spacelift

# Why is My `tofu plan` Slow?

## Observability Built Into OpenTofu

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# Four Minutes, Hidden in the Log

TF_LOG=debug for the same demo stack: 276 lines, and not one says how long anything took.

```
    ... lines 1 to 261 above ...
262  2026-11-02T14:38:57.957-0500 [DEBUG] terraform_data.app[4]: applying the planned Create change
263  2026-11-02T14:38:57.957-0500 [DEBUG] terraform_data.app[3]: applying the planned Create change
264  2026-11-02T14:38:57.957-0500 [DEBUG] State storage *statemgr.Filesystem declined to persist a state snapshot
265  2026-11-02T14:38:57.957-0500 [DEBUG] State storage *statemgr.Filesystem declined to persist a state snapshot
266  2026-11-02T14:38:57.957-0500 [INFO]  Starting apply for time_sleep.database_migration
267  2026-11-02T14:38:57.958-0500 [DEBUG] State storage *statemgr.Filesystem declined to persist a state snapshot
268  2026-11-02T14:38:57.958-0500 [INFO]  Starting apply for terraform_data.app[0]
269  2026-11-02T14:38:57.958-0500 [DEBUG] State storage *statemgr.Filesystem declined to persist a state snapshot
270  2026-11-02T14:38:57.958-0500 [DEBUG] time_sleep.database_migration: applying the planned Create change
271  2026-11-02T14:38:57.958-0500 [DEBUG] terraform_data.app[0]: applying the planned Create change
272  2026-11-02T14:38:57.958-0500 [DEBUG] State storage *statemgr.Filesystem declined to persist a state snapshot
273  2026-11-02T14:42:57.961-0500 [DEBUG] provider.terraform-provider-time: Value switched to prior value due to semantic equ...
274  2026-11-02T14:42:57.970-0500 [DEBUG] provider.stdio: received EOF, stopping recv loop: err="rpc error: code = Unavailabl...
275  2026-11-02T14:42:57.971-0500 [INFO]  provider: plugin process exited: plugin=.terraform/providers/registry.opentofu.org/...
276  2026-11-02T14:42:57.975-0500 [DEBUG] provider: plugin exited
```

Real log, tofu 1.13.2

**276**
lines of debug log

**4m 0s**
**hidden in the gap between lines 270 and 273**

**0**
durations logged

# One Resource Ate 4 Minutes

Reproduction: demo stack




Recorded on tofu 1.13.2

**4m 1s**
total

**4m 0s**
**in one resource apply**

**under 1 s**
the rest

# The Steps Towards Deep Observability

Upgrade to 1.13 or newer to gain the signals to look at instead of guessing

## Traces

1.10+ · experimental

End to end execution traces across init, provider downloads, and per-resource plan/apply spans.

## pprof CPU profiles

1.11

Set TOFU_CPU_PROFILE, then open the profile as a flame graph.

## JSON run events

1.12

-json-into=<file> gives you human and machine output from one run.

## Trace propagation

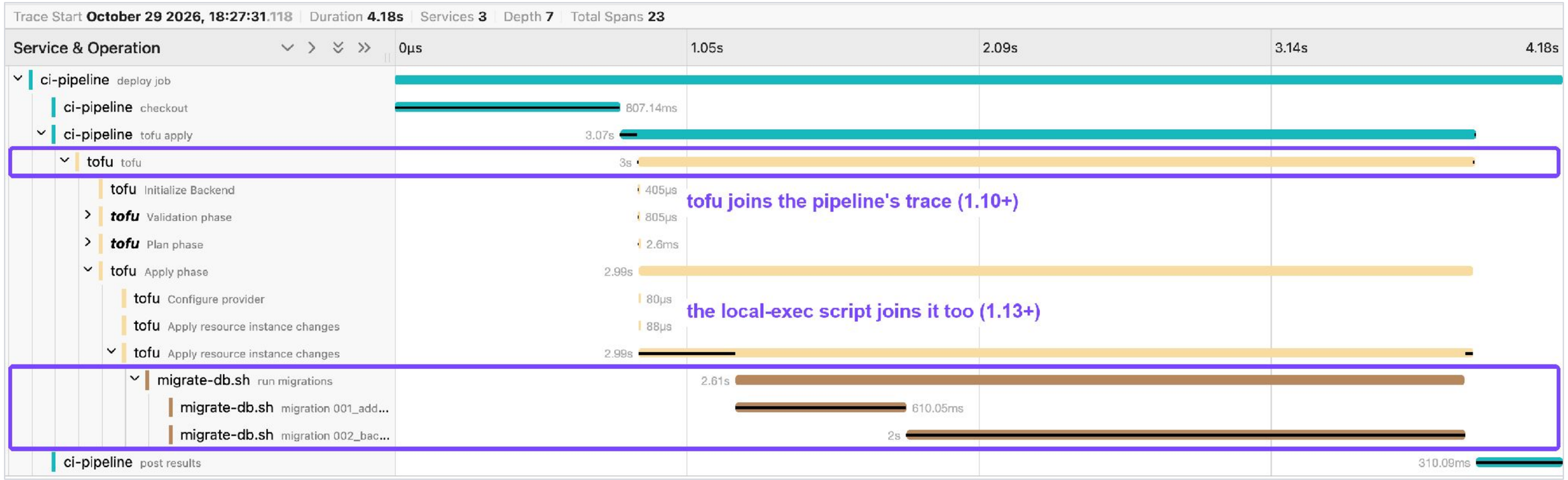
1.10 in, 1.13 out

TRACEPARENT in and out: your pipeline, tofu and its scripts in one trace.

**Built in the open by** James Humphries (@Yantrio), Martin Atkins (@apparentlymart), Christian Mesh (@cam72cam), @ogormans-deptstack and Zhanybek Mamataliev (@texasich).

