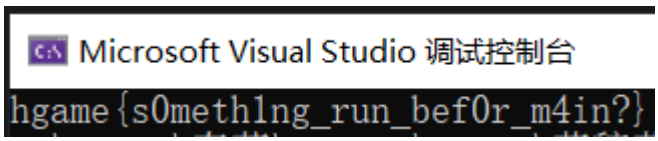
```
11  for ( i = 0LL; ; ++i )
12  {
13    result = i;
14    if ( i >= a3 )
15      break;
16    v5 = (v5 + 1) % 256;
17    v6 = (v6 + *(unsigned __int8 *)(v5 + a1)) % 256;
18    v4 = *(_BYTE *)(v5 + a1);
19    *(_BYTE *)(v5 + a1) = *(_BYTE *)(v6 + a1);
20    *(_BYTE *)(a1 + v6) = v4;
21    *(_BYTE *)(a2 + i) ^= *(_BYTE *)((unsigned __int8)(*(_BYTE *)(v5 + a1) + *(_BYTE *)(v6 + a1)) + a1);
22  }
23  return result;
24 }
```

我们发现加密语句对输入的每一位是单独加密的

故可以编写 c 解密代码如下

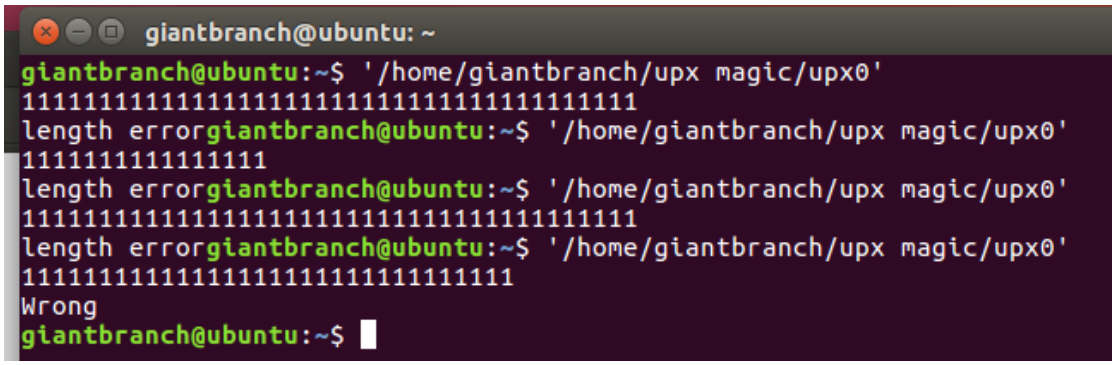
```
#include<stdio.h>
int main()
{
    int codet[300] =
{ 0x6C,0x0A8,0x54,0x0D3,0x0D1,0x0FC,0x87,0x2F,0x0F7,0x0E4,0x74,0x5F,0x1B,0x0A4,0x22,0x6A,0x0EF,0x17,0x4F,0x4,0x0B4,0x3D,0x40,0x36,0x0A0,0x32,0x5B,0x1D,0x8A,0x57,0x0AD,0x0FD,0x7D,0x0F6,0x48,0x0E2,0x7F,0x0D4,0x1A,0x1F,0x15,0x9F,0x0C0,0x89,0x0BB,0x3F,0x3A,0x73,0x28,0x0,0x1C,0x0A3,0x2E,0x6D,0x68,0x0C5,0x0E,0x18,0x90,0x0D,0x0A,0x0D6,0x4D,0x45,0x0FF,0x0DB,0x11,0x0DA,0x95,0x53,0x5A,0x72,0x2D,0x0A1,0x0F,0x50,0x7A,0x0B0,0x0BC,0x8D,0x0BA,0x0CC,0x56,0x88,0x0CF,0x0CB,0x0C7,0x26,0x80,0x42,0x9E,0x7C,0x7,0x0F0,0x0E9,0x49,0x0DF,0x71,0x98,0x6B,0x0B1,0x0B5,0x0E7,0x0F8,0x67,0x24,0x0BF,0x46,0x77,0x0E5,0x8E,0x0B,0x29,0x63,0x85,0x34,0x62,0x0D2,0x4E,0x0ED,0x0A7,0x41,0x8C,0x0D7,0x43,0x60,0x0D9,0x0B8,0x0EC,0x0D5,0x0B6,0x92,0x8,0x0C1,0x5D,0x86,0x0C,0x44,0x7B,0x0CA,0x0AB,0x0E0,0x96,0x83,0x2A,0x3