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WAS

Tomcat

server.xml connector server 가 . xpoweredBy="false" 가
 . false가 가 .

```
<Connector port="8080" protocol="HTTP/1.1"
  connectionTimeout="20000"
  redirectPort="8443"
  server="bar"
  xpoweredBy="false"
  />
```

가 X-Powered-By 가 web.xml

 tomcat 6 가 .

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

JBoss EAP 6.x

- SERVER

SERVER org.apache.coyote.http11.Http11Protocol.SERVER Property 가 .

```
org.apache.coyote.http11.Http11Protocol.SERVER="foo"
```

```
<system-properties>
  <property name="org.apache.coyote.http11.Http11Protocol.SERVER"
value="foo"/>
</system-properties>
```

- X-PoweredBy

X-PoweredBy JBoss

```
/subsystem=web/configuration=jsp-configuration/:write-attribute(name=x-
powered-by,value=false)
{
  "outcome" => "success",
  "response-headers" => {
    "operation-requires-reload" => true,
    "process-state" => "reload-required"
  }
}
```

가

```
<subsystem xmlns="urn:jboss:domain:web:1.1" default-virtual-server="default-
host" native="false">
  <configuration>
    <jsp-configuration x-powered-by="false"/>
  </configuration>
  ...
  ...
</subsystem>
```

JBoss EAP 7.x

- Server: JBoss-EAP/7 X-Powered-By: Undertow/1

CLI

```

/subsystem=undertow/server=default-server/host=default-host/filter-ref=x-
powered-by-header:remove
/subsystem=undertow/server=default-server/host=default-host/filter-
ref=server-header:remove

```

CLI

```

/subsystem=undertow/configuration=filter/response-header=server-
header:write-attribute(name=header-value,value=foo)
/subsystem=undertow/configuration=filter/response-header=x-powered-by-
header:write-attribute(name=header-value,value=bar)

```

- X-Powered-By: JSP/2.3

CLI

```

/subsystem=undertow/servlet-container=default/setting=jsp:write-
attribute(name=x-powered-by,value=false)

```

- <https://access.redhat.com/solutions/21075>
- <https://tomcat.apache.org/tomcat-8.0-doc/security-howto.html#Connectors>
- <https://access.redhat.com/solutions/2740891>

Directory Listing

Tomcat

- <https://tomcat.apache.org/tomcat-9.0-doc/default-servlet.html>

Tomcat 9					web.xml
	listings	false			

```

<servlet>
  <servlet-name>default</servlet-name>
  <servlet-class>
    org.apache.catalina.servlets.DefaultServlet
  </servlet-class>
  <init-param>
    <param-name>debug</param-name>

```

```
<param-value>0</param-value>
</init-param>
<init-param>
  <param-name>listings</param-name>
  <param-value>>false</param-value>
</init-param>
<load-on-startup>1</load-on-startup>
</servlet>
```

HTTP Method Limit

HTTP Method

Tomcat

```
<security-constraint>
  <web-resource-collection>
    <web-resource-name>Protected Context</web-resource-name>
    <url-pattern>/*</url-pattern>
    <http-method>PUT</http-method>
    <http-method>DELETE</http-method>
    <http-method>HEAD</http-method>
    <http-method>TRACE</http-method>
    <http-method>OPTIONS</http-method>
  </web-resource-collection>
  <auth-constraint />
</security-constraint>
```

AJP Secret

Tomcat / Undertow AJP . AJP ()
가 가 . AJP가 .
• Tomcat AJP HTTP HTTPS AJP 가 HTTP HTTPS .
• AJP .
• AJP 가 . AJP

가 secret httpd mod_jk
 httpdRed Hat Enterprise Linux 7 8 Red Hat Software
Collections

Tomcat

```
<Connector port="8009" protocol="AJP/1.3" redirectPort="8443"
address="YOUR_TOMCAT_IP_ADDRESS" requiredSecret="YOUR_AJP_SECRET" />
```

JBoss EAP 5.2.x

```
<Connector protocol="AJP/1.3" port="8009" address="${jboss.bind.address}"
redirectPort="8443" requiredSecret="YOUR_AJP_SECRET"/>
```

JBoss EAP 6.4.x

```
<system-properties>
  <property name="org.apache.coyote.ajp.DEFAULT_REQUIRED_SECRET"
value="YOUR_AJP_SECRET"/>
</system-properties>
```

JBoss EAP 7.x

```
<subsystem xmlns="urn:jboss:domain:undertow:7.0" ...>
  ...
  <server name="default-server">
    <http-listener name="default" socket-binding="http" redirect-
socket="https" enable-http2="true"/>
    <ajp-listener name="ajp" socket-binding="ajp"/>
    <https-listener name="https" socket-binding="https" security-
realm="ApplicationRealm" enable-http2="true"/>
    <host name="default-host" alias="localhost">
      ...
      <!-- add the following with your AJP port (8009) -->
      <filter-ref name="secret-checker" predicate="equals(%p, 8009)"/>
    </host>
  </server>
  ...
  <filters>
    <!-- add the following with your credential (YOUR_AJP_SECRET) -->
    <expression-filter name="secret-checker" expression="not
equals(%{r,secret}, 'YOUR_AJP_SECRET') -> response-code(403)"/>
  </filters>
</subsystem>
```

```
/subsystem=undertow/configuration=filter/expression-filter=secret-checker:add(expression="not equals(%{r,secret}, 'YOUR_AJP_SECRET') -> response-code(403) ")
/subsystem=undertow/server=default-server/host=default-host/filter-ref=secret-checker:add(predicate="equals(%p,8009) ")
```

mod_proxy (ajp mod_proxy_ajp / mod_proxy_balancer)

secret . JBCS httpd 2.4.37; RHEL 7 httpd-2.4.6-67; RHEL 8 httpd-2.4.6-62

- mod_proxy_ajp ProxyPass secret 가 .
• mod_proxy_balancer BalancerMember secret 가 .

secret=YOUR_AJP_SECRET 가 (:
<HTTPD_HOME>/conf/httpd.conf <HTTPD_HOME>/conf.d/proxy_ajp.conf).

- mod_proxy_ajp:

```
ProxyPass /example/ ajp://localhost:8009/example/ secret=YOUR_AJP_SECRET
```

- mod_proxy_balancer:

```
<Proxy balancer://mycluster>
  BalancerMember ajp://node1:8009 route=node1 secret=YOUR_AJP_SECRET
  BalancerMember ajp://node2:8009 route=node2 secret=YOUR_AJP_SECRET
</Proxy>
ProxyPass /example/ balancer://mycluster/example/
stickysession=JSESSIONID|jsessionid
```

mod_jk

- mod_jk - workers.properties worker loadbalancer secret
secret mod_jk 1.2.12 가 .

```
worker.<WORKER_NAME>.secret=YOUR_AJP_SECRET
```

mod_cluster

mod_cluster secret . mod_cluster가 Tomcat/JBoss

AJP

secret

http

https

- <https://access.redhat.com/solutions/4851251>

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