APPSEC BEHAVIORS FOR DEVOPS BREED SECURITY CULTURE CHANGE

About Chris Romeo

- **CEO / Co-Founder / Security Culture Hacker @ Security Journey**
- **Experience**
  - ***20 years in the security world, CISSP, CSSLP***
  - ***10 years at Cisco, leading the Cisco Security Ninja program & CSDL***
- **Speaker at RSA, AppSec USA, AppSec EU, & ISC2 Security Congress**
- **Co-host of the #AppSec PodCast**
- **Owner of a DevOps build pipeline; consulting with companies trying to figure out AppSec + DevOps**

@edgeroute

Behaviors → mindset, skills → skill sets

Agenda

- **The State of DevOps and Security**
- **DevOps Culture**
- **Security Components for DevOps**
- **Creating a DevOps + Security Culture**
- **Security Behaviors and Habits**
- **Conclusion and Key Takeaways**

DevOps delivers agility and growth, but 80 percent still struggle with it

Everyone is doing DevOps, but how many are really doing DevOps? Survey shows there's work to be done.

By Joe McKendrick for Service Oriented | January 12, 2016 -- 16:52 GMT (08:52 PST) | Topic: Enterprise Software

DevOps largely failing to improve security, study shows

Warwick Ashford
Security Editor

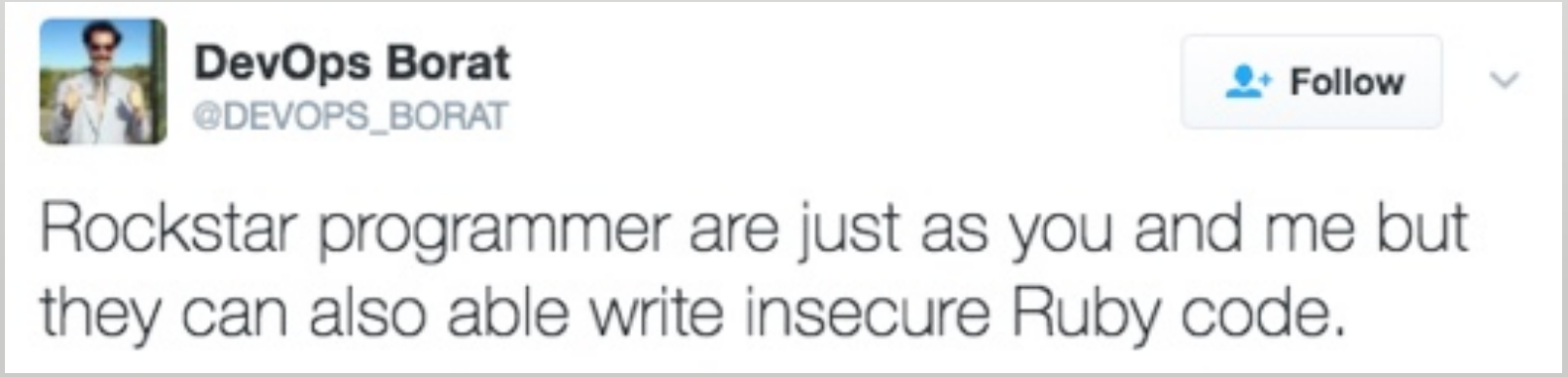
25 Oct 2016 12:45

Despite the promise of improved application security, DevOps is failing to deliver due to some key barriers, an HPE study shows

