Observability Working Group
Meeting Minutes

Aug 7, 2025

- Profiling update
    - Working for OTP 27 on x86, next steps are cleaning up / rebasing, and testing with other versions and on ARM
- Metrics update
    - Waiting on feedback still
- Config overhaul update
    - The new way is more structured so ideally we'd use that
    - Backward compatibility is complicated

Mar 13, 2025

- OpenTelemetry:
    - Metrics PR
        - https://github.com/open-telemetry/opentelemetry-erlang/pull/837

Feb 6, 2025

- Silent dropping in overloaded batch processor
    - Should log how many were dropped
    - Do a telemetry event
    - Also do telemetry event for span sweeper
- Uplink migration to beam-telemetry

Dec 6, 2024

- [tristan] Otel: new Weaver
- [tristan] Logs

Oct 3, 2024

- [tristan] Greg submitted stipend for Otel profiling!
- [tristan] Question re-confusion with telemetry
    - Is it still a problem?

Sept 06, 2024

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July 11, 2024

- Telemetry_metrics_prometheus_core needs a new maintainer
- Otel: Ping Austin about TC review of Erlang metrics
- Otel: Semconv 1.26

June 6, 2024

-

May 2, 2024

- [tristan] Otel list/iolist/string attributes
- [tristan] Otel Metrics update
    - ETS bug
- [tristan] Otel Profiling stipend
- [bryan] Otel Semantic Conventions 1.25
    - Organization decision
    - Do we need to repeat the docs for erlang?

April 4, 2024

- [tristan] Otel Demo
    - https://github.com/open-telemetry/opentelemetry-demo/issues/1343#issuecomment-2034949921

- [tristan] Otel docs
- [tristan] Otel Metrics update
    - Telemetry integration

Jan 11, 2024

Dec 7, 2023

[tristan] ErlEF Stipend
- Metrics
- logs
[tristan] Stabilized HTTP semantic conventions

Nov 2, 2023

[tristan] All the things

June 1, 2023

[tristan] Gone on paternity leave

May 4, 2023

Attendees:

Agenda:
- State of Observability survey. Survey the community on what tools and vendors they use.
    - Distributed Tracing
        - OpenTelemetry
        - Spandex
        - Not using
        - Other
    - Metrics
        - Prometheus.erl
        - Prom_ex
        - Telemetry.Metrics
        - OpenTelemetry

- Not using
- Other
- Logs (select all that apply)
    - Logger
    - Lager
    - Logger+OpenTelemetry
    - Printing to stdout/stderr
- Self hosted (select all that apply)
    - Jaeger
    - Zipkin
    - Prometheus
    - Grafana
    - Grafana Tempo
    - Grafana Loki
    - Other
- Vendor (select all that apply)
    - Honeybadger
    - Sentry
    - Rollbar
    - AppSignal
    - Honeycomb
    - Lightstep
    - Splunk APM
    - Instana
    - Sentry
    - Google Stackdriver
    - AWS X-Ray
    - Logflare
    - Elastic
    - Dynatrace
    - Influx
    -
- Where do you deploy your projects?
    - K8s
    - Docker
    - Bare metal
    - ?
- Release upgrades
- How do you collect logs/metrics/traces
    - Sidecar
    - Daemon
    - Direct
- Are you an engineer/sre/etc

- What do you find missing in BEAM observability tooling?
- What works well?
- Describe how you began the investigation of a recent incident?
    - What worked well
    - What did you find lacking
- What do you miss from other languages/runtimes you work or worked in?
- Do you use observability for use cases outside of monitoring
    - Business logic
    - CI/CD
- What do you primarily use observability for
    - Trace
    - Metrics
    - Logging
- RUM

April 7, 2023

Attendees:
- Tristan
-

Agenda
-

March 2, 2023

Attendees:
- Tristan
- Bryan
- Josh lee
- Nat Bennett

Agenda
-

Feb 2, 2023

Attendees:
- Tristan Sloughter
- Greg Mefford
-

Agenda
- Arrow proposal to Foundation

Jan 5, 2023

Attendees:
- Tristan Sloughter
- Greg Mefford

Agenda:
- Phoenix Metrics
    - Telemetry_reporter_opentelemetry
    - https://github.com/open-telemetry/opentelemetry-erlang/issues/463
- Phoenix sampling
- Phoenix/Plug options to suppress span creation based on criteria (endpoint, query string, etc)

Dec 1, 2022

Attendees:
- Tristan Sloughter
- Bryan Hunt
- Greg Mefford

Agenda:
- [TS] Idiomatic naming of Elixir macros/functions
  https://github.com/open-telemetry/opentelemetry-erlang/pull/496#pullrequestreview-1190956244

Nov 3, 2022

Attendees:
- Tristan Sloughter
- Byran Hunt
- Jacek Krolikowski

Agenda:
- [BH] redbug/rexbug maintenance
- [TS] Need testers for Otel metrics and logs

Notes
- A backstop github group for projects associated with the WG to be able to step in if a maintainer goes away.

