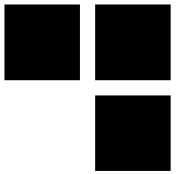
SYNACKTIV
DIGITAL SECURITY



AJPy: AJP python library

(or how to finally attack the port 8009 during pentests?)

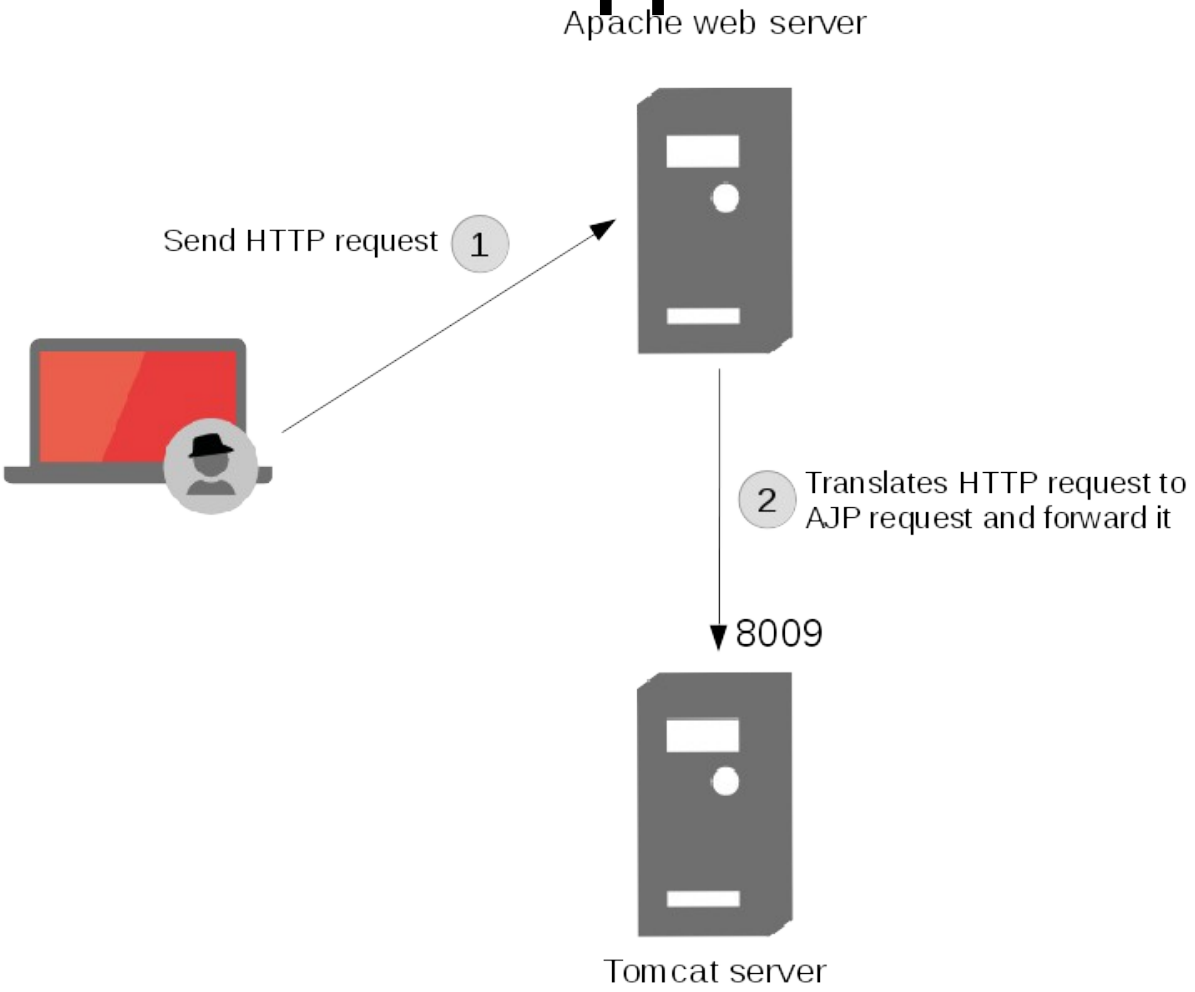
Presented the 02/06/2016

For SSTIC 2016

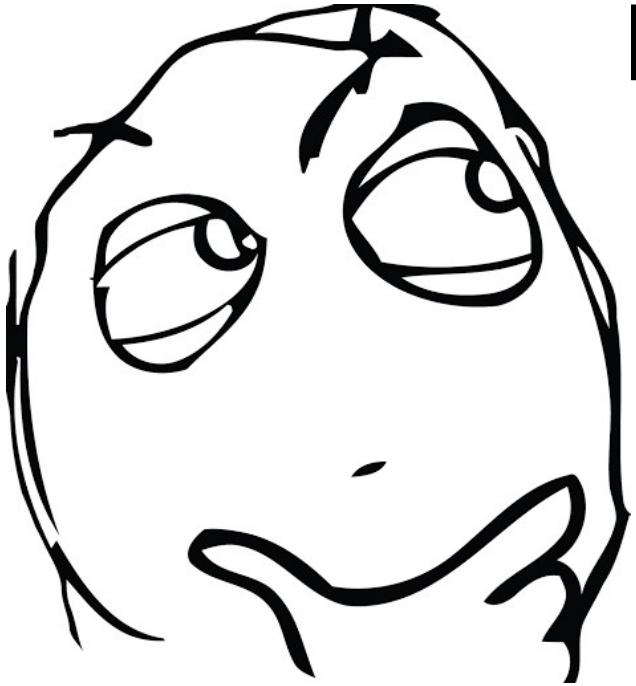
By Julien Legras

Wait whaaaaat?

