Supply Chain Security

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Outline

Problem statement

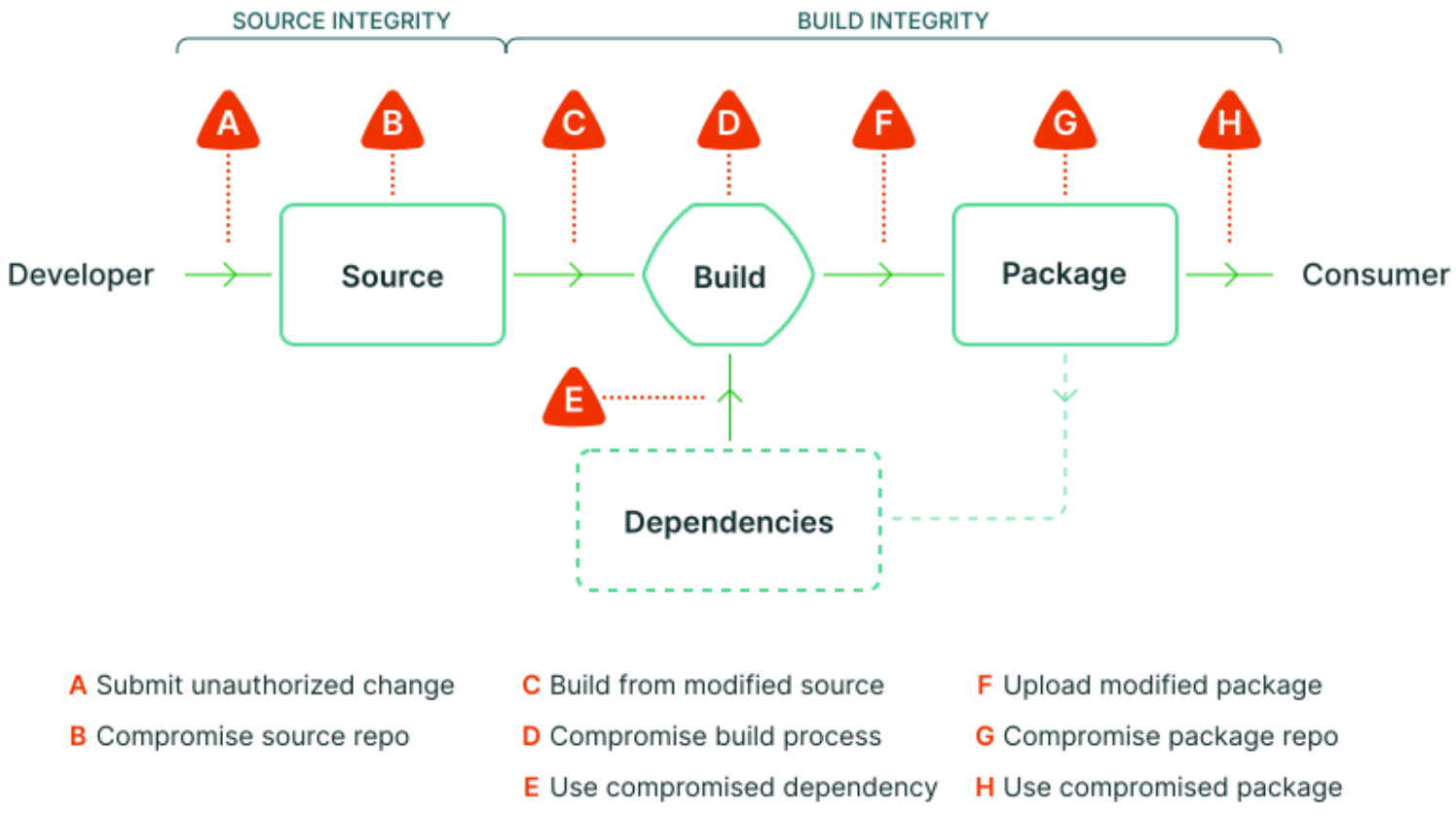

image src:
`https://slsa.dev/spec/v0.1/#supply-chain-threats`

Breach cases

TODO: Move links

1959 CIA intercepted a USSR lunar probe

`https://www.cia.gov/readingroom/collection/lunik-loan-space-age-spy-story`

2014 3rd party vendor credential leak on Home Depot's credit card terminals

`https://www.computerweekly.com/news/2240234281/Home-Depot-traces-credit-card-data-hack-to-supplier-compron`

2021 backdoor in the open source PHP Git server

`https://news-web.php.net/php.internals/113838`

SLSA Framework

Source Integrity

Ensuring every change reflects the intent of producer.

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Availability

Ensuring that all code and change history are available for potential incident investigation.