A DevOps


CREATE
PLAN
RELEASE
CONFIGURE
DEV
OPS
VERIFY
PACKAGE
MONITOR

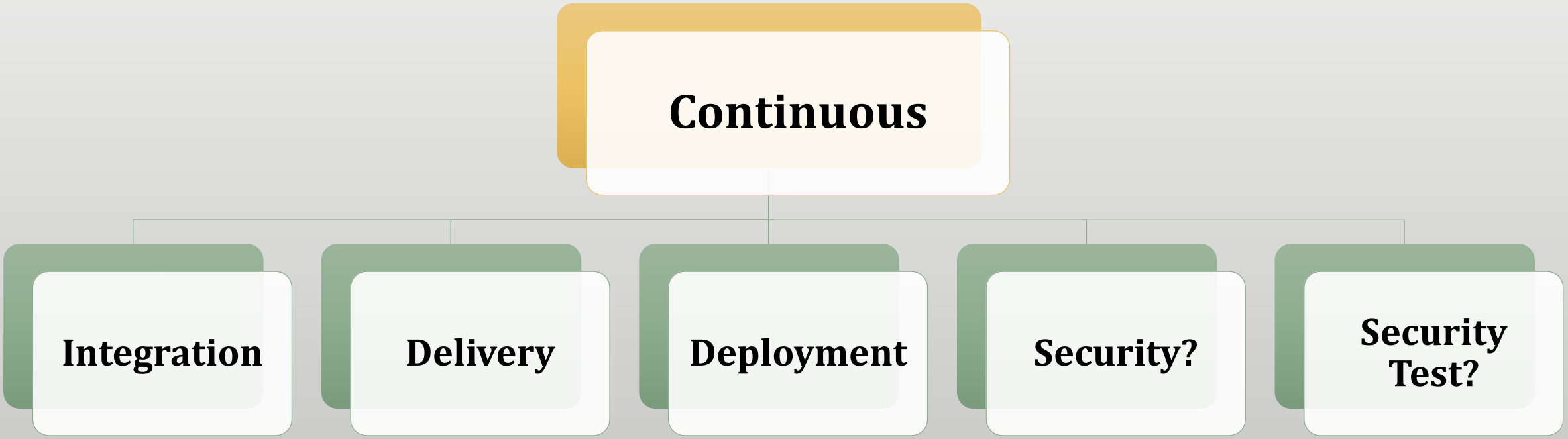
DevOps according to DevOps Borat




WORKED FINE IN DEV
OPS PROBLEM NOW


I DON'T ALWAYS TEST MY CODE
BUT WHEN I DO I DO IT IN PRODUCTION

All things continuous



So What?

Why does PSIRT care?

5 things people HATE about DevOps

1. **Everyone thinks it's all about Automation.**
2. **"True" DevOps apparently have no processes - because DevOps takes care of that.**
3. **The Emergence of the "DevOps' DevOp", a pseudo intellectual loudly spewing theories about distantly unrelated fields that are entirely irrelevant and speaking at conferences.**
4. **People constantly pointing to Etsy, Facebook & Netflix as DevOps. Let's promote the stories of companies that better represent the market at large.**
5. **Lack of fit for anyone who is not in a Dev or Ops role.**

A DevOps culture

1. **Things move fast**
2. **Small pieces of work checked in often**
3. **Autonomous teams with transparency; No silos**
4. **Building quality into the development process**
5. **Feedback / eliminate blame / embrace failure**
6. **Automation**

Naming rights

Julien Vehent
@jvehent

Follow

Can we stop the {Sec}Dev{Sec}Ops{Sec} naming foolishness?
Just call it DevOps and focus on making security a natural part of building stuff.

Security components to go fast

Security best practices	Threat modeling	Static analysis
Security code review	Dynamic analysis	Vulnerability scanning
3rd Party SW / Dependency checker	Red Teaming	PSIRT

A DevOps + Security

Threat modeling

Static analysis

Security best practices

Security code review

Dynamic analysis

Vulnerability scanning

Red Teaming

3rd Party SW / Dependency checker

PSIRT

Security culture

"What happens {**with security**} when people are left to their own devices."

--Tim Ferriss

1. Application security is about the people.
2. The people introduce the vulnerabilities.
3. Security in DevOps must change the people.

