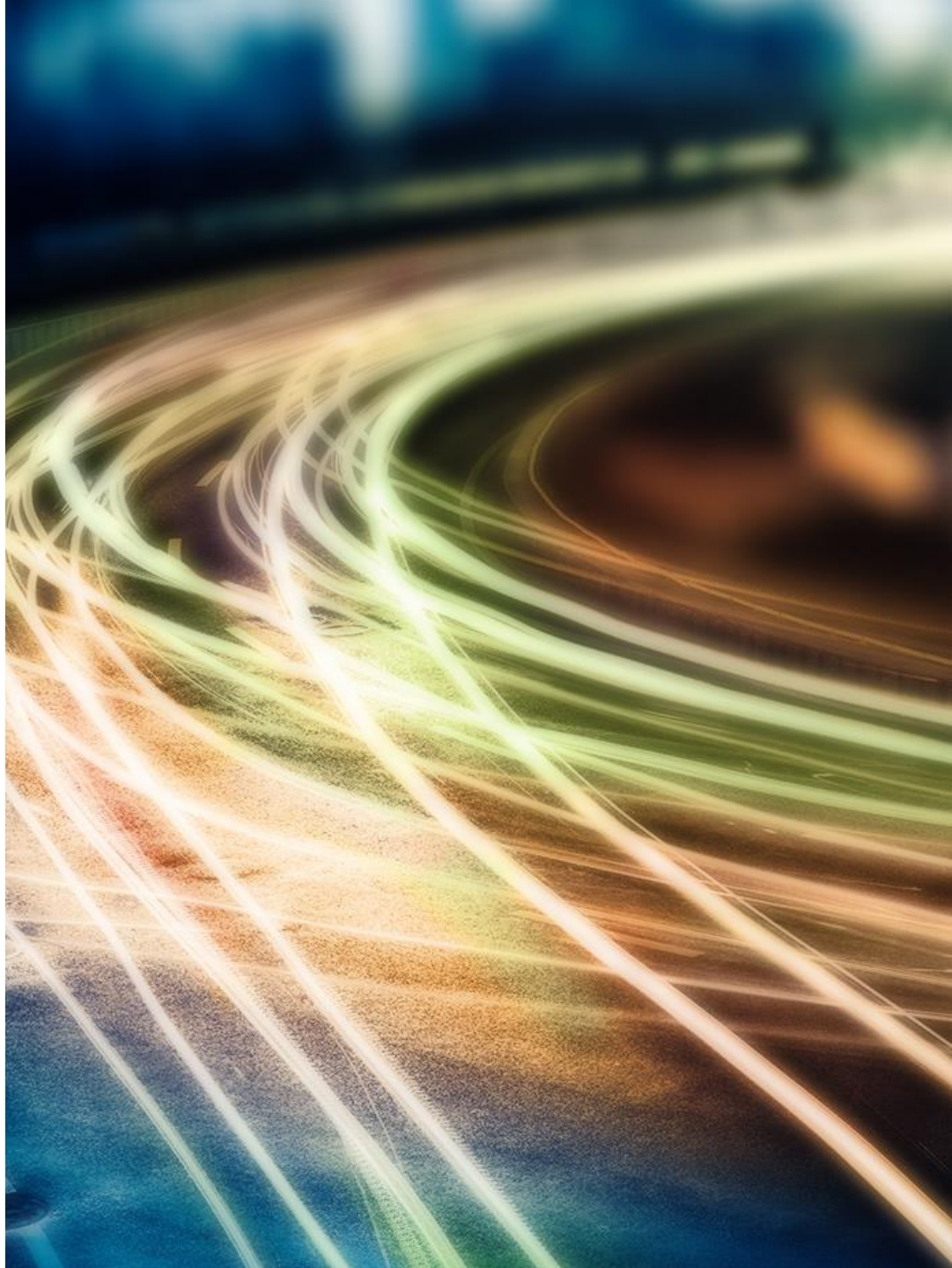
Proper Threat Modeling Techniques

Dexter Law



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DevOps Principles

With the goal of closing the gap between IT operations and development to improve communication/collaboration and align objectives faster and more efficiently delivery

- Automation
  - Automate everything from workflows to testing new code
- Iteration
  - Write smalls chunks of code during a time-box sprint to support releases and rereleases that increase the speed and frequency of deployment
- Continuous Improvement
  - Continuously test, learn from failures, and act on feedback in order to optimize performance, cost and time to deployment
- Collaboration
  - Unite teams, foster communication and breakdown silos between deployment, IT operations, and quality assurance

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What is Threat Modeling?

Threat Modeling a technique used to help you identify **Threats**, **Attacks**, **Vulnerabilities**, and **Countermeasures** that could affect your **applications,** software, systems, networks, and business processes, etc.

