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Seeing the Hidden Crypto: Why CBOM Matters Now

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About Me

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Cryptographic Bill of Materials (CBOM)

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- Cryptography is everywhere
- But often invisible
- PQC makes that a problem
- CBOM makes it visible

Why should we care?

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- Where are we using RSA, ECC, SHA-1, TLS ciphers?
- Which systems depend on them?
- Which ones are quantum-vulnerable?
- What breaks if we change them?

BOM → SBOM → CBOM

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- BOM: what parts make up a product
- SBOM: what software components are inside
- CBOM: what cryptography is inside

SBOM sees software, not crypto intent

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Why CBOM matters now

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- Weak / legacy crypto still exists
- Crypto agility is becoming necessary
- PQC migration starts with discovery
- Regulation is pushing inventory and planning

PQC changes the question

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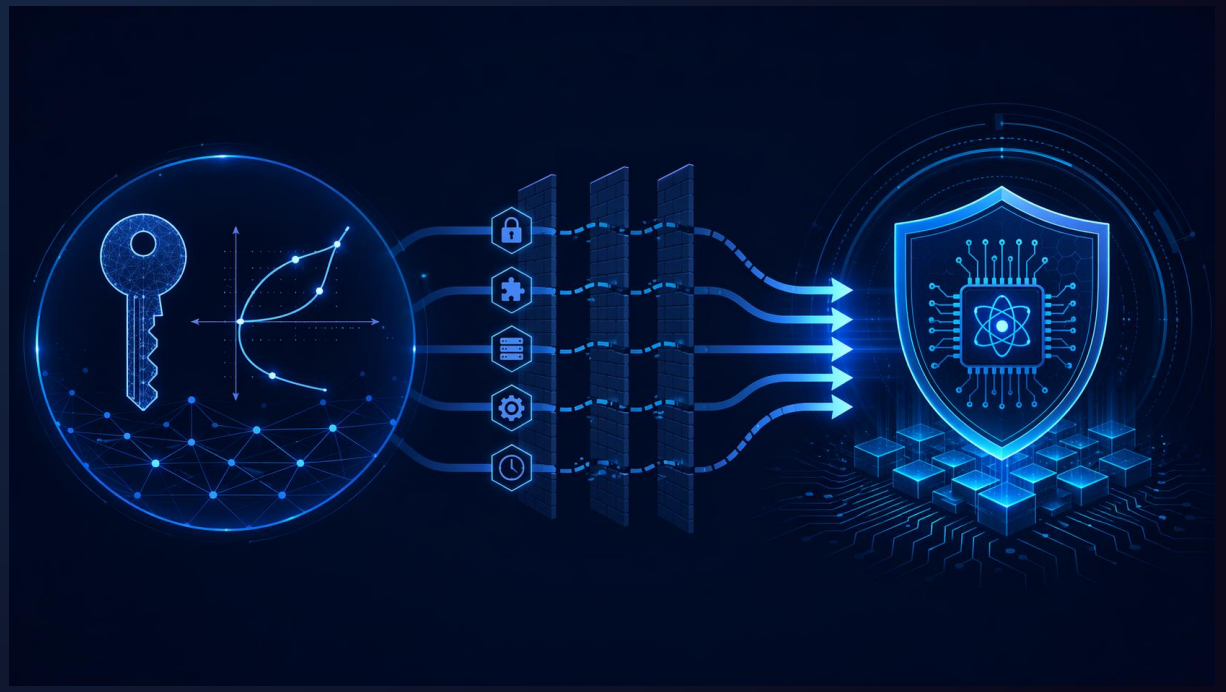
- Not: Do we use cryptography?
- But: Where do we use vulnerable public-key crypto?
- And: How hard is it to replace?
- Discovery becomes the first migration step



Example: one application, many crypto dependencies

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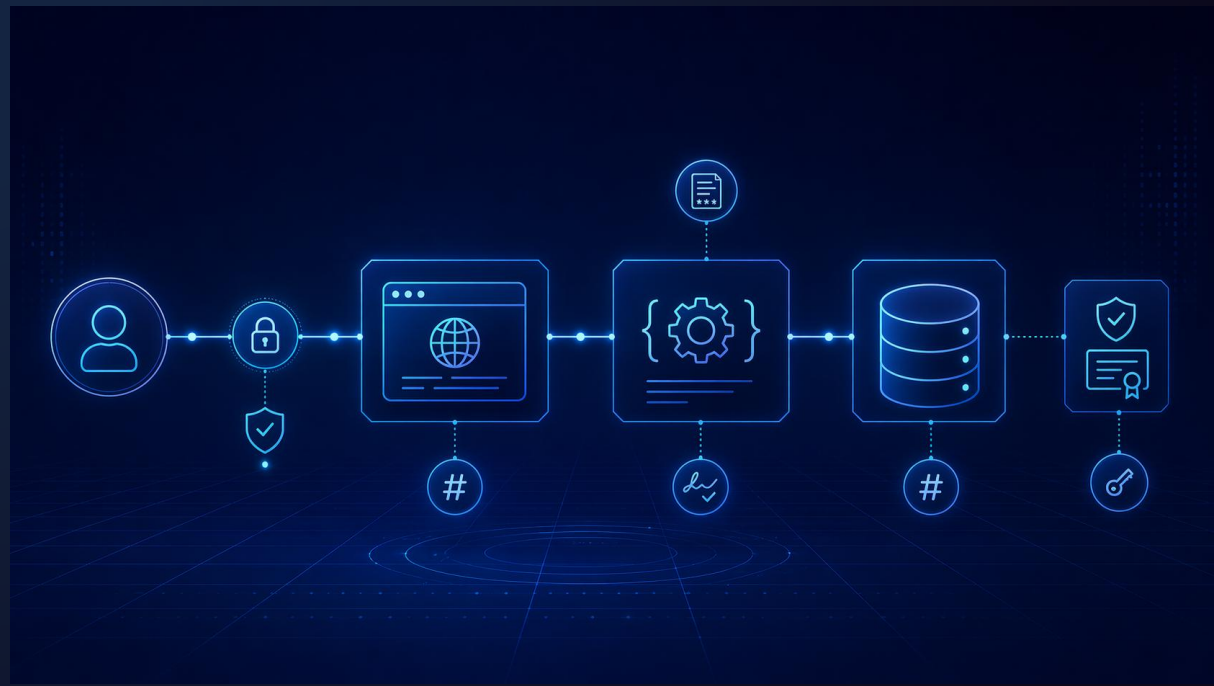
- Web app uses TLS
- Backend signs tokens
- Library performs hashing
- Certificate chain anchors trust
- Container may include extra crypto libraries