NixOS / Spectrum Build Environment

TODO: Build environment picture
Hydra -> BinCache -> Jenkins -> Release

- — TII GitHub
- — OpenSrc locations

NixOS SLSA Solution

Hydra package signing

Binary cache package signing

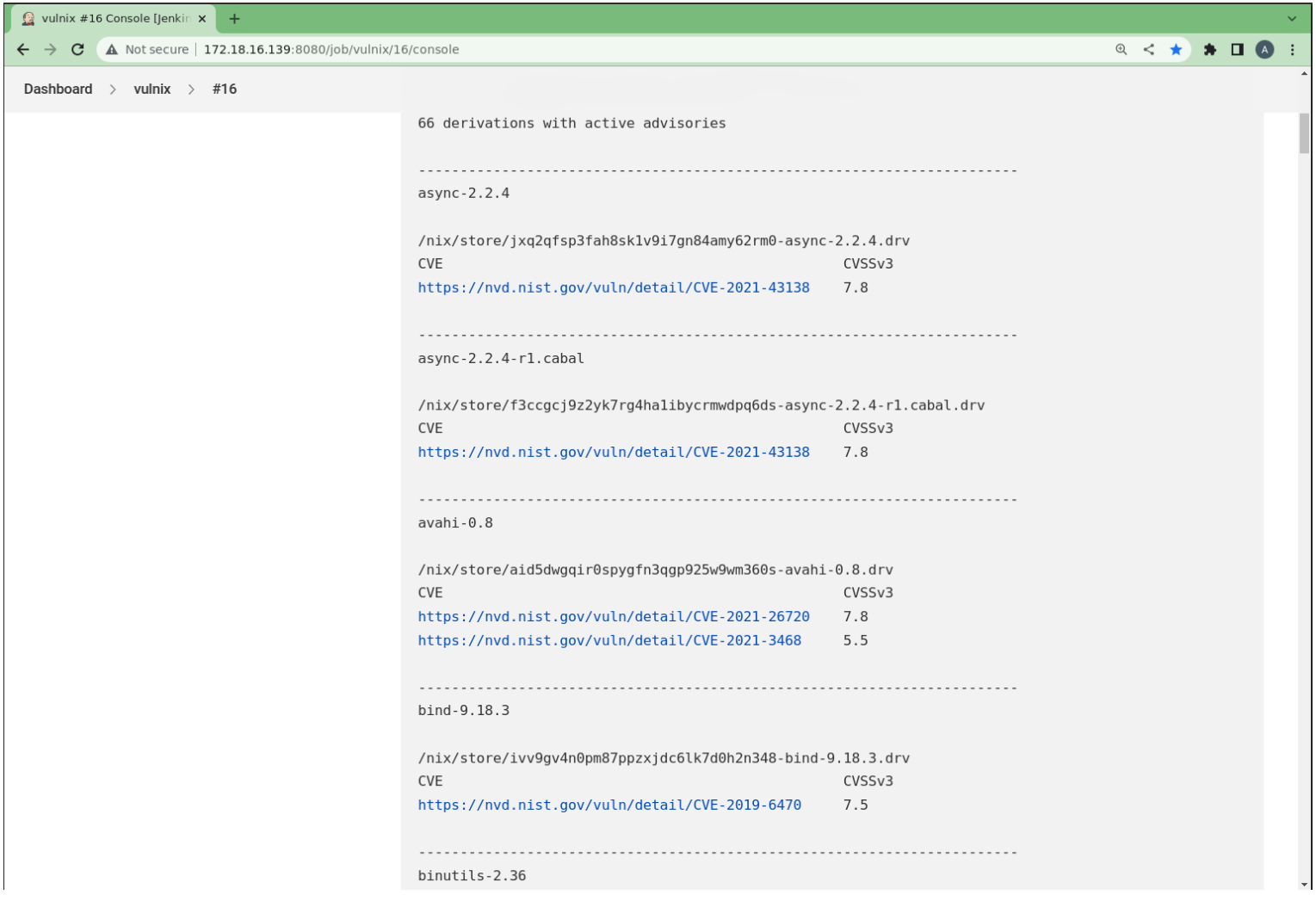
Jenkins package signature verification

SCA (Software Composition Analysis)

- Automated process that defines the open source software in the codebase.
- Companies need to be aware of potential obligations, limitations and security vulnerabilities that open source brings into play.
- As the codebase grows, tracking all of those becomes rather tricky.
- SCA takes use of automatic scanners to enable productivity without compromise on security.

Look & Feel

TODO: Vulnix results screenshot here



[Vulnix] Theory of operation

- Pulls all known CVEs from NVD
- Matches a list of derivations against CVE entries
- Whitelisting is used to suppress unwanted results

[Vulnix] Pros & Cons

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Pros

- Fast
- Easy integration
- Written in Python - easy to maintain

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Cons

- Simplistic mapping can lead to false positives / negatives
- Inactive development