Remo Presentation

(Positive ModSecurity Rulesets / Input Validation)

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OWASP

Who am I and how did I get here?

- I started out in IT as an innocent medievalist
- Then I got interested in Apache
- Then I wanted to secure my servers with ModSecurity
- Then things got a bit out of hand

Defense Preparations

- Trying to build a strong defense position with ModSecurity
- Import cool rulesets (gotroot?)
- It felt like making a basket waterproof
- Marcus Ranum:
  “Default Permit is the number one stupid thing in Computer Security”

Negative Rulesets

You patch against all known attacks.
That's like basic spam filtering and it boils down to *Default Permit.*

More from Marcus: “Systems based on *Default Permit* are the computer security equivalent of empty calories: tasty, yet fattening.”

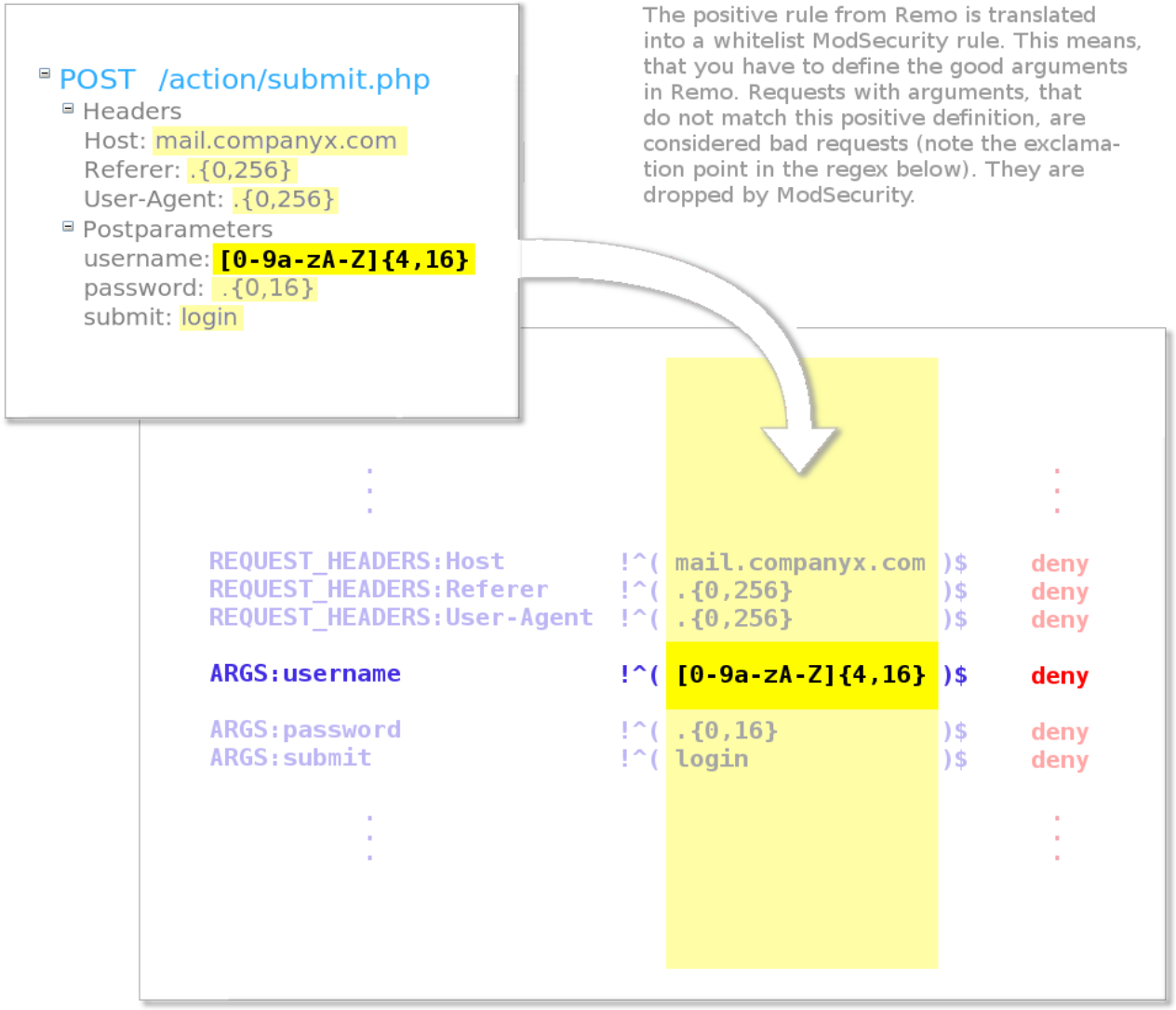
And given the gotroot ruleset has 10000+ rules, you'll agree on the fattening effect.