C,0x0B7,0x0DD,0x0DC,0x3B,0x19,0x99,0x0D0,0x0A9,0x0DE,0x0C6,0x2,0x0D8,0x5C,0x0F3,0x52,0x9B,0x9,0x64,0x30,0x91,0x0C9,0x0C3,0x0F2,0x2C,0x25,0x0E6,0x9C,0x0EE,0x10,0x13,0x81,0x20,0x59,0x0FE,0x0FB,0x0AA,0x0CD,0x16,0x27,0x76,0x0FA,0x33,0x0B9,0x0E1,0x1E,0x0F5,0x4C,0x0EA,0x0F1,0x0BE,0x0F4,0x5,0x0A2,0x93,0x2B,0x0A5,0x12,0x0A6,0x21,0x0E8,0x51,0x0CE,0x79,0x6F,0x66,0x9D,0x84,0x1,0x5E,0x8F,0x6E,0x9A,0x3E,0x0AE,0x7E,0x6,0x14,0x0EB,0x82,0x0E3,0x97,0x69,0x35,0x23,0x61,0x0B2,0x0B3,0x94,0x3,0x39,0x0C4,0x47,0x0BD,0x0AC,0x78,0x55,0x0AF,0x37,0x0C2,0x4A,0x70,0x65,0x75,0x8B,0x31,0x0C8,0x4B,0x38,0x58,0x0F9,0x0,0x0,0x0,0x0,0x0,0x0,0x0,0x0,0x0,0x0B2,0x58,0x9,0x61,0x62,0x46,0x0A2, };
    int realcode[40] =
{ 0XB6,0X94,0XFA,0X8F,0X3D,0X5F,0XB2,0XE0,0XEA,0X0F,0XD2,0X66,0X98,0X6C,0X9D,0XE7,0X1B,0X08,0X40,0X71,0XC5,0XBE,0X6F,0X6D,0X7C,0X7B,0X09,0X8D,0XA8,0XBD,0XF3,0XF6 };
    int i,v5 = 0,v6 = 0,temp,j=0,jk=0;
    for (i = 0; i < 32; i++)
    {
        v5 = (v5 + 1)%0x100;
        v6 = (codet[v5] + v6) % 0x100;
        temp = codet[v5], codet[v5] = codet[v6], codet[v6] = temp;
        for (j = 0; j <= 0xff; j++)
        {
            jk = j;
            jk ^= codet[(codet[v5] + codet[v6])&0xff];
            if (jk == realcode[i])
            {
                printf("%c",j);
                break;
            }
        }
        if (j == 0xff+1) printf("\n{%d}\n", i);
    }
    return 0;
```

