Jake Marcinko

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PCI Security Standards Council

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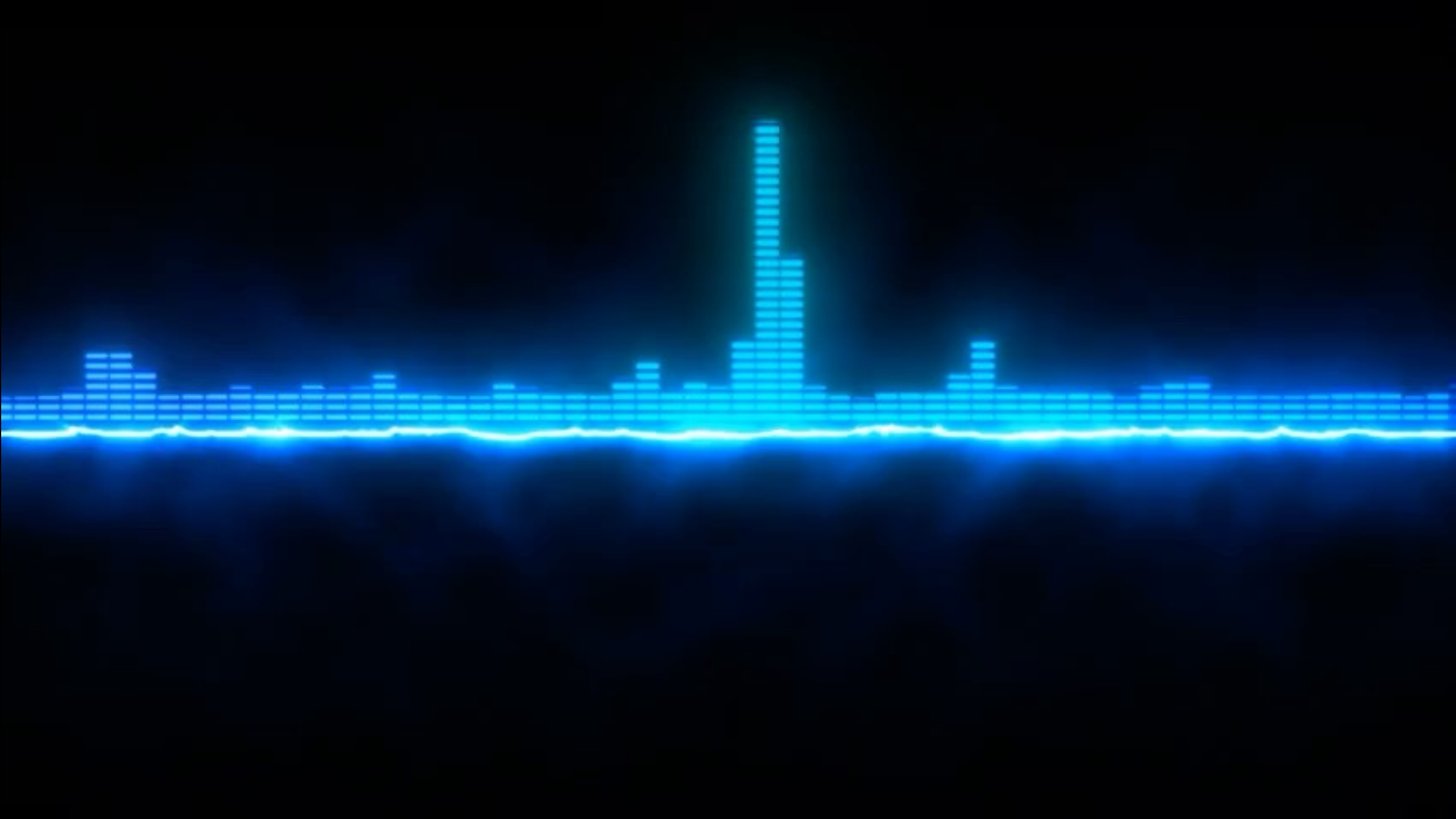

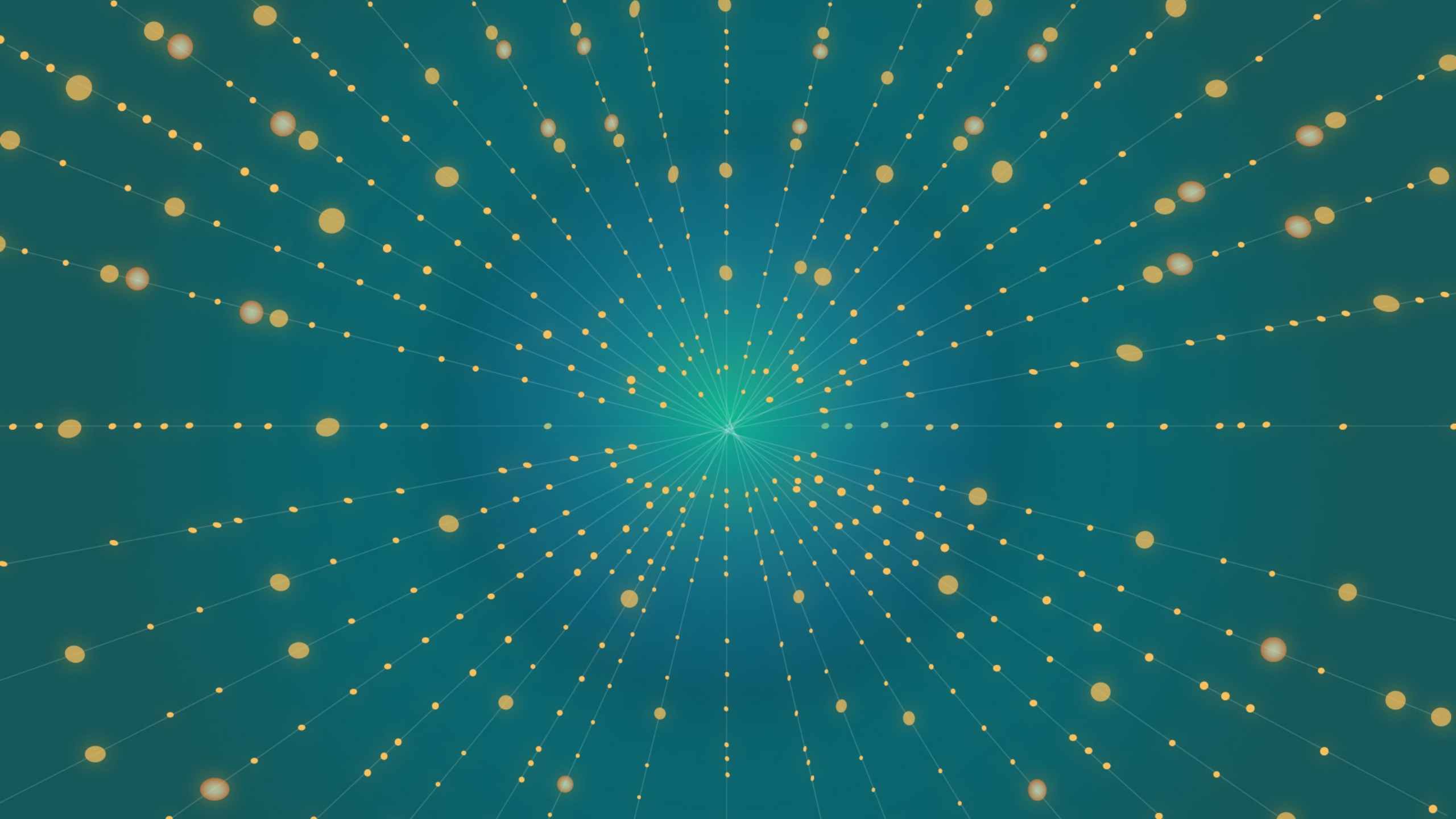

Software Security Principle #1

Software Security is a Function of Software Quality

- Success is dependent on customer satisfaction and trust.
- Quality is a major factor in building customer trust.
- Lower quality = less satisfaction = less trust = fewer customers.
- Once trust erodes, it is difficult to recover.