Generic Negative Rulesets

- Not patching against individual attacks but against generic patterns
- Official Core-Rules: That's about as good as you can get in my humble opinion

```
SecRule REQUEST_FILENAME|ARGS "\b(?:user_(?:(?:object|table|user)s|password|group)|a(?:tt(?:rel|typ)id|
    ll_objects)|object_(?:(?:nam|typ)e|id)|pg_(?:attribute|class)|column_(?:name|id)|substr(?:ing)?|
    table_name|mb_users|rownum)\b" \
    "capture,t:htmlEntityDecode,t:lowercase,t:replaceComments,ctl:auditLogParts=
    +E,log,auditlog,msg:'SQL Injection Attack. Matched signature <%{TX.0}>',id:'950906',severity:'2'"
```

Positive Rulesets



Positive Approach – Generated Ruleset

```
<LocationMatch "^/action/submit\.php$">
  SecRule REQUEST_METHOD "!^(POST)$"
    "t:none,deny,id:9,status:501,severity:3,msg:'Request method wrong
    (it is not POST).'"

  ...

  SecRule ARGS_NAMES "!^(username|password|secret)$"
    "t:none,deny,id:9,status:501,severity:3,msg:'Strict parametercheck:
    At least one parameter is not predefined for this path.'"

  ...

  SecRule ARGS:username "!^([0-9a-zA-Z]{4,16})$"
    "t:none,deny,id:9,status:501,severity:3,msg:'Postparameter username
    failed validity check. Value domain: Custom.'"
```

- Fairly easy to read, no advanced Regex-FU

Entering REMO

- How to get a decent positive Ruleset?
- I need something *bash* won't do! A real editor, a graphical user interface! Something modern! Why must this happen to me? I'm interested in the middle ages!
- **R**ule **E**ditor for **MO**dsecurity as a Ruby on Rails application

<fill in meaningful title here>

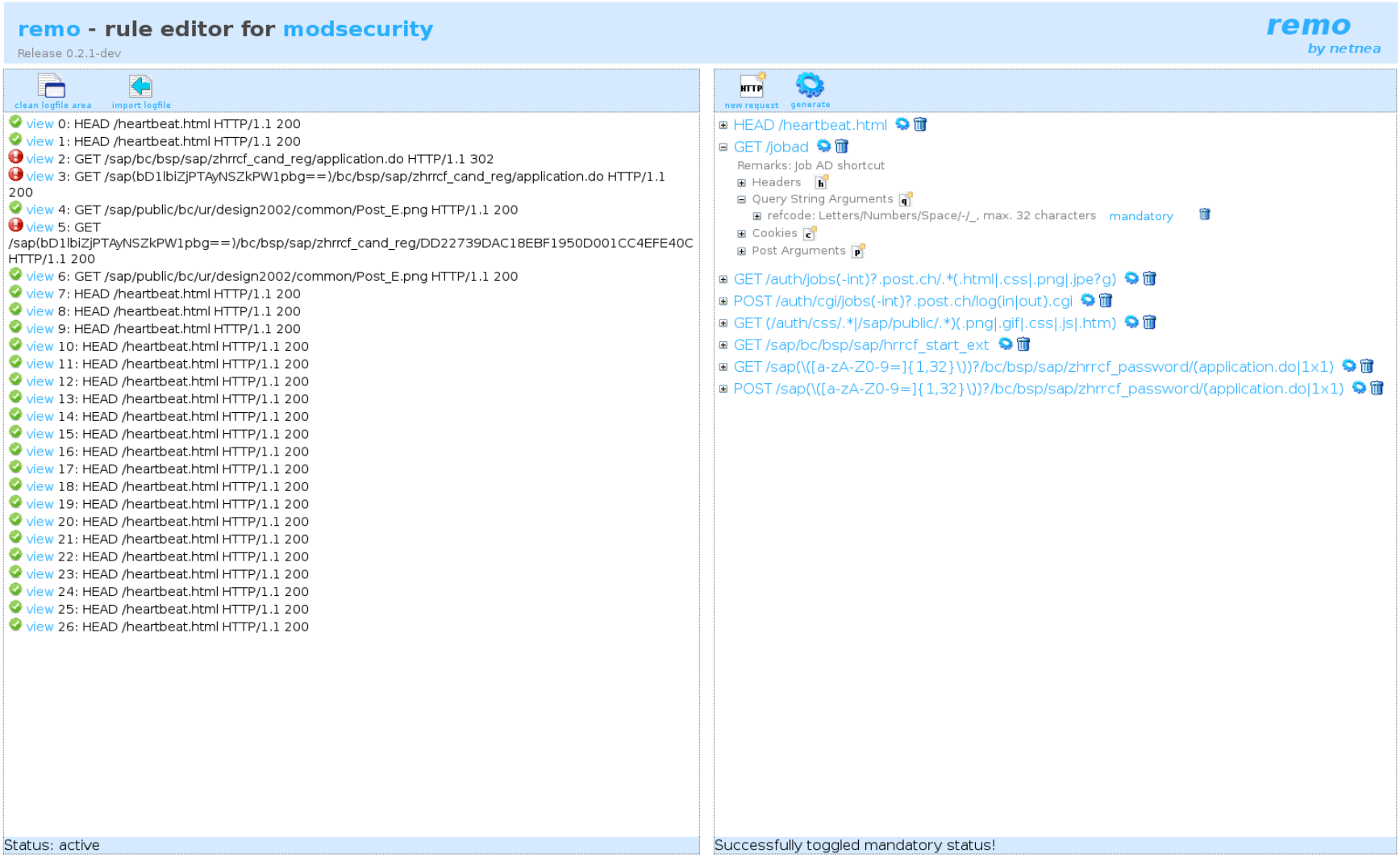
- **REMO** core functionality is done
- Not over though, it is beta software
- But it mostly works, it's free and and it's ready to be used by you
- http://remo.netnea.com

