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Secure.
Capitalizing on
Collective Intelligence

How We Implemented Security in Agile for 20 SCRUMs- and Lived to Tell

SESSION ID: ASEC-R03

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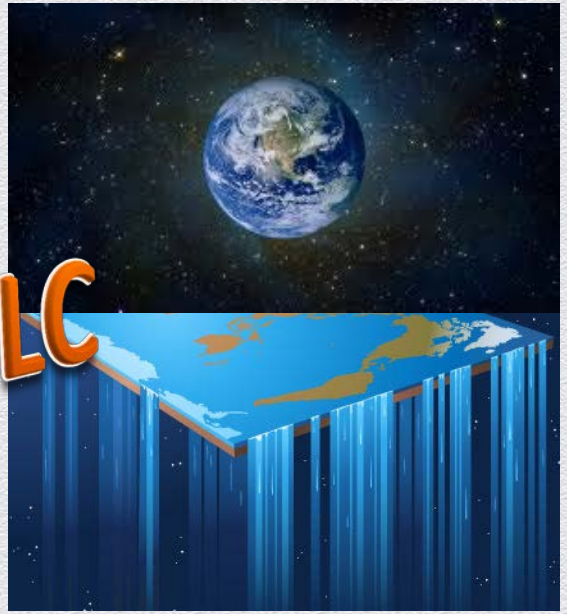
Security Specialist
LivePerson
@lione_heart

Challenged by Agile

Agile != SDLC



In the Next 45 Min

- LivePerson and Application Security
- Where did it all Began
- LivePerson And Agile
- Security Checkpoints in the Process
- Bringing it All Together in the Continuous Integration
- Summarize the Challenges
- Key Success Factors

LivePerson ID

What we do?

SaaS platform for creation of meaningful connections through real-time engagement

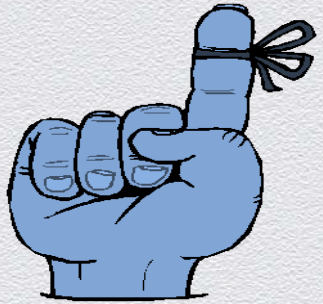
How it works?

Monitor web visitor's behavior (Over 1.5 B visits each month)

Conduct behavioral ranking

Provide the engagement platform (Over 10 M chats each month)