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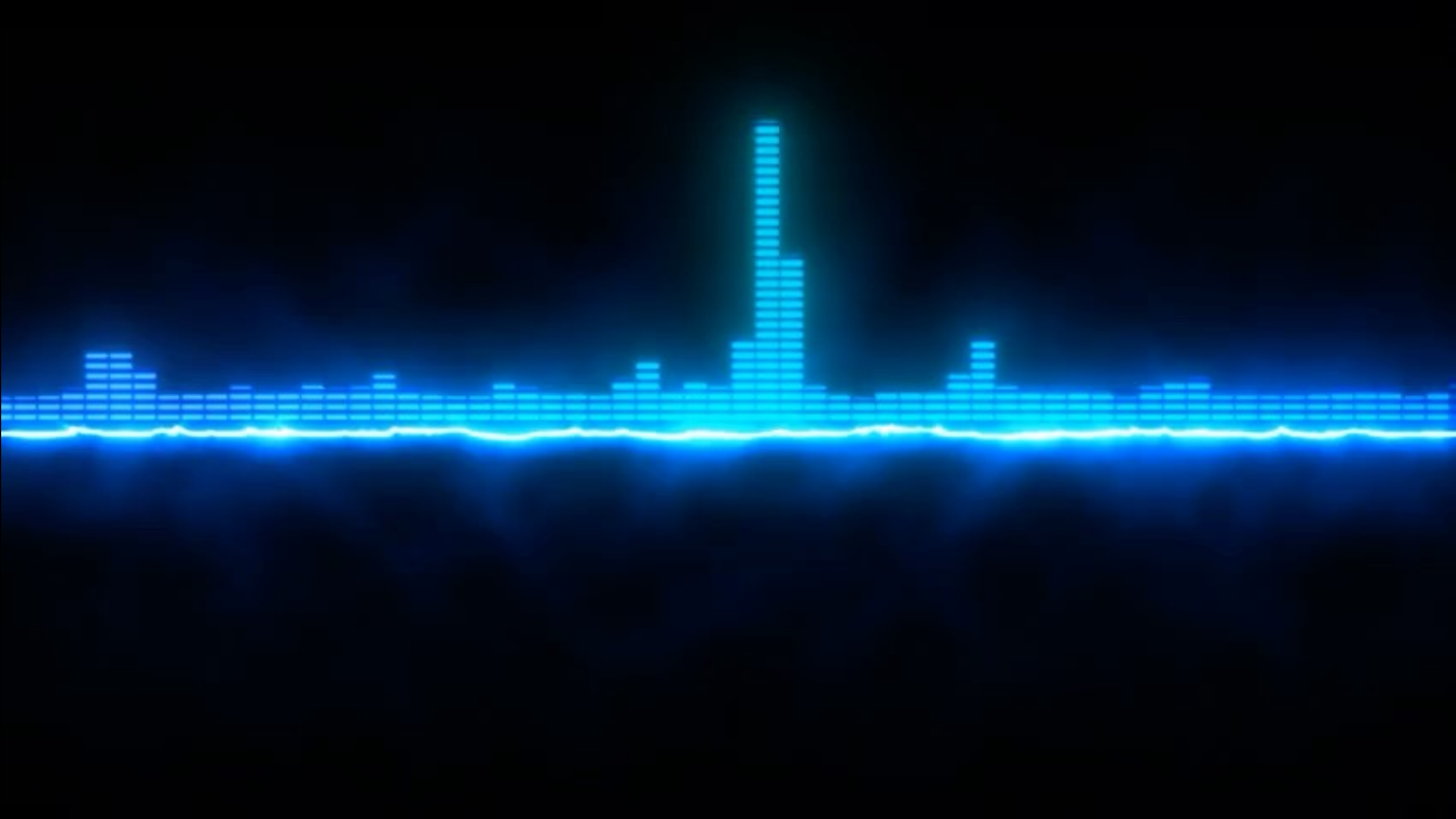

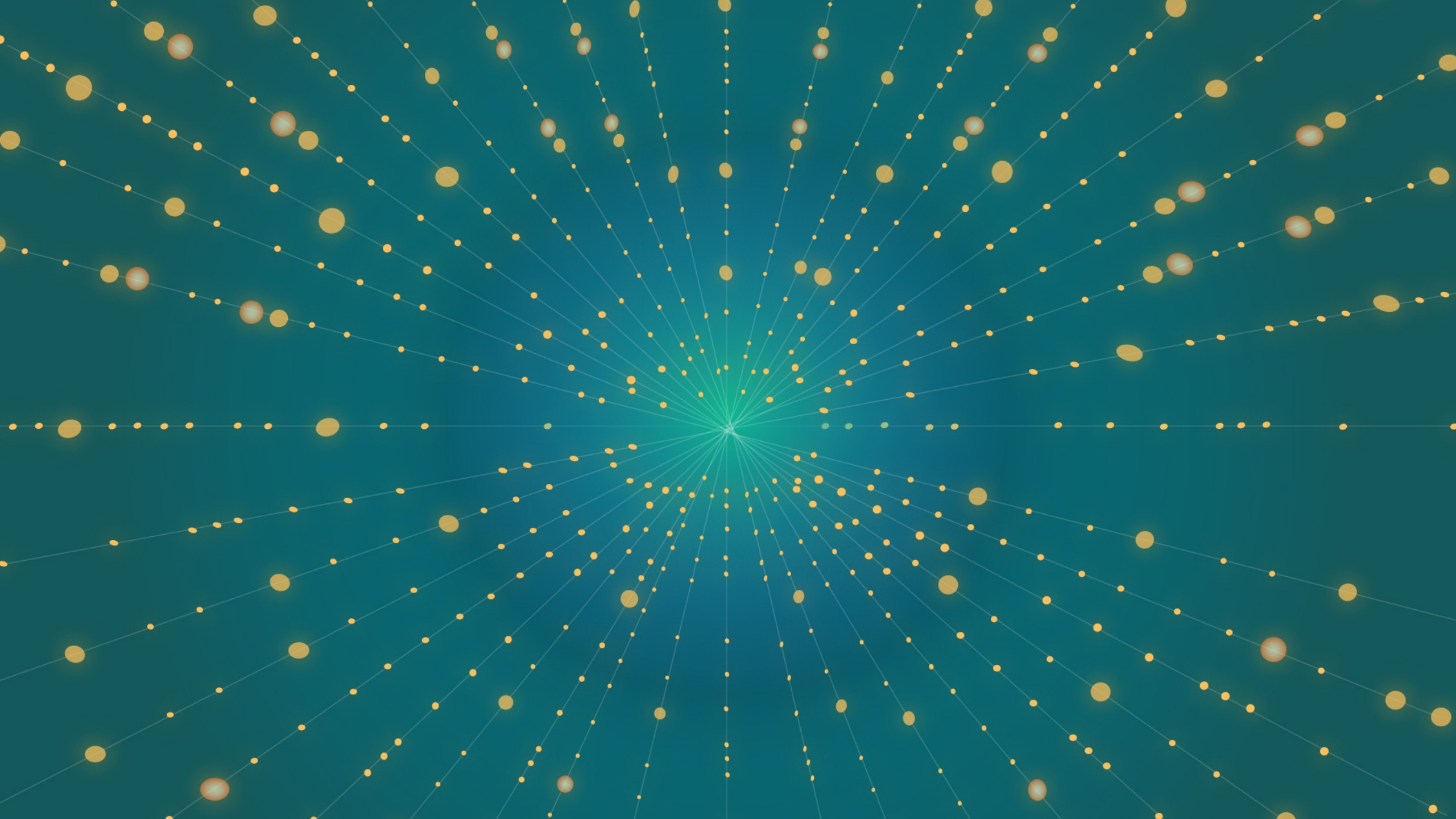


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Software Security Principle #2

Minor Security Issues Can Have Major Repercussions

- The Internet is an extremely hostile environment.
- Software must be designed to withstand such conditions.
- Knowing one's weaknesses and how they may be exploited is key to one's survival.
- Insufficient testing and mitigation of threats and vulnerabilities can have catastrophic consequences.

