OWASP

Open Web Application Security Project

Vulnerabilities:Is not fault of Developer, it is of Delivery process S-SDLC.

Presentador

OWASP
Open Web Application Security Project

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Bag: Systems Engineer

IT Security Consultant

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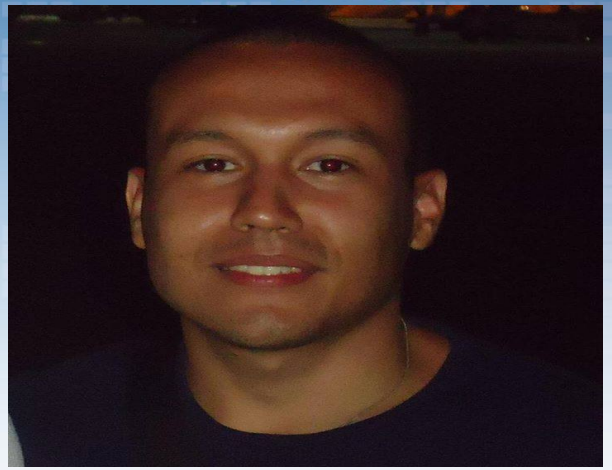
CCNA and CCIA Cisco



Programming courses in .Net and Java (IBM, Microsoft)

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Results

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When asked 12,000 security professionals to name what is the main security threat to their organization, 69% said vulnerabilities in the application layer * - however, less than 10% ensure that all their critical applications Business are reviewed for safety before and during production.

Dropbox: 68 million accounts

Ashley Madison: Over 30 million

Linkedin: 164 million

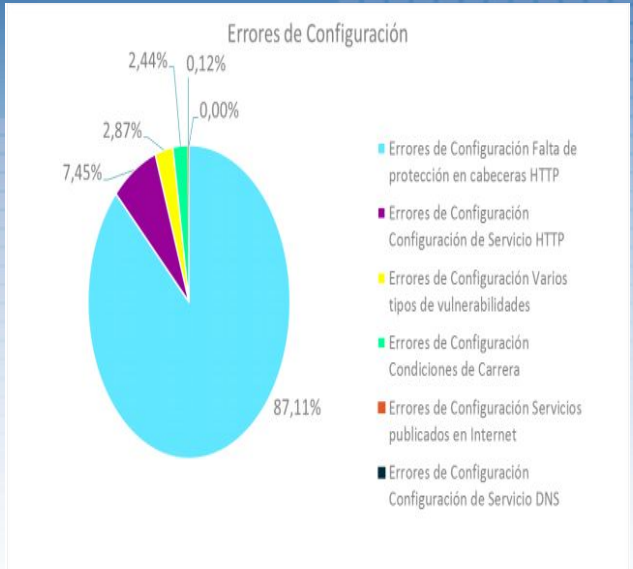
Yahoo + 500 million

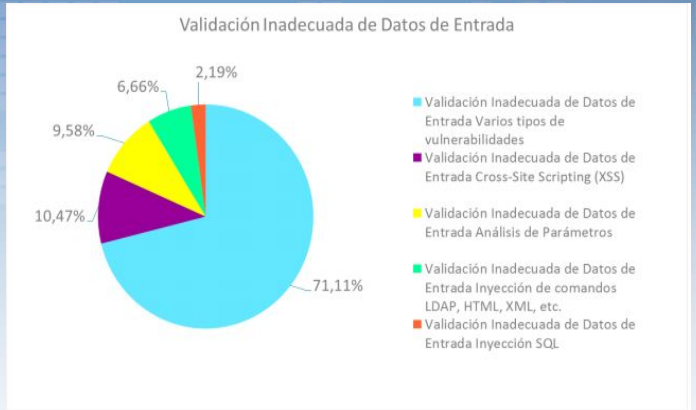
Panama Papers
https://tcinet.ru/en/press-centre/technology-news/3863/