- It's about understanding your system in a risk-based way
- Offers a strategic practice by which you can think about system characteristics
- Provides visibility into weaknesses that may affect not only the application, but potentially the entire organization

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The Purpose

Including threat modeling in the Software Development Lifecycle/DevOps toolchain can help

- Build a secure design
- Efficient investment of resources; appropriately prioritizing security, development, and other task
- Bringing security and development together to collaborate on shared understanding, informing development of the system
- Identify threats and compliance requirements, and evaluate their risk
- Define and build required controls

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What to include

Your threat model should include the following:

- A description / design / model of what of the whatever you're building or worrying about
- A list of assumptions that can be checked / challenged I the sure as the threat landscape changes
- A list of potential threats to the system
- A list of actions to be taken for each threat
- A way of validating the model and threats, and verification o success of actions taken for each threat
- A way of validating the model and threats, and varication of sues of actions taken

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The Purpose

Including threat modeling in the Software Development Lifecycle/DevOps toolchain can help

- Balance risk, controls, and usability
- Identify where building a control is unnecessary, based on acceptable risk
- Document threats and mitigation
- Ensure business goals are protected in the face of malicious actors, accidents, etc.
- Identification of security test cases / security test scenarios to test the security requirements

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When to use Threat Modeling

The motto: “Threat modeling: the sooner the better, but never too late,”

At the earlier stages of the Software Development Lifecycle/DevOps toolchain, perform threat modeling:

- Every time there is a change in system architecture
- After security incident has occurred or new vulnerabilities are introduced
- As soon as architecture is ready

The more the better!

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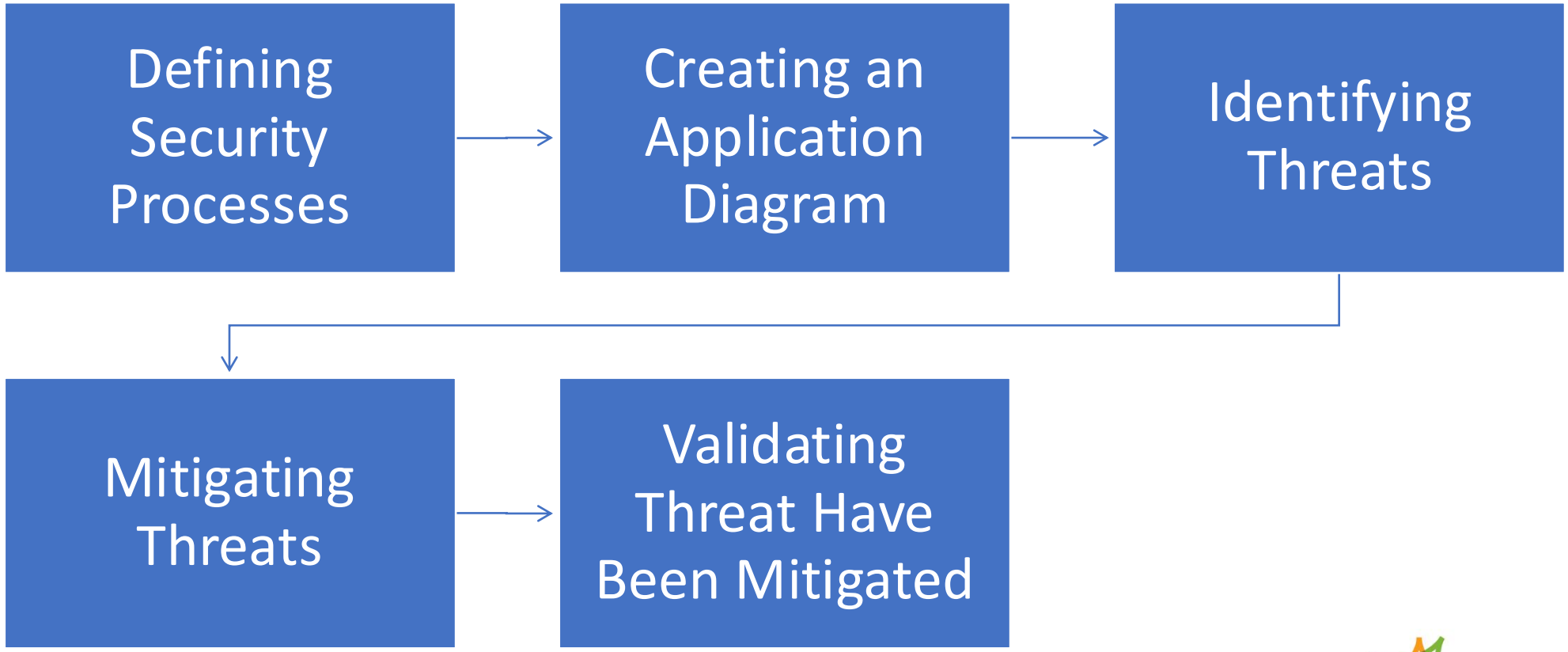
Major steps in threat modeling

Threat modeling should be apart of your routine development lifecycle, enabling you to progressively refine your threat model



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Attack Personas

- Attack Personas
- Evil User Stories
- Raindance
- Mozilla Rapid Risk Assessment
- OWASP ThreatDragon

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The Prompt

Threat modeling
Teach us how good threat modeling looks like
Learn about the process, ways, how, and why?
Supposed to help people think like the bad guy