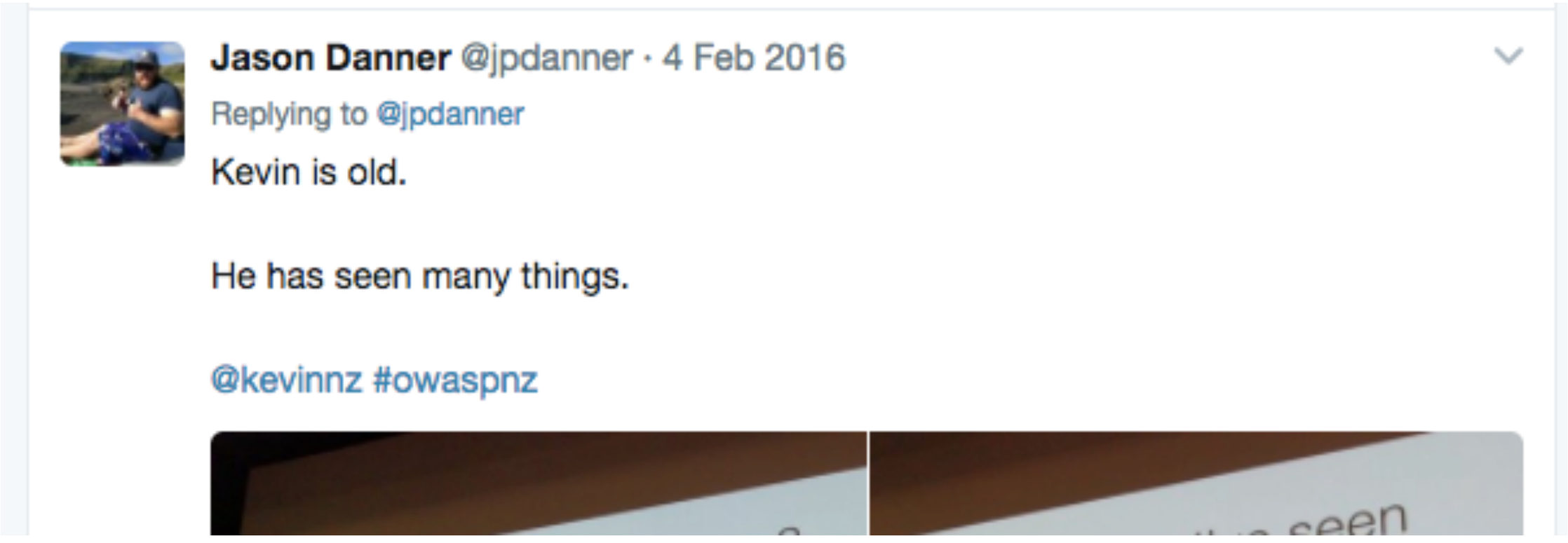
Top 10 Review and ~~Preview~~

Kevin Alcock, OWASP Day NZ 20 April 2017

OWASP
Open Web Application Security Project

Obligatory Who is



The Top 10

- Open Web Application Security Project (OWASP)
- The OWASP Top Ten provides a powerful awareness document for web application security. The OWASP Top Ten represents a broad consensus about what the most critical web application security flaws are.

Who is it for?

Attackers

Defenders

Developers

Testers

OWASP TOP 10 (2013)
A1 - Injection
A2 - Broken Authentication and Session Management
A3 - Cross-Site Scripting (XSS)
A4 - Insecure Direct Object References
A5 - Security Misconfiguration
A6 - Sensitive Data Exposure
A7 - Missing Function Level Access Control
A8 - Cross-Site Request Forgery (CSRF)
A9 - Using Known Vulnerable Components
A10 - Unvalidated Redirects and Forwards

2017

A10 - Underprotected APIs (NEW)

- Increased exposure through Mobile, Micro Services
- Just because it is not “published” doesn’t mean it is is not discoverable
- Secure your comms, credentials, tokens and keys
- Harden your parsers
- Implement Access control where possible

A9 -Using Components with Known Vulnerabilities

- WordPress plugins, anyone?
- Audit your third party dependences
- Regularly check vendor and CVE’s
- Check to see if you really do need it
- Way up if you should Upgrade, replace, rewrite or virtual patch

A8 - Cross-Site Request Forgery (CSRF)

- A Phishers dream
- Use the CSRF defence in your framework
- Grab CSRF Cheat Sheet from owasp.org

A7 - Insufficient Attack Protection (NEW)

- Do you know when you are under attack?
- WAF's, IDS, Firewalls, Honeypots
- Actively monitor and respond accordingly

A6 - Sensitive Data Exposure

- Passwords, credit card numbers, health records, and personal information
- Don’t store sensitive data unnecessarily
- Ensure strong standard algorithms and strong keys are used, and proper key management is in place.
- Ensure passwords are stored with an algorithm specifically designed for password protection, such as bcrypt, PBKDF2, or scrypt.