Statistics

Configuration

AThose like, files of free access or servers web on updated



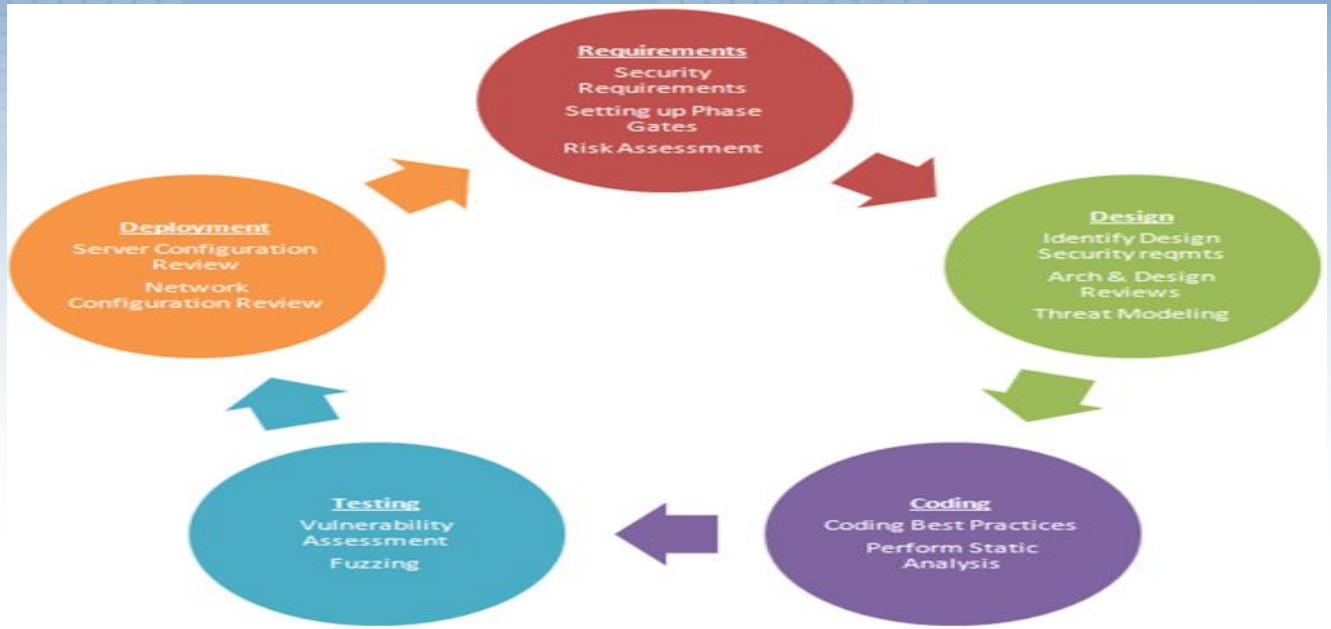


Cryptographic:

Lack of SSL Certificates, or certificates with weak encryption

Input chains
Those that do not validate data revenues, nor upload files

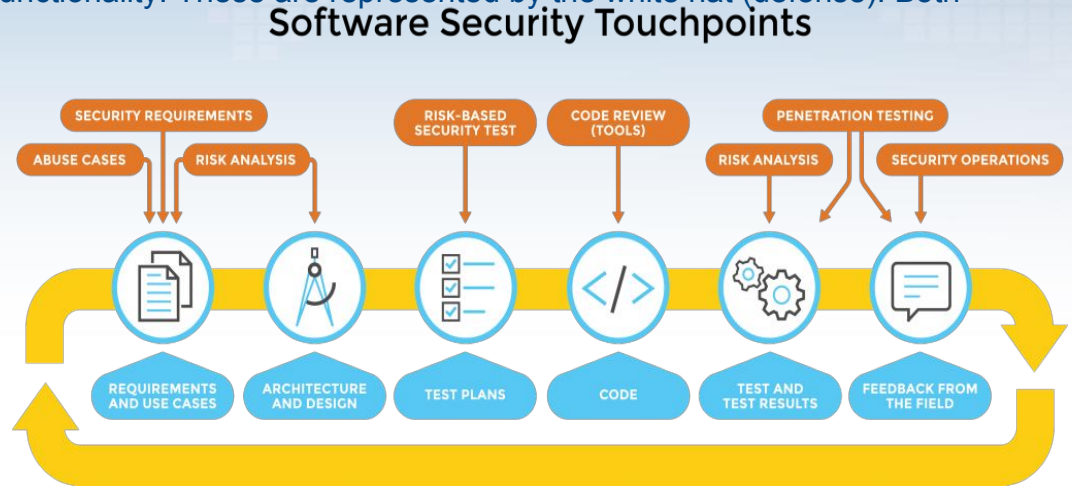
S-SDLC(Systems Development Life Cycle)



S-SDLC Model more use Security touchpoint

Touchpoints are a mix of destructive and constructive activities. Destructive activities are about attacks, exploits, and breaking software. These kinds of things are represented by the black hat (offense). Constructive activities are about design, defense, and functionality. These are represented by the white hat (defense). Both hats are necessary

- Code review
- Architectural risk analysis
- Penetration testing
- Risk-based security tests
- Abuse cases
- Security requirements
- Security operations



S-SDLC more use MS SDL

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Ciclo de vida de MS Security Development (MS SDL): Uno de los primeros de su tipo, MS SDL fue propuesto por Microsoft de acuerdo a las fases de un SDLC.

