OWASP
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Integrating Security in Agile projects

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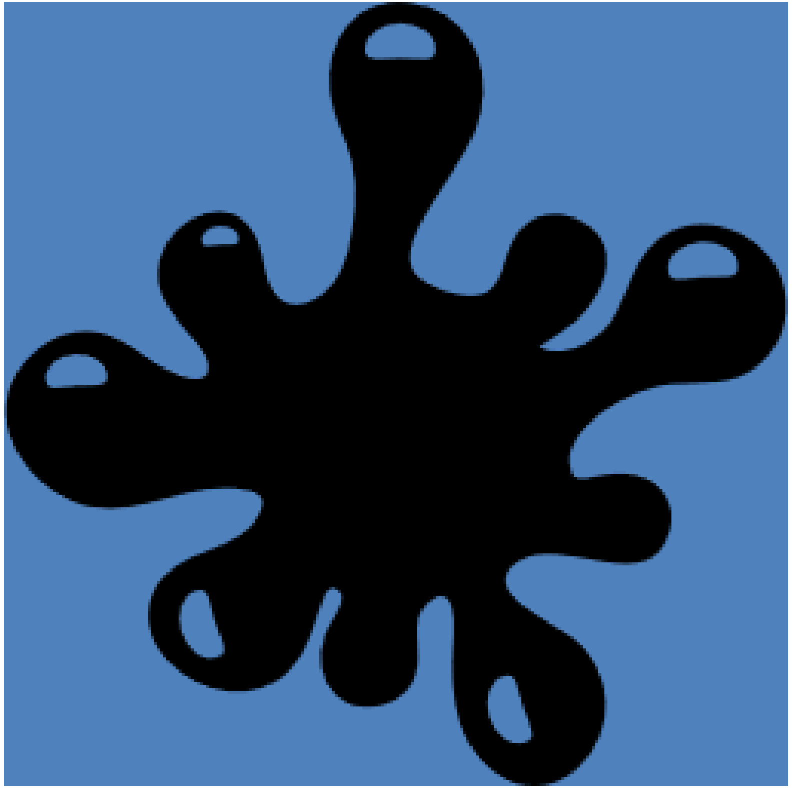
Secure Development vs. Agile Development



Secure Agile Development

We believe **Agility** and **Security** are on the same **Team**!

Introduction

Elena:

- HPE Software **Security Lead** for HPE’s Application Delivery Management (ADM) Business Unit
- 25+ years of software engineering , last 4 years in product security
- MSc in Applied Mathematics from Leningrad State University

Efrat:

- Senior **Program Manager** in HPE SW StormRunner Load (SRL) *
- 17+ years in Software industry, out of which 9 years as a Program manager
- BSc in Computer Science and Mathematics
- MBA in Business Management and Marketing

What we will discuss today

Challenges

Planning and coordination

Secure development lifecycle management (SLM)

