

Introducing SLSA



Agenda

- Problem
- Background and overview of the SLSA framework proposal
- Next steps for SLSA doc
- Do you follow something similar and are you able to give us an overview?
- Open discussion

Problem Today

- Software producers want to secure their supply chains but don't know exactly how.
- Software consumers want to understand and limit their exposure to supply chain attacks but have no means of doing so.

What is SLSA?

- SLSA is a **proposal!**
- it stands for “**S**ecurity **L**evels for **S**oftware **A**rtifacts”
- it is inspired by what Google does internally

What is SLSA?

SLSA ensures that software artifacts meet certain minimum end-to-end integrity standards. It consists of:

- Standards
- Accreditation
- Technical controls

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- Standards <- **the proposal only covers this right now**
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- Technical controls

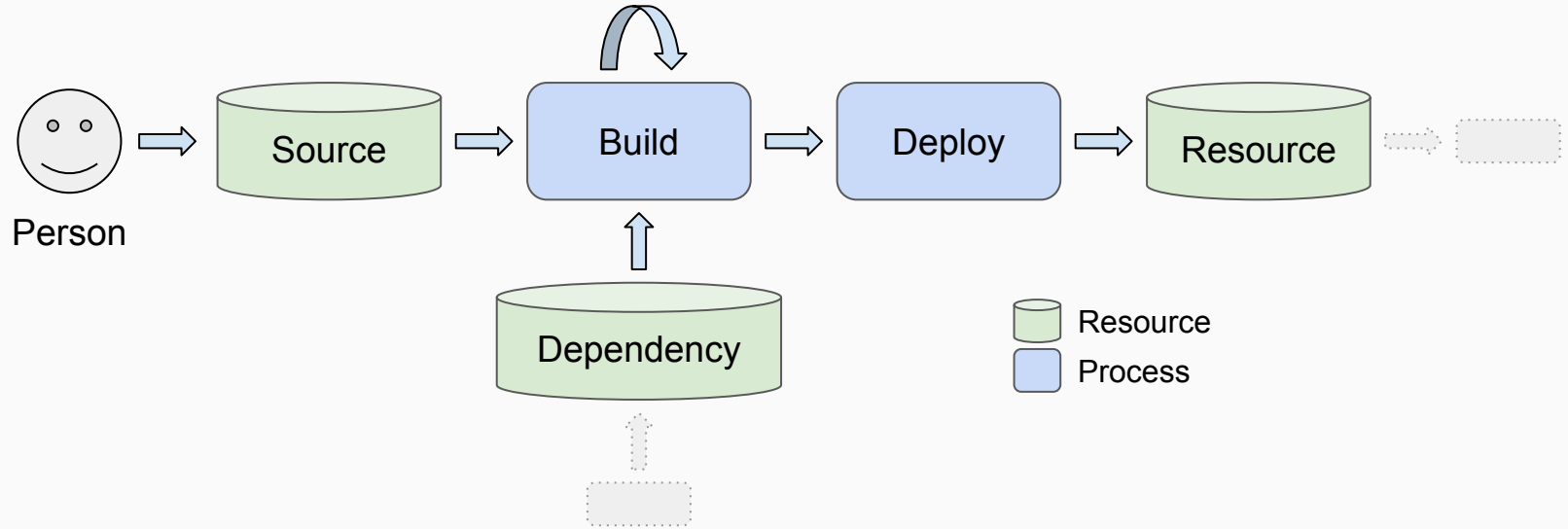
What is SLSA?

- SLSA allows us to talk about supply chain risks and mitigations in a common language
- It allows us to communicate and act on those risks **across organizational boundaries**