SaaS & Cloud only

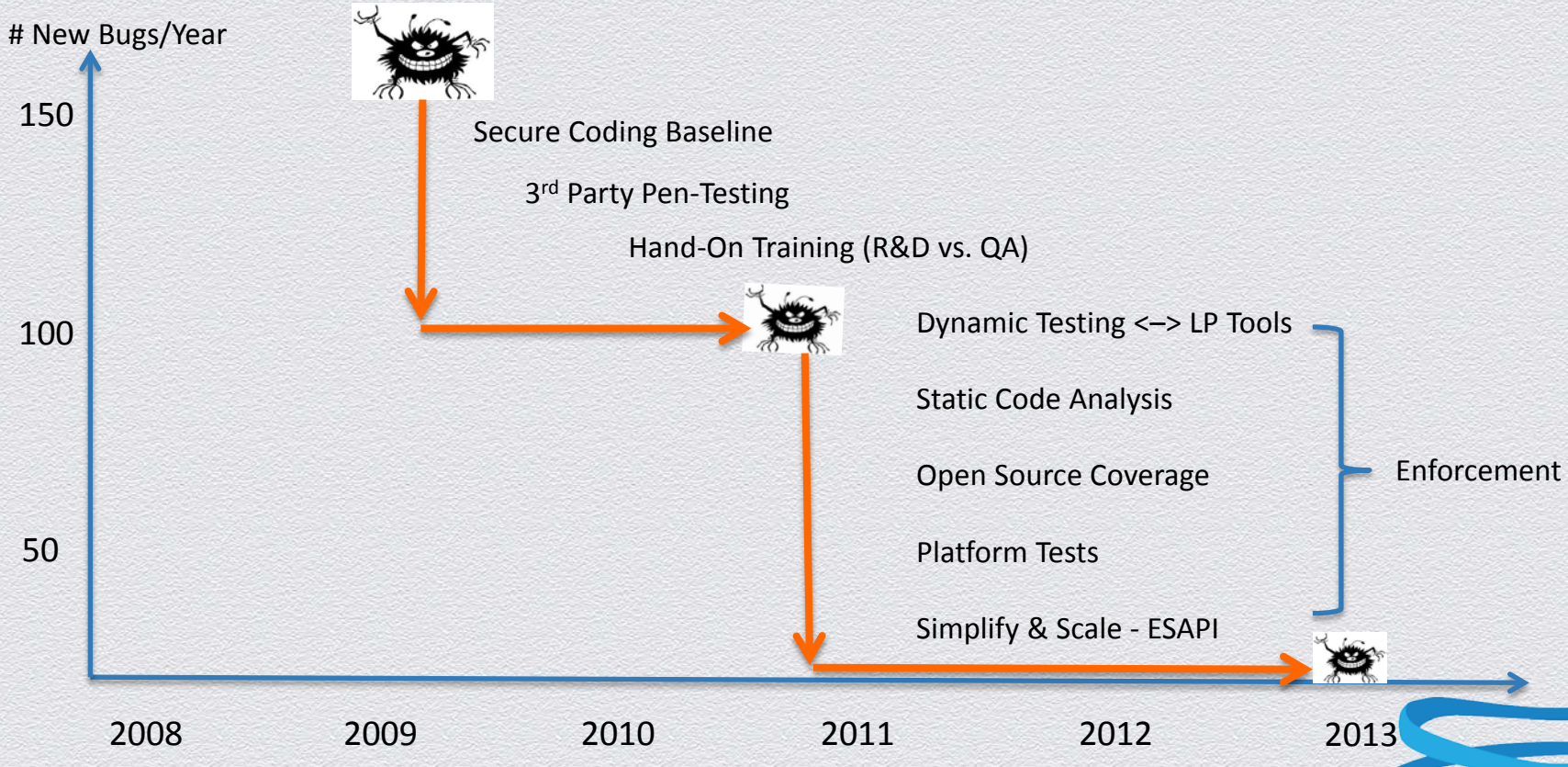


Security is NOT optional…