A5 - Security Misconfiguration

- Are you rolling with default settings, anywhere?
- Is your software up to date?
- IaaS - treat your configurations like code
- Test Test Test

A4 - Broken Access Control (Original category in 2003/2004)

- Don’t just hide features
- Check access!!

A3 - Cross-Site Scripting (XSS)

- Stored, reflected, server, client
- Escape untrusted data

A2 - Broken Authentication and Session Management

- Don’t put session tokens in the URL
- Use analytics to fine tune your timeouts
- Make sure you do invalidate your tokens
- Validate credentials on sensitive operations

A1 - INJECTION!

- SQLi is 18 years old and its still a thing!
- it is not just SQL:
  check your LDAP, XPath, or NoSQL queries; OS commands; XML parsers, SMTP Headers, expression languages, etc.
- DON’T TRUST INPUT!

OWASP TOP 10 (2017)

A1 - Injection

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A7 - Insufficient Attack Protection (NEW)

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A9 - Using Known Vulnerable Components

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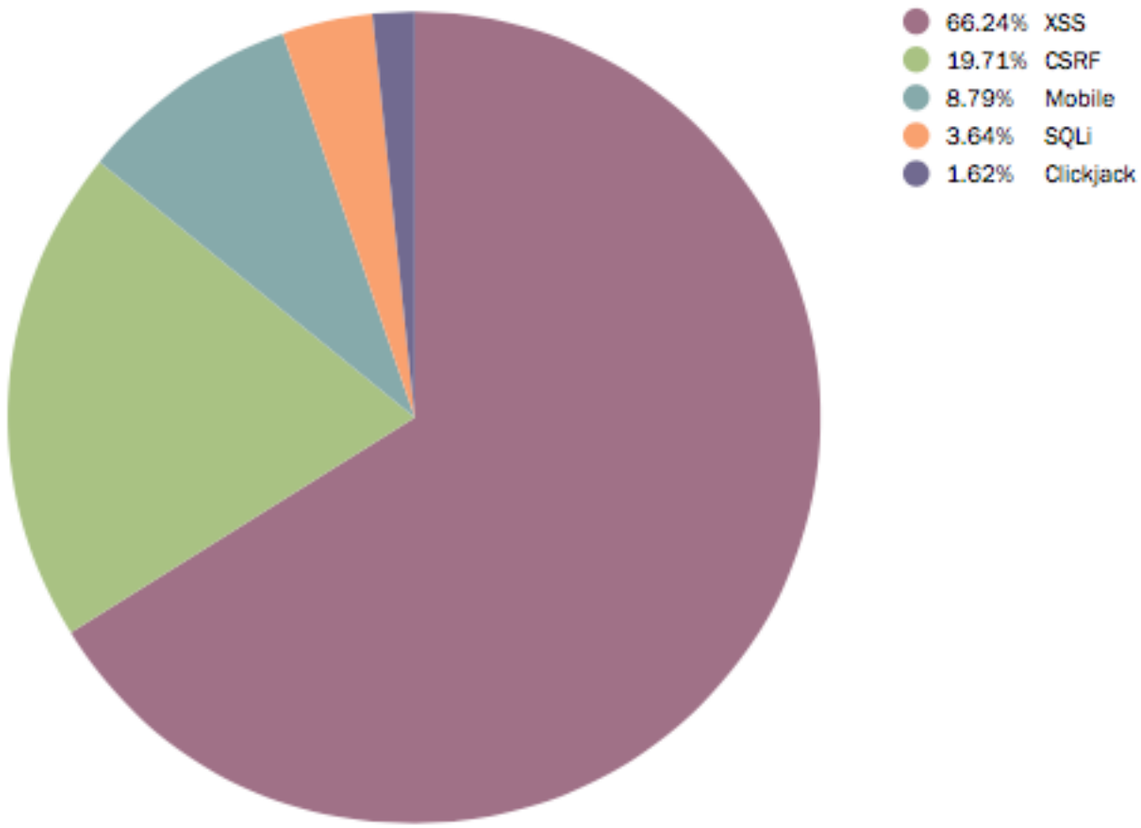
How does that compare



* The State of the Bug Bounty - 2016 *(Bugcrowd)*

But there’s more…

- Clickjacking (CAPEC-103)
- Denial of Service (CWE-400) (Was 2004 Top 10 – Entry 2004-A9)
- Deserialization of Untrusted Data (CWE-502)
- Expression Language Injection (CWE-917)
- Information Leakage (CWE-209) and Improper Error Handling (CWE-388) (Was part of 2007 Top 10 – Entry 2007-A6)
- Hotlinking Third Party Content (CWE-829)
- Malicious File Execution (CWE-434) (Was 2007 Top 10 – Entry 2007-A3)
- Mass Assignment (CWE-915)
- Server-Side Request Forgery (SSRF) (CWE-918)
- Unvalidated Redirects and Forwards (CWE-601) (Was 2013 Top 10 – Entry 2013-A10)
- User Privacy (CWE-359)

Where to from here?