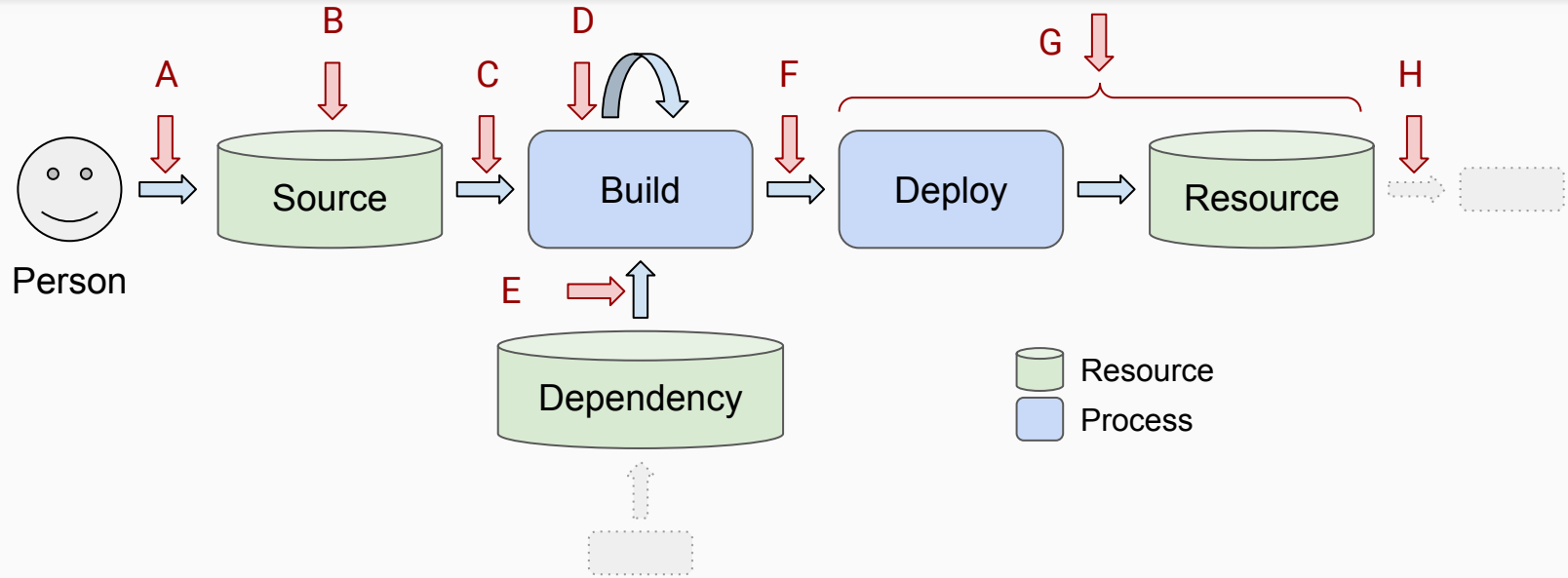
Two Main Principles

1. Non-unilateral AKA two person control
2. Auditable

Terminology



Threats

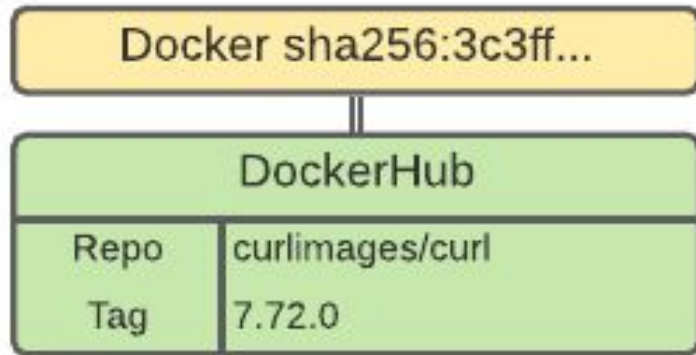


Level	Meaning
SLSA 3	“Auditable and Non-Unilateral.” High confidence that (1) one can correctly and easily trace back to the original source code, its change history, and all dependencies and (2) no single person has the power to make a meaningful change to the software without review.
SLSA 2	“Auditable.” Moderate confidence that one can trace back to the original source code and change history. However, trusted persons still have the ability to make unilateral changes, and the list of dependencies is likely incomplete.
SLSA 1	Stepping stone to higher levels. Moderate confidence that one can determine either who authorized the artifact or what systems produced the artifact. Protects against tampering after the build.

