ARF Filesystem Capture

Reconstructing a file after cleanup

A report says the parser accepted the fixture. By morning the worktree has gone, the fixture name has been reused and the report is the only thing anyone remembers. A filename and a timestamp alone give the reviewer little to test.

Capture the right bytes at the right boundary

Record the object's path, operation and source. Bind the original byte sequence with a digest. A create can supply its result. An edit needs an identifiable preimage and result. A delete depends on the bytes present before removal. If the system retains a snapshot and a delta, restoration depends on both and on the order in which they apply.

The filesystem observation protocol can carry hashes and content references in its payload. Separate storage lets large or restricted bytes follow their retention and access rules. The capture source signs its observation, and the protocol's custody records distinguish an item waiting for delivery from one the receiver accepted.

Try the discrepancy a reviewer actually sees

The signed, scripted Press example is in the file-history record. Its records use source: decision_press and arf.io/decision-press/simulation-v1. Select the deletion, open its JSON and decode the preimage. Recompute its digest. In the record, decode event.payload.press.before.bytes from Base64 and compare SHA-256 with event.payload.press.before.sha256. The edited revision has the same pair of fields under after. A trailing newline or a single changed byte is enough to distinguish two inputs with the same visible filename.

The full-resolution field note walks through this signed example. A native exact-source staging path separately encrypts the exact frame supplied to it, restores it and checks the original digest. Keeping the input frame and the file it describes distinct makes the restoration claim testable.

Agree on retention before the job

For a real rollout, name the paths worth capturing, who may recover them, how long the bytes live and what happens when the capture source loses contact. Have another operator restore a selected revision from the retained material. Include an intentionally missing object in the exercise. An honest gap tells the reviewer which conclusion is still open.

Evidence for a disappearing fixture

Operation	Retained material	Reader's check
Create	Path, result bytes or content reference, result digest.	Reconstruct and hash the first revision.
Edit	Bound preimage and resulting revision.	Identify the exact input used for the test.
Delete	Pre-deletion bytes or a recoverable reference.	Restore the last revision after the path is gone.
Transfer	Signed observation and intake receipt.	Identify which capture the receiving side accepted.

Sources and evidence

Restore the deleted fixture · From file event to restorable bytes · Implementation record