Defining features of a sustainable DevOps security culture

Deliberate and disruptive

Eliminate Security Blame

Building Quality AND Security In

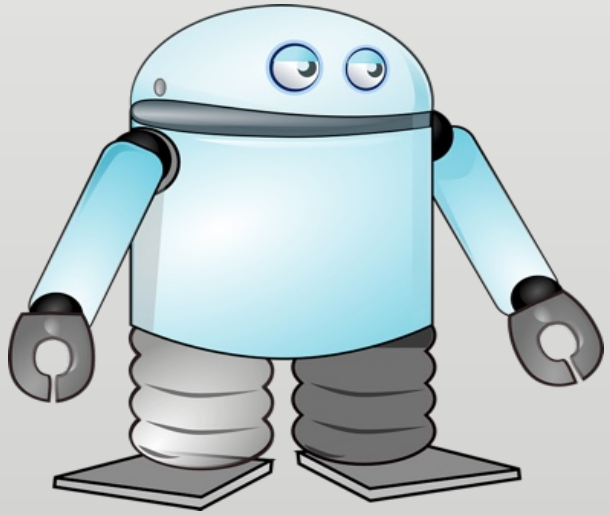
Security Transparency

No security silo

How do we embed a culture of security?

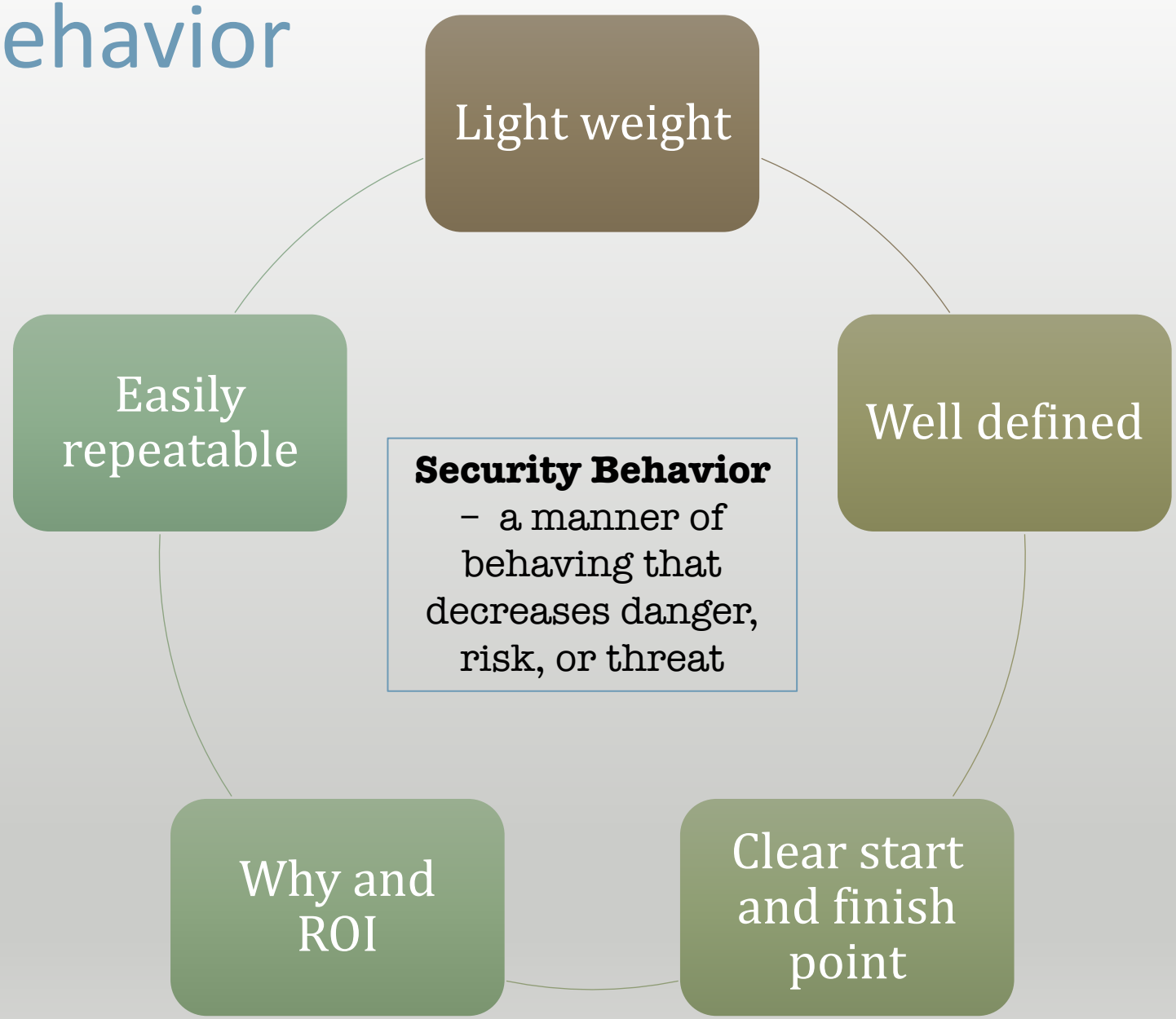
