Open Source and CSIRT
- What can we do?-

Presented by:

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Shin Adachi, CISSP, CISM, CISA, PMP

FIRST OF ALL

Congratulations HITCON on your 10th Anniversary!

祝10週年　台灣駭客年會!

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DISCLAIMER

This presentation ONLY reflects personal views and opinions of the presenters, NOT presenters' affiliations IN ANY WAY, including but not limited to their employers, customers, associations, and so on.

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PRESENTED BY

- CSIRT Evangelist
  - JPCERT/CC from 1998 to 2002
  - NTT-CERT, Intelli-CSIRT
  - Steering committee of Nippon CSIRT Association.
- GNU/Linux, Emacs
- Guest researcher of Meiji Univ.
  - Team building
  - Theory of management and Social psychology

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AND..

- Silicon Valley InfoSec Geek
  - FIRST Education Committee Chair
  - CISSP, CISM, CISA, and PMP
  - NTT-CERT
  - ENISA Expert/Working Groups
  - Info Security consultant
- Contributed to:
  - NIST SP 500-291 and *293
  - Liberty Alliance Presence Services, eGov Profile v1, IAF, Strong Authentication etc.
  - ITU-T: NGN Security and IdM

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MISSING HIM, WHO CAN'T COME TODAY..

- IT gadget otaku
- Photographer
- Consultant

- vi/emacs
- grep/sed/awk
- Debian/Linux
- OS X

- Father

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AGENDA

- Issues on OSS
- Roles of CSIRT
- OSS Security Tools

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VULNERABILITY

Source: https://translate.google.com/#auto/zh-TW/vulnerability

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VULNERABILITY

Root cause of most cyber security incidents

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CASE #1- WORLDCUP 2014

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Source: https://twitter.com/apbarros/status/481157619261116416/photo/1

CASE #1- WORLDCUP 2014

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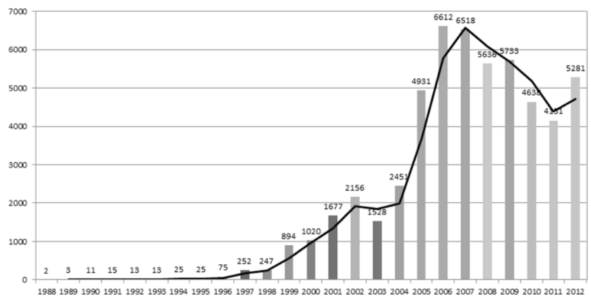
Source: https://twitter.com/apbarros/status/481157619261116416/photo/1

SOFTWARE VULNERABILITIES

Source: 25 Years of Vulnerabilities: 1988-2012
by sourcefire



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QUIZ

How many Apache related vulnerabilities were published in 2012 and 2013?

2014 (as of July 31) 67

2013: 135

2012: 129

Source: http://www.osvdb.org/search?search[vuln_title]=apache&search[text_type]=alltext

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CASE #2

CVE-2013-1966

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CASE #2: CVE-2013-1966

Vulnerability

- in Apache Struts 2 before version 2.3.14.1
- allows remote attackers
- to execute arbitrary OGNL code
- via a <u>CRAFTED</u> request that is <u>NOT PROPERLY HANDLED</u> when using the includeParams attribute in
  i. a URL, or
  ii. a tag.

Reference: http://struts.apache.org/development/2.x/docs/s2-013.html

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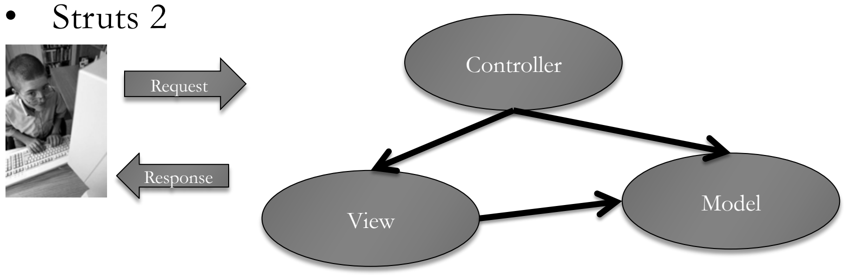
CASE #2: CVE-2013-1966

What is Struts?