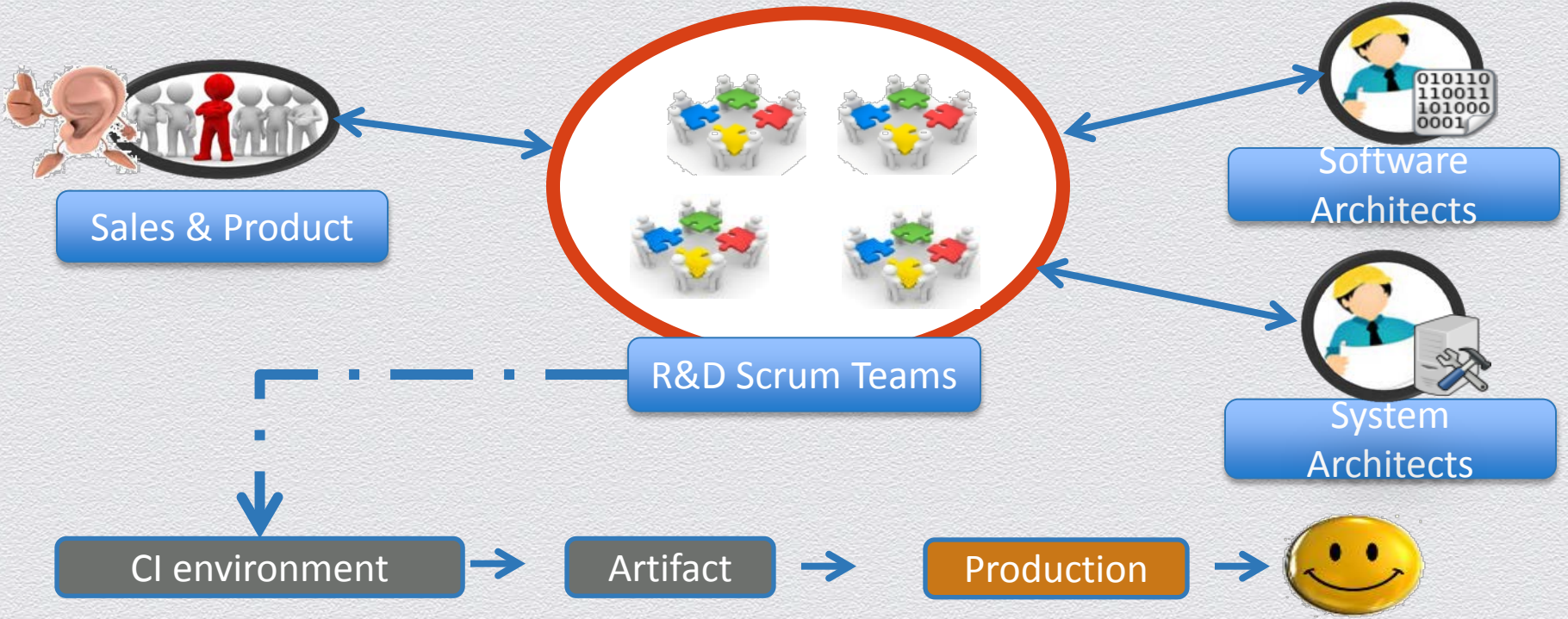
LIVEPERSON


FAILURE
SUCCESS

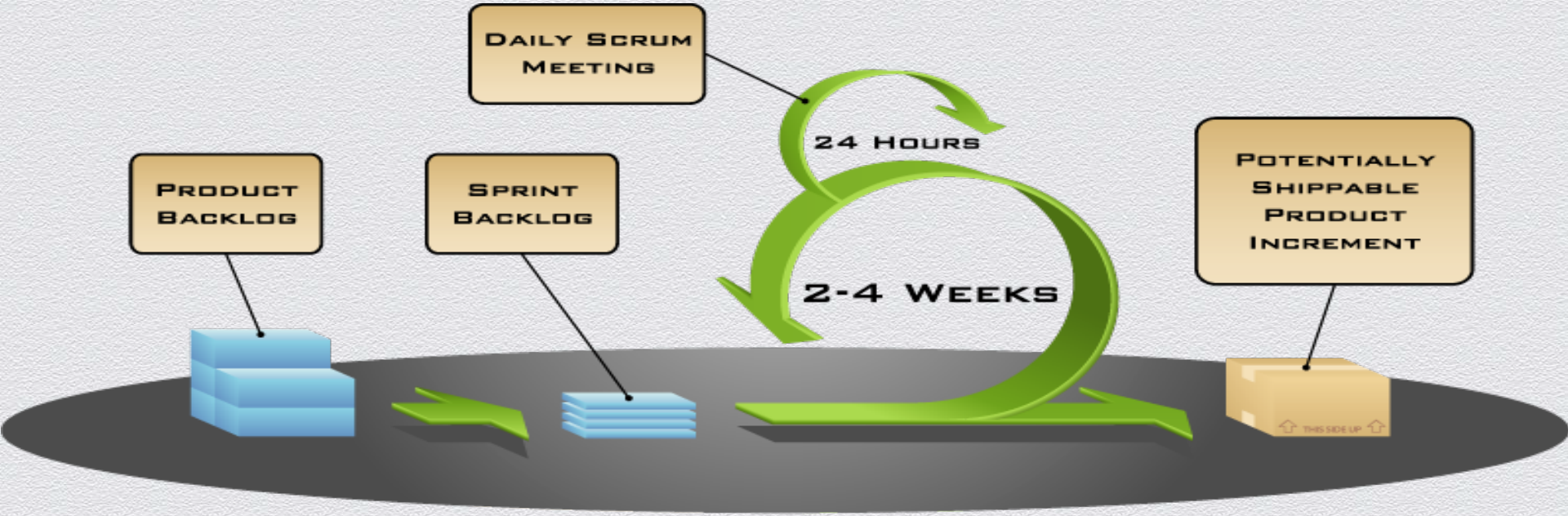