Culture Hacking

Community



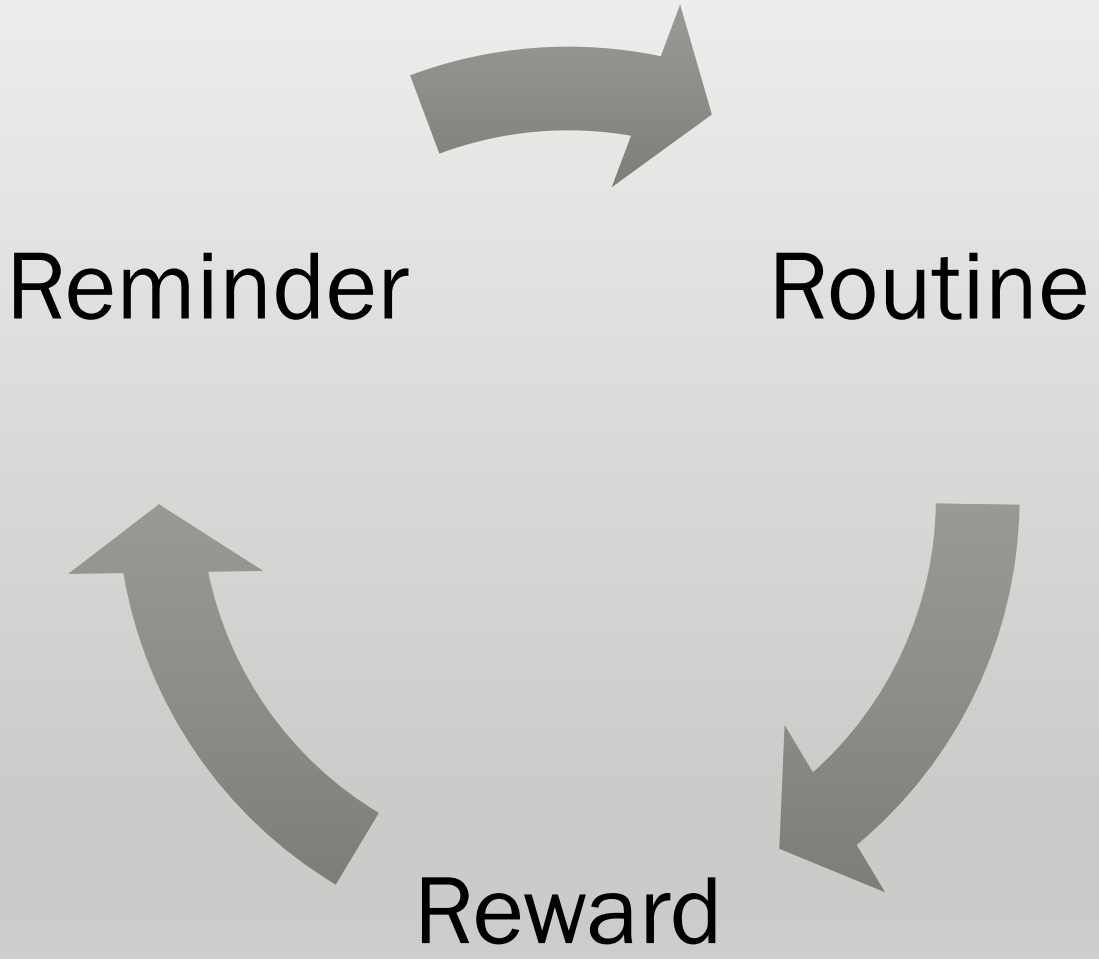
Automation

Security behavior



Security behavior vs. security process

Security habits



Build security in

Desired Outcome

- A wide spread attitude / culture change
- Consideration of security best practices early