Sep 1, 2022

Attendees:
- Tristan Sloughter

Agenda:
- [TS] Otel Metrics ready for review and almost alpha release

August 4, 2022

Attendees:
- Tristan Sloughter
- Greg Mefford

Agenda:
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July 7, 2022

Attendees:
- Tristan Sloughter
- Bryan Naegele

Agenda:
- [TS] Otel Metrics

June 2, 2022

Attendees:

Agenda:
- [TS] Otel Logger Handler
  - Curious about OTP logger performance and what it says both about our Handler implementation and how we do Traces and soon Metrics
    - Messages v ETS table
    - Pool of processes (maybe not needed these days?)
    - Heap allocation settings
    - Pool of ETS tables (maybe not needed these days because of improved write concurrency?)

Notes:

- Performance hacks for messaging and ETS table writes still needs to be benchmarked per use case. OTP 25 has improvements around messages and lock contention with off_heap message queue

May 5, 2022

Attendees:
- Tristan Sloughter
- Andrew Rosa
- Lukasz Niemier

Agenda:
- [TS] Update on OpenTelemetry
    - Metrics
    - Demo WG
    - HTTP filtering
- OpenCensus Elixir library needs publishing with telemetry 1.0

Notes:
- OpenCensus Elixir add note to README about the project being in maintenance mode (don't archive the repo yet)
- Generate semantic conventions from YAML to Erlang header file and Elixir module
    - Get rid of the static header file that was manually created with the attribute keys
- Need to get examples of behaviours (samplers, resource detectors, etc) in Elixir

March 4, 2022

Attendees:
- Tristan Sloughter
- Greg Mefford (Stord)
- Lucian Parvu
- Alex Koutmos

Agenda:
- [TS] Update on OpenTelemetry
- [TS] Configuration of Phoenix/Plug routes to not start spans for

Notes:
- Unplug for filtering Plug routes in telemetry https://github.com/akoutmos/unplug

Feb 3, 2022

Attendees:
- Tristan Sloughter
- Greg Mefford

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Agenda:
- [TS] OpenTelemetry blog post published the other day
  https://medium.com/opentelemetry/opentelemetry-erlang-elixir-javascript-and-ruby-v1-0-3a0c32e0add4
- [GM] Getting things rolling at work, planning to work on docs/examples soon

Notes:
- Phoenix default logs do not include metadata so our debug logs are lost
  - Docs/example in opentelemetry_phoenix will be updated
  - Looking into improving Phoenix defaults and docs
- TLS app start order warning needs fixing
- Need to improve configuration (span processors for example) and defaults

Jan 6, 2022

Attendees:
- Tristan Sloughter
- Łukasz Niemier
- Kai
- Bryan
Agenda:
- [TS] OpenTelemetry 1.0 tracing has been released
  - Simpler configuration:
    https://github.com/open-telemetry/opentelemetry-erlang/issues/345
  - Docs docs docs
  - examples
- [TS] Change the time of this meeting to an hour or two later?
- [ŁN] Try to implement the logger specs for OTel

Notes:
- Ping OTP team about looking up a single pdict term from another process
- Ping Andrew about lager->logger integration and state of his branch, how we can help
- Meeting time: Move to an hour later

Dec 2, 2021

Attendees:
- Tristan Sloughter
Agenda:
- [TS] What is the most commonly used metrics library
  - Elixir

- Prometheus_ex
- Statix
- Vendor specific: AppSignal, NewRelic
- telemetry_metrics based: prom_ex
    - Erlang
        - prometheus_erl?
        - exometer?
-

Nov 4, 2021

Attendees:
- Tristan Sloughter
- Greg Mefford
- Łukasz Niemier

Agenda:
- [TS] OpenTelemetry
    - GA review has begun for tracing
- [GM] Finch context injection PR: https://github.com/sneako/finch/pull/160
    - Seems like this is likely to get merged
    - Should enable an OTel-Finch library (that we may be able to work on within Stord)
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Oct 7, 2021

Attendees:
- Tristan Sloughter
- Łukasz Niemier
- Bryan Naegele

Agenda:
- [TS] OpenTelemetry:
    - Couple PRs open for review
        - https://github.com/open-telemetry/opentelemetry-erlang/pull/258
        - https://github.com/open-telemetry/opentelemetry-erlang/pull/287
- [TS] Cross Process Context Propagation
    - Looking to figure out a way to prototype with VM changes
- [ŁN] PR for Erlang to allow reconfiguration of `logger` is merged, so Rebar3 and Mix will be able to use `kernel.logger` as a configuration source for Erlang's logger
- [BN] OpenTelemetry Contrib Migration
    - Phoenix moved

- Ecto in-progress
- Cowboy experiment created
- Phoenix/Cowboy integration
- Triage remaining repos/libs
- Community expectations