1. TRAINING	. REQUIREMENTS	3. DESIGN	4. IMPLEMENTATION	5. VERIFICATION	6. RELEASE	7. RESPONSE
1. Core Security Training	2. Establish Security Requirements	5. Establish Design Requirements	8. Use Approved Tools	11. Perform Dynamic Analysis	14. Create an Incident Response Plan	Execute Incident Response Plan
	3. Create Quality Gates/Bug Bars	6. Perform Attack Surface Analysis/ Reduction	9. Deprecate Unsafe Functions	12. Perform Fuzz Testing	15. Conduct Final Security Review	
	4. Perform Security and Privacy Risk Assessments	7. Use Threat Modeling	10. Perform Static Analysis	13. Conduct Attack Surface Review	16. Certify Release and Archive	

S-SDLC Owasp SAMM

SAMM(Software Assurance Maturity Model)

Training

1. Input Validation
2. Output Encoding
3. Authentication and Password Management (includes secure handling of credentials by external services/scripts)
4. Session Management
5. Access Control
6. Cryptographic Practices
7. Error Handling and Logging
8. Data Protection
9. Communication Security
10. System Configuration
11. Database Security
12. File Management
13. Memory Management
14. General Coding Practices

Training

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Proactive tools: to know what use to remedy, and how with need test

Key references

- Stopping XSS in your web application: OWASP

XSS (Cross Site Scripting) Prevention Cheat Sheet

- General information about injection:

Top 10 2013-A1-Injection

Key tools

OWASP Java Encoder Project

Microsoft .NET AntiXSS Library

OWASP ESAPI

OWASP Encoder Comparison Reference Project

Web Goat: Practice how to exploit vulnerabilities

Desing

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ASVS

(Application Security Verification Standard)

V3: Session Management Verification Requirements

Control objective

One of the core components of any web-based application is the mechanism by which it controls and maintains the state for a user interacting with it. This is referred to this as Session Management and is defined as the set of all controls governing state-full interaction between a user and the web-based application.

Ensure that a verified application satisfies the following high level session management requirements:

- Sessions are unique to each individual and cannot be guessed or shared
- Sessions are invalidated when no longer required and timed out during periods of inactivity.

Requirements

#	Description	1	2	3	Since
3.1	Verify that there is no custom session manager, or that the custom session manager is resistant against all common session management attacks.	✓	✓	✓	1.0
3.2	Verify that sessions are invalidated when the user logs out.	✓	✓	✓	1.0
3.3	Verify that sessions timeout after a specified period of inactivity.	✓	✓	✓	1.0

Threat Modeling:

Know what we have

-Name of application: the name of the application.

-Version of the application: the version of the application.

-Description - A high-level description of the application.

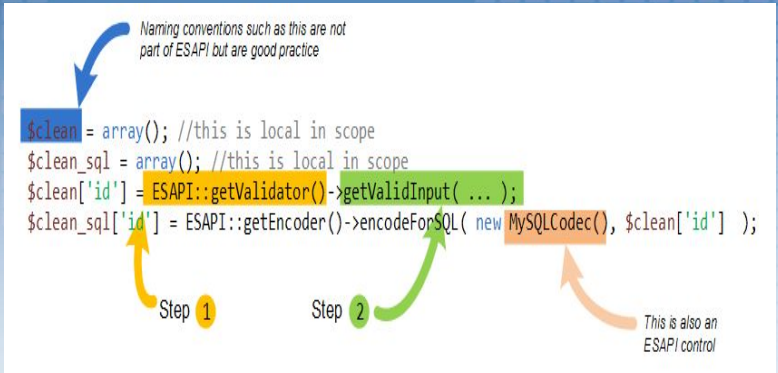
-Document Owner - The owner of the threat modeling document.

Overall Risk Severity				
Impact	HIGH	Medium	High	Critical
	MEDIUM	Low	Medium	High
	LOW	Note	Low	Medium
		LOW	MEDIUM	HIGH
	Likelihood			

Risk Ranking: to establish criticality Of the vulnerabilities

Development

ESAPI (The OWASP Enterprise Security API)



Response Headers

- HTTP Strict Transport Security (HSTS)
- Public Key Pinning Extension for HTTP (HPKP)
- X-Frame-Options
- X-XSS-Protection
- X-Content-Type-Options
- Content-Security-Policy
- X-Permitted-Cross-Domain-Policies

