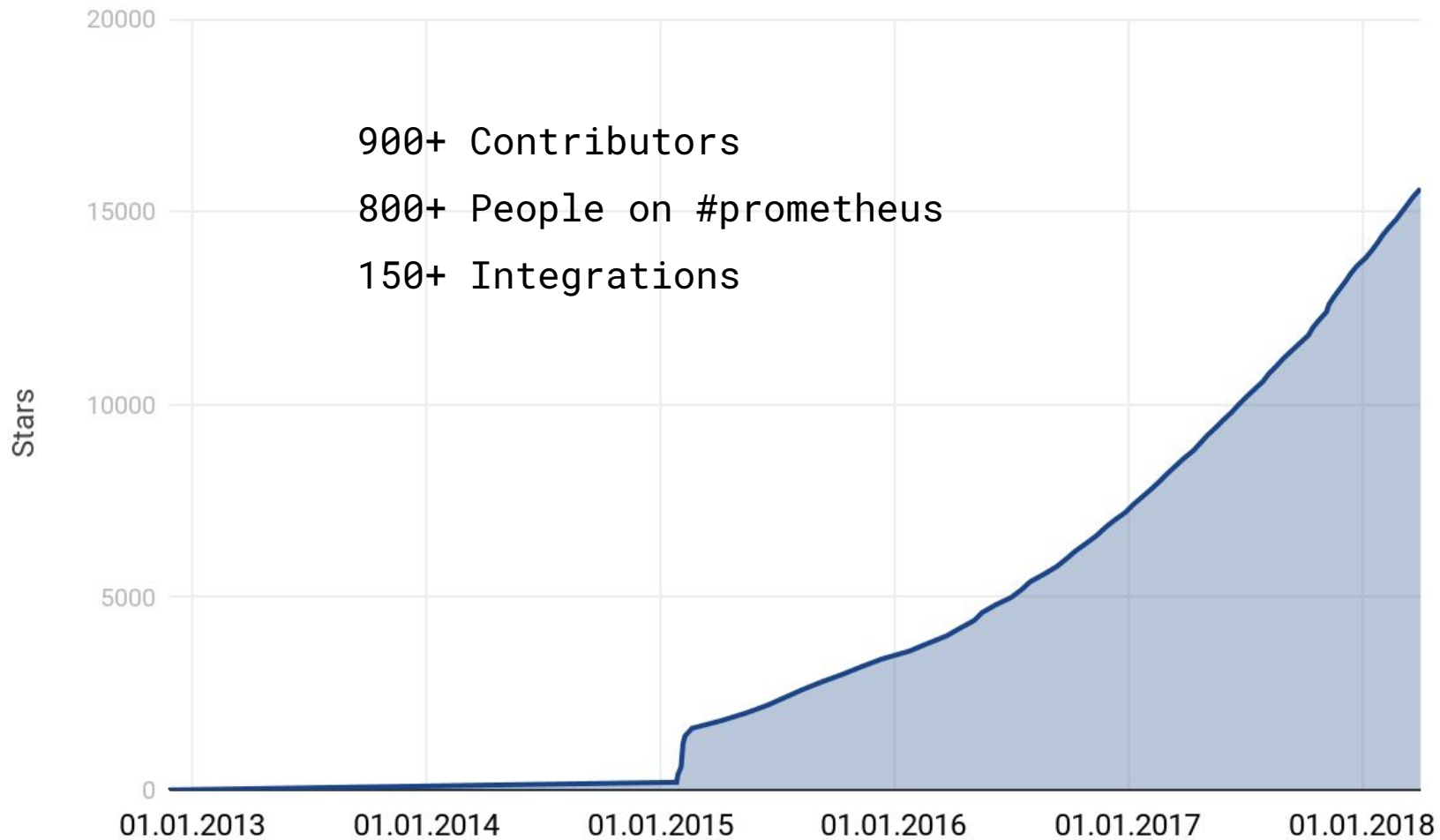


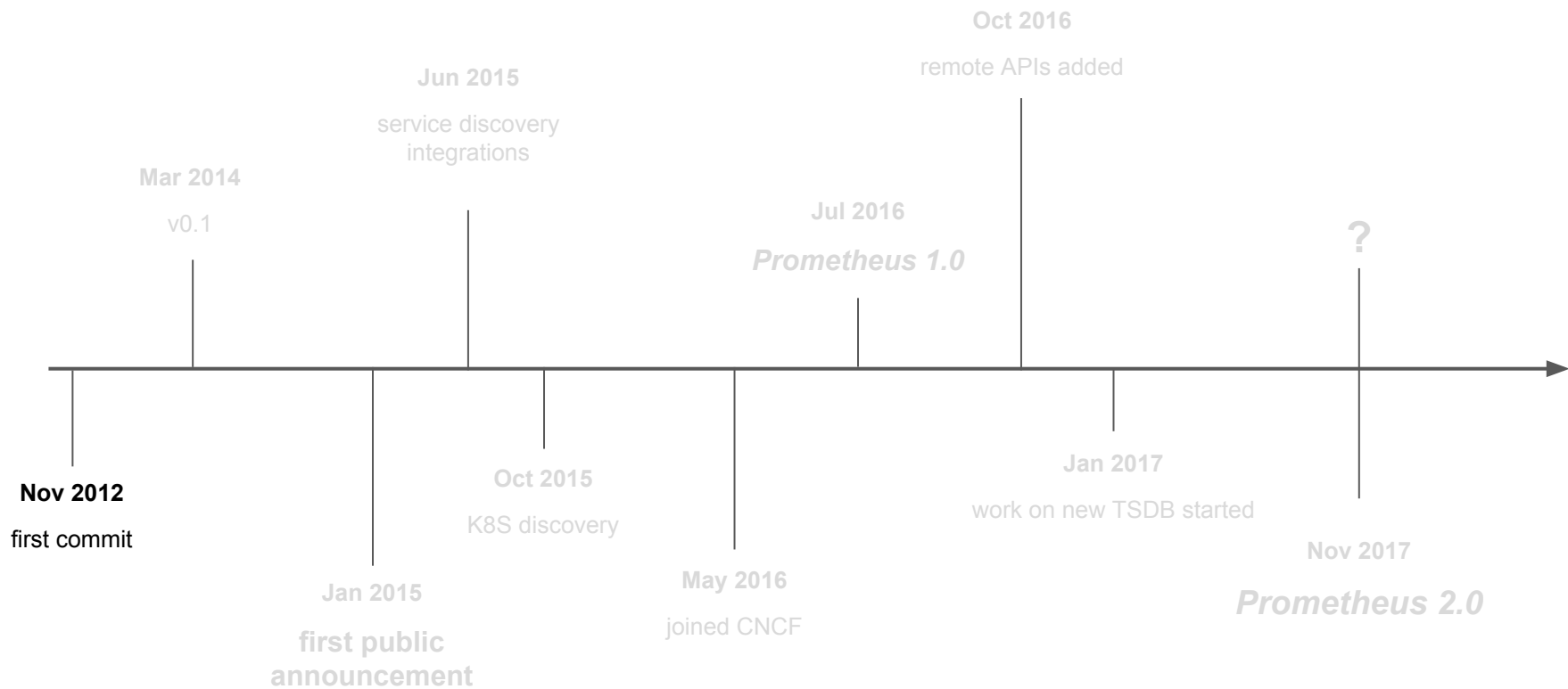
Prometheus 2