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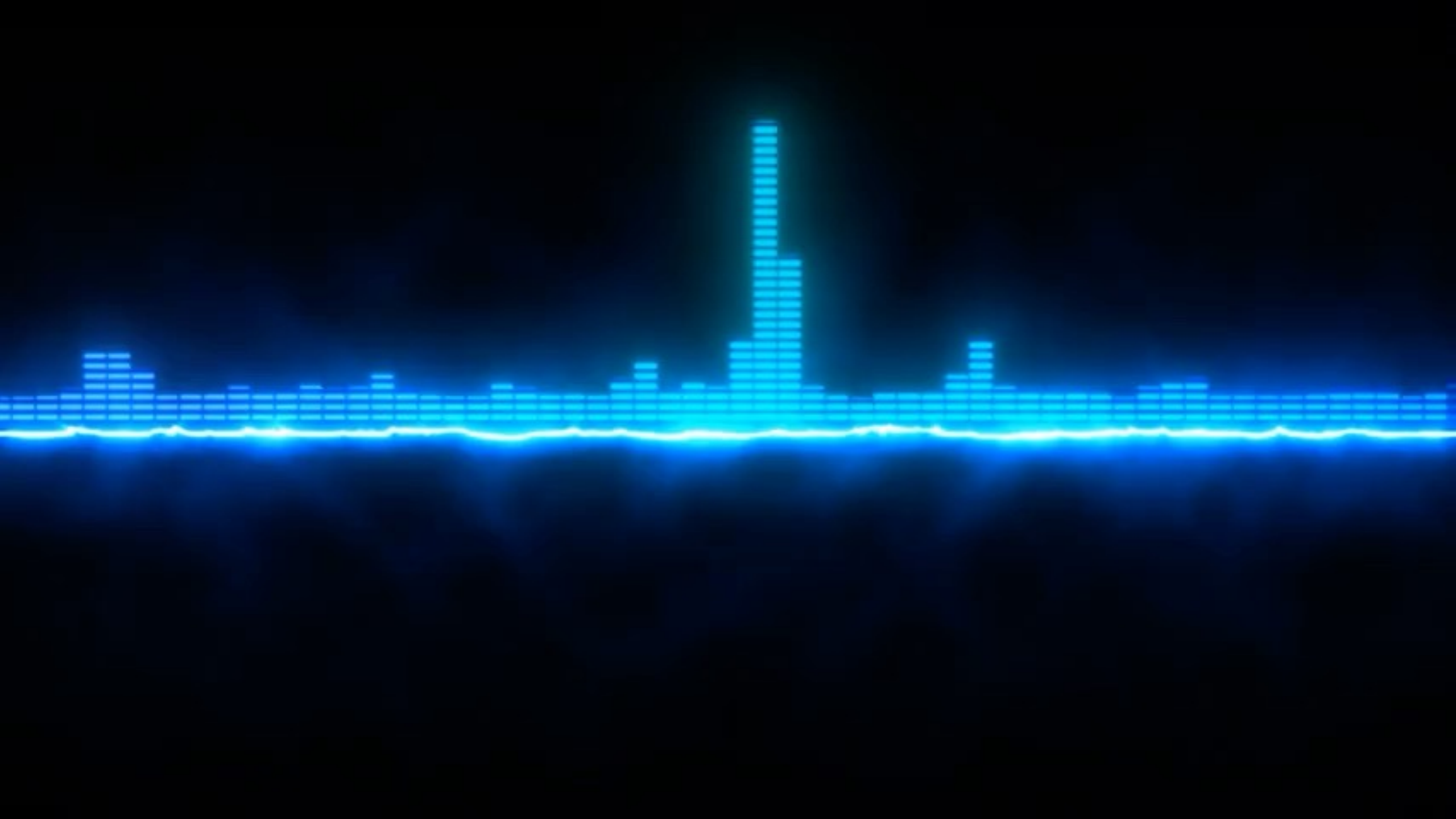

