

Execution Context Trace v1

Evidence form for shell and runner context, process inputs, separate streams, exit status, resolved file identity, evidence classification, and a bounded human decision

Outcome. Identify the smallest failing execution boundary when a command returns exit status 0 but changes the wrong file, then reject the misleading green signal with independent evidence.
Boundary. This trace does not universalize Bash behavior, dump the full environment, teach filesystem internals, or treat command text, stdout, exit status, or AI as final correctness authority.

Eight evidence stages

1 Shell boundary	2 Cwd and resolution	3 Process inputs	4 Streams
5 Exit status	6 Filesystem identity	7 Evidence class	8 Human decision

Trace identity

Learner		Reviewer	
Lab attempt		Capture date	
Case and run		Shell or runner	
Target claim		Final decision	SUFFICIENT / PROBE / DEFER

Safety and capture order

Baseline	Run setup_fixture.py --case baseline, inspect the workspace, then run the root and safe probe. Capture context before changing it.
Mutations	Reset before each probe. Change cwd while holding DEMO_MODE fixed, then change DEMO_MODE while holding cwd fixed.
Safety boundary	Use the supplied local fixture only. No network, credentials, privilege changes, host deletion, or full environment dump is required.

Run context and process observables

Record what entered and left the process. Keep shell-specific resolution distinct from portable process and filesystem evidence.

Field	Question to close	Reviewable evidence	Invalid promotion
run_id	Which exact observation row is this?	Unique run label tied to the command output	A row label proves the run occurred
shell_boundary	Which shell or runner launched the process?	Named boundary and shell-specific probes when used	Bash behavior applies to every shell
cwd	Which working directory gave relative paths meaning?	Observed absolute cwd	The typed prompt or folder name is enough
resolved_executable	Which executable actually ran?	Observed absolute executable path	The launcher token or PATH guess is identity
argv	Which arguments entered the process?	Exact ordered argv	Command summary preserves every argument
relevant_env	Which non-secret environment value affects the claim?	Whitelisted DEMO_MODE only	A full environment dump is safer or stronger
stdin	Did material input enter through stdin?	Captured value or NONE	Silence can be assumed without recording
stdout	What did the process write to stdout?	Separate captured stdout	Plausible stdout proves the intended effect
stderr	What did the process write to stderr?	Separate captured stderr	Missing capture means stderr was empty

Filesystem identity and bounded closure

Bind file effects to resolved identities, keep unknowns explicit, and record the smallest defensible claim or next probe.

Field	Question to close	Reviewable evidence	Invalid promotion
exit_status	Which status did this process return?	Observed numeric status	Zero proves semantic correctness
resolved_file_effect	Which concrete file was affected?	Resolved path plus sibling comparison	A relative filename is a global identity
before_hash	What was the file state before the run?	Hash or equivalent pre-run oracle	A remembered value is an observation
after_hash	What was the file state after the run?	Hash or equivalent post-run oracle	A changed hash proves business correctness
observed_inferred_unknown	How strong is each material statement?	OBSERVED, INFERRED, or UNKNOWN	Inference can be recorded as observation
claim_or_next_probe	What bounded claim follows or which probe separates explanations?	Evidence-linked claim or one-variable probe	More commands are automatically more diagnostic
residual_uncertainty	What remains unmeasured or out of scope?	Named unknown and consequence	Unknown means harmless
human_decision	Is the evidence sufficient, does it need a probe, or must it defer?	Exact decision value plus rationale	Machine validation chooses sufficiency
support_disclosure	What material AI or tool support affected the work?	Support used and independent validation	Tool output replaces human accountability

Execution Context Trace run capture

Complete the row from inspectable evidence. Capture context before mutation and use the same run id across streams, status, and file observations.

Run and context

Run id	<input type="text"/>	Shell or runner	<input type="text"/>
Working directory	<input type="text"/>	Resolved executable	<input type="text"/>

Process inputs

Argv	<input type="text"/>	Relevant environment	<input type="text"/>
Stdin	<input type="text"/>	Input evidence locator	<input type="text"/>

Streams and status

Stdout	<input type="text"/>	Stderr	<input type="text"/>
Exit status	<input type="text"/>	Output evidence locator	<input type="text"/>

Context review check

Review question	Result	Evidence locator	Repair or rationale
Shell or runner boundary is named and portable claims stay bounded	PASS / REPAIR	<input type="text"/>	<input type="text"/>
Cwd and resolved executable are observed rather than guessed	PASS / REPAIR	<input type="text"/>	<input type="text"/>
Argv relevant environment and material stdin are recoverable	PASS / REPAIR	<input type="text"/>	<input type="text"/>
Stdout stderr and exit status are captured separately	PASS / REPAIR	<input type="text"/>	<input type="text"/>
No green signal is promoted to the intended effect	PASS / REPAIR	<input type="text"/>	<input type="text"/>

Filesystem identity

Control field	Learner entry	Evidence locator	Review boundary
Resolved file effect	_____	_____	Bind the filename to cwd and an exact path
Before hash	_____	_____	Capture before mutation
After hash	_____	_____	Compare with the before state
Sibling file observation	_____	_____	Reject the same-name assumption independently

Evidence classification and human closure

Closure field	Learner entry	Evidence refs	Review question
Observed inferred or unknown	_____	_____	Are material statements classified honestly
Claim or next probe	_____	_____	Does the probe separate competing explanations
Residual uncertainty	_____	_____	Does every material unknown remain visible
Human decision	SUFFICIENT / PROBE / DEFER	_____	Does the action follow the evidence
Support disclosure	_____	_____	Was material support independently validated

Optional evidence captures

Capture	Suggested content	Evidence locator	Authority boundary
A and B	Fixture safety shell boundary cwd and executable	_____	Convenience copy only
C and D	Argv relevant environment stdout stderr and status	_____	Structured output remains authoritative
E and F	Root and alternate resolved paths with sibling hashes	_____	A screenshot does not prove hidden state
G and H	Environment mutation transfer evidence and human closure	_____	Exclude secrets and reviewer-only material

Changed context transfer

Create the transfer case. Its north and south labels and sentinel data differ. Reconstruct the evidence method without copying baseline paths, observations, or conclusions.

Transfer item	Second case entry	Evidence locator	Review check
Fixture and safety boundary	_____	_____ _____	The transfer case is ownership-marked
Shell or runner and launcher	_____	_____ _____	No Bash claim is universalized
North or south cwd	_____	_____ _____	The current labels are observed
Executable argv environment and stdin	_____	_____ _____	Inputs belong to this run
Stdout stderr and exit status	_____	_____ _____	Channels remain separate
Resolved file and sibling hashes	_____	_____ _____	File identity is independently proven
Isolated cwd and mode probes	_____	_____ _____	Only one variable changes per probe
Observed inferred and unknown	_____	_____ _____	Unknown evidence remains unknown
New human closure	SUFFICIENT / PROBE / DEFER	_____ _____	Decision follows transfer evidence

Critical dimension review

Dimension or closure field	Result or entry	Evidence locator	Repair or rationale
Context completeness	PASS / REPAIR	_____ _____	_____
Stream and process evidence separation	PASS / REPAIR	_____ _____	_____
Filesystem identity proof	PASS / REPAIR	_____ _____	_____
Portability boundary	PASS / REPAIR	_____ _____	_____
Bounded conclusion	PASS / REPAIR	_____ _____	_____
Final human decision	SUFFICIENT / PROBE / DEFER	_____ _____	_____