For Devs

- Application Security Requirements
- Application Security Architecture
- Standard Security Controls
- Secure Development Lifecycle
- Application Security Eduction

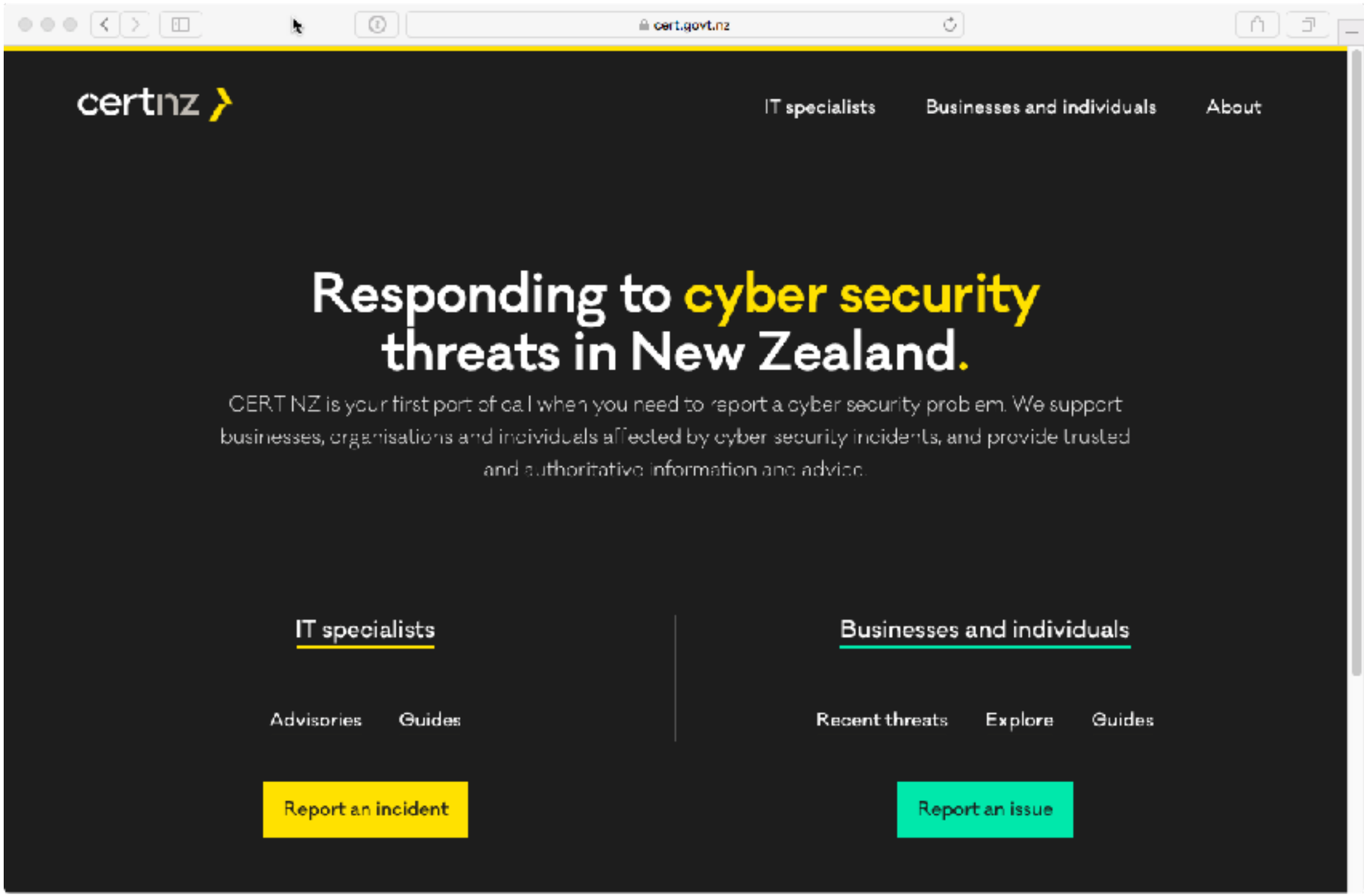
For Testers

- Understand the Threat Model
- Understand your SDLC
- Testing Strategies
- Achieving Coverage and Accuracy
- Make Findings Awesome

For Everyone

- Support OWASP
- And your local chapter!

Shout out!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Credits

- old-guy https://twitter.com/jpdanner/status/695087811158880256
- attackers https://twitter.com/malwareunicorn/status/853359887568445440
- defenders https://images.nasa.gov/#/details-GRC-1973-C-01775.html
- developer https://twitter.com/ProObject/status/849683334473150464
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