Habit Generation

- Explain WHY they should care
- Demonstrate how best practices are done
- Understand the negative case, or not doing them

Uncover design security problems

Desired Outcome

- Choose the design decision that protects the confidentiality and integrity of customer data

Habit Generation

- Show developers how to create a threat model
- Quickly move to threat modeling an active design on which they are working
- Enable the security light bulb

React to automated security bugs

Desired Outcome

- Interpret automated security notifications as a gift and not a curse

Habit Generation

- Position the interruption as close to the dev as possible (IDE based SA)
- Aggressively limit false positives – do not scan for everything in the beginning

Detect security flaws in other's code

Desired Outcome

- Find the errors in the code that could be exploited if they reach production (those missed by automated scans)

Habit Generation

- Force a security code review in the code commit process
- Require a security +1 for each check-in
- Teach your developers the fundamental security lessons of their languages, and how to find those issues in code

Eradicate 3rd party software vuln's

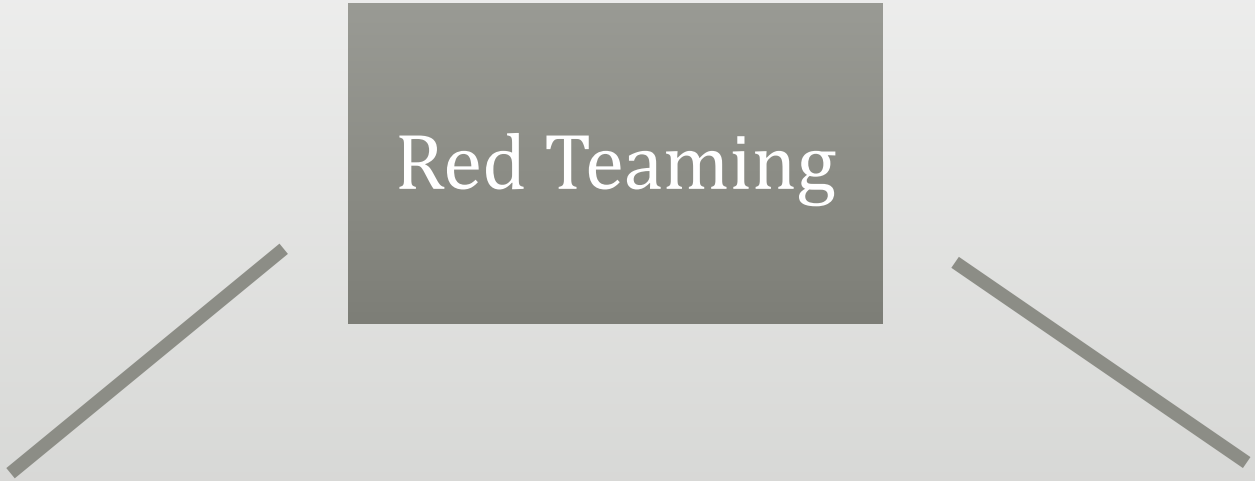
Desired Outcome

- Eliminate known vulnerable components at deploy time

Habit Generation

- Break the build on a dependency checker failure

Be mean to your code



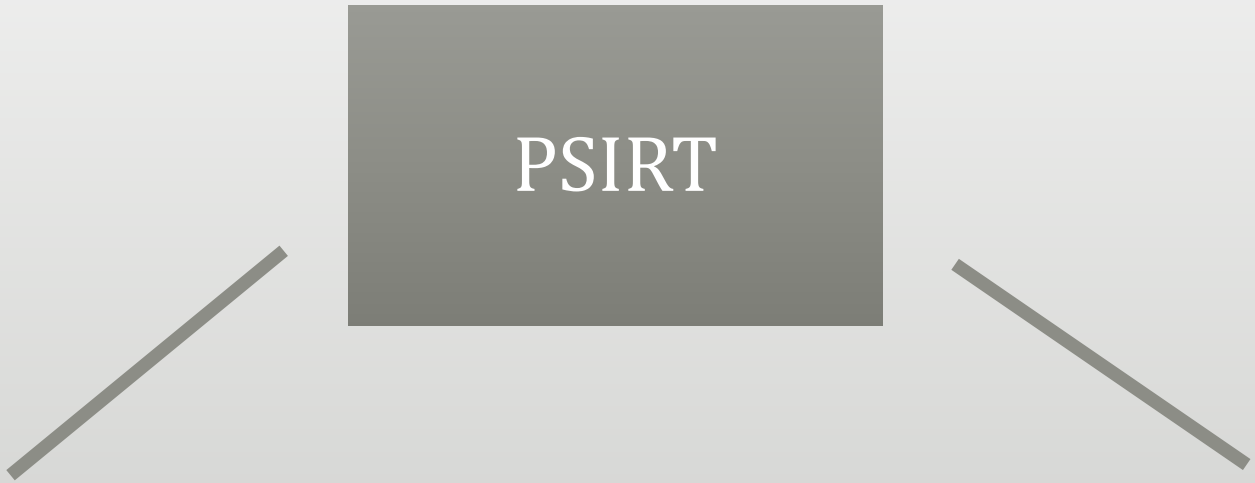
Desired Outcome

- Uncover flaws using active testing, fix those flaws, and push the fixes to production as fast as possible.

Habit Generation

- Instill the idea that your code will be attacked
- Provide the time and tools for everyone to spend time attacking

Respond in a timely and organized fashion



Desired Outcome

- Partnership between dev and PSIRT to alleviate any security bugs in the shortest amount of time possible

Habit Generation

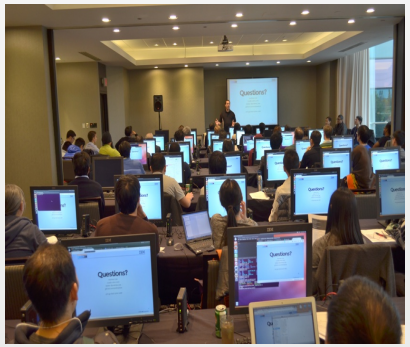
- Talk to and educate developers about the PSIRT mission

Summary

Security Behaviors for DevOps	
	Build Security In
	Uncover design security problems
	React to automated security bugs
	Detect security flaws in other's code
	Eradicate 3rd party software vuln's
	Be mean to your code
	Respond in a timely and organized fashion