From Pen-Testing to SDLC



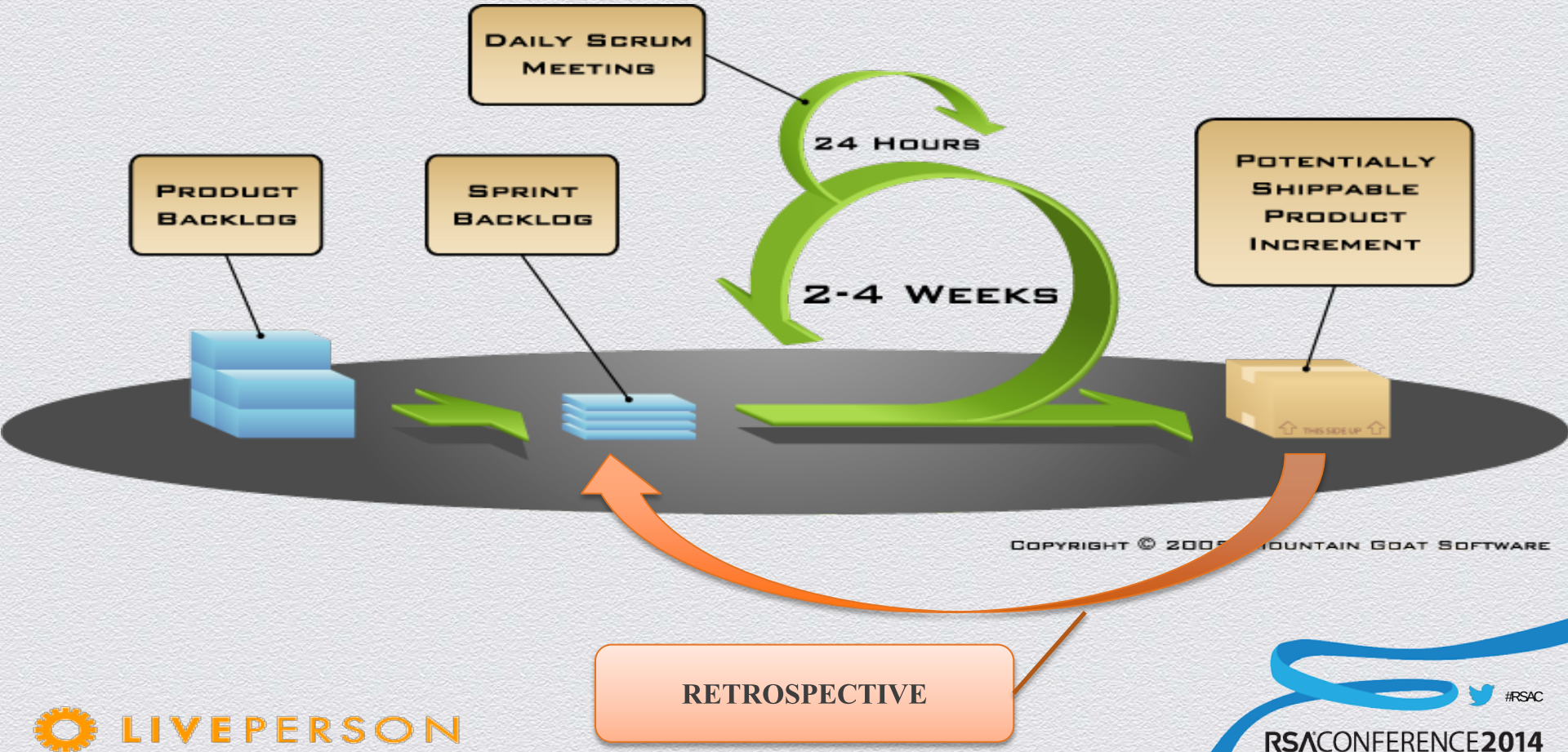
Who are the Key Players?