- Open source web application Framework
- Based on MVC architecture
- Struts 2



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CASE #2: CVE-2013-1966

More serious in Japan than any other places

- Not yet sure why @_@ 😕
- Many websites in Japan compromised
- Such sites spread malware to users through drive by download
- Needed to apply the patch as soon as it was released…
    - when Japan was **<u>in big holiday week on April~May.</u>**
- Many sites are still suspected vulnerable…😱

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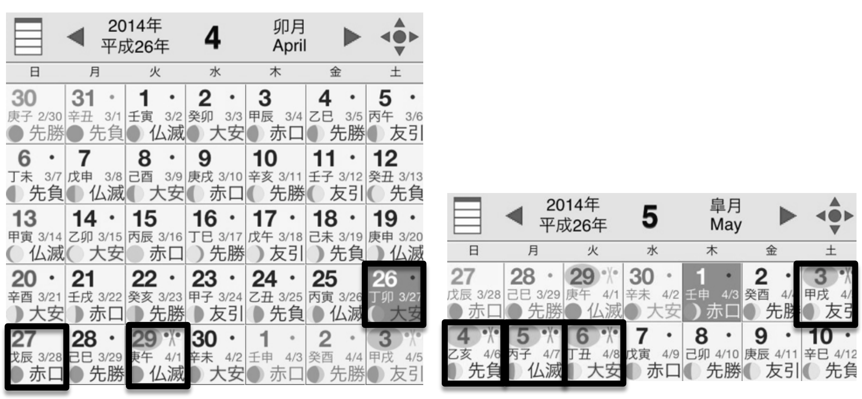
CASE #2: CVE-2013-1966



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CASE #2: CVE-2013-1966

What are the problems?

1. Developers
   - Lack of Secure Development
   - Lack of Secure Coding

CASE #2: CVE-2013-1966

What are the problems?

2. Users ~_~;;
   - Didn't care of patches 😱
     - No Patch management in the worst cases
   - Did not consider security enough, or at all😱
   - Even Struts 1s were still running after its support expired…(Windows XP, you are not alone.😱)

CVE-2013-1966

Source: http://struts.apache.org/struts1eol-press.html

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CVE-2013-1966

What are the problems?

3. Vendors, or System Integrators
   - Some vendors did not have contractual obligations to fix vulnerabilities. 😵
   - Some of them even not familiar enough with patching or patch management 😭

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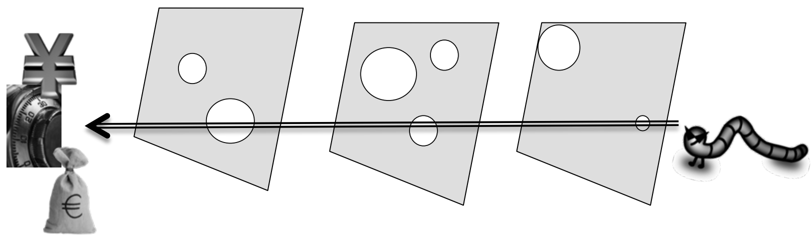
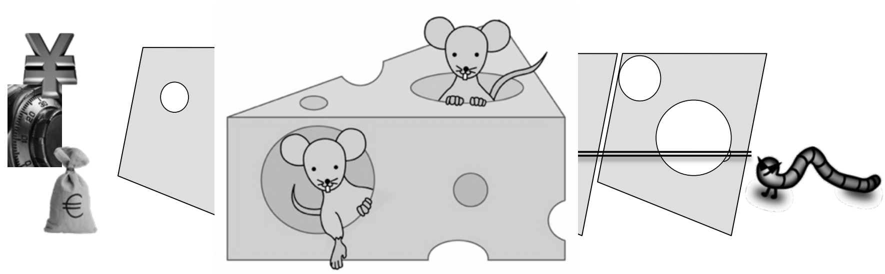
SECURITY ISSUES AROUND OPEN SOURCE



http://en.wikipedia.org/wiki/Swiss_cheese_model
Awareness test

COMMERCIAL BETTER?



OPEN SOURCE SOFTWARE AS "FREE" SOFTWARE

- Do it ourselves at our own risk.
- We have all or majority of controls.

It's "Free"

Back to the root

"Have fun!"