Security behaviors through security community

People



Monthly Training

Security Days

Internal Capture the Flag

Conferences

Build a security [advocate, guild, champion] program

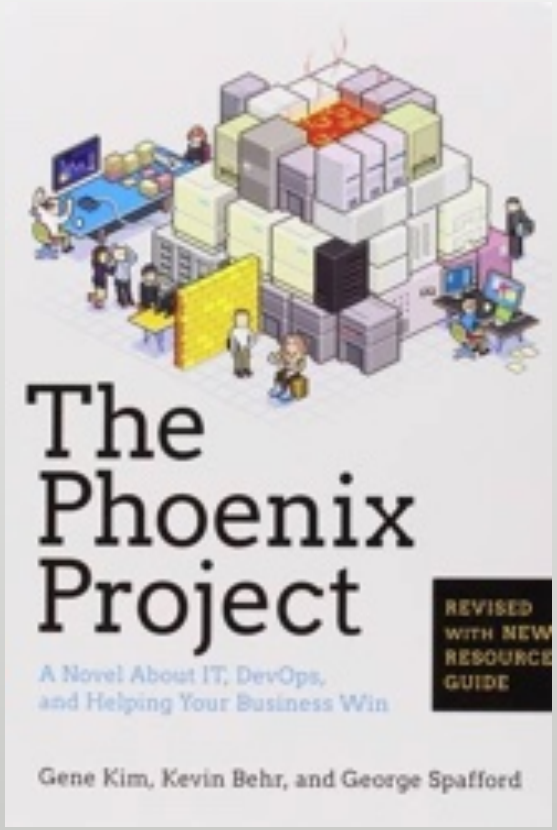
Apply What You Have Learned Today

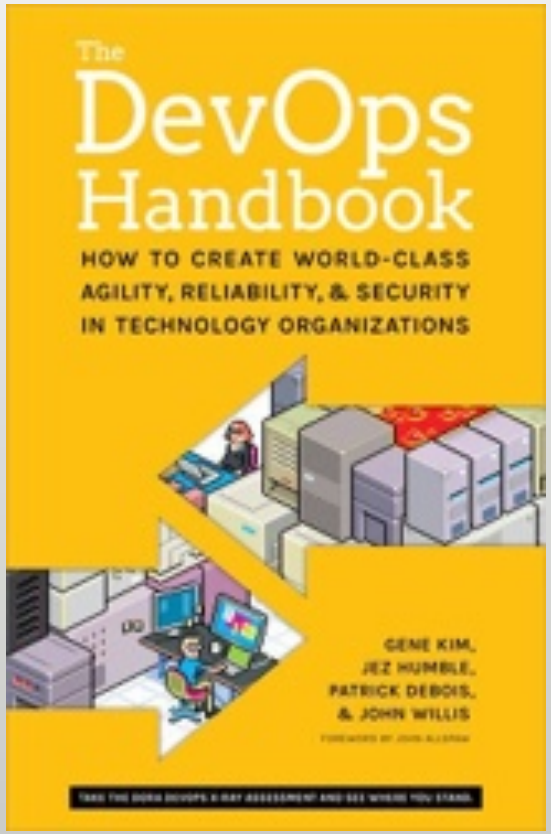
- Next week:
  - *Assess your organizational DevOps and security culture*
  - *Survey DevOps population to gauge response to security*
- In the first three months:
  - *Prioritize security behaviors and form a plan*
  - *Focus on the security behavior that is your top priority and invest in making it successful*
- Within six months:
  - *Branch out to your top three security behaviors and focus in*
- Within one year:
  - *Roll out all the security behaviors*

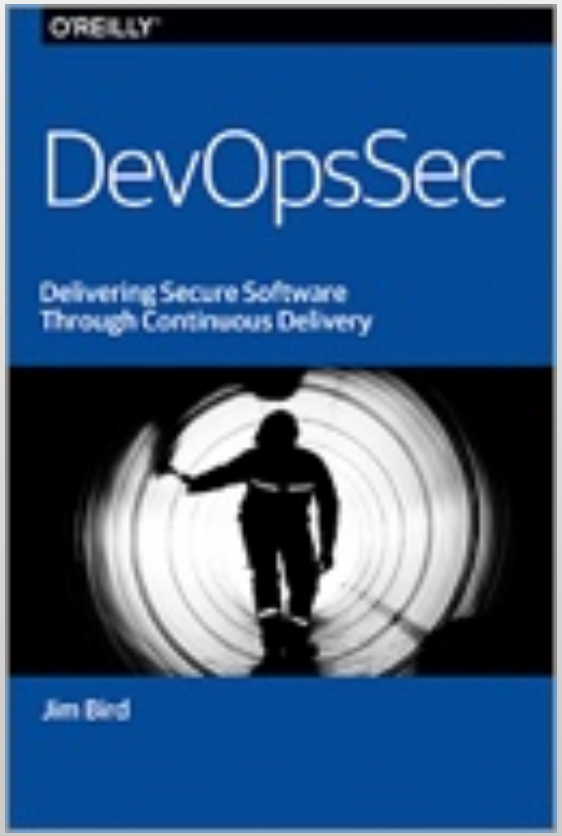
Key takeaways

1. Just call it DevOps and focus on making security a natural part of building stuff.
2. Security behaviors embed security without all the overhead.
3. Security community bolsters security behavior.

Resources to learn more







https://techbeacon.com/contributors/chris-romeo

Q+A and Thank you!

Chris Romeo, CEO / Co-Founder

chris_romeo@securityjourney.com

www.securityjourney.com

@edgeroute, @SecurityJourney