

# SovereignStack HIGH-LEVEL DESIGN

Move your S3 data to the European Sovereign Cloud — in one day.

## What is SovereignStack?

A **self-managed migration engine** that copies S3 objects between AWS partitions — standard AWS to the **European Sovereign Cloud (ESC)** — without the data ever leaving AWS infrastructure.

SovereignStack operates as a **control plane only**: it orchestrates server-side copies, translates ARNs across partitions, re-encrypts with sovereign KMS keys, validates integrity, and produces a compliance-grade audit trail. Your data travels directly inside AWS at backbone speed — it never touches the SovereignStack host.

## How it works



### The Challenge

EU regulations (DORA, NIS2) require sensitive data in the **Sovereign Cloud**. But ESC is a **separate AWS partition** — different ARNs, different KMS keys, different credential chains. A simple `aws s3 cp` doesn't work.



### The Engine

SovereignStack handles ARN translation (`aws→aws-eusc`), KMS re-encryption, storage class mapping, parallel multipart transfers (8 threads), and 3-tier ETag integrity verification — **all server-side, all automated**.



### The Result

Data lands **DORA/NIS2-compliant** in the Sovereign Cloud. Every object is cryptographically verified. An append-only audit trail with 21 event types is ready for regulators. **One day instead of months**.

## Key capabilities

### ■ Zero Local Data

Server-side `S3→S3` copy at 4–15 MB/s. Objects **never** transit through the host. Control plane only.

### ✓ Integrity Verification

3-tier validation: direct ETag match, **cryptographic multipart ETag** (MD5-of-MD5s), size fallback.

### ◇ KMS Re-Encryption

Transparent re-keying with **sovereign KMS keys**. One config line. Metadata & ContentType preserved.

### ⊗ API Authentication

API key auth, configurable CORS, input validation, error sanitization. **No telemetry, no phone-home**.

### ▷ Compliance Audit Trail

**Append-only** JSON Lines log. 21 event types. Recursive credential scrubbing. DORA/NIS2/BSI C5 ready.

### ○ Full Source Code

**Complete codebase** included. Your team can review, audit, and extend every module. No black boxes.

## At a Glance

Timeline	Build in-house	<b>SovereignStack</b>
Engineers	8–12 weeks	<b>1 day</b>
Audit trail	2 Senior	<b>0</b>
Compliance docs	Must be built	<b>Built-in</b>
Source code	Must be written	<b>Included</b>
	Internal	<b>Included</b>

## Ready for the Sovereign Cloud?

Let's talk about your migration.

[sales@getsovereignstack.com](mailto:sales@getsovereignstack.com)

[getsovereignstack.com](https://getsovereignstack.com)