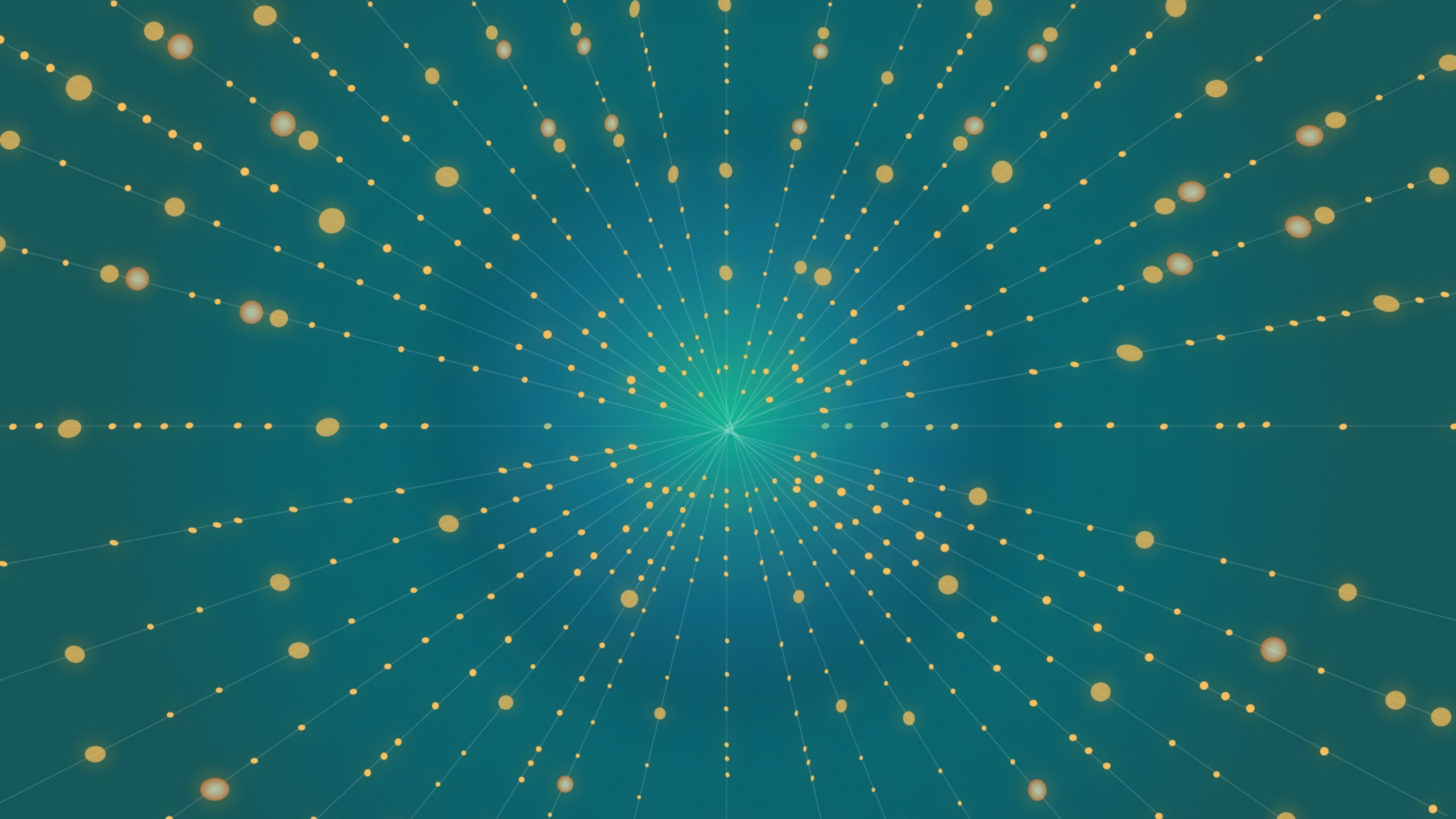

Software Security Principle #3

Software Security Requires Continuous Evolution

- Innovation often introduces new, unforeseen vulnerabilities.
- Threats aren’t static, so why are security practices often so?
- Maintaining software security requires continuous evolution in concert with product innovation.

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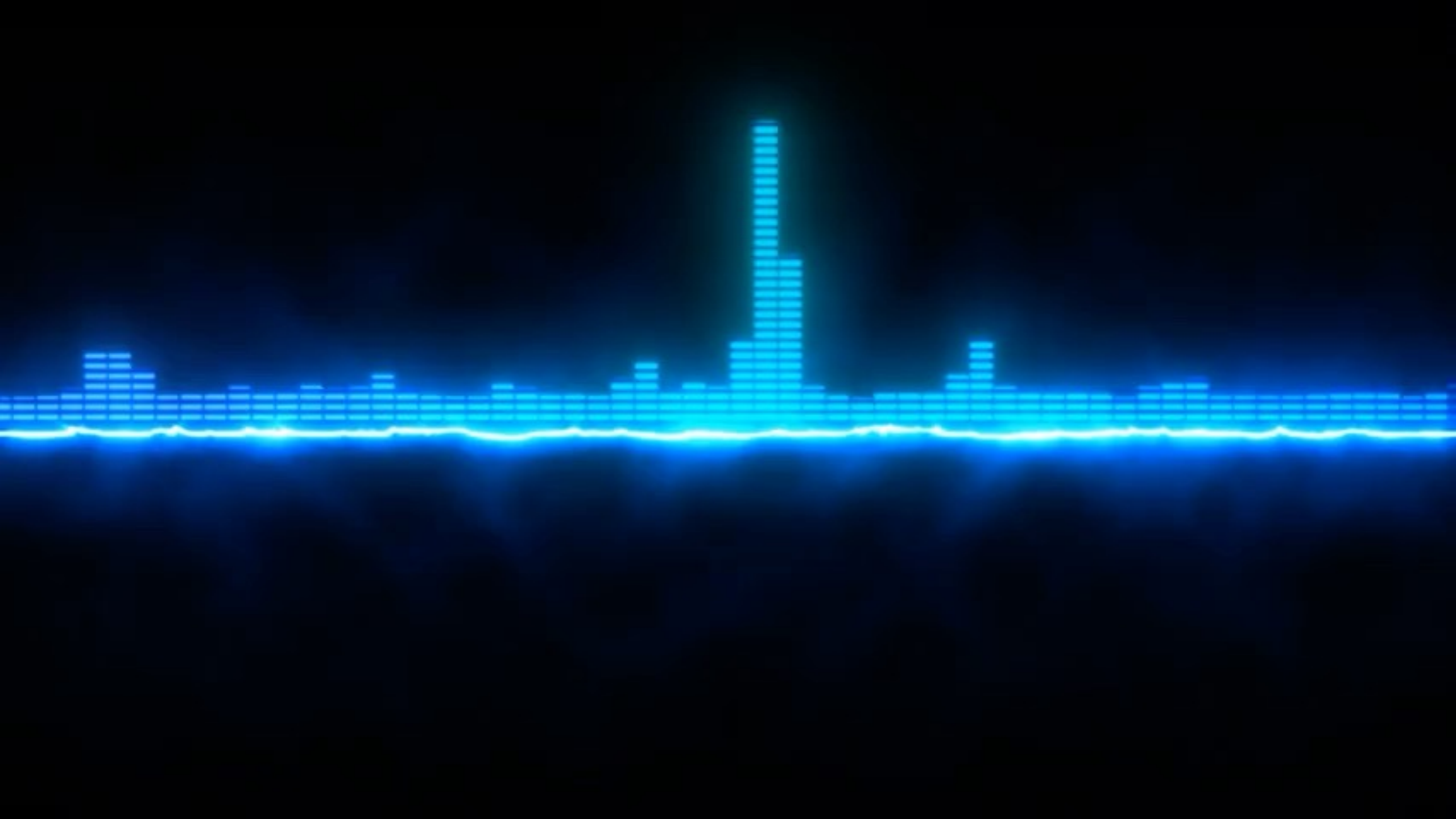
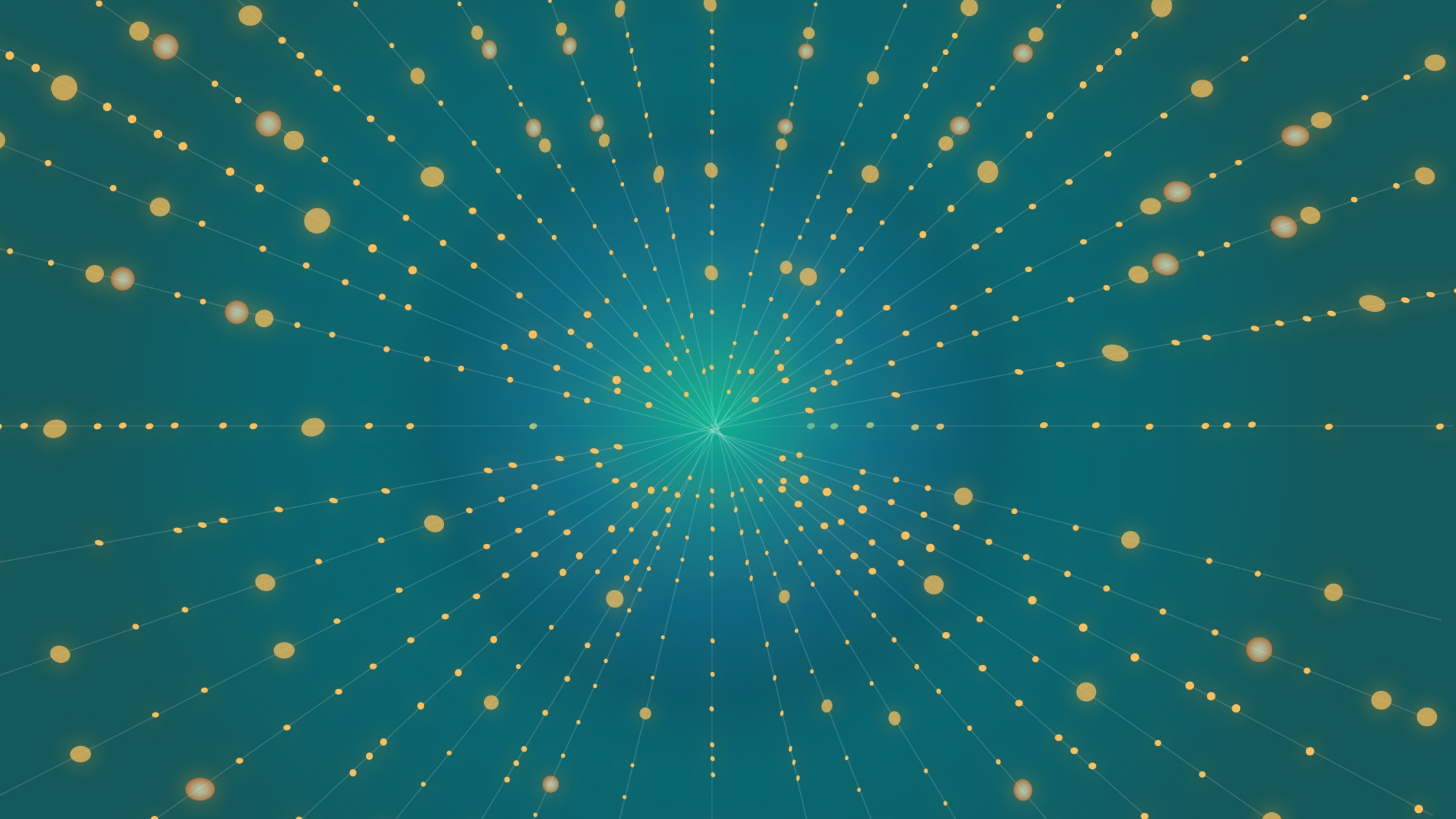
Applying These Principles with the Web Software Module