		Required at		
Requirement		SLSA 1	SLSA 2	SLSA 3
Source	Readability	✓	✓	✓
	Retention		18 mo.	indef
	Change History		✓	✓
	Two-Person Review			✓
Build	Automation	✓	✓	✓
	Isolation		✓	✓
	Source Integrity		✓ *	✓
	Hermeticity			✓
	Provenance	↓	✓ *	✓
Deploy	Provenance Chain	↓	✓	✓
	Policy	↓	✓	✓
	Enforcement	†	†	✓
	Logging	✓	✓	✓
Common	Security	↓↓	↓	✓
	Access	↓↓	↓	✓
	Superusers	↓↓	↓	✓

Legend:
* = best effort
† = detection is allowed
↓, ↓↓ = lower requirements (details TBD)

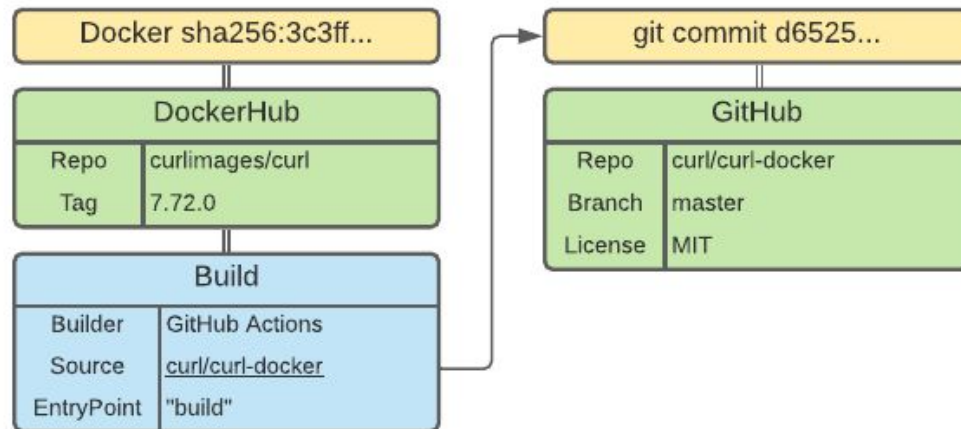
Example: Curl Docker Image - SLSA 0: Initial State