Agile Framework



Agile Framework



Add Security to the Agile Process

Scrum Actions

- Release Planning
- Sprint Planning
- Coding
- Code Freeze
- Q&A – Regression Tests
- Release

Add Security to the Agile Process

Scrum Actions	Security Control
Release Planning	Security High-Level Design
Sprint Planning	
Coding	
Code Freeze	
Q&A – Regression Tests	
Release	

Add Security to the Agile Process

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Coding	ESAPI & SCA checks for each build
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LIVEPERSON

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Q&A – Regression Tests	Automated Security Tests
Release	External Pen-Test

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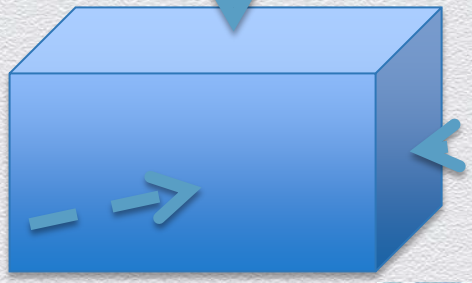
Screening Code in 3D

Delivered

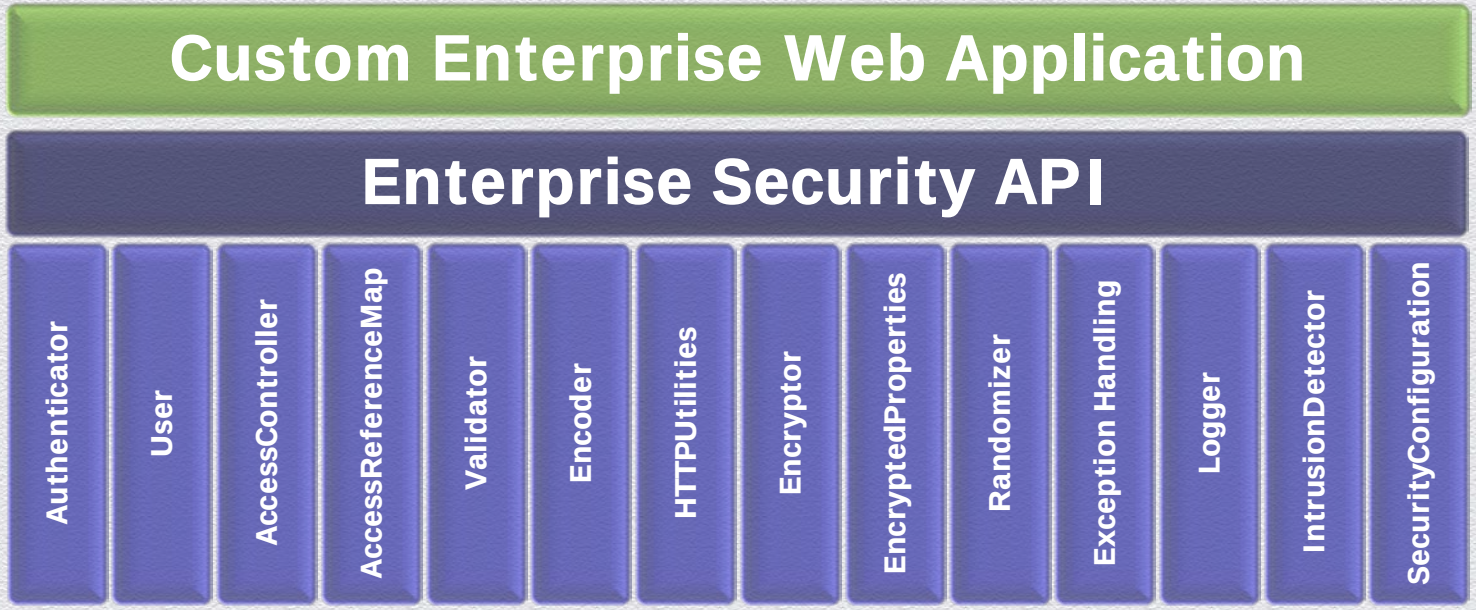


Dependencies and Open Source

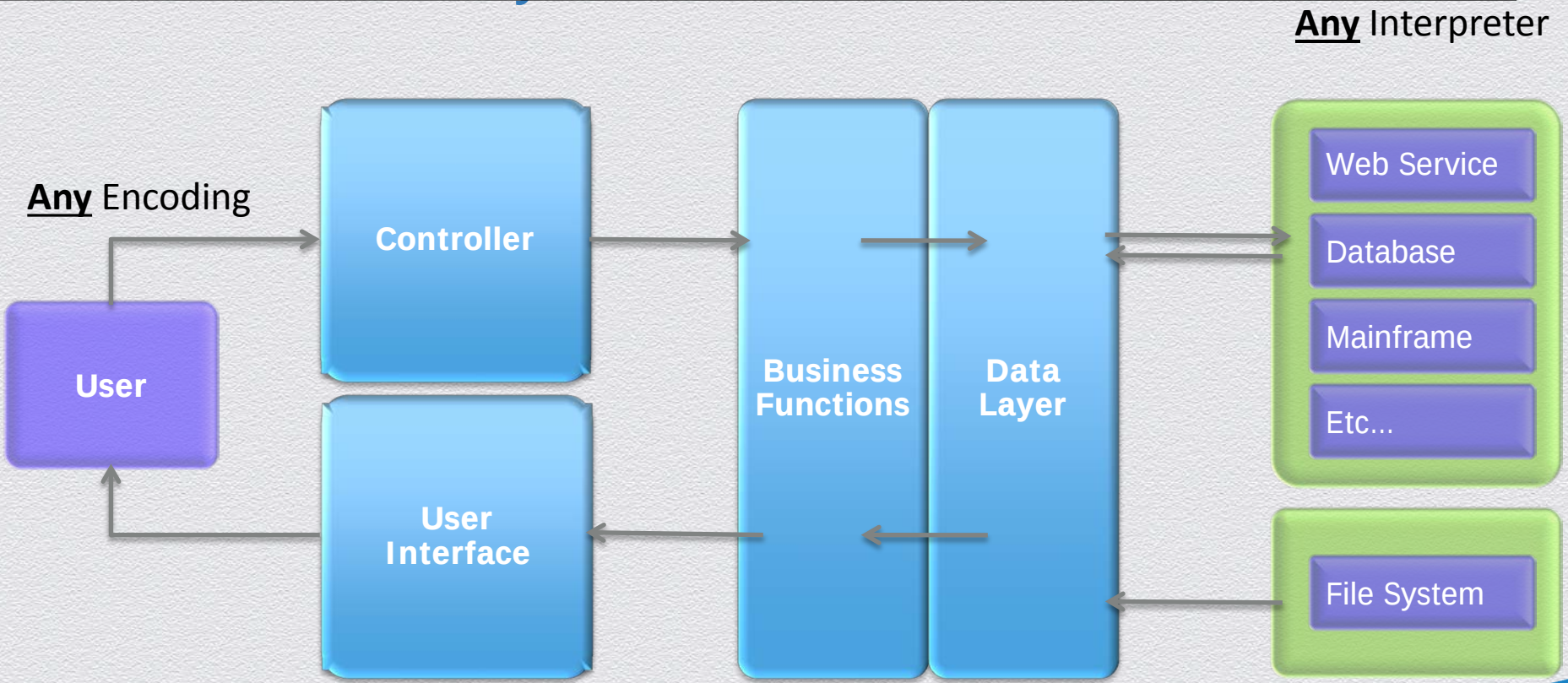
Developer Code

- ESAPI/AntiSamy/CSRF Guard…
- Utilities
- SCA

ESAPI Building Blocks



Where Do I Put my Validation ?