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- OSS Security Tools

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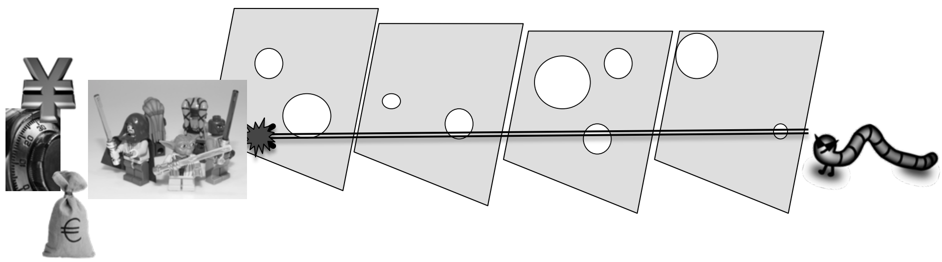
WHAT CAN CSIRTS DO FOR OPEN SOURCE ?



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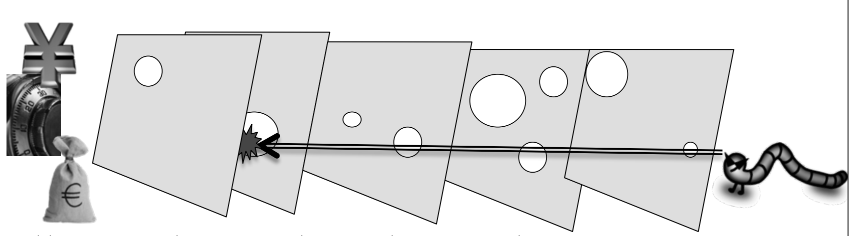
PATCH MANAGEMENT

- "An ounce of prevention equals a pound of cure."
  By Benjamin Franklin
- Patch and Vulnerability Group(PVG)
  - Manage patch and Vulnerability
- Zero-day -> Mitigation



http://csrc.nist.gov/publications/nistpubs/800-40-Ver2/SP800-40v2.pdf

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PATCH MANAGEMENT

NIST
National Institute of
Standards and Technology
Technology Administration
U.S. Department of Commerce

Special Publication 800-40
Version 2.0

Creating a Patch and Vulnerability Management Program

Recommendations of the National Institute of Standards and Technology (NIST)

http://csrc.nist.gov/publications/nistpubs/800-40-Ver2/SP800-40v2.pdf

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PATCH MANAGEMENT

- System Inventory
- Monitoring
- Prioritize
- Create Remediation DB
- Testing of Remediation
- Deploy
- Distribute information
- Automated Deployment

http://csrc.nist.gov/publications/nistpubs/800-40-Ver2/SP800-40v2.pdf

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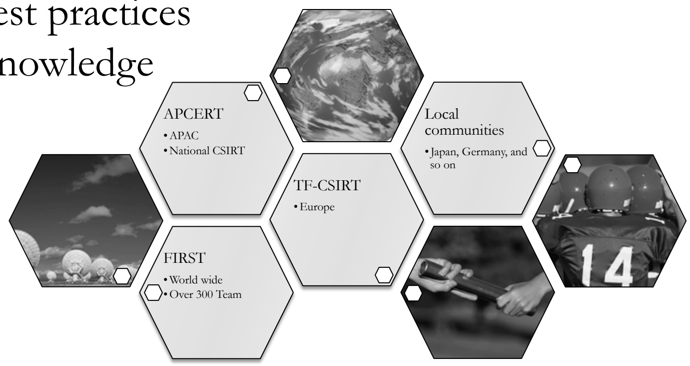
CSIRT AND COMMUNITIES