Applying These Principles

Objective C.1: Know Your Product Composition

- Cannot ensure software security & quality if you don’t know the composition of your own products.
- Vulnerabilities in third-party software components & services can lead to broader product vulnerabilities.
- Requires a detailed inventory of components, sub-components, and services (Software Bill of Materials or “SBOM”).

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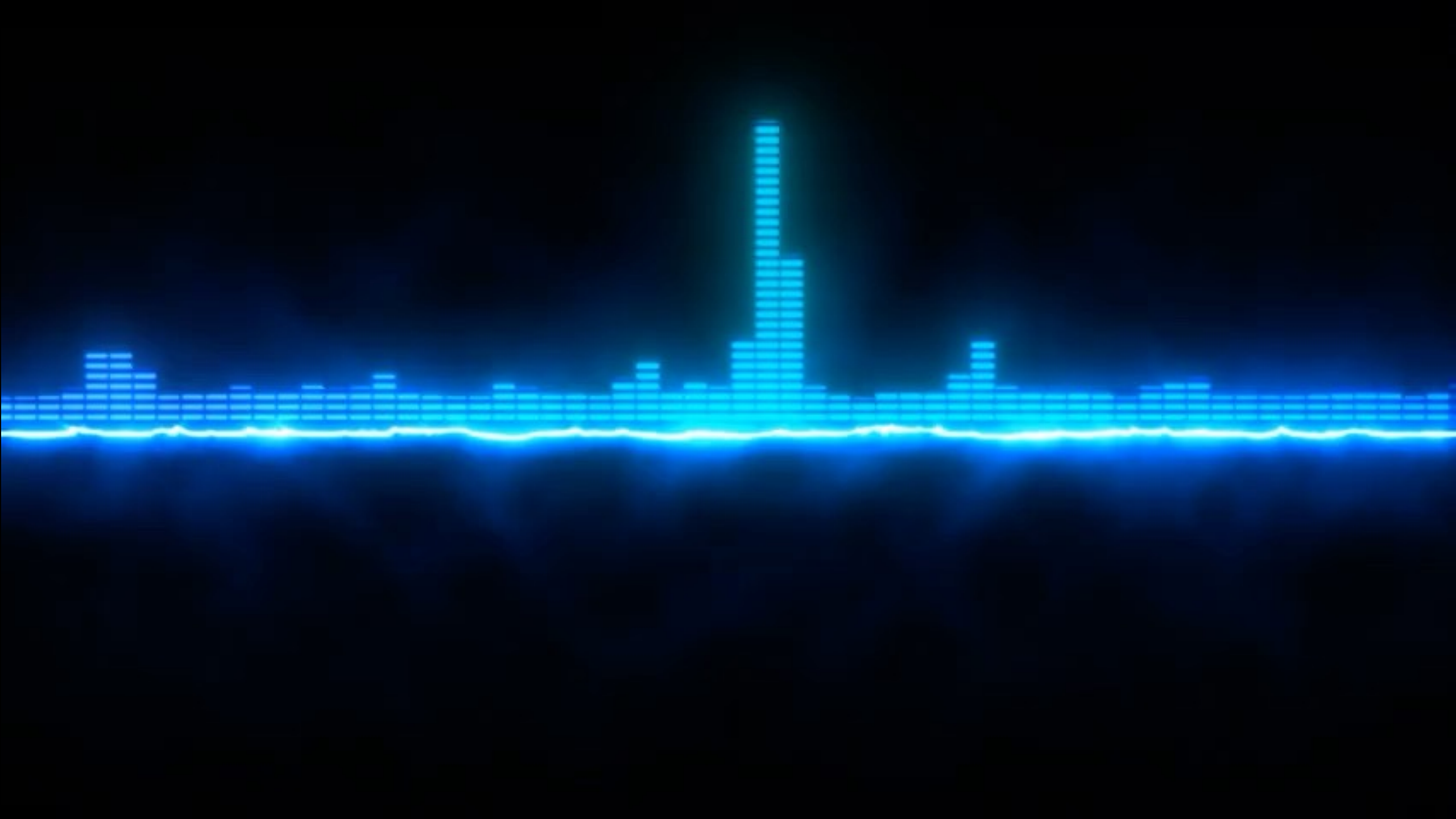