}



得到 flag
hgame{s0meth1ng_run_bef0r_m4in?}

upxmagic0



输入 32 个 1 后不再出现 length error 而是 wrong
可知 flag 为 32 位

```
for ( i = 0; i < (unsigned __int64)sub_4004E0(v16); ++i )
{
  v12 = *((char *)v16 + i) << 8;
  for ( j = 0; j <= 7; ++j )
  {
    if ( (v12 & 0x8000) != 0 )
      v12 = (2 * v12) ^ 0x1021;
    else
      v12 *= 2;
  }
  v15[i] = (unsigned __int16)v12;
}
```

对输入进行加密
我们可以编写 c 语言代码对所有 ASC 字符进行上述的加密
随后与下列校验的值进行比较得到最后的 flag

```
v14[0] = 36200;
v14[1] = 40265;
v14[2] = 10770;
v14[3] = 43802;
v14[4] = 52188;
v14[5] = 47403;
v14[6] = 11826;
v14[7] = 40793;
v14[8] = 56781;
v14[9] = 40265;
v14[10] = 43274;
v14[11] = 3696;
v14[12] = 62927;
v14[13] = 2640;
v14[14] = 23285;
v14[15] = 65439;
v14[16] = 40793;
v14[17] = 48395;
v14[18] = 22757;
v14[19] = 14371;
v14[20] = 48923;
v14[21] = 30887;
v14[22] = 43802;
v14[23] = 18628;
v14[24] = 43274;
v14[25] = 11298;
v14[26] = 40793;
v14[27] = 23749;
v14[28] = 24277;
v14[29] = 30887;
v14[30] = 9842;
v14[31] = 22165;
```

```
#include<stdio.h>
int main()
{
    int i,j,k,a[128];
    int code[33] =
{ 0x8D68 ,0x9D49 ,0x2A12 ,0xAB1A ,0xCBDC ,0xB92B ,0x2E32 ,0x9F59 ,0xDDCD ,0x9D
49 ,0xA90A ,0xE70 ,0xF5CF ,0xA50 ,0x5AF5 ,0xFF9F ,0x9F59 ,0xBD0B ,0x58E5 ,0x3
823 ,0xBF1B ,0x78A7 ,0xAB1A ,0x48C4 ,0xA90A ,0x2C22 ,0x9F59 ,0x5CC5 ,0x5ED5 ,
0x78A7 ,0x2672 ,0x5695 };
    for (i = 0; i <= 127; i++)
    {
        k = i << 8;
        for (j = 0; j <= 7; ++j)
```

```
        {

            if ((k & 0x8000) != 0)
            {
                k = (2 * k) ^ 0x1021;
            }
            else
            {
                k *= 2;
            }
        }
        k = k & 0xffff;
        a[i] = k;
    }
    for (i = 0; i < 32; i++)
    {
        for (j = 0; j <= 127; j++)
        {
            if (code[i] == a[j])
            {
                printf("%c", j);
                break;
            }
        }
    }
    return 0;
}
```

编写解密代码

```
noW_YOu^koNw-UPx^mAG|C_@Nd^crC16
```

得到 flag

noW_YOu~koNw-UPx~mAG|C_@Nd~crC16

upxmagic1

通过 strings 命令看到壳为 upx3.94

使用 winhex 打开

将

```
55 50 58 3F  00 00 00 00 55 50 58 3F    UPX?    UPX?
```

改 为

```
55 50 58 21  00 00 00 00 55 50 58 21    UPX!    UPX!
```

使用 upx3.94 成功脱壳

```
C:\Users\春芹>D:\TOOLS\upx\upx394w\upx394w\upx.exe -d "C:\Users\春芹\Desktop\upx magic1\upx2"
                       Ultimate Packer for eXecutables
                          Copyright (C) 1996 - 2017
UPX 3.94w       Markus Oberhumer, Laszlo Molnar & John Reiser   May 12th 2017

        File size         Ratio      Format      Name
   --------------------   ------   -----------   -----------
    885352 <-    394032   44.51%   linux/amd64   upx2

Unpacked 1 file.
```

找到加密函数

```
for ( i = 0; i < (unsigned __int64)sub_4004E0(v16); ++i )
{
  v12 = *((char *)v16 + i) << 8;
  for ( j = 0; j <= 7; ++j )
  {
    if ( (v12 & 0x8000) != 0 )
      v12 = (2 * v12) ^ 0x1021;
    else
      v12 *= 2;
  }
  v15[i] = (unsigned __int16)v12;
}
```