Sept 2, 2021

Attendees:
- Tristan Sloughter
- Kai
- Bryan Naegle
- Illia Khaprov

Agenda:
- [TS] Joining Splunk. Will be working full time on OpenTelemetry starting Sept 13th.
    - First focus will be on finalizing 1.0 and updating libraries and examples
    - Then all in on metrics

Aug 5, 2021

Attendees:
- Bryan Naegele
- Alex Koutmos
- Kai Naluri
- Łukasz Niemier
- Tristan Sloughter

Agenda:
- [TS] Submitted proposal for stipend to complete OpenTelemetry metrics first release
- [BN] Still need to move minutes to github
- [LN] Reviewing Otel Logging spec still to determine any gaps
- Discussion of parse transforms for defining telemetry event specs for auto-discovery
- Otel org in hex
    - Ask EMJ to set up
    - Already exists!
    - Add docs to contrib repo

Jul 1, 2021

Attendees:
- Bryan Naegele
- Jose Valim

- Alex Koutmos
- Łukasz Niemier
- Kai (Naluri) - Guest

Agenda:
- Make Telemetry v1.0
  - No objections
  - https://github.com/beam-telemetry/telemetry/pull/71
- Make Telemetry Poller v1.0
  - No objections
- Rename Github repo to be consistent with other wg
  - Who has power to do that? (Jose)
- Move minutes to the Github repo
  - link to this one for archive - no need to reproduce into the repo

Apr 1, 2021

Attendees:
- Greg Mefford
- Fred Hebert
- Alex Koutmos
- Bryan Naegele

Agenda:
- Issue management with github? I.e. https://github.com/erlef/build-and-packaging-wg/issues
  - https://github.com/erlef/build-and-packaging-wg/tree/master/minutes
  - Ours is at https://github.com/erlef/eef-observability-wg/issues but without templates
- Telemetry:span / Otel changes
  - https://github.com/beam-telemetry/telemetry/pull/75
  - Span otel context is essentially broken
  - Moved from being stack-based spans in the PDict, we lost ability to track events starting/stopping, now a unique lookup for each start and stop.
  - Proposal to track the span stack separately per integration so e.g. Phoenix can only close Phoenix-created spans
  - Telemetry.span would generate a ref and pass it to each telemetry.execute call to facilitate
  - Concerns about potential for collision of metadata keys? Probably not because of how we're injecting the ref and just how refs work, unless you're serializing them in ways that break the conventions.
- OTel 1.0 release
  - Greg to check with Tristan on status - looks like we have a 0.6.0 released in Hex but not GitHub.

- The 1.0.0-rc1 branch was merged in GitHub
- Support matrix on the repos to communicate which versions are compatible?
- Getting Started Guide / Examples
    - FYI: Greg is working on going through and improving these
    - Note [new workflow](#)

Mar 4, 2021

Attendees:
- Greg Mefford
- Bryan Naegele
- Maxim Fedorov

Agenda:
- [BN] Talk about [PR for pulling out metrics](#) from otel
    - Elixir has flexibility to use an experimental package/namespace however we want.
- [MF] Will there be some separation/distinction between API and SDK for metrics?
    - There is a separation for sure, but maybe not specifically for metrics
    - API should ideally be minimal no-op if the SDK is not used.

Feb 4, 2021

Attendees:
- Łukasz Niemier
- Tristan Sloughter
- Greg Mefford
- Bryan Naegele

Agenda:
- [GM] Building shared mental models / common conventions in Elixir
- [TS] opentelemetry.io docs for review
- [TS] uplink update?

Jan 7, 2021

Attendees:
- Tristan
- Greg
- Bryan
- Fred

Agenda:

- [TS] Context: Custom user attributes and propagation across processes and services (HTTP requests and such)
    - https://github.com/keathley/finch/issues/81
    - https://github.com/beam-telemetry/telemetry/issues/48
- [BN] Uplink is pretty much ready, working on blog post to announce / release

Dec 3, 2020

Attendees:
- Tristan
- Łukasz Niemier
- Fred Hebert
- Greg Mefford
- Bryan Naegele

Agenda:
- [TS] Should telemetry go to 1.0
    - https://github.com/beam-telemetry/telemetry/issues/69
    - Decision: Yes
    - Jose: When updating deps use "~> 0.4.x or ~> 1.0"
- [TS] OpenTelemetry: Library structure and versioning
    - OpenTelemetry versioning, development, and support
    - https://github.com/open-telemetry/opentelemetry-erlang/issues/181
    - Will discuss more in the OpenTelemetry meetings (today at 3pm PST and next week at 7am PST)

Nov 5, 2020

Attendees:
- Tristan
- Fred
- Bryan
- Greg

Agenda:
- [TS] Items to complete for GA can be found in the 2 projects https://github.com/open-telemetry/opentelemetry-erlang/projects
- [TS] Please review record_exception PR: https://github.com/open-telemetry/opentelemetry-erlang/pull/138
    - Look into other language implementations and their values for "type"
- [TS] And Elixir example PR: https://github.com/opentelemetry-beam/opentelemetry-examples/pull/6
- General context propagator as a library outside of otel