- **Classic Java web application architecture**

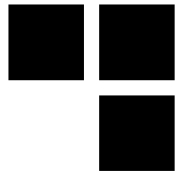


What is AJP?



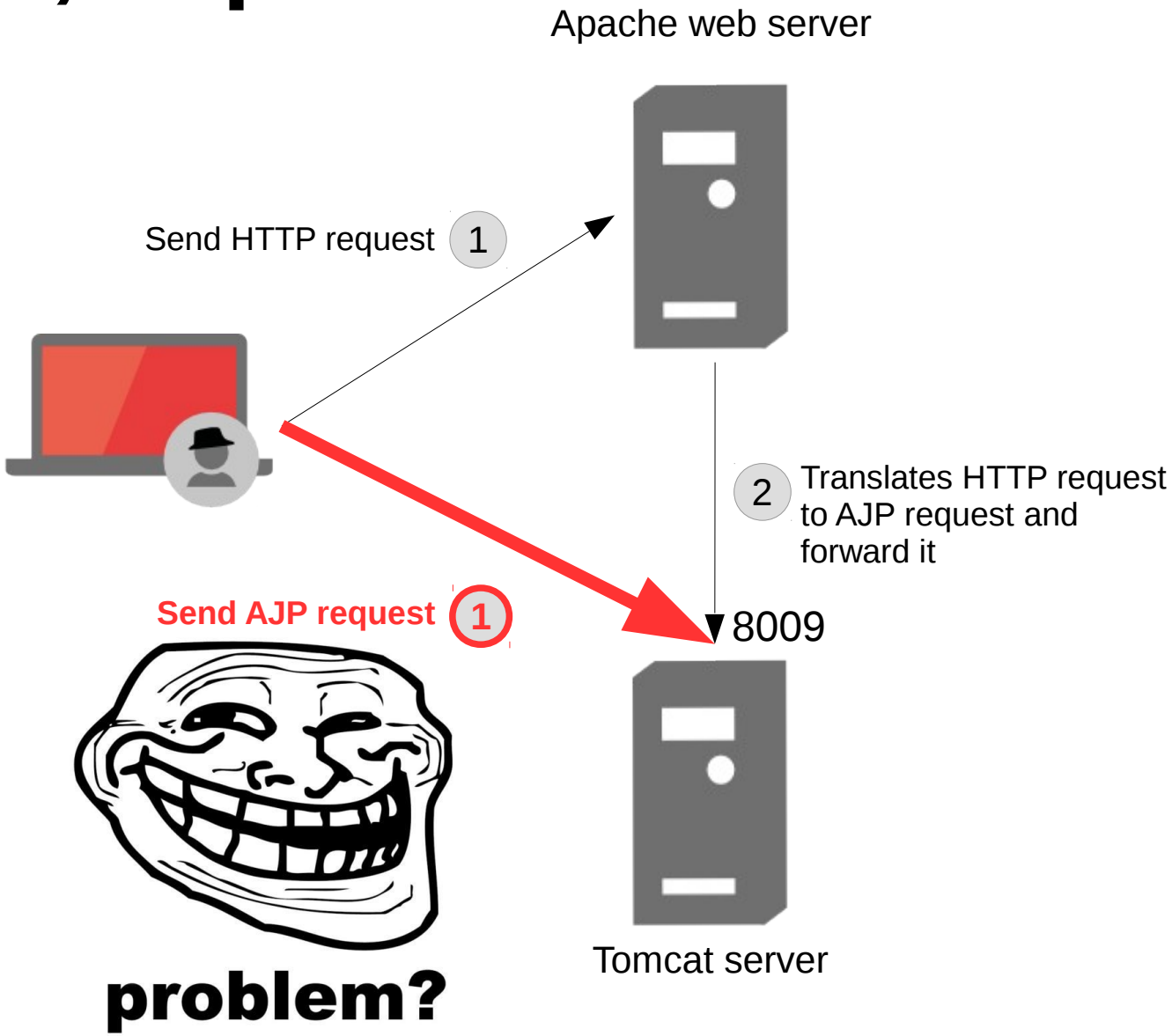
- **packet-oriented**
- **binary format (~ compressed HTTP)**
- **TCP connections reuse**
- **Current version: 1.3 (1998)**
- **About 42K open ports (tcp/8009) on the Internet (2012)**
- **Works with most of the Java application containers:**
  - Apache Tomcat
  - JBoss/Wildfly
  - Jetty
  - Etc.

Security



- **Many restrictions can be done on Apache web server**
  - IP source filtering
  - Mutual SSL authentication
  - fail2ban
  - etc.
- **Almost no restrictions on AJP Connectors**

Hello, I speak AJP



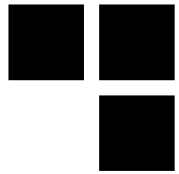
I don't really speak AJP

- **AJPy is a small python library that can craft and serialize AJP packets**
- **Contains a tool for Tomcat**
  - Get version (from error page)
  - Authentication bruteforce on admin panel

    BUT mitigated by *LockOutRealm* (>Tomcat 6)
  - WAR upload (almost) → webshell over AJP

Show time

Conclusion



- **TODO**
  - Fix the WAR deploy issue for Tomcat
  - Add JBoss/Wildfly support
  - Resource fuzzing
  - Improve and stabilize AJPy core library

- **See you @BeeRump for more**

  (CFP is still open, submit your papers @Baboon)