Practical tips

Agile development practices

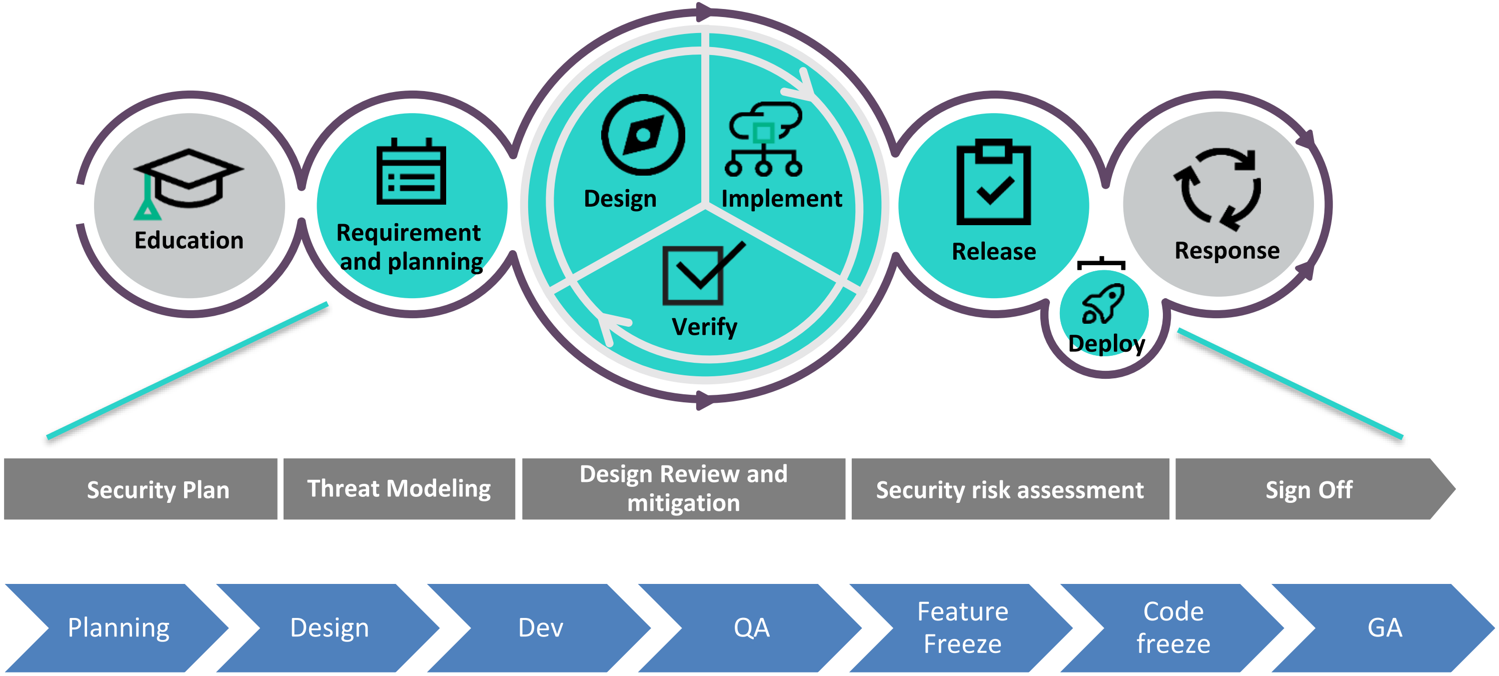
HPE ADM organization and portfolio

12
Products

5
Countries

~400
Developers

SLM framework



Education

Requirement and planning

Design

Implement

Verify

Release

Deploy

Response

Security Plan

Threat Modeling

Design Review and mitigation

Security risk assessment

Sign Off

Planning

Design

Dev

QA

Feature Freeze

Code freeze

GA

Our product overview

Light weight web base application for performance testing in the cloud

Smart, Simple, Scalable

5 development teams, ~50 people

Persona: professional performance engineers

6 versions a year (every 2 months)