  (this is not an OWASP project. At least not yet)

Securing an SAP application

- SAP applications are getting hooked up to the internet.
- Typical case: E-Recruiting
  This means: The whole world is allowed to send requests to the central Human Resources SAP Server and submit crazy attachments on top of that.
- That's like trying to defend a medieval city against infiltration during a public market day.

Remo in action



Remo in action

GET /sap/public/bc/ur/design2002/common/Post_E.png

The request **fails** against the present ruleset due to one or multiple parameters.

File, Request number: audit-log-test.log, #4
Status: 200 OK
ModSecurity Message: Warning. Pattern match "HTTP" at REQUEST_PROTOCOL.

Missing mandatory parameters: None. All mandatory parameters present.

Headers

Host: jobs-int.post.ch
User-Agent: Mozilla/5.0 (X11; U; Linux i686; en-US; rv:1.8.1.12) Gecko/20080129 Firefox/2.0.0.10 (Debian-2.0.0.12-0etch1)
Accept: image/png,*/*;q=0.5
Accept-Language: en-us,en;q=0.5
Accept-Encoding: gzip,deflate
Accept-Charset: ISO-8859-1,utf-8;q=0.7,*;q=0.7
Keep-Alive: 300
Connection: keep-alive
Referer: https://jobs-int.post.ch/sap(bD1lbiZjPTAyNSZkPW1pbg==)/bc/bsp/sap/zhrrcf_cand_reg/application.do
Cookie: __utma=14378678.39713121.1206026408.1206026408.1206026408.1; RMID=c229d88b47e28070; WT_FP
__utmz=14378678.1206026408.1.1.utmccn=(direct)|utmcsr=(direct)|utmcmd=(none); ittrksessid=10.226.
back_jobs-int.post.ch=https%3a%2f%2fjobs-int.post.ch%2fsap%2fbc%2fbsp%2fsap%2fhrrcf_start_ext%3f

Cookie Parameters

back_jobs-int.post.ch: https%3a%2f%2fjobs-int.post.ch%2fsap%2fbc%2fbsp%2fsap%2fhrrcf_start_ext%3fsap-language%3dDE%

Querystring Parameters

Post Parameters

Status

- It's beta software and it needs more work.
  The list of feature requests is impressive, btw.

- Code quality is ok
  (but it could do better security-wise)

- It's really a simple piece of software that facilitates a boring task: Writing ModSecurity rules yourself.

- Did I mention it needs more work?
  (This is where you come in)

Final Words

- Johann Peeters' talk about input validation
  Be really careful to set up your process properly or you enter maintenance hell.
- Combining Remo and Core Rules? Yes! Negative first, positive afterwards.

http://remo.netnea.com