编写解密代码

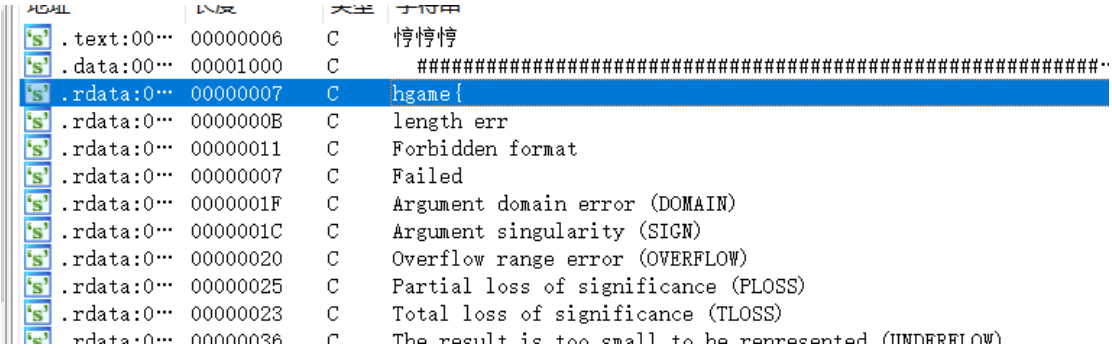
```
#include<stdio.h>
int main()
{
    int i, j, k, a[128];
    int code[33] = { 36200,  40265,  10770,  43802,  52188,  47403,  11826,  40793,
56781,  40265,  43274,  3696,  62927,  24277,  15363,  31879,  9842,  43802,  2640,
23285,  65439,  40793,  48395,  22757,  14371,  48923,  30887,  43802,  18628,  43274,
11298,  40793,  23749,  24277,  30887,  9842,  22165 };
    for (i = 0; i <= 127; i++)
    {
        k = i << 8;
        for (j = 0; j <= 7; ++j)
        {

            if ((k & 0x8000) != 0)
            {
                k = (2 * k) ^ 0x1021;
            }
            else
            {
                k *= 2;
            }
```

```
        }
        k = k & 0xffff;
        a[i] = k;
    }
    for (i = 0; i < 37; i++)
    {
        for (j = 0; j <= 127; j++)
        {
            if (code[i] == a[j])
            {
                printf("%c", j);
                break;
            }
        }
    }
    return 0;
}
```

得到 flag

hgame{noW_YOu~koNw-rea1_UPx~mAG|C_@Nd~crC16}

xdmaze
打开 ida 的字符串窗口
发现



交叉引用后找到判断语句伪代码

```
{
  for ( i = 6; i <= 33; ++i )
  {
    switch ( *((_BYTE *)v11 + i) )
    {
      case '0':
        v14 += 512;
        break;
      case '1':
        v14 += 64;
        break;
      case '2':
        v14 += 8;
        break;
      case '3':
        ++v14;
        break;
      default:
        goto LABEL_8;
    }
    if ( word_404020[v14] != 0x20 || v14 > 4095 )
    {
      v9 = std::operator<<<std::char_traits<char>>(&std::cout, "Failed");
      std::ostream::operator<<(v9, &std::endl<char,std::char_traits<char>>);
      return 1;
    }
  }
  v10 = std::operator<<<std::char_traits<char>>(&std::cout, "Win");
  std::ostream::operator<<(v10, &std::endl<char,std::char_traits<char>>);
  return 0;
```

找到判断语句

```
byte_404020     db 2 dup(20h), 3Fh dup(23h), 20h, 7 dup(23h), 20h, 1FFh dup(23h)
                                        ; DATA XREF: main+1B9↑o
                db 20h, 3Fh dup(23h), 20h, 3Fh dup(23h), 2 dup(20h), 1FFh dup(23h)
                db 2 dup(20h), 3Fh dup(23h), 20h, 7 dup(23h), 20h, 1FFh dup(23h)
                db 2 dup(20h), 7 dup(23h), 20h, 1FFh dup(23h), 2 dup(20h)
                db 7 dup(23h), 20h, 7 dup(23h), 20h, 7 dup(23h), 20h, 7 dup(23h)
                db 2 dup(20h), 3Fh dup(23h), 20h, 1FFh dup(23h), 20h, 1FFh dup(23h)
                db 2 dup(20h), 1FFh dup(23h), 20h, 3Fh dup(23h), 20h, 3Fh dup(23h)
                db 20h
```

这是 word_404020 中的值

编写 c 解密代码

```
#include<stdio.h>

int main()
{
int
array[5000]={0x20,0x20,0x23,0x23,0x23,0x23,0x23,0x23,0x23,0x23,0x23,0x23,0x23,0x23,0x23,0x23,
0x23,0x23,0x23,0x23,0x23,0x23,0x23,0x23,0x23,0x23,0x23,0x23,0x23,0x23,0x23,0x23,0x23,0x23,0x
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23,0x23,0x23,0x20 };
    int i=0,tk=0;//tk 记录 array 值等于 0x20 的位置
    while (array[i] != '\0')
    {
        if (array[i] == 0x20)
        {
            switch (i-tk)
            {
            case 512:printf("0"); break;
            case 64:printf("1"); break;
            case 8:printf("2"); break;
            case 1:printf("3"); break;
            }
            tk = i;
        }
        i++;
    }
    return 0;
}
```

```
31201130312032032222231003011
```

拼接后得到 flag

hgame{31201130312032032222231003011}