Managed in Agile methodology

SaaS product, continues delivery, hotfix

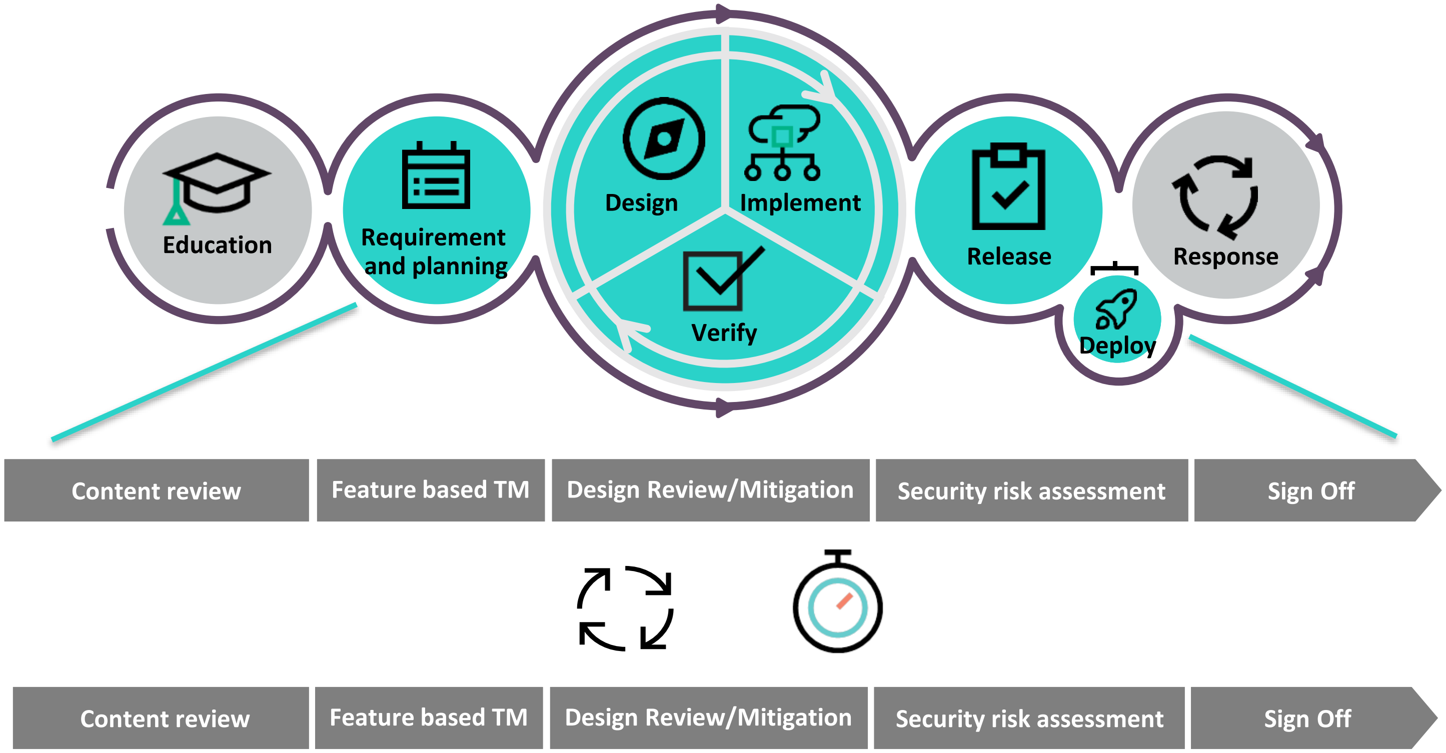
7+ groups collaboration

Agile development practices

- Ceremonies
- Minimal shippable product (MSP)
- Prioritized backlog flexible to change
- Strict heart beat (HB)
- Tool for agile project management
- High automation coverage

- No Sprints
- 1 HB = 1 Release = 1 Sprint
- No heterogenic scrum teams
- No scrum master (Feature leader role added)
- Additional untraditional ceremonies
- Additional unclassical configurations in the project management tool

SLM adjustments for Agile project



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Response

Content review | Feature based TM | Design Review/Mitigation | Security risk assessment | Sign Off

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External security governance aspects

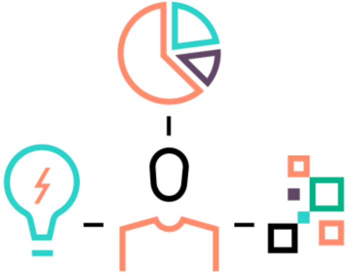
Security expertise:

- Application security
- Penetration testing

Main checkpoints embedded in process:

- Content review (**Security impact** labeling)
- Design review (Feature based **threat modelling**)
- Security assessment (**Penetration testing**)

Security Impact



Any content level:

- Theme, Epic, **Feature**, User Story etc.

Know the product:

- **Security controls** implemented in the product
- **Data** managed by the product

Ask the feature lead:

- Which **security controls** are affected?
- Which **data types** are affected?
- Which new **risks** might be inserted?

OWASP Top Ten

The **Open Web Application Security Project** (OWASP) is a worldwide not-for-profit organization focused on improving the security of software

The **OWASP Top Ten** represents a broad consensus about what the **most critical** web application **security flaws** are

https://www.owasp.org/index.php/Main_Page

The OWASP Top Ten - 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 Components with Known Vulnerabilities

A10 Unvalidated Redirects and Forwards

Content Review Outcome

Security Impact defined for **every** feature:

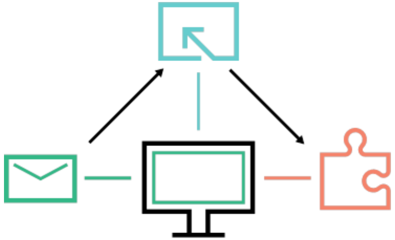
- Complete release **security status**
- Accurate **documentation** of concerns and decisions
- **List of features** for design review
- **Prioritized backlog** for security assessment

Security Assessment

Penetration testing flavor:

- Think as an **attacker**
- Know product as a **developer**
- Work according to **time limits**
- Work in **controlled** environment
- Get all required **support** from development team

Best practices



Processes:

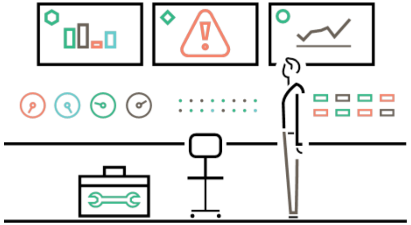
- Security assessment cycle is part of every release **timeline**
- **Dedicated security environment** preparation with predefined data
- Security bucket is allocated for development teams in **every release planning**
- Security criteria is a part of the **release criteria**
- **Status and risks** reviewed as part of all project management meetings, including **retrospective**
- Project **ceremonies**

Best practices

Ceremonies:

- Bi weekly sync meetings:
  - **Content** review
  - **Design** reviews
  - Security assessment **review** and **summary**
- Demo and handover training **every** release