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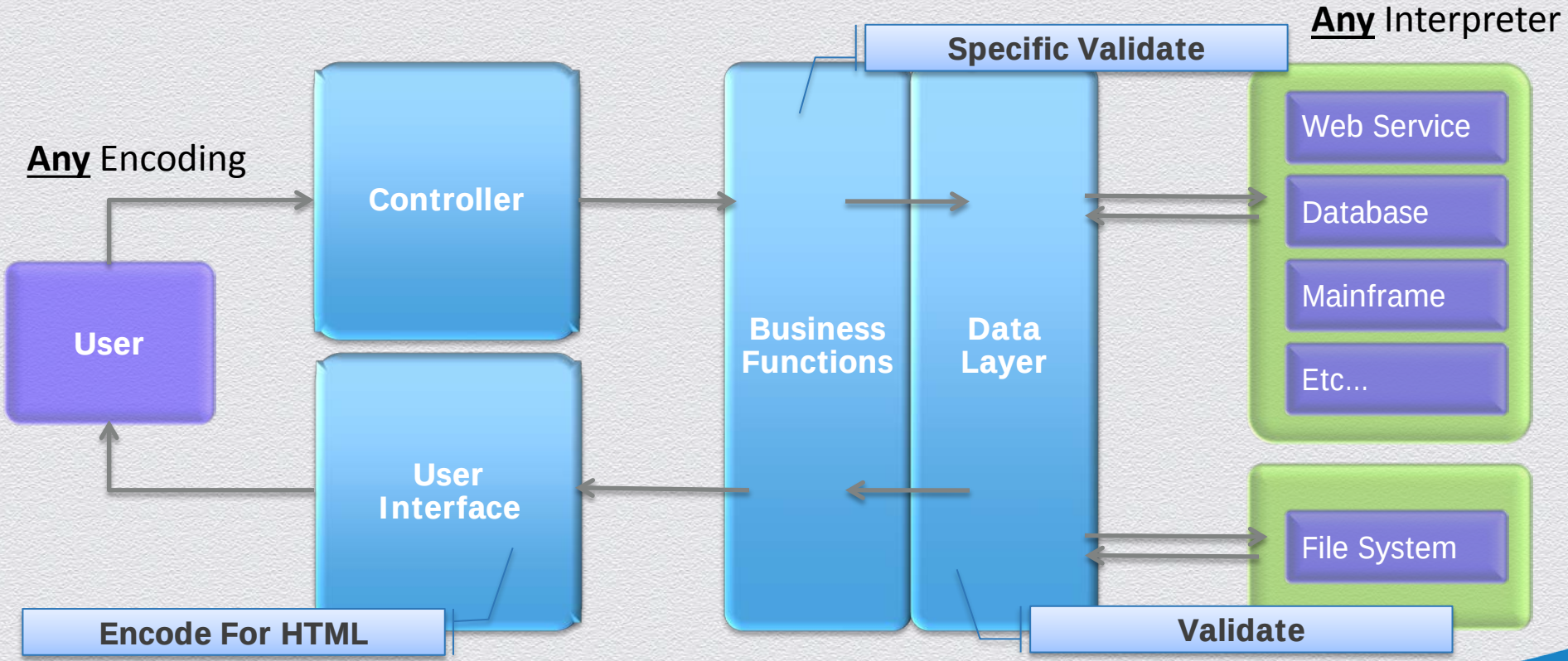


API Example

```
private String getValidInput(String attributeName, String attributeValue, FILTER filter, int maxLength, boolean allowNull) {
    if(log.isDebugEnabled()){
        log.debug(String.format("Attribute:%s value: %s",attributeName,attributeValue));
        log.debug(String.format("filter:%s  length:%d  allowNull:%s", filter.name(), maxLength, allowNull));
    }
    try {
        return ESAPI.validator().getValidInput(attributeName, attributeValue, filter.name(), maxLength, allowNull);

    } catch (ValidationException e) {
        log.error(String.format("ESAPI ValidationException while parsing parameter name: %s, value: %s",attributeName,attributeValue),e);
    } catch ( IntrusionException e) {
        log.error(String.format("ESAPI IntrusionException while parsing parameter name: %s, value: %s",attributeName,attributeValue),e);
    }

    return null;
}
```

```
public String getValidString(String attributeName, String attributeValue, int maxLength, boolean allowNull) {
    return getValidInput(attributeName, attributeValue, FILTER.SafeString, maxLength, allowNull);
}
```

Define Relevant Filters

Automated Test Example

```
////// safe string test
@Test()
public void StringTest() throws Exception {
    GenericTestRunner runner = new GenericTestRunner("safeString"){
        public String validate(String value) {
            return validator.getValidString("safeString", value, 100000, false);
        }
    };
    runner.validValuesTest();
    runner.invalidValuesTest();
}
```

Black/ White Listing

Filter

Integrating Automated Testing: Example Preventing RegEx DoS and Performance Issues