 Artifact

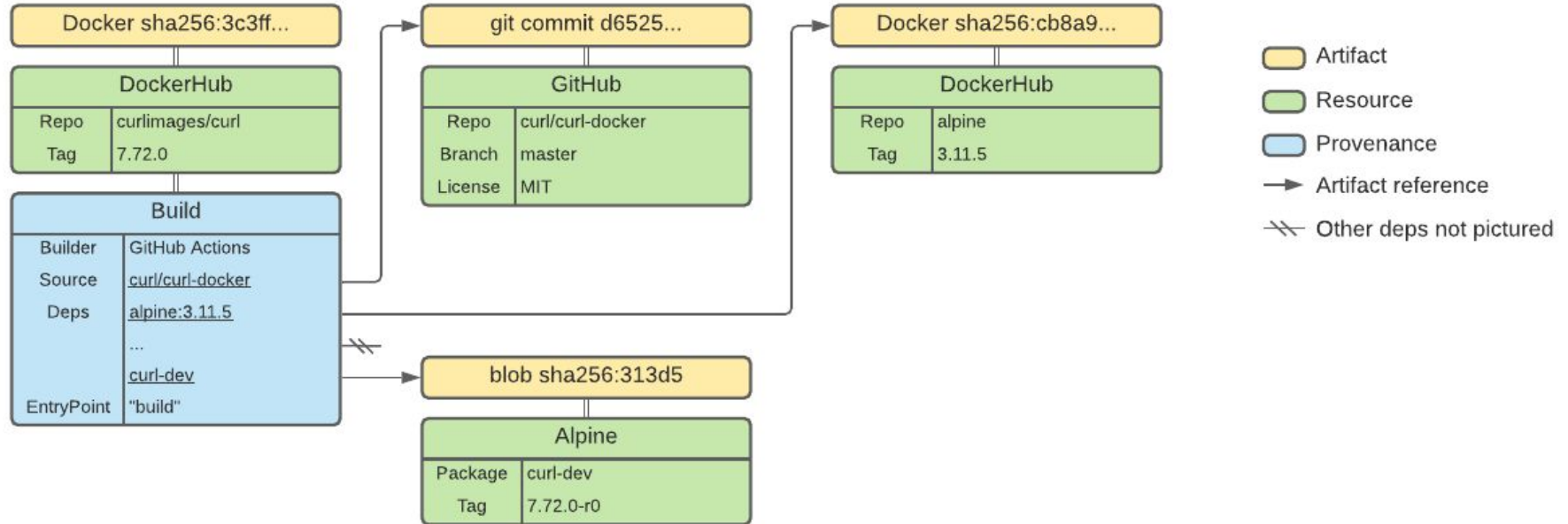
 Resource

Example: Curl Docker Image - SLSA 1: Provenance

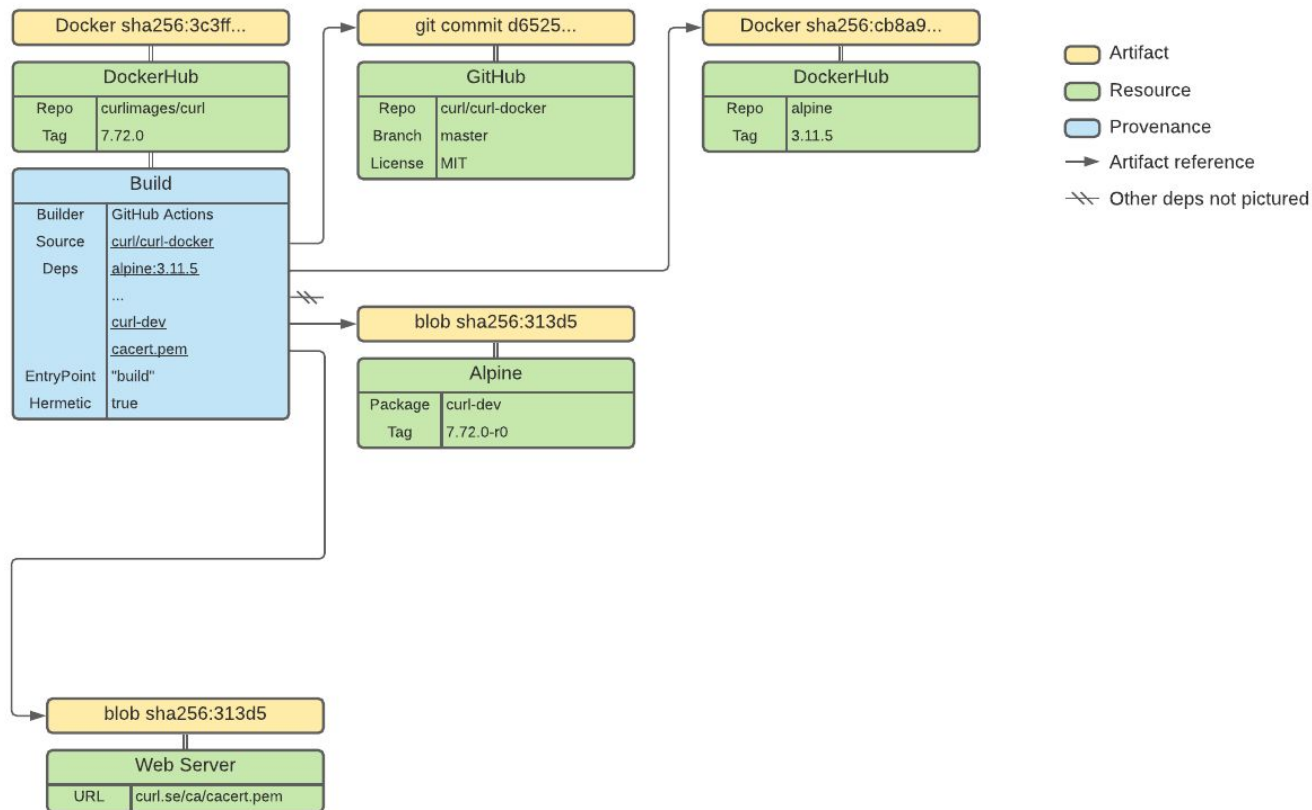


- Artifact
- Resource
- Provenance
- Artifact reference

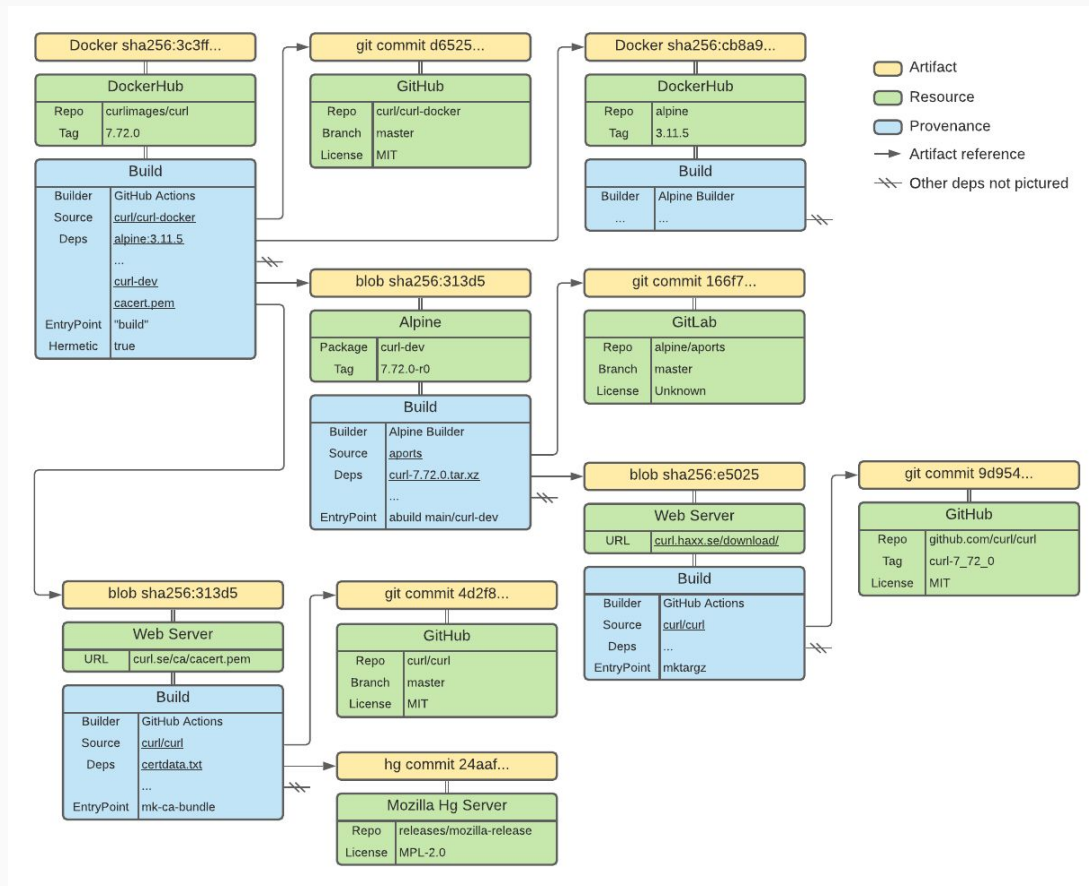
Example: Curl Docker Image - SLSA 2: Additional controls



Example: Curl Docker Image - SLSA 3: Hermeticity and two-person review



Example: Curl Docker Image - Composition of SLSA levels



What are the goals with SLSA?

Short Term

- Reach industry consensus on the definition of a “secure” software supply chain AKA broad buy-in of the SLSA framework

Long Term

- We enable stricter policy driven releases for (OSS) artifacts
 - “All deployed artifacts must meet SLSA 3”

Accreditation and delegation

- It is not practical for every software consumer to fully vet every platform and fully walk the entire graph of every artifact
- Auditors and/or accreditation bodies can verify and assert that a platform or vendor meets the SLSA requirements when configured in a certain way
- There may be some way to “trust” an artifact without analyzing its dependencies

Next Steps

- Decide if we like the name SLSA 😄
- We welcome all comments and suggestions for this document via doc comments, email, or feedback form.
- We are sharing with small groups of people now and will share with wider audiences in upcoming weeks

Do you follow something similar?

Open Discussion