- Still need to discuss with OTP team about cross process

Oct 1, 2020

Attendees:
- Tristan Sloughter

Agenda:
- [TS] OTel
    - Repos merged
    - Draft of new api changes open
      https://github.com/open-telemetry/opentelemetry-erlang/pull/115
- Todo:
    - Merge exporters into a single opentelemetry-beam repo

Sep 3, 2020

Attendees:
- Tristan Sloughter
- Vince Foley

Agenda:
- [TS] OTel: rebar3 3.14 is out so will be merging repos
- [TS] OTel: rewritten context. Should have PR soon
    - Currently passing only span context to spawned process to propagate but correlation context is also required, so whole context must be passed?
    - Re: process dictionary
        - Issue that talked about adding Process dict function to get individual key:
            - https://github.com/erlang/otp/pull/2287
- [VF] cowboy_telemetry is in plug_cowboy now
    - master branch, not released yet
    - Try it out!
    - Jose:
        - Add a way to opt out
            - Documenting how to set handlers would be fine

Aug 6, 2020

Attendees:
- Tristan Sloughter
- Greg Mefford

- Łukasz Niemier
- Bryan Naegele

Agenda:
- [TS] Did not complete proposal to OTP team about copying logger metadata to a spawned process. They aren't really around anyway.
- [TS] Otel related: mix now has support for rebar3's "subdir" git resource (https://github.com/elixir-lang/elixir/pull/10246) so we can now consider moving apps into a single repository
- [BN] Metrics API change / getting community feedback
- [GM] Advice about guides/docs/community education resources
    - Greg will contribute some example ASCII-art to the Phoenix and/or Ecto Telemetry docs as an example of what library authors should include to help people understand what metrics are available.

July 2, 2020

Attendees:
- Tristan Sloughter
- José Valim
- Greg Mefford
- Vince Foley
- Bryan Naegele

Agenda:
- [BN] Telemetry Registry / Metrics definitions path forward
    - Probably different APIs for Erlang and Elixir (e.g. edoc vs. ex_doc integration)
    - Useful for surfacing spans programmatically, but needs human intervention for most actual value (metrics / tags, etc.)
    - Agreed that it would be better to generate docs from telemetry registry instead of manually, at least in Elixir
- [BN] Telemetry -> Otel library update
    - Have to specify the root application, and it walks the application / module tree to discover metrics
    - Could detect conflicting metric definitions with the same name
- [Vince] cowboy_telemetry
    - https://github.com/beam-telemetry/cowboy_telemetry
    - Telemetry events execute inside *connection* process
    - context propagation ideas:
        - proc_lib carries forward logger metadata on spawn
        - seq_trace could automatically merge a map

Action items:
- Cowboy telemetry events not in request process
    - How to propagate context to child process
- OTP patch for proc_lib spawn copy logger metadata?

June 4, 2020

Attendees:
- Greg Mefford
- José Valim
- Tristan Sloughter
- Arek Gil
- Vince Foley
- Łukasz Niemier
- Vance Shipley
- Bryan Naegele

Agenda:
- [TS] Otel update
    - Metrics ready to be worked on again, I just haven't had time
    - [Spec doc](#)
- [TS] Otel: Work is needed on examples
  https://github.com/opentelemetry-beam/opentelemetry_example/issues/5
    - Seeing more people ask about using Otel, esp Elixirists, and having trouble getting started
- [TS] Plan for Otel repos after
  https://github.com/open-telemetry/opentelemetry-erlang-api/issues/61
    - Merge API/SDK into a single repository (but push to separate Hex packages)
    - Create open-telemetry/opentelemetry-erlang-contrib
        - Move exporters/integrations/etc to this repo from opentelemetry-beam when they become mature enough
- [VF] PlugCowboy instrumentation
    - plug_adapter telemetry was removed
        - stop and exception could terminate at any point
    - early_error event was added
    - Investigating a cowboy stream_handler
        - WIP https://github.com/elixir-plug/plug_cowboy/pull/39
- [ŁN] Discoverability of WG work
    - EEF Observability WG shield
    - Adding documentation about long-term storage of metrics in Phoenix LiveDashboard
    - ElixirForum threads about Observability:

- https://elixirforum.com/t/telemetry-influxdb-reporter/26107
- https://elixirforum.com/t/subscribing-my-liveview-to-telemetry-metrics-reporter/25998
- https://elixirforum.com/t/custom-phoenix-telemetry-handlers/26851
- https://elixirforum.com/t/how-to-set-up-telemetry-properly-in-a-mix-task/27104
- https://elixirforum.com/t/telemetry-calculating-custom-metrics-like-rpm-requests-per-minute-on-the-host-itself/26393
- https://elixirforum.com/t/attach-telemetry-to-multiple-ecto-applications-started-as-umbrella/21211
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May 7, 2020