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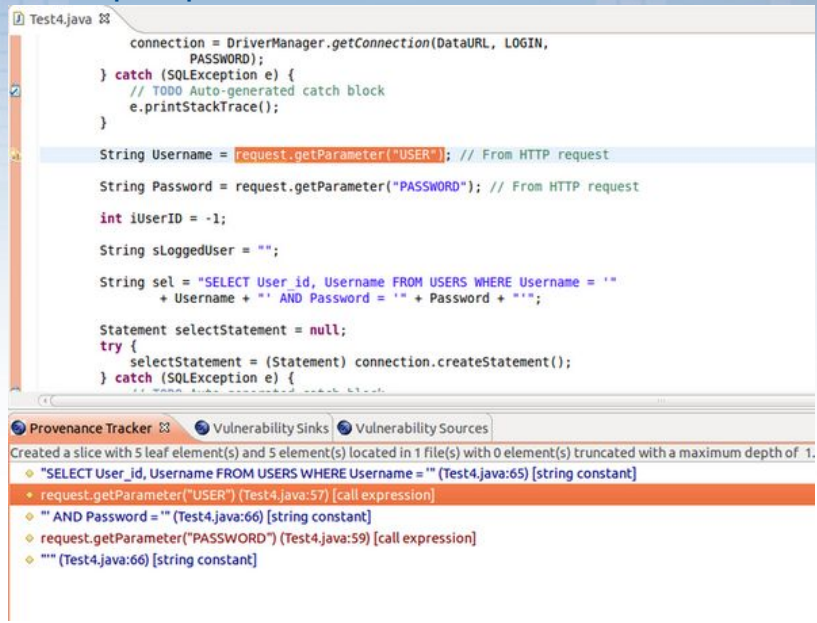
Static code analysis tool, which allows us to measure how we are going

Owasp Lapse



Verification

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V3: Session Management Verification Requirements

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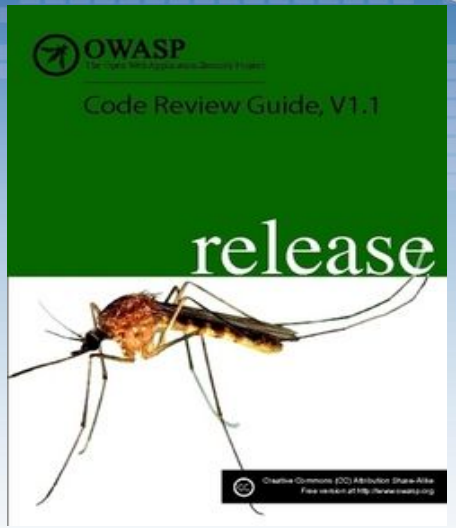
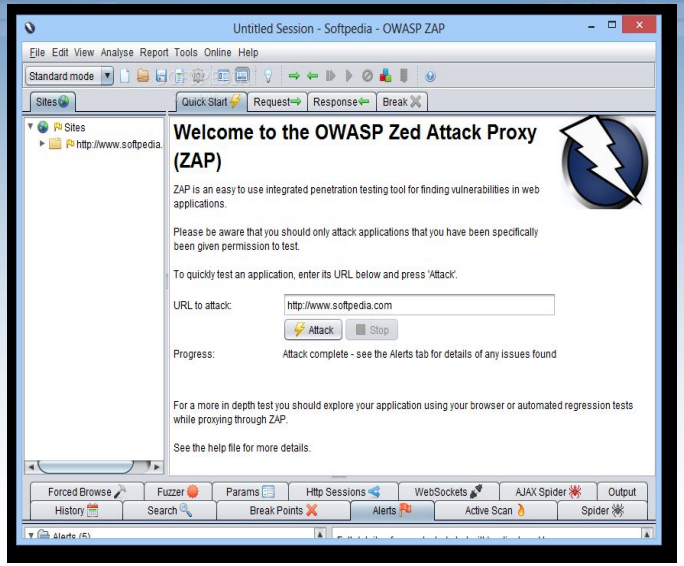


that allows only users with administrator privileges to access the content.

Figure A5.11
Authorization configuration in IIS

```
<configuration>
  <system.webServer>
    <security>
      <authorization>
        <remove users="*" roles="" verbs="" />
        <add accessType="Allow" users="" roles="Administrators" />
      </authorization>
    </security>
  </system.webServer>
</configuration>
```

Maintence



Audit each delivery once a week

Audit the project root separately if it exists

There are websites that try to avoid it, with countermeasures

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Future of SDLC…….

Secure the house from the ground up

References

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https://www.owasp.org/images/3/33/OWASP_Application_Security_Verification_Standard_3.0.1.pdf
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https://www.owasp.org/index.php/Category:OWASP_WebGoat_Project
https://www.owasp.org/images/0/07/OWASP_Proactive_Controls_v1.pdf