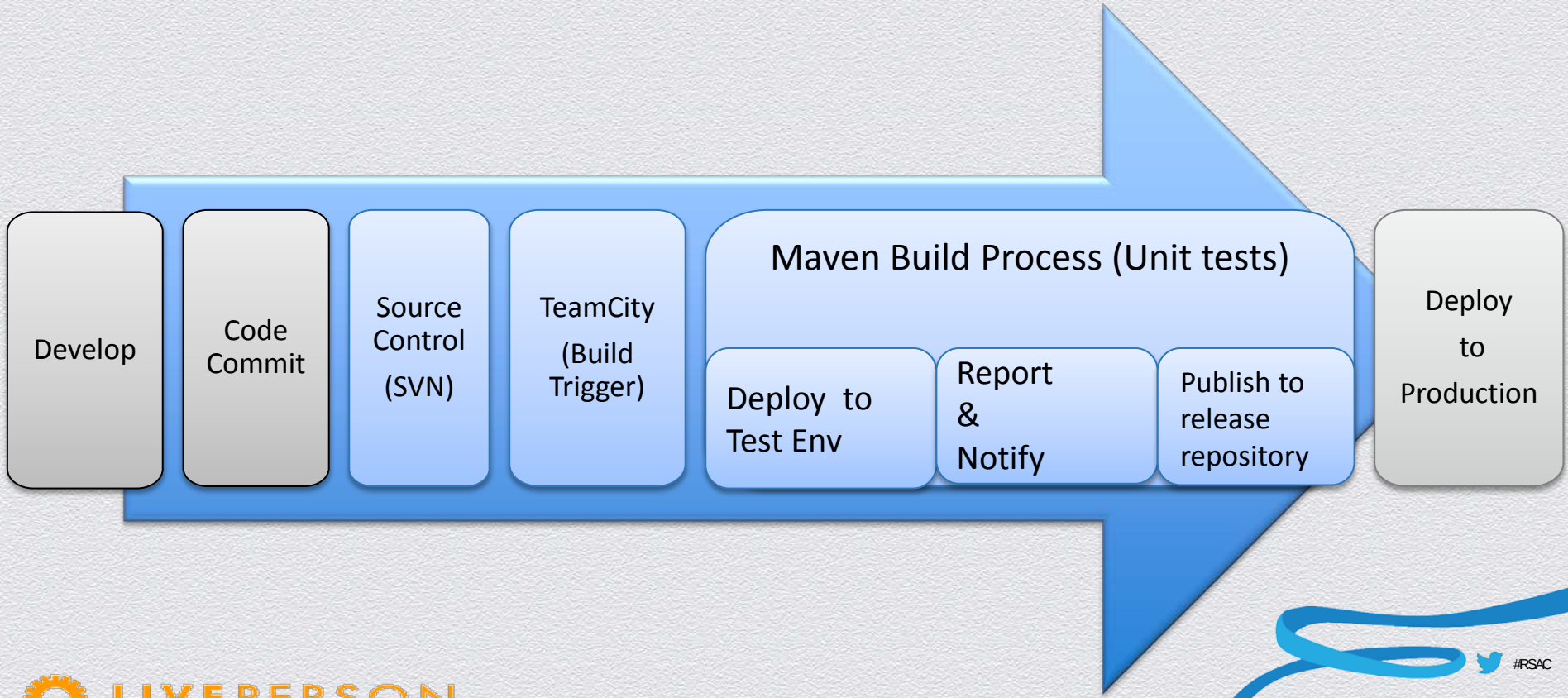
LivePerson ESAPI Implementation

Live Person Security API (LPSAPI) -
In-House Security Package based on ESAPI project

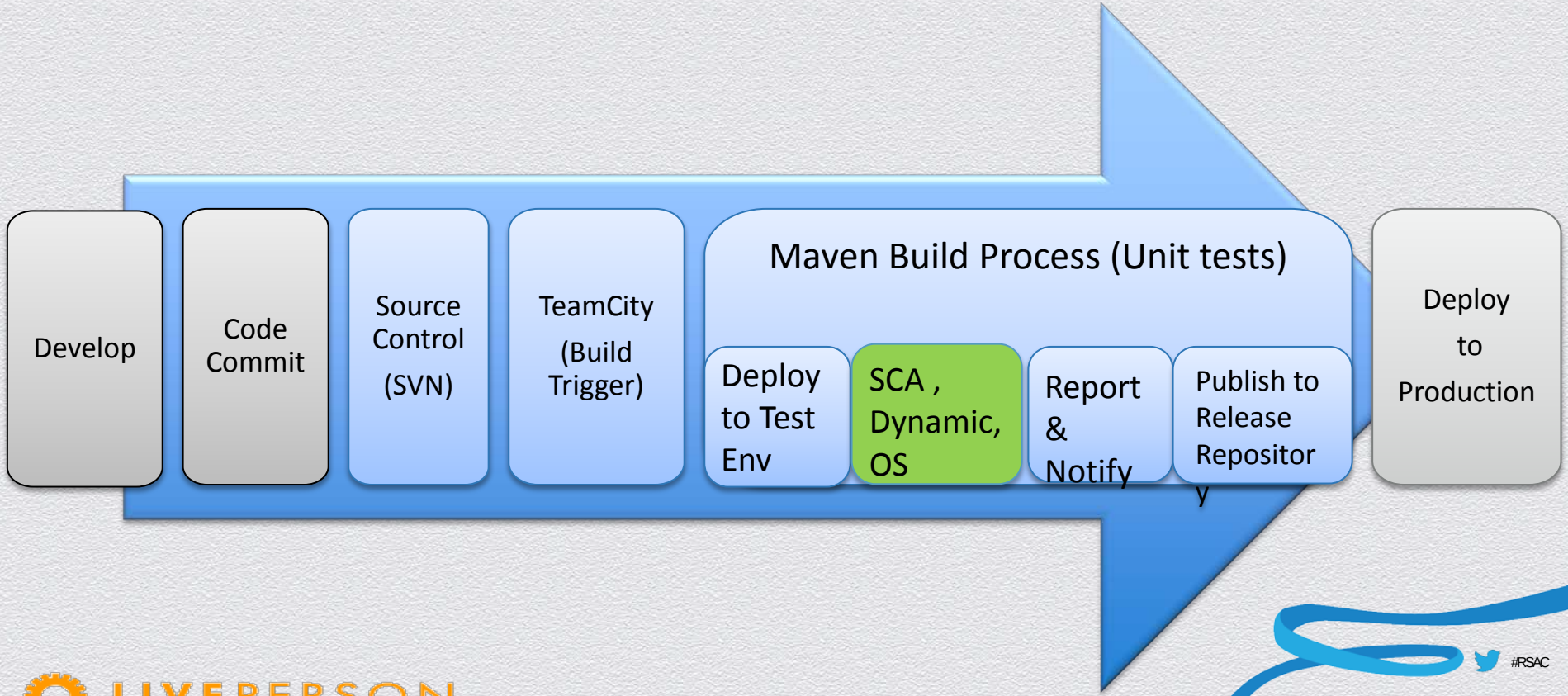
For Each Product

- Imports LPSAPI
- Enforces correct usage via Source Code Analysis (SCA)
- Enforce Open Source Policy
- Test your infra BB