- Vulnerability information
- Best practices
- Knowledge



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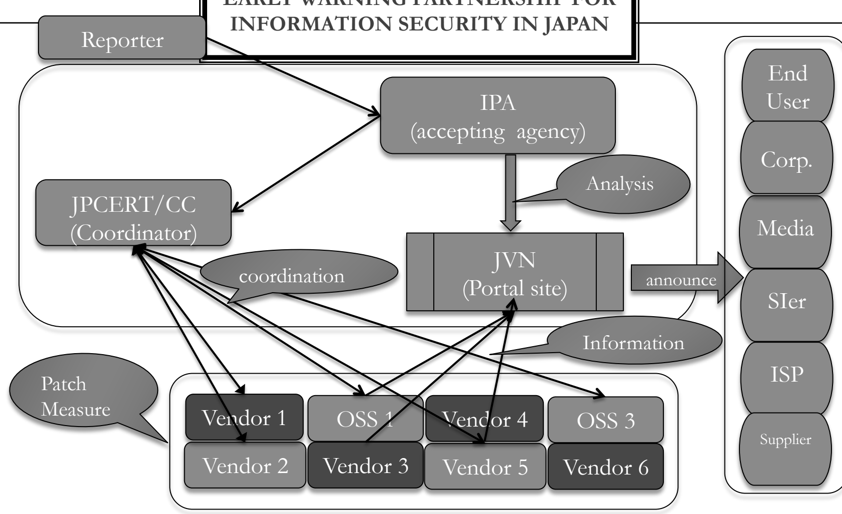
EARLY WARNING PARTNERSHIP FOR INFORMATION SECURITY IN JAPAN



http://www.jpcert.or.jp/english/vh/project.html

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OSS SECURITY TOOLS

KALI LINUX

SNORT

metasploit

skipfish

OSS SECURITY TOOLS

- Many useful tools are already available.
  - Commercial level software are also there
  - Attacker are also using those tools…
  - Know your enemy?
- OSS security tool community
  - different motivation from other OSS softs
  - useful to share knowledge and information
  - more security experts

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OSS SECURITY TOOLS

- for admins/developers
  - IDS/IPS, WAF, Firewalls,
  - Penetration testing, code testing
- for end users
  - data encryption & signing
  - data rescue
- for security professionals
  - security analysis tools
  - digital forensic, malware analysis, pentest

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REFERENCES OF OSS SECURITY TOOLS

Top 125 Network Security Tools

http://sectools.org/

Probably best free security list

https://www.techsupportalert.com/content/probably-best-free-security-list-world.htm

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SHARE SECURITY TOOLS, KNOWLEDGE, AND EXPERIENCES

- Beginners
  - I don't know which one are good.
  - I don't know how to use them
  - I don't know how to Google them.
  - I don't know how to learn them.
- Seniors- those more experienced
  - I like these ones best among others.
  - I know how to use them.
  - "Use the Source, Luke", in addition to Just Googling them to know!
  - Do it to learn it

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WHY DON'T WE HELP?

- Security requires a lot of hands-ons.
- Beginners need Seniors.
- Bring up new Jedi's for future internet security.
- Expect young generation do more than we are doing.

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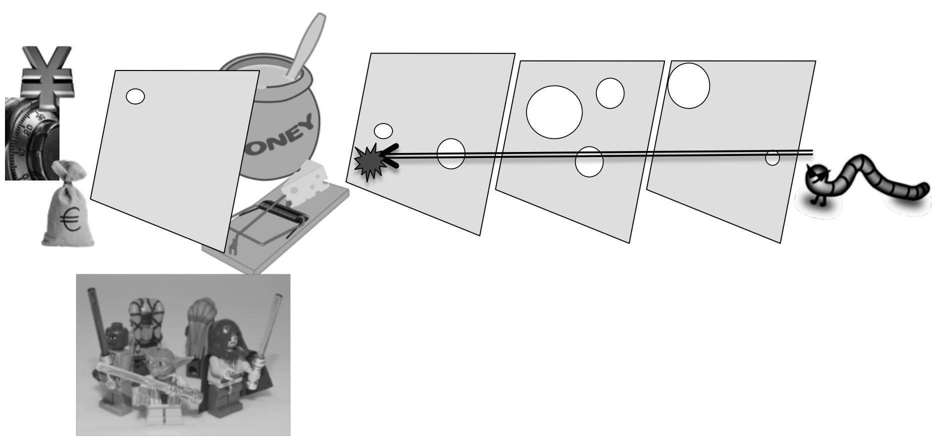
CONCLUSION



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MORE CONSIDERATIONS

- Best practices using Open Source Software
- User Vulnerability Educations
- Secure Development and Secure Coding
- OSS Security Tools repository and how to use them (Hands on)

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QUESTIONS?

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SPECIAL THANKS TO

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Mr. Ikuya Hayashi, NTT-CERT

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