

Continuity-Proof Lineage

The agent's lineage field is an append-only sequence of records governed by a continuity proof, so any modification or deletion of a prior record produces a detectable continuity break.

Continuity-Proof Lineage

The semantic agent's lineage field is an append-only sequence of lineage records, structured for append-only mutation under continuity proofs such that no prior lineage record may be modified or deleted without producing a detectable continuity break. This makes the agent's recorded operational history tamper-evident: any party with access to the lineage field can verify that the recorded history has not been altered.

In one embodiment, lineage record integrity may be enforced through cryptographic chaining in which each lineage record carries a cryptographic reference to its immediate predecessor. The agent's identity field may further include a continuity hash chained over the sequence of substrate events recorded in the lineage field, updated incrementally with each appended record and verifiable by reproducing the chain from any prior reference value. A continuity break is detectable as a discrepancy between a computed continuity hash and a stored prior reference value, and triggers escalation under the governance policy field.

Disclosure Scope

This article describes subject matter disclosed in U.S. Provisional Application No. 64/070,239. It reflects the disclosure as filed and does not add mechanisms, numbers, or protocols beyond those in the specification.

Agent-Resident Execution

[All 40 steps → \(/inventive-steps\)](/inventive-steps)

Substrate (</agent-resident-execution-substrate>)

Persistent execution environment carried by the agent, not the host — identity, state, and lineage across power cycles, devices, and upgrades.

Provisional application

PRIMARY TECHNICAL DISCLOSURE

- [{step.name}, Articles \(/articles/agent-resident-execution-substrate\)](/articles/agent-resident-execution-substrate)

SECONDARY TECHNICAL

- [Persistent Semantic Agent \(/articles/agent-resident-execution-substrate/persistent-semantic-agent\)](/articles/agent-resident-execution-substrate/persistent-semantic-agent)
- [Managed Inference Tool Registry \(/articles/agent-resident-execution-substrate/managed-inference-tool-registry\)](/articles/agent-resident-execution-substrate/managed-inference-tool-registry)
- [Agent-to-Tool Dispatcher \(/articles/agent-resident-execution-substrate/agent-to-tool-dispatcher\)](/articles/agent-resident-execution-substrate/agent-to-tool-dispatcher)
- [Lineage-Derived Training Signal \(/articles/agent-resident-execution-substrate/lineage-derived-training-signal\)](/articles/agent-resident-execution-substrate/lineage-derived-training-signal)
- [Identity Preservation Across Upgrades \(/articles/agent-resident-execution-substrate/identity-preservation-across-upgrades\)](/articles/agent-resident-execution-substrate/identity-preservation-across-upgrades)
- [Cognitive State-Conditioned Dispatch \(/articles/agent-resident-execution-substrate/cognitive-state-conditioned-dispatch\)](/articles/agent-resident-execution-substrate/cognitive-state-conditioned-dispatch)
- [Governed Tool Lifecycle \(/articles/agent-resident-execution-substrate/governed-tool-lifecycle\)](/articles/agent-resident-execution-substrate/governed-tool-lifecycle)
- [Continuity-Proof Lineage \(/articles/agent-resident-execution-substrate/continuity-proof-lineage\)](/articles/agent-resident-execution-substrate/continuity-proof-lineage)
- [Substrate Runtime Continuity \(/articles/agent-resident-execution-substrate/substrate-runtime-continuity\)](/articles/agent-resident-execution-substrate/substrate-runtime-continuity)

- [Personal Corpus Model Training \(/articles/agent-resident-execution-substrate/personal-corpus-model-training\)](/articles/agent-resident-execution-substrate/personal-corpus-model-training).
- [Heterogeneous Inference Endpoints \(/articles/agent-resident-execution-substrate/heterogeneous-inference-endpoints\)](/articles/agent-resident-execution-substrate/heterogeneous-inference-endpoints).
- [Atomic Lifecycle Substitution \(/articles/agent-resident-execution-substrate/atomic-lifecycle-substitution\)](/articles/agent-resident-execution-substrate/atomic-lifecycle-substitution).
- [Integrity Signal Feedback \(/articles/agent-resident-execution-substrate/integrity-signal-feedback\)](/articles/agent-resident-execution-substrate/integrity-signal-feedback).
- [Hardware-Bound Identity \(/articles/agent-resident-execution-substrate/hardware-bound-identity\)](/articles/agent-resident-execution-substrate/hardware-bound-identity).
- [Cognitive State Append-Only Invariant \(/articles/agent-resident-execution-substrate/cognitive-state-append-only-invariant\)](/articles/agent-resident-execution-substrate/cognitive-state-append-only-invariant).
- [Counterparty Identity Records \(/articles/agent-resident-execution-substrate/counterparty-identity-records\)](/articles/agent-resident-execution-substrate/counterparty-identity-records).
- [Privacy Egress-Controlled Disclosure \(/articles/agent-resident-execution-substrate/privacy-egress-controlled-disclosure\)](/articles/agent-resident-execution-substrate/privacy-egress-controlled-disclosure).
- [Federated Cross-Device Agent Identity \(/articles/agent-resident-execution-substrate/federated-cross-device-agent-identity\)](/articles/agent-resident-execution-substrate/federated-cross-device-agent-identity).

[Agent-Resident Execution Substrate overview → \(/agent-resident-execution-substrate\)](/agent-resident-execution-substrate)