Discovery comes from multiple places

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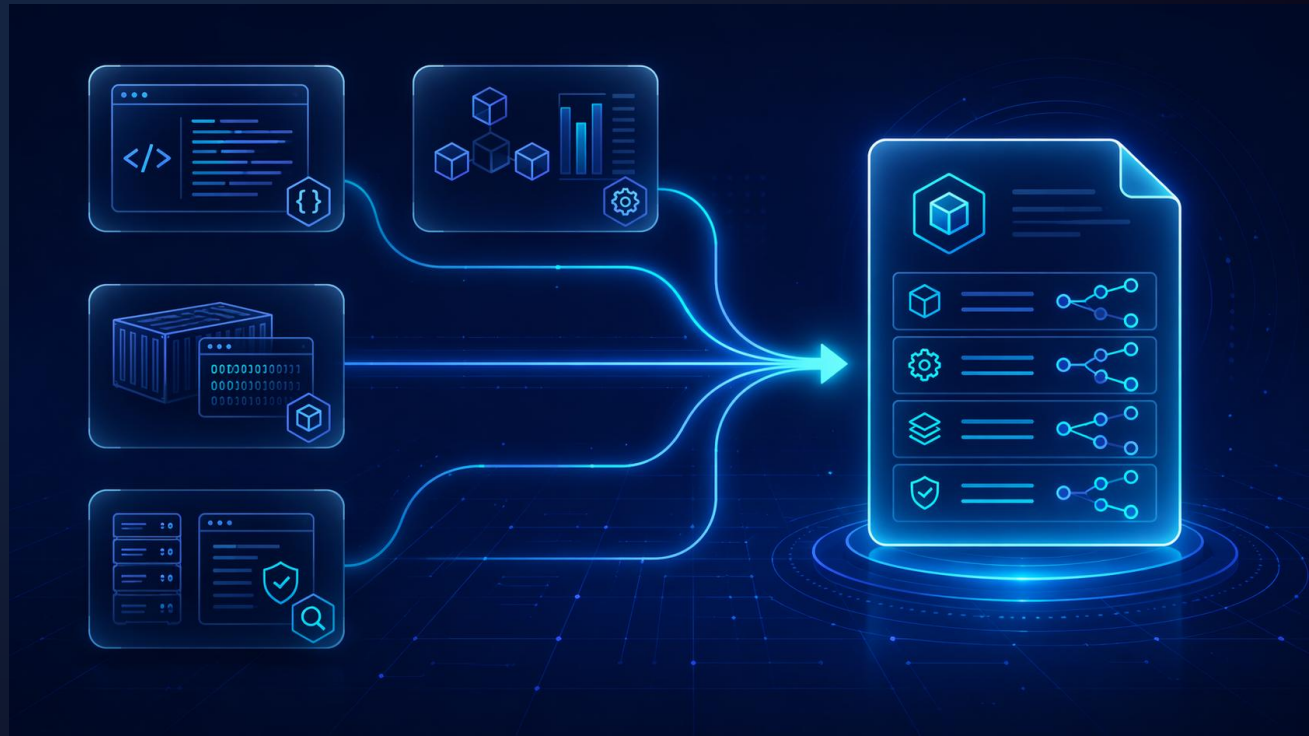
- Source code scanning
- Binary/executables scanning
- Network traffic
- Filesystem and Containers



How can we generate CBOMs today?

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Open source tools

1. CBOMkit
2. CodeQL

Demo

Where the ecosystem is heading

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- Inventory of cryptographic systems is now expected
- PQC migration guidance stresses discovery
- Standards are moving toward machine-readable structure
- NIST, OMB, ETSI, NCSC, ENISA
- From India: CERT-In

Final takeaway

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- You cannot migrate what you cannot see
- You cannot enforce what you cannot describe
- Visibility enables agility
- Agility enables PQC readiness

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Questions?

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Thank You!