# One Trace, End to End

Since 1.10, tofu joins your pipeline's trace. Since 1.13, it hands that context to the scripts it runs.



# Turn It On (OpenTofu)

One docker run, two env vars for tracing, one for profiling, one CLI flag

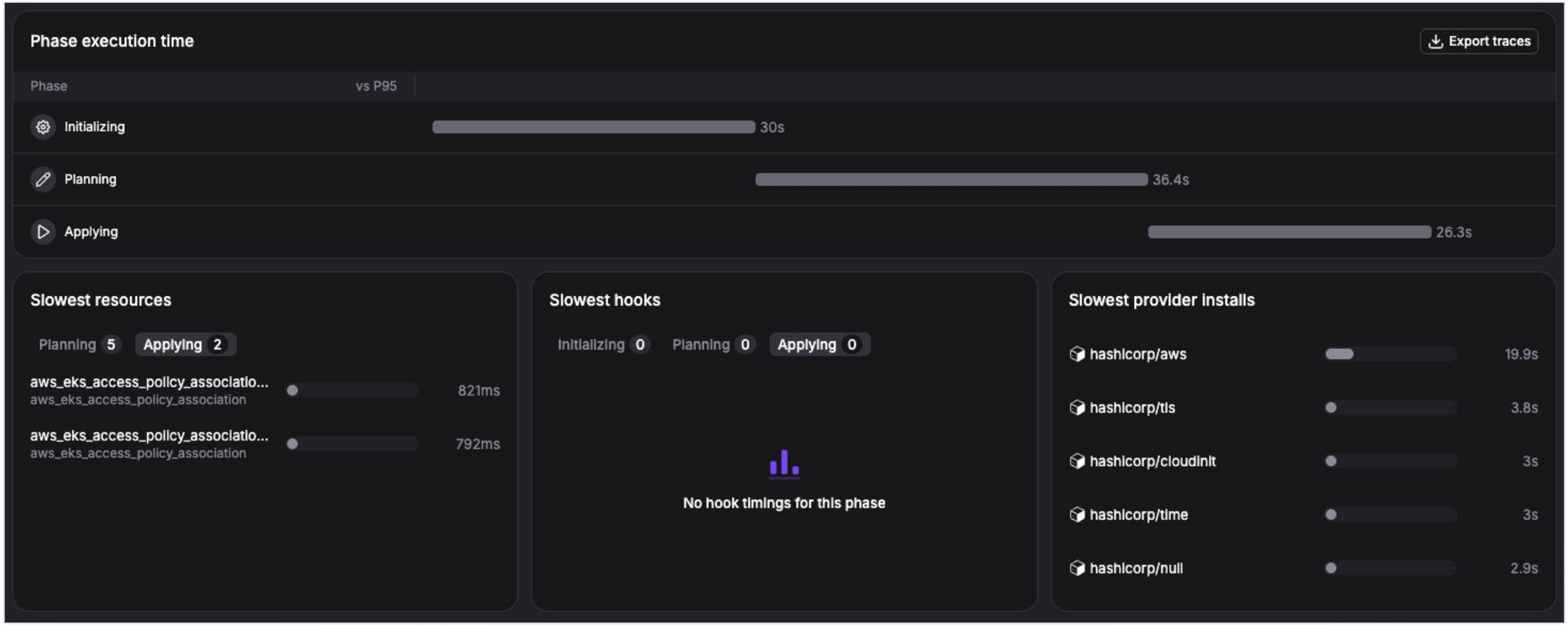
```
docker run -d --rm -p 16686:16686 -p 4318:4318 \
  cr.jaegertracing.io/jaegertracing/jaeger:2.22.0
# UI: http://localhost:16686
# No Docker? Jaeger also ships as a single binary
# Demo: jaeger.demo.jaegertracing.io

export OTEL_TRACES_EXPORTER=otlp
export OTEL_EXPORTER_OTLP_ENDPOINT=http://localhost:4318
export TOFU_CPU_PROFILE=./tofu.pprof

tofu plan -json-into=plan.json
go tool pprof -http=:8080 ./tofu.pprof
```

# Same Spans, No Setup

**Shipping today in Spacelift:** tofu's spans on every run, with no changes to your stack or pipeline.



# Gotchas, and Where You Can Help

Know these before you turn it on everywhere.

- Experimental today. The maintainers are working toward stable.
- Samples 100%. Sampling isn't configurable, so every run ships every span.
- If the OTel Collector is unreachable: up to 5 s added per `tofu` execution, spans dropped, exit code unchanged.

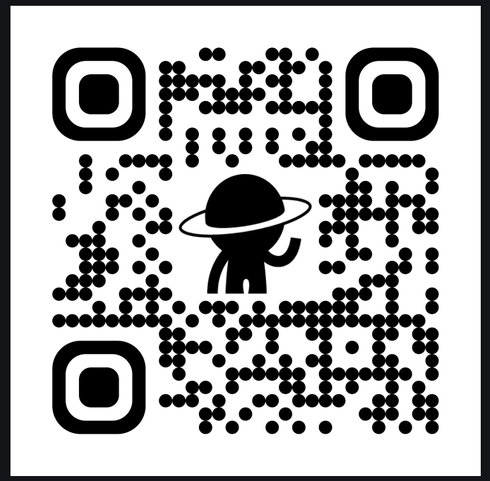
**Wanted:** sampling that follows your pipeline's decision, richer plan/apply spans, context through backends.

Stop guessing

# Find the longest bar and shrink it.

Before you reach for -parallelism, turn on a trace.

Try it: opentofu.org/docs/internals/tracing
File issues: github.com/opentofu/opentofu
Community Slack: opentofu.org/slack



Register for the virtual event