Release Integrity Plan

Revision

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SME

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Abstract

This document describes the methodology to ensure that the software to be deployed has sufficient controls applied to it to ensure its integrity.

Group / Owner

devops / Information Systems Security Developer

Motivation

This document is motivated by the need to have formal processes in place to control the software deployed into safety-critical, cyber-physical systems for certification of compliance to standards such as **ISO/SAE 21434** and **ISO 26262**.

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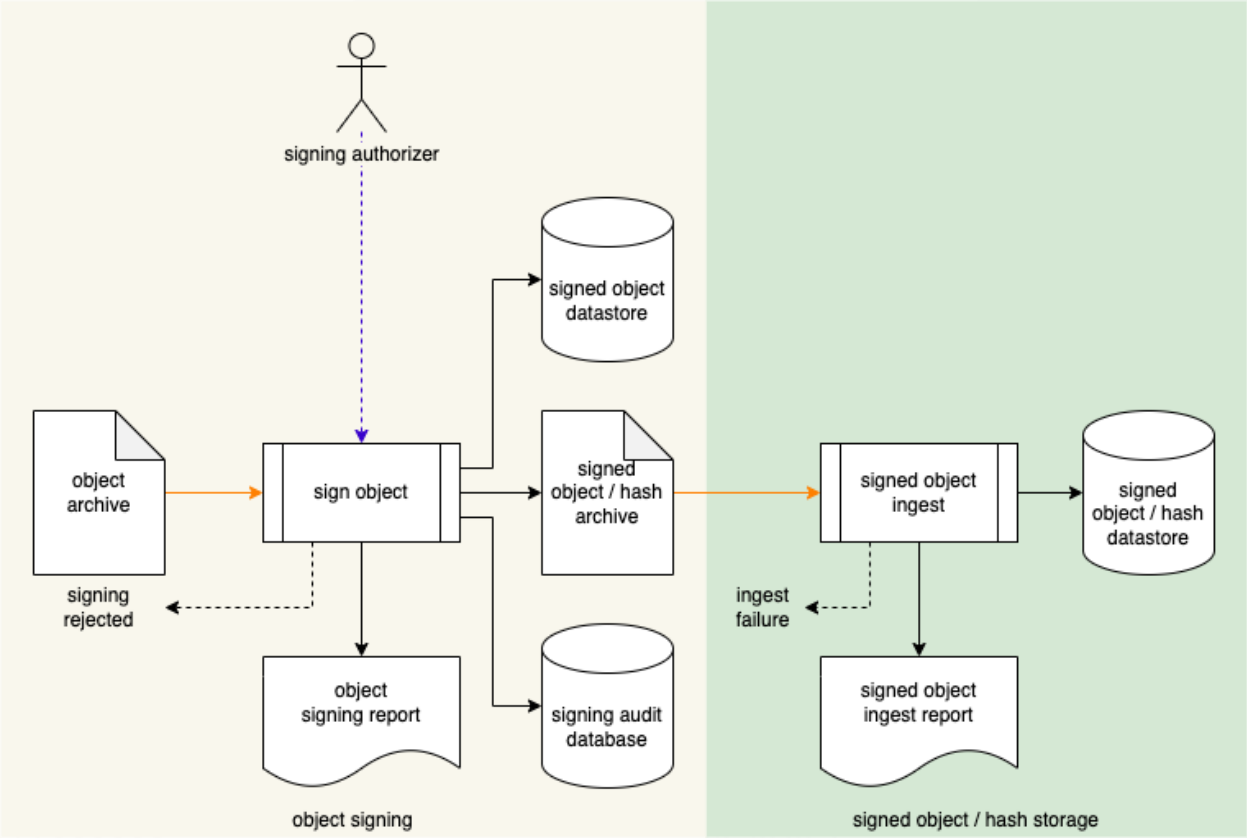
Overview

Note: This document has overlap with those relating to toolchain management.

There are several controls which need to be in place in order to secure the software to be deployed. These include:

- Code signing
- Hash tracking
- Credential management
- Root-of-trust implementation
- Secure deployment support
- Unauthorized alteration countermeasures