Attendees:
- Tristan Sloughter, Greg Mefford, Vince Foley, Bryan Naegele

Agenda:
- [TS] Attempting an OpenTelemetry Plug integration:
    - Current code
    - Issues (may be resolved by using PlugCowboy events instead):
        - Plug.Telemetry does not execute exception events
    - Issues with PlugCowboy adapter:
        - Start event does not have the route
        - Requires additional configuration and matching to exclude routes from being traced
    - Phoenix fires event for route dispatch
        - TODO: Add same event to Plug match
- [TS] Distributed context
    - WeChat paper on overload control
    - useful for users including additional metadata to telemetry events
    - request priority for load shedding
    - request deadline
- [GM] Update example to deploy a OTel Collector to demonstrate forwarding traces to vendors
    - https://github.com/opentelemetry-beam/opentelemetry_example
    - NewRelic Go forwarder: https://github.com/newrelic/opentelemetry-exporter-go
    - Official collector forwarders: https://github.com/open-telemetry/opentelemetry-collector-contrib

April 9, 2020

Attendees:

- Greg Mefford
- Vince Foley
- Tristan Sloughter
- Bryan Naegele
- Łukasz Niemier
- Arkadiusz Gil

Agenda:
- [TS] Ecto telemetry data doesn't include connection information
    - Needed for OpenTelemetry attributes
    - Some info could come from the new init event metadata
    - Peer IP information for example might be more difficult / DB-specific
    - Database driver (e.g. Postgrex) is the one that calls gen_tcp
    - DBConnection is the part that emits the Telemetry event via a log callback
- [ŁN] Should we register EEF for IANA SMI Network Management Private Enterprise Codes and whether we should use it in Syslog handler and/or SNMP MIBs
    - Agreed it would be good to have an EEF prefix
    - Need to determine what the process is specifically, but EEF could manage the prefix allocations to other sub-projects within the Erlang ecosystem
    - Ericsson used to / still has an SNMP enterprise prefix but need to coordinate path forward
- [VF] Pattern for broadcasting events with custom prefixes
    - Emit an event with the prefix at "init", enable libraries to dynamically wire up additional handlers
        - Not suitable for a general pattern since it depends on boot order (Ecto is an exception since it starts in the client app)
    - Example in Ecto: https://github.com/elixir-ecto/ecto/pull/3268
    - [GM] What's the purpose of custom prefixes in the first place?
        - To separately track the events, but didn't have good tooling to do it otherwise at the time. It would have been better to use metadata instead to get the Repo for example
        - Instrumentation in the code in the libraries should use simple semantic names and rely on the aggregator/reporter to deal with cardinality and grouping
        - Working Group guidance:
            - Don't use prefixes, use static event names
            - Add to further attributes to metadata
- [AG]
    - telemetry:span - are we going ahead with the implementation https://github.com/beam-telemetry/telemetry/issues/57?
    - Removing Sum metric (https://github.com/beam-telemetry/telemetry_metrics/issues/49) - apparently there are people using it:

March 12, 2020

Attendees: Tristan Sloughter, Greg Mefford, Łukasz Niemier, Vince Foley, Bryan Naegele

Agenda:
- [TS] Update on OpenTelemetry Metrics
    - Beta launch scheduled for March 16
    - KubeCon EU delayed
- [GM] Early feedback on making an internal library to simplify all the configuration stuff for metrics and tracing
    - Currently specific to our internal choices, but could be abstracted for a training
    - Jose can push Jim on this for ElixirConf US :)
- [GM] Feedback on Telemetry.Metrics vs. Statix
    - This is fine - not intended to solve the problem of app-internal metrics
- [BN] WG membership check
    - Leaving it up to the WG manager
- [BN] implementation of span and how that affects discovery
    - Should figure out discovery solution prior to implementation of this
    - Could require a macro to make span + registration workable
- [GM] Seemed like my Lone Star talk landed well with folks
- [BN] Registry proof of concept scope and intent
- [ŁN] Extraction of logger_olp
    - No standard way to handle overload protection now
    - Separate library provides a standard API for people to do this in their handlers
- [GM] `failure` vs. `exception` in telemetry event names (discussion) and/or optional stacktrace on `failure`
    - No change to behavior, but good to change name of the event from `failure` to `exception`
    - We can talk separately about whether to have a recommendation for how to treat metadata for successful vs. unsuccessful returns

February 13, 2020

Attendees: Tristan Sloughter, Greg Mefford, Zach Daniel, Thomas Depierre, Bryan Naegele, Fred Hebert, Vince Foley

Meeting link:
- https://zoom.us/j/676807265

Agenda:

- [TS] Updates to WG readme https://github.com/erlef/eef-observability-wg/pull/15
- [TS] OpenTelemetry metric collection
    - OpenCensus updated views inline
    - OTel wants to store individual updates and then aggregate
    - Two options
        - Pool of processes
        - ETS bag (telemetry prometheus is prior art)
- [FH] Context propagation within the BEAM
    - Seq_trace is going to be problematic
    - Look at forking/experimenting with gen.erl patch for context prograpation
        - https://github.com/erlang/otp/blob/master/lib/stdlib/src/gen.erl
- [FH] Presentation plan for Code BEAM SF
    - Work completed:
        - Tldr: Core infrastructure is in place and stable
        - Telemetry library
            - Moved to erlang, stable release
        - Telemetry.Metrics
        - Telemetry integrations:
            - Plug
            - Phoenix
            - Ecto
            - Absinthe
            - ??
        - Erlang / Elixir Logger consolidation
        - Metrics Reporters
    - In progress:
        - Tracing standards wrt. Telemetry vs OTel
        - Docs/guides about how to actually use Telemetry
        - Event discovery
- [BN] PoC around event definition and registration to an experimental lib
- [BN] I'll be speaking at Code BEAM STO
- [GM] I'll be speaking at Lone Star (Feb 27-28)

Action items for next time:
- Experiment with tracing in gen.erl
- [TS] experiment with benchmark process v ets bag metric collection and labelset storage

January 9, 2020

Attendees: Tristan Sloughter, Greg Mefford, Łukasz Niemier
Meeting link: Join Hangouts
Agenda:
- [TS] Hangouts or Zoom - EEF has an account we can use - will use it for future meetings

- [GM] Working on [an example repo](#) that would demonstrate how to integrate distributed tracing with OTel in some simple apps. I'm initially focusing on Elixir because it's where I'm most comfortable, based on [the example I built for Spandex](#). It just looks like an initial commit right now because I'm working on getting things to work locally before I push up a bunch of messy commits.
- [GM] We've made a lot of progress on the [Telemetry.Metrics discussion about standardized patterns for spans](#) as events and José made [a "clean" issue to summarize the decision and next steps](#).
- [BN] We need a discovery for events and spans in general. Bryan Naegele has been exploring to discover events at compile time. José Valim suggested an application modelling approach.
    - Is there a viable option for telemetry event discovery at compile time that works in Erlang, as well? PoC made for explicit declaration of events and discovery at runtime.
    - We should open an issue in the Telemetry repo to discuss the options.
- [GM] Gut-feeling: it's still not trivial to just fire up a new service and get things set up the way we want. It's a lot of copy/paste from existing services, etc. Would be great to make things easier to have it just work out of the box. We're working on this at B/R (but not me specifically), so maybe I'll have more specific feedback later.
    - Share some code samples when it gets closer
- [AG] Status of [Telemetry.Metrics feature-parity with Statix](#)
    - Sampling feature is missing
    - "Set" metric not supported, but not clear whether people need it / whether Telemetry.Metrics needs to support that feature
    - Performance benchmark? Probably not a blocker but good idea.
- [GM] I will be speaking about OpenTelemetry (and intro to distributed tracing in general) at [FOSDEM](#) in early Feb and at [Lone Star Elixir](#) in late Feb.
- [BN] Example Metric Definitions are ready for PR to Phoenix and Ecto
    - Libraries should have a guide that lists the events
    - Elixir documentation guidelines should also describe recommendations for emitting events and listing them in docs, but Bryan will open an issue first to confirm since we normally don't link out to external libraries from the Elixir docs.
- [BN] Reporter options were added to Metrics
    - E.g. for this definition, do something special like sampling
    - Will probably be reporter-specific
- [AG] Observability guidelines
    - Event names should have unique prefix (module name for example)
    - A guide of what libraries are available and recommended to use
    - General observability guidelines independent of library
    - Library guidelines for how to instrument appropriately
- [AG] OpenTelemetry/Telemetry integration
- [BN] How to track exceptions vs error tuples https://github.com/teamon/tesla/pull/324
    - Error tuples aren't necessarily marking tracing spans as an error

- Exceptions should be reraised and traced as an error
- [GM] RE Telemetry.Metrics: what about Erlang apps? - Defer for now
- [Vince async] Just an FYI, here's my PR to add Ecto auto-instrumentation via telemetry to the New Relic agent:
    - https://github.com/newrelic/elixir_agent/pull/161
    - Uses erlang:trace to discover repos when they start, then reads config to discover the ecto events
        - https://github.com/newrelic/elixir_agent/pull/161/files#diff-e50f1b518ee54376c5e36a604b3348f0
    - Open to suggestions!
    - [JV] To discover repos, it may be easier to add an API to Ecto that returns all currently running repos. This information is already kept, as Ecto keeps a process registry, but not made public
        - That'd be nice but I have to determine when to run that (app starting order means the agent might start before the ecto app). I ran into race conditions trying the simple ways of solving this
        - You can query it periodically, every 10 seconds, and see if any new repo has been added? Another idea is to traverse all modules and see if they are Ecto.Repos.
        - If we adopt the traverse all modules approach generally I'd be ok doing that