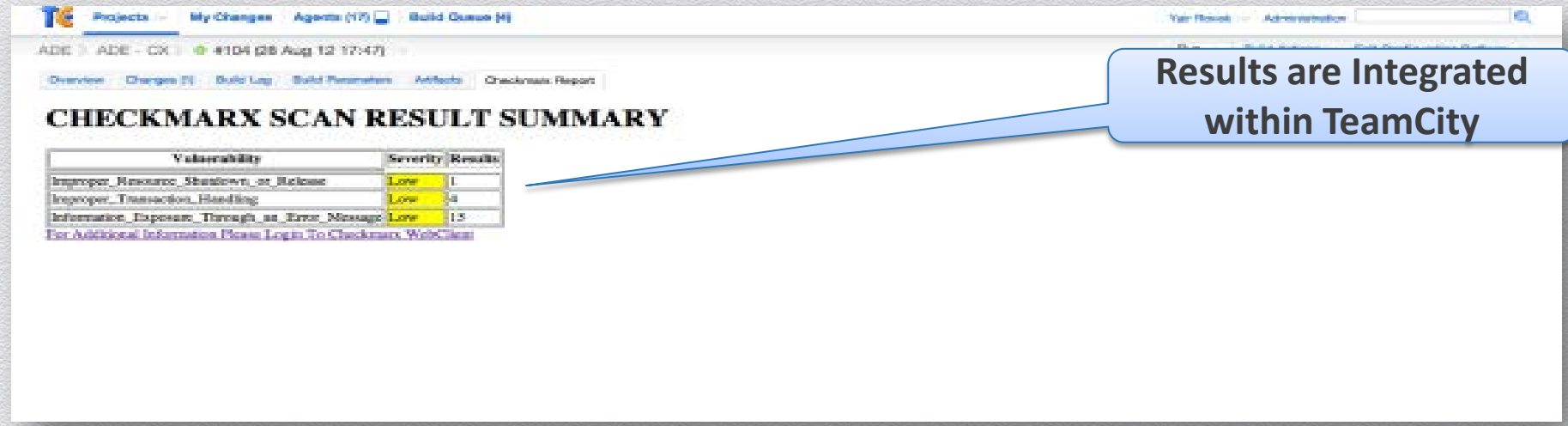
CI Environment



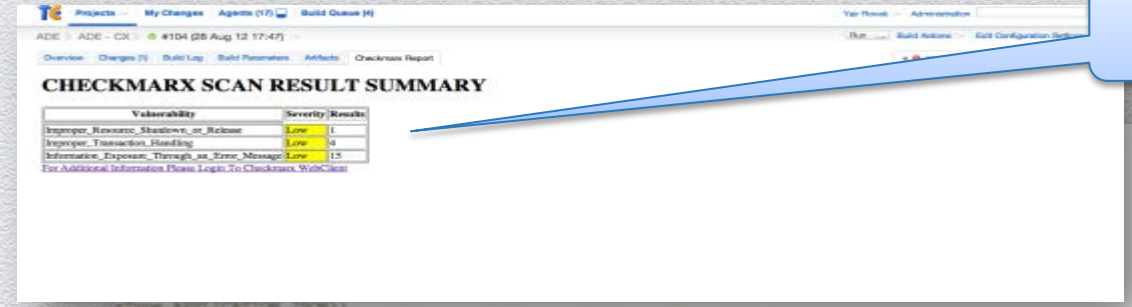
Security in CI Environment



One Dashboard



Dive into the Results



Results are integrated within CI environment

Developer has all required info.
No need to involve the Security Team

Challenges

- Management
- Developers
- Technology
- HR
- Formal Training VS Coaching and Continues Education
- Scale
- PenTest Quality

Key Success Factor
Secure Agile Development

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Key Success Factors

Identify the process within R&D and set a plan to become part of it

Set Security Package API to be consumed with each code (ESAPI AntiSamy CSRF Guard)

Screen and enforce your policy on your code Open Source and platform

Use automation to collaborate with the security dynamic test

Allow customer to run a pen test and work as a community to succeed

Key Success Factors

Engage tech leaders as security champions by showing them the value

Train developers on a regular basis

Create a knowledge base and discussions around security

Break the build for any “High” or “Medium” findings

Start small but think big

Q&A

Contact Me!

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@lione_heart

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Never ending story …

Links to Resources

- OWASP – https://www.owasp.org/index.php/Main_Page
- AGILE & SDLC - http://www.ambysoft.com/essays/agileLifecycle.html
- MS SDLC - http://www.microsoft.com/security/sdl/default.aspx