



Provenance Is Not Entropy

“Most tools treat provenance like entropy—random, snapshot-based, and context-free. We treat provenance like biology—observable, evolving, and impossible to fake at scale.”

How we got here

Two of our partners shared a video in front of a jelly fish tank. I was floored by how much they resembled lava lamps but even more random.

It immediately struck me as the perfect metaphor for what we’re doing.

Lava lamps capture randomness—heat, motion, and chaos frozen into a moment. They are mesmerizing, unpredictable, and memoryless.

Jellyfish, by contrast, move with history. Each pulse carries the imprint of environment, interaction, and time.

Nexus and Hurricane follow the jellyfish model of trust: provenance not as a snapshot of motion, but as a living record of becoming. Because in security, what matters most isn’t that something moved unpredictably—but that its path can be seen, traced, and understood.

A Manifesto for Living Trust in Software Systems

Modern software security treats trust like randomness.

We hash files.
We snapshot artifacts.
We generate reports.

And we call that provenance.

It isn’t.

The Problem



Most tools answer only one question:

“Has this artifact changed?”

That’s necessary—but it is not sufficient.

When systems fail, when audits happen, when breaches spread, the real questions are different:

- *How did this get here?*
- *What influenced it along the way?*
- *What changed first—and what followed?*
- *Who knew, and when?*

Static provenance collapses under these questions.

The False Comfort of Mechanical Trust

Hashes, signatures, and snapshots are like artificial randomness:

- Precise
- Verifiable
- Context-free

They prove integrity at a moment in time, but they carry **no memory**.

A file with a valid hash can still be:

- Poorly sourced
- Illegally composed
- Vulnerable by inheritance
- Operationally dangerous

Randomness is not trust.

Entropy is not evidence.

Trust Comes From Evolution, Not Isolation



Real trust emerges from **traceable change over time**.

Living systems leave:

- History
- Scars
- Dependencies
- Consequences

You don't trust a system because it hasn't changed.
You trust it because you can see **how it changed**.

Living Provenance

We believe provenance should behave like biology:

- **Observable** — structure can be inspected, not inferred
- **Evolving** — every change leaves a trace
- **Contextual** — nothing exists without lineage
- **Resistant to fabrication** — false history collapses under time

In a living provenance system:

- Dependencies are inheritance, not references
- Vulnerabilities are injuries, not annotations
- Fixes are treatments, not checkboxes
- Time is a first-class dimension, not metadata

This is not chaos.
This is accountability.

Make Lies Expensive

A static artifact can be forged.
A static report can be curated.
A static SBOM can be sanitized.

But an evolving system is hard to fake.



When provenance is continuous:

- Gaps are visible
- Inconsistencies surface
- Silence becomes evidence
- Absence becomes suspicious

Living systems expose deception simply by existing.

Our Position

We reject provenance as a snapshot.

We reject trust without memory.

We reject security theater.

We build systems that answer not just *what*, but *why* and *how*.

Because when software becomes infrastructure,
history is the only real proof.

The Principle

Provenance is not randomness.

Provenance is recorded evolution.

And evolution, once observed, cannot be undone.

30-Second Voiceover Script

"Most security tools treat provenance like entropy.
They hash files, snapshot artifacts, and call that trust.

But randomness isn't evidence.



Nexus observes how software actually evolves—dependencies, structure, and influence over time.

Hurricane preserves that history, tracking exposure, inheritance, and consequence across the lifecycle.

Together, they replace static proof with living provenance.

Static artifacts can be forged.
Evolving systems are harder to fake.

Provenance isn't randomness.
It's recorded evolution.

And once evolution is observed... it can't be undone."

Performance notes (optional but useful)

- **Pace:** ~125–135 words/minute
- **Pauses:** after “entropy,” “evidence,” and “moment”
- **Tone:** thoughtful, not salesy
- **Music:** low, slow pulse or none at all