December 5, 2019

Attendees: Tristan Sloughter, Arek Gil, Greg Mefford, Vince Foley, Irving Reid, Jose Valim
Meeting link: Join Hangouts
Agenda:
- Updates on action items:
    - Telemetry tracing prefix discussion: https://github.com/beam-telemetry/telemetry_metrics/issues/46
    - Telemetry.Metrics as Statix replacement: ?
        - Goal is compatibility / feature parity between the libraries
        - Make sure Telemetry.Metrics is a viable replacement
    - Erlang/Elixir shared logger metadata
        - Changes merged into master, planned for 1.10
        - Metadata now goes through Erlang's logger infrastructure
        - Elixir Logger is an Erlang logger handler that dispatches using GenEvent
        - The Elixir team would like to deprecate their backends in favor of Erlang handlers, but Erlang handlers are not currently encouraged due to lack of overload protection for process-based logger handlers
    - Common metrics and tracing guidelines for Telemetry.Metrics and Telemetry events/handlers

- OpenTelemetry update:
    - Split into two repos. One for the SDK and one for the API
    - First release:
        - [API v0.2.0](#)
            - Library developers depend on this
            - Just behaviours; nothing actually happens as far as reporters
            - Mostly no-ops when used without SDK, so users aren't "forced to use it"
            - Swappable so vendors can have their own replacement SDK vs. the default one
            - Analogous to Telemetry vs. Telemetry.Metrics
        - [SDK v0.2.0](#)
            - Default implementation of actual span-management infrastructure / reporters / etc.
            - Analogous to Telemetry.Metrics vs. Telemetry
    - Beginning of Elixir API opened in PR:
        - https://github.com/open-telemetry/opentelemetry-erlang-api/pull/3
        - https://github.com/zachdaniel/opentelemetry-erlang-api/pull/1/commits
    - OpenTelemetry Beam github org: https://github.com/opentelemetry-beam
    - We want to have a simple straightforward story for library authors to build instrumentation into their library
        - Push telemetry
        - Make sure telemetry is forward compatible by being "dumb"
- Telemetry / Telemetry.Metrics:
    - Mutable telemetry hooks
        - https://github.com/beam-telemetry/telemetry/issues/48
    - Need to figure out how OpenTelemetry Metrics and Telemetry.Metrics fit together
        - Unlike OpenCensus it is possible they fit together well
        - The Metrics SDK is still being finalized, good time to take a look and raise any concerns
        - I (Tristan) considered inviting Josh from Lightstep who has been working on the API/SDK to this meeting to discuss but I don't think any of us have digested the existing spec yet.
        - If there is interest we could schedule something for next week
- Docs/Community:
    - Awesome BEAM Observability: https://github.com/erlef/eef-observability-wg/#awesome-beam-observability
    - Erlang Questions ML post asking for Telemetry examples: http://erlang.org/pipermail/erlang-questions/2019-December/098857.html

September 12, 2019

Attendees:
- Arkadiusz
- Bryan
- Chase
- Fred
- Ilya
- Lukasz
- Tristan
- Greg
- Vince
- José
- Mark

Agenda:

- Tristan update on OpenTelemetry and the new SIG for BEAM ecosystem
    - Now have an official SIG with weekly meetings to be held in Gitter (OT/Erlang)
    - Tristan to check on adding to official OT calendar
    - Hoping to get a beta ready at least for tracing for Kubecon (Tristan to attend) so we can advertise
- Seqtrace update
    - Benchmarks: https://github.com/binaryseed/seq_trace_intro/issues/1
    - Implementation added to OpenTelemetry: https://github.com/open-telemetry/opentelemetry-erlang/blob/acd68115019192383d40a3a752ac99b9f9cfa51a/src/ot_ctx_seqtrace.erl
- Logger and Elixir: https://github.com/elixir-lang/elixir/pull/9333
    - Lukasz to work on a smaller Elixir PR so that we can have integrated metadata with Erlang's new logger module, since Elixir will support OTP 20 until OTP 23 is released.
- Telemetry / Telemetry.Metrics
    - Slower progress recently, but still planning to make progress and contribute to the project ongoing
    - Future work is mostly integrations (statsd, prometheus, etc.)
    - Maybe our WG should own these kinds of repos, also for example Statix, which is a popular statsd library but isn't getting much maintenance
    - Maybe encourage use of Telemetry.Metrics as a replacement for Statix - Tristan/Greg/Lukasz to report back status next meeting
    - Bryan/José to work on a common set of metrics/guidelines in the docs to advertise some common patterns that people should start with. Problem is being

able to pass definitions to the reporters beforehand (e.g. so Prometheus knows what metrics exist). Would Phoenix/Ecto/Plug be open to an optional dependency on Telemetry.Metrics?
- Brian/José to work on a common set of guidelines for tracing and start/stop Telemetry events (see also https://github.com/opencensus-beam/tracelog)
- We should move the Telemetry.Metrics reporters moved into an org so the EEF WG can own/maintain them, but each should have a primary owner so that it isn't overlooked
- Tristan/Arkadiusz to work on how to handle configuring how prefix trace events will work

July 03, 2019

Summary of action items:
- Greg: Add question to seqtrace issue in repo regarding use of seqtrace in place of or in addition to pdict for span context.
- Arkadiusz: Create issue about module based tracer in the repo and post to slack channel
- Tristan: Document pain points with integration of Telemetry.Metrics and OpenCensus in repo issue.

