

Observable Python Applications

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Acknowledgement of Country

Belmont (in San Francisco Bay Area Peninsula)
Ancestral homeland of the Ramaytush Ohlone

What is observability

It's 5pm, do you know where your application is?

Why observability

Ship it and forget it?

Feedback

Is my code doing what I think it does?

Monitor

What is going on right now?

Alert

Is there a problem?

logging

A print for the modern world

logging levels

What should go where?

Consistent semantics

Fixing logging levels

Filter

Fixing logging levels

Filter
name

Fixing logging levels

Filter
name

```
import logging
```

```
LOGGER=logging.getLogger(__name__)
```

logging level semantics

- ▶ Error: Alert now

logging level semantics

- ▶ Error: Alert now
- ▶ Warning: Alert in business hours

logging level semantics

- ▶ Error: Alert now
- ▶ Warning: Alert in business hours
- ▶ Info: In Prod

logging level semantics

- ▶ Error: Alert now
- ▶ Warning: Alert in business hours
- ▶ Info: In Prod
- ▶ Debug: Staging/Explicit

logging privacy

No PII

logging privacy

No PII

no passwords

logging privacy

No PII

no passwords

regardless of levels

logging aggregation

All instances → Centralized server

logging aggregation

All instances → Centralized server
Query and Alert

logging queries

Match

logging queries

Match
Source

Metrics scraping

Server pull model

Prometheus format

All common metrics aggregation systems support it

Web endpoint

Integrate into web framework of choice

Web endpoint

Integrate into web framework of choice
Use native library

Counters

Tick up or die

Counters

Tick up or die
Hits

Counters

Tick up or die
Hits
Bytes sent

Gauges

Point in time measurement

Gauges

Point in time measurement
Total allocated memory

Enums

Different states

Enums

Different states

0/1 mutually exclusive gauges

Analytics

Per-transaction measurements

OpenTelemetry

Looks good...

OpenTelemetry

Looks good...
but not there yet

Structured Logging

Collect data in per-transaction object

Structured Logging

Collect data in per-transaction object
Send it to log

Error Tracking

Detailed data about errors

Error Tracking

Detailed data about errors
Usually exceptions

For most non-trivial cases, run yourself:

For most non-trivial cases, run yourself:
Detailed error data can be sensitive!

Data, Not Speculation

Observability \rightarrow Knowledge

Return on Investment

► Testing

Return on Investment

- ▶ Testing
- ▶ Monitoring

Return on Investment

- ▶ Testing
- ▶ Monitoring
- ▶ On-boarding