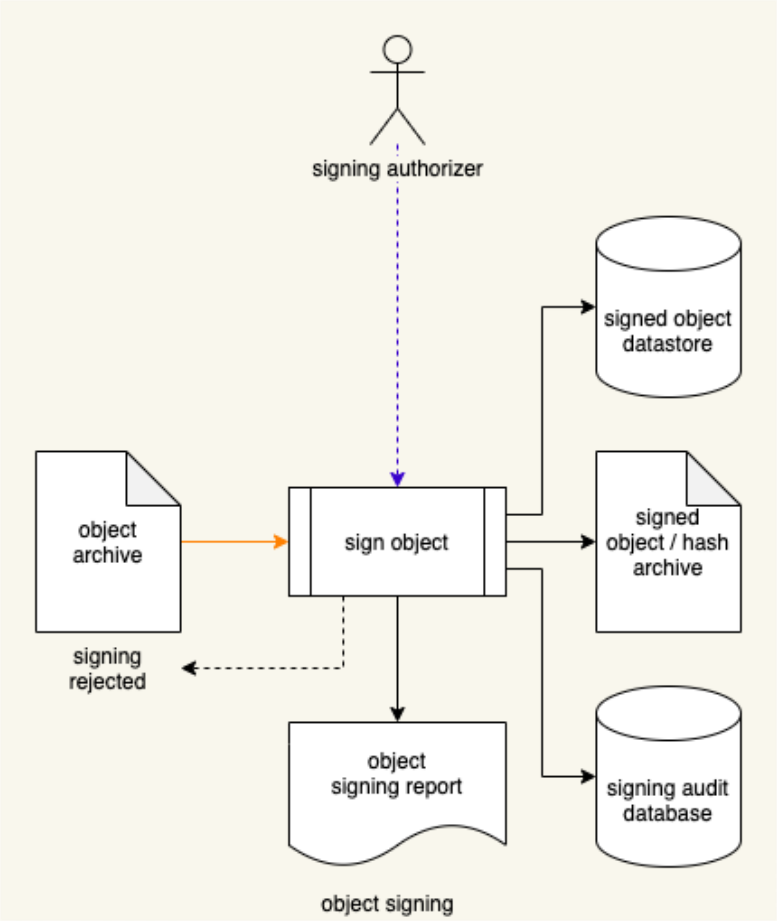
Below is the overview of the process used to create and deploy the deployment payload securely.



Process

Object Signing

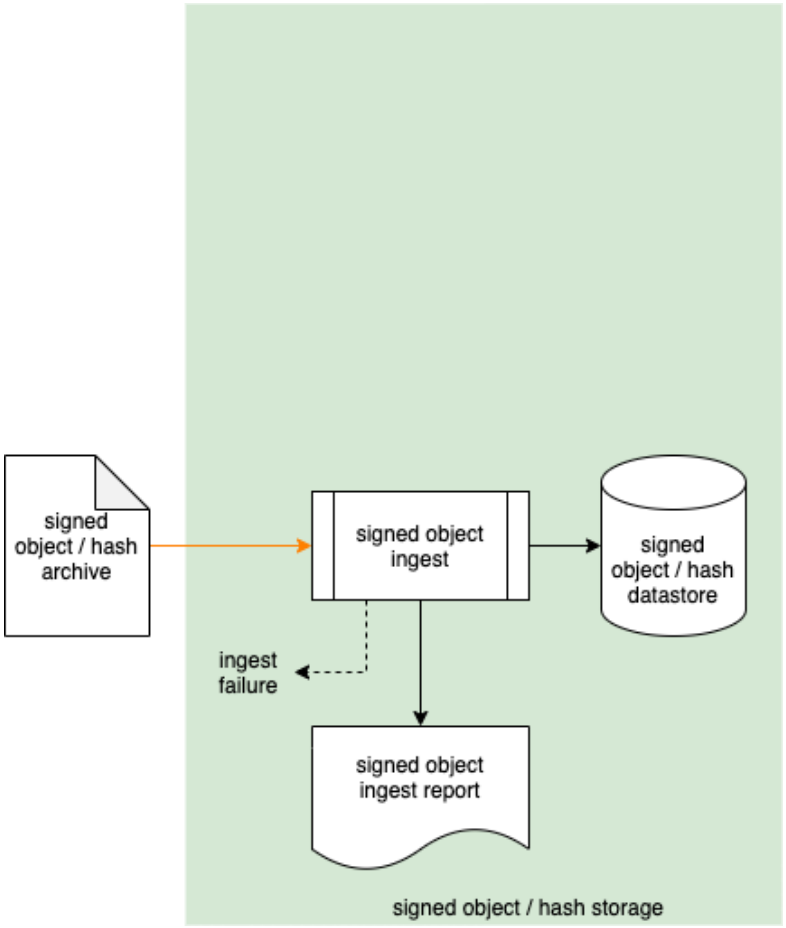
Inputs	Object archive
Outputs	signed object datastore signed object / hash archive signing audit database object signing report
Participants	Signing Authorizer (optional)



The code signing infrastructure takes an object archive and signs it. This may require the authorization of the Signing Authorizer. Invocation of the code signing infrastructure will always generate an object signing report and add a log entry to the signing audit database. Should signing be unsuccessful, a signing rejected notification is generated. Should signing be successful, a signed object / hash archive will be produced, and a copy stored in the signed object datastore.

Signed Object / Hash Storage

Inputs	signed object / hash archive
Outputs	signed object / hash database signed object ingest report
Participants	**none**



The signed object / hash archive is taken as input to the signed object ingest process. Invocation of the signed object ingest will generate a signed object ingest report. Should ingest be unsuccessful, an ingest failure notification is generated. Should ingest be successful the object / hash archive will be added to the signed object / hash datastore.

References

1. **Deployment Plan** (AVCDL secondary document)