OSY.SSI [2015] [10] Code injection : Counter-measures

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About counter-measures

Advanced injection



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Let's have a look at the counter-measures we mentioned

).	Not	making	vulnerable	code	in	the	first	place	
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Coders must be <u>aware</u> of, and <u>alert</u> to memory.

That being said: testing would prevent most bugs (USENIX'14), static analysis works (A380), etc. That's not enough, but that's improvement.

1. Detecting stack smashing and blocking it No free lunch theorem

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Also, when detection happens, it might be too late... Note: we didn't deactivate that during last session...

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How would you bypass an IDS? How would you bypass an A/V?

2. Analysing user actions
Bypassing an IDS

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SUPREMELYCRUTCHESCATARACTINSTRUMENTATIONLOVABLY PERILLABARBSPANISHIZESBEGANAMBIDEXTROUSLY PHOSPHORSAVEDZEALOUSCONVINCEDFIXERS

3. Refusing unauthorised code and stack execution

Leeloo Dallas Multipass

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Because of DEP, attack vectors have shifted to JITs and browser components: Java, Flash, Video.

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- ▶ PIE?
 Breaks things, ROP unless kernel is also PIE. Not immune to UAF.



Software code

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Remember: only one suffices.



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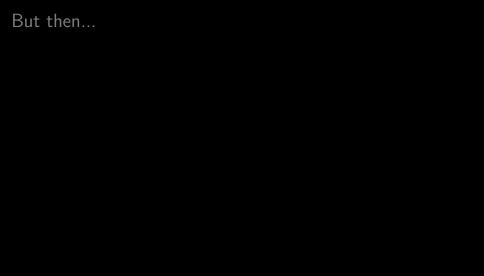
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But then people went stupid.

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Why?



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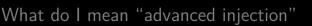
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Remember: security in products is an economic externality.

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and why do I talk about it

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- Corresponds to a shift in the cybercriminal population
- Coincides with widespread superficial use of computers by untrained personnel
- Manages to bypass protection and evade detection

So there we go again: Vote Yay again

Would you rather:

./0 Try some of these techniques yourself? (more coding)

 $./1\,$ Learn about how modern attacks are planned? (less coding)

You'll have the slides and code either way to practice at home.

Also don't forget to vote for the exam

More training

root-me.org
smashthestack.org