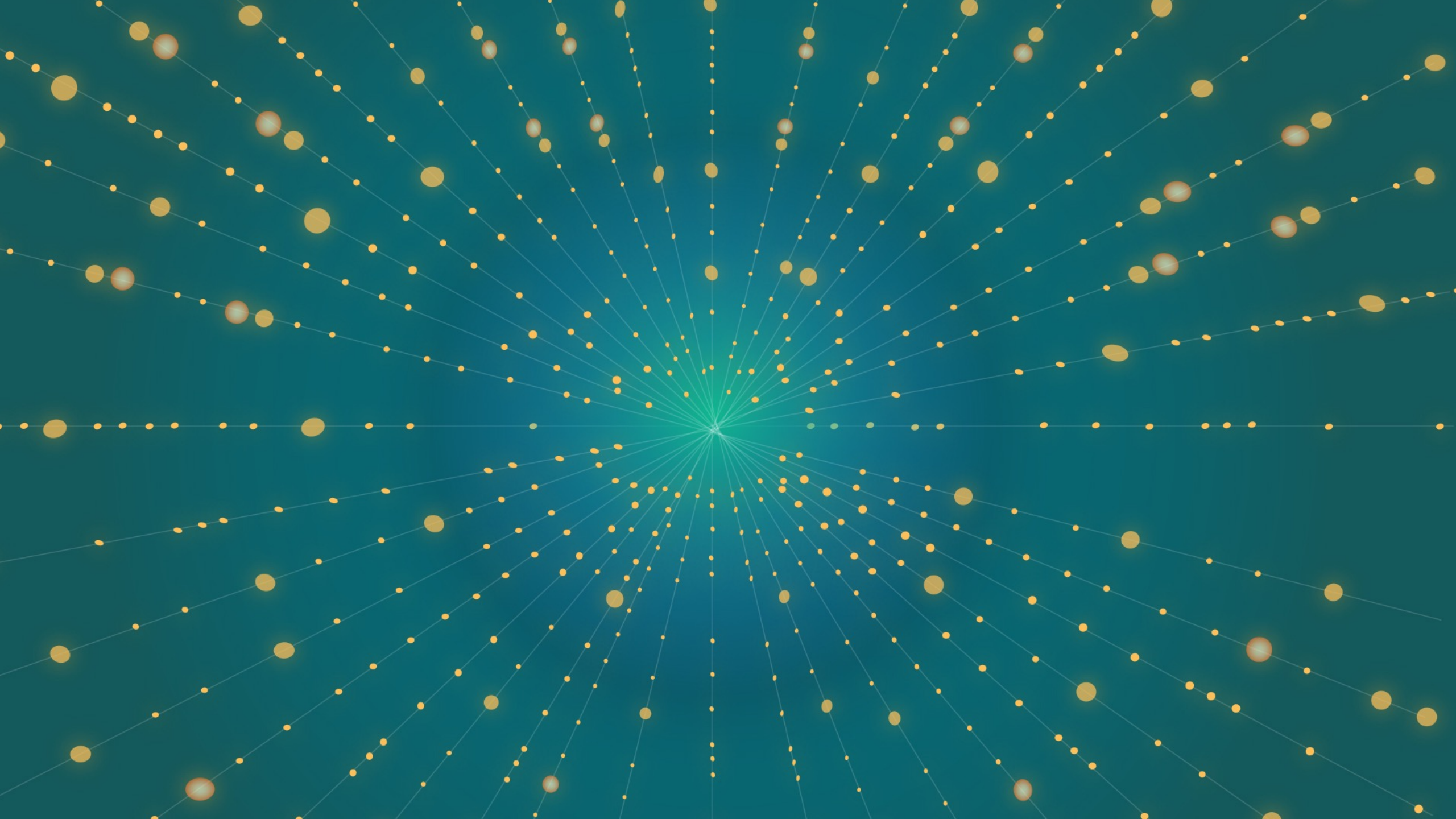


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Applying These Principles

Objective C.2: Know Your Users

- Access control is fundamental to software security.
- Protecting the software and software assets requires robust authentication & access control capabilities.
- Failure to do so could enable unauthorized users to access sensitive functions and data or increase the software's attack surface.