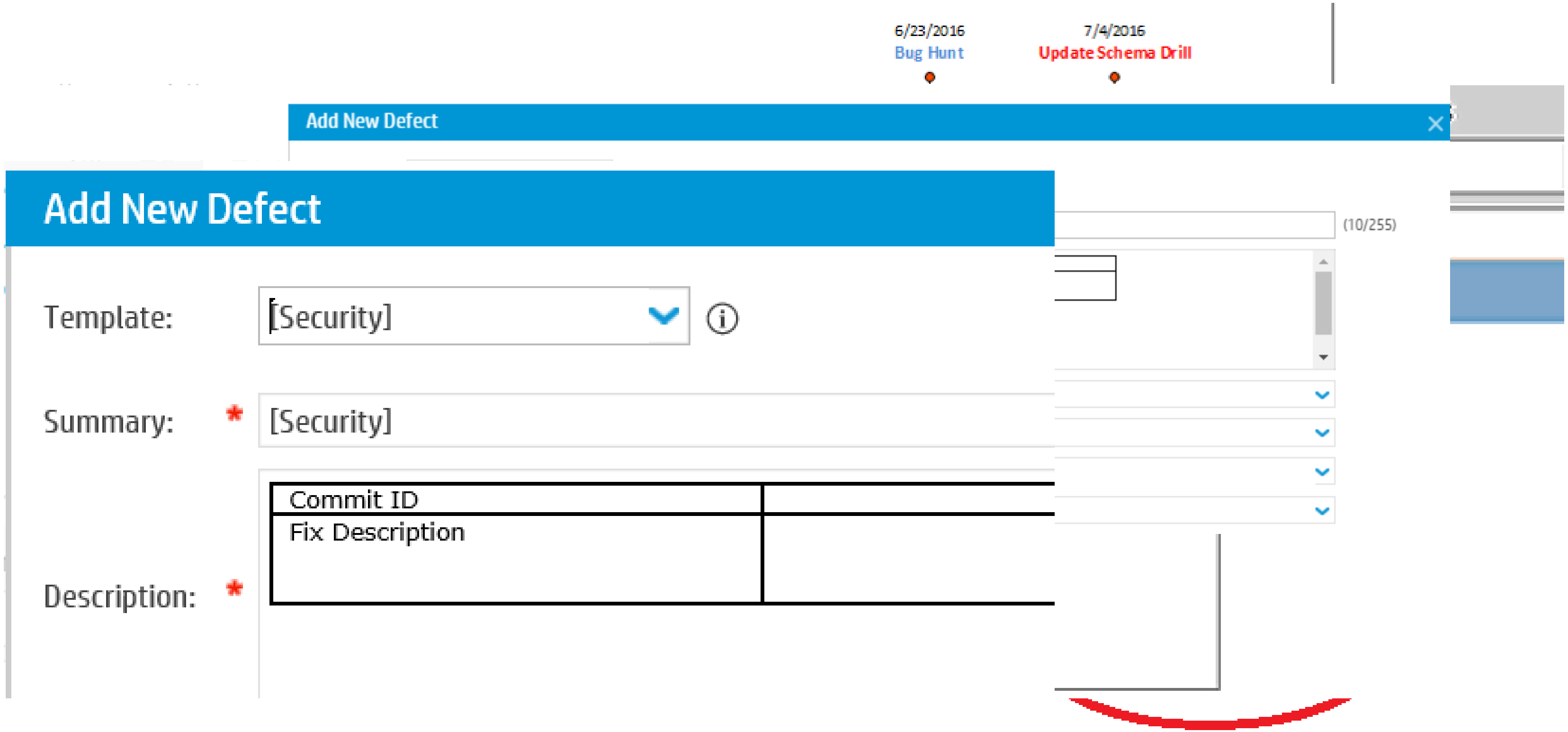
Best practices



Tools:

- **Manage** security content as part of the general release content
- **Audit** every security task in project management tool
- Additional **configurations** in the project management tool
  - Item name **prefix**: [Security]
  - Tags: **Security Impact** and **Security Comments**
  - Security defect **template**

Best Practices: Screenshots



6/23/2016
Bug Hunt

7/4/2016
Update Schema Drill

Add New Defect

(10/255)

Add New Defect

Template: [Security]

Summary: * [Security]

Description: *

Commit ID	
Fix Description	

Roles

Security champion

Tactical technical focal point

- Product insights
- Technical demonstration
- Code referee
- Security ambassador (“double agent”)

Architect

Strategical technical focal point

- Design review
- Product Road map
- Architecture adjustments
- Provide balance

Project manager

Orchestrator and key stakeholder

- Processes leadership
- Meetings management
- Tasks auditing
- Team engagement
- Continuous improvement

Tips

- **Know** your partner
- **Drop** the text book definitions! Take the **suitable** agile flavor and **optimize** it
- **Cooperate** and back up one another
- Work **iteratively** on basis of **retrospectives**
- Meet & **Sync periodically** either via calendar invite or “coffee tests”
- Use tools to **audit everything**, be an inseparable part of the project content and success criteria
- **Promote and formalize** integration of secure development into all agile projects in your organization

Summary

Don’t say “security doesn’t work with agile”

Be flexible, adjust yourself and your processes, find a good partner and you will succeed together!

Q&A

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Thank you!