- Attendees:
    - Tristan
    - Greg
    - Arkadiusz
    - Ilya
    - Lukasz

- Updates on previous meeting action items
    - Tristan: Github Repo https://github.com/erlef/eef-observability-wg/
    - Vince & Greg: seq_trace
        - No benchmarks yet
        - What is the goal?
            - Add to issue question of it is to replace the process dictionary or be in addition to:
            https://github.com/erlef/eef-observability-wg/issues/2
    - Arkadiusz: metrics definitions
        - Documented:
        https://github.com/erlef/eef-observability-wg/issues/3#issuecomment-499508469
        - Tristan document pain points in working with Telemetry.Metrics from OpenCensus/OpenTelemetry

- Opening/closing spans with module based tracer
    - Arkadiusz will create issue describing this in the repo and post to slack channel

May 29, 2019

Summary of action items:
- Tristan to set up a Google Group
- Vince & Greg to look into whether `seq_trace` is going to be usable for us
- Arkadiusz to Survey existing metrics definitions across existing libraries (Prometheus, OpenCensus, Statix, Telemetry.Metrics)

- Attendees:
    - Tristan (Denver)
    - Zach (Tampa)
    - Vince (Portland)
    - Lukasz (Poznań)
    - Jose (Kraków)
    - Ilya (Worms)
    - Greg (Cincinnati)
    - Arkadiusz (Kraków)
    - Bryan (Denver)
- Means of communication:
    - Erlang Slack channel #eef-observability-wg (issue: lose history, hard to follow topics)
    - Mailing group? - Action: Tristan to set up a Google Group
    - Preferred communication in "permanent" places like GitHub Issues
- Meeting frequency
    - Monthly? Will try for every month on a Wednesday, using Doodle to confirm timing before each instance.
- Ideas:
    - Shared VM metric collector
        - vmstats
        - telemetry_poller
    - Context propagation for popular libs (start with listing them)
        - Phoenix, Ecto, Plug, Absinthe, Poolboy, HTTPoison, Hackney, Tesla, Mint, Phoenix LiveView, DBConnection, Elli
        - Consider using `seq_trace` to support tracing independent of library (The main issue is that it could interfere with other uses of the tracing token)
            - http://erlang.org/doc/man/seq_trace.html
        - In terms of logger metadata, we should plan to use OTP21 logger, which is planned to be integrated with Elixir in 1.10 or 1.11 (2020)

- Ideally, the `seq_trace` token would be a map, so that multiple use-cases could share it using different keys (i.e. users would get_token, update the map, and set_token)
- Perhaps the initial focus should be on explicit white-box tracing?
- `seq_trace` only propagates context between processes via message passing - creation of spans is still as normal and not magical/automatic.
- Action: Vince & Greg to look into whether `seq_trace` is going to be usable for us before the next meeting.
- Discourse category ("Observability") on Elixir Forum
- Convert Telemetry.Poller to Erlang ([in PR](#) - Bryan Naegele)
- Identify and triage libs which need new maintainers; determine if there's value, e.g. wobserver
- Status update on what the plans and needs are for OpenCensus libraries with the merger to OpenTracing - OpenTelemetry effort.
- Lower level [Telemetry.Metrics](#) interface in Erlang
  - Currently using Structs and Protocols, so hard to convert to Erlang
  - Docs might not be as good
  - Intention with Phoenix 1.5 is to include this by default, so might not be as seamless
  - The API needs to be really good because end-user developers are going to interact with it; not just library authors
  - Main issue is with reporters, because if the internal data structures are different, they'd need to support both - need some kind of abstraction that both can handle (like maps)
  - How will this interact with OpenTelemetry's metrics feature set? Probably a lot of overlap, so we need to make sure that it's not too confusing for people.
  - Action: Arkadiusz to Survey existing metrics definitions across existing libraries (Prometheus, OpenCensus, Statix, Telemetry.Metrics) before next meeting
- Development/debug performance tooling (I'll expand more on this in the meeting)
- ~~I'm (Zach Daniel) working on a guide for users of Spandex (for datadog) to migrate to opencensus. I'll also have to add an ecto integration, unless one exists that I'm not aware of. I have some questions about how to communicate the change, and what kind of visibility we'd like for it.~~ I have what I need here now.