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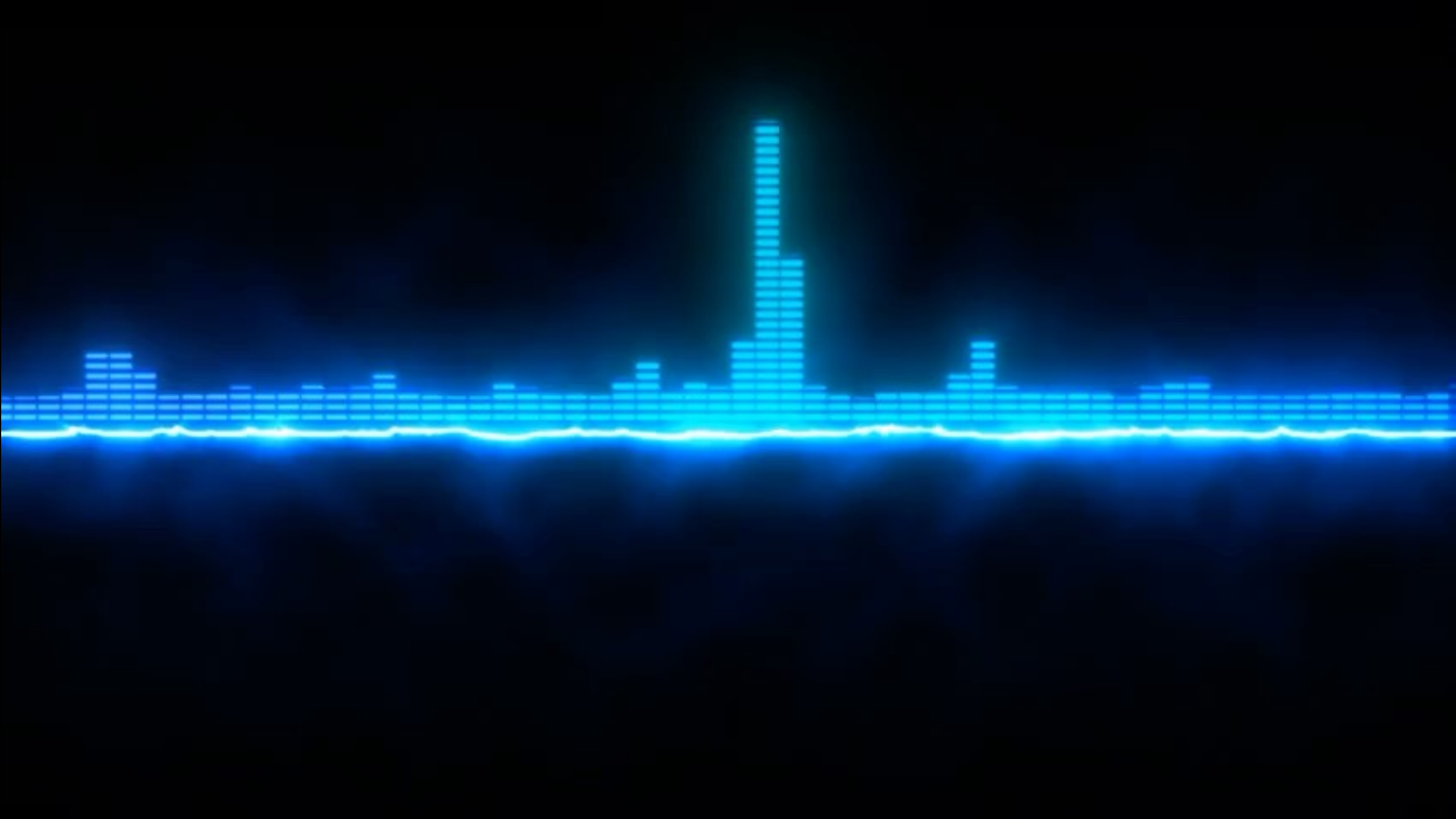
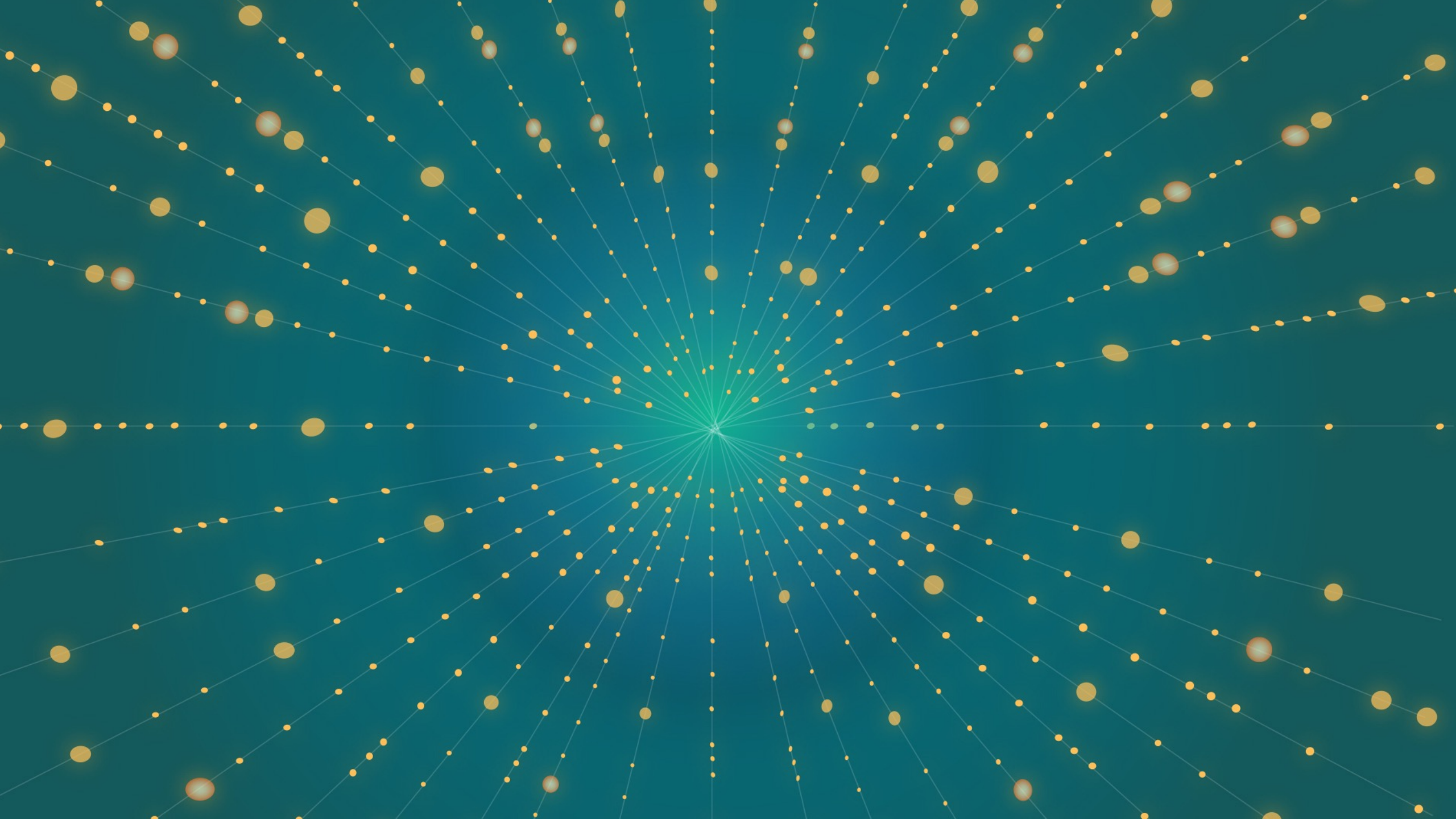
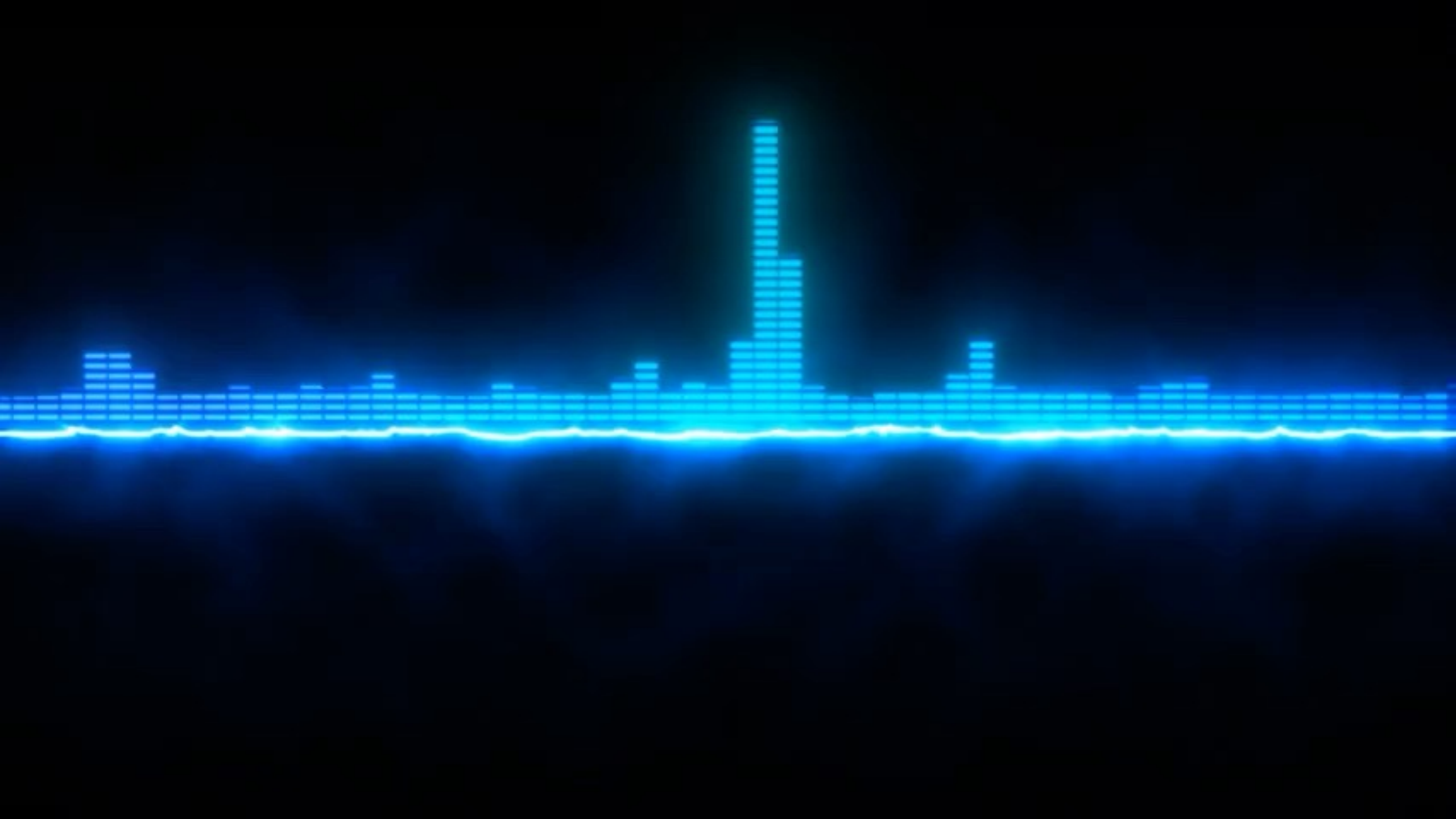


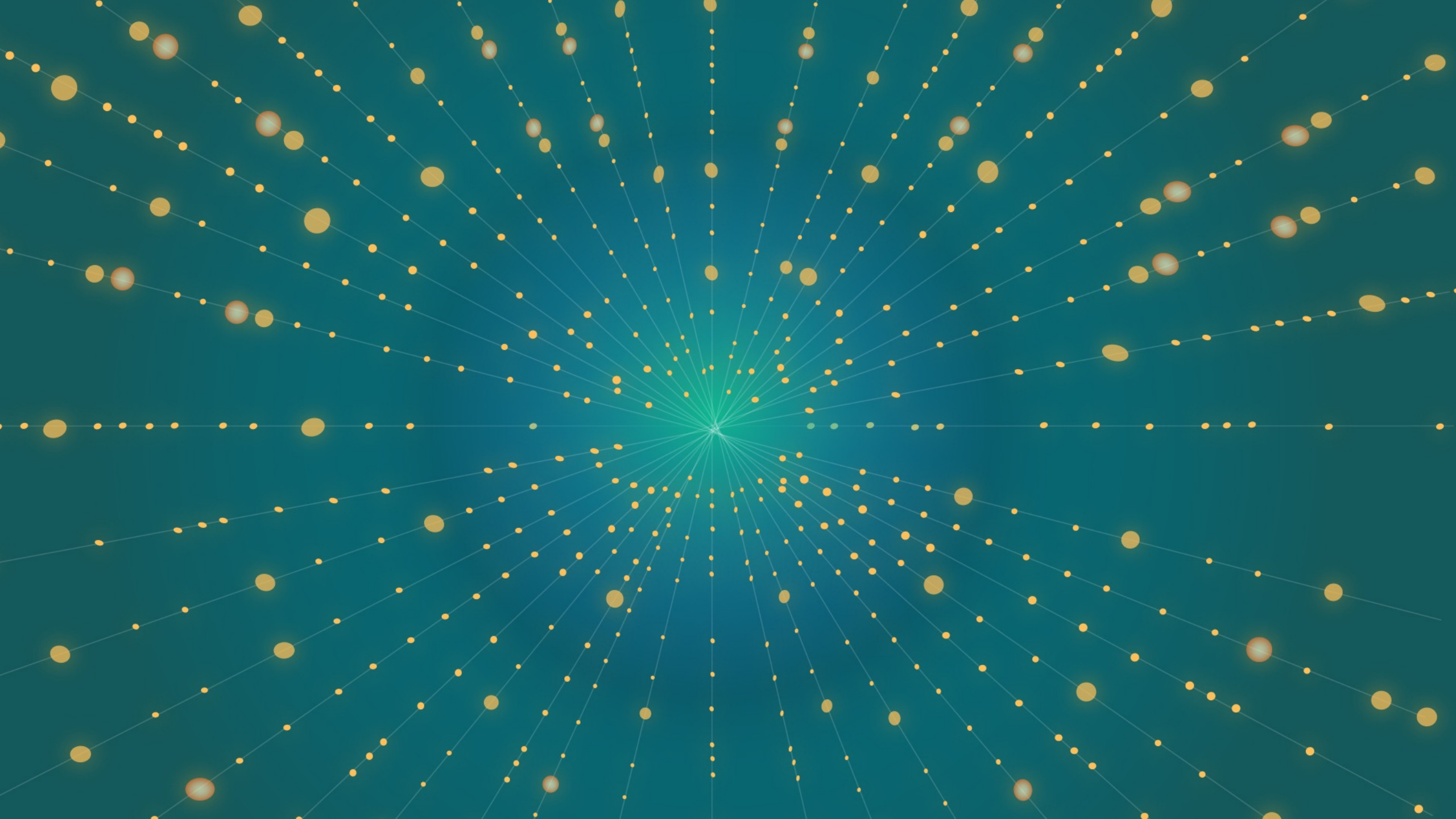


Applying These Principles

Objective C.3: Know Your Weaknesses and Address Them

- Identify and address vulnerabilities and design weaknesses.
- Do not repeat or reintroduce previously resolved vulnerabilities.
- Apply what you learn to other similar scenarios.
- Do not blindly trust user input. Verify input and output are valid and/or properly formatted.



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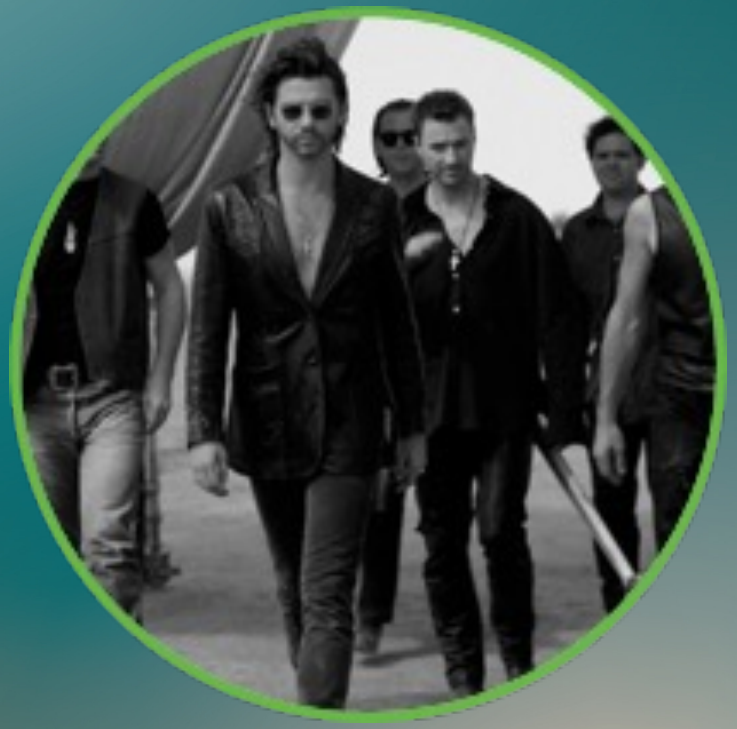
Applying These Principles

Objective C.4: Know Your Assets and Protect Them



- If you do not know your assets or their value, then you cannot adequately protect them.
- Someone wants what you have.
- Inadequately protected assets will almost certainly be compromised.

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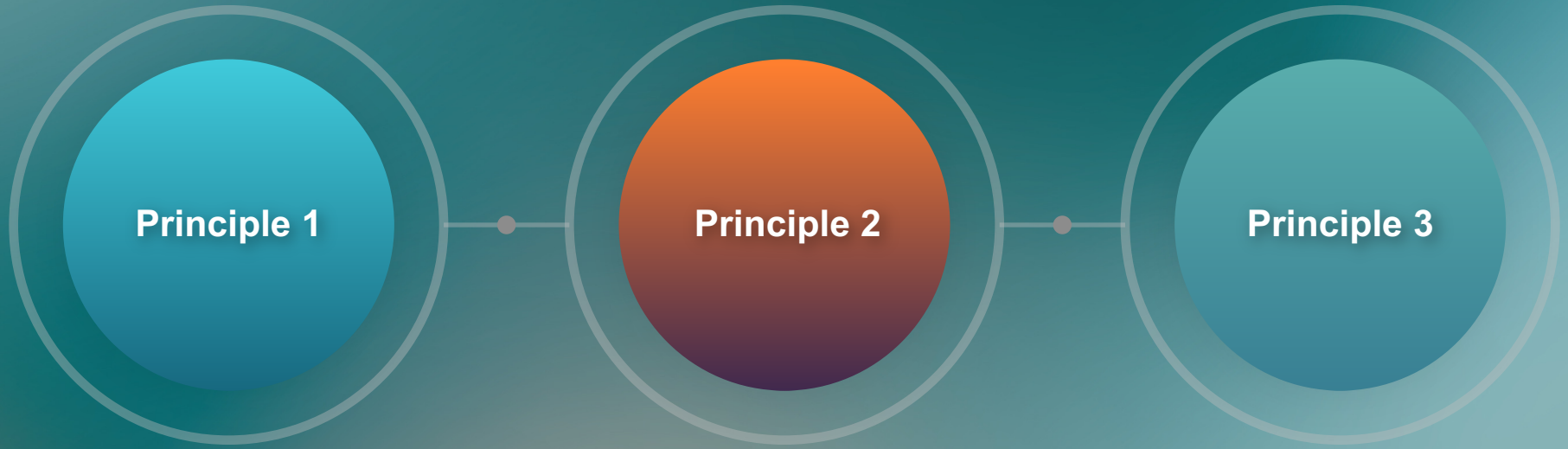
Summary of Key Principles



Software Security is a Function of Software Quality.

Minor Security Issues Can Have Major Consequences.

Software Security Requires Continuous Evolution.

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Summary of Required Actions

C.1 Web Software Components and Services

Know your product composition.

C.3: Web Software Attack Mitigation

Know your weaknesses and address them

C.2: Web Software Access Controls

Know your users and ensure they are who they claim to be.

C.4: Web Software Communications

Know your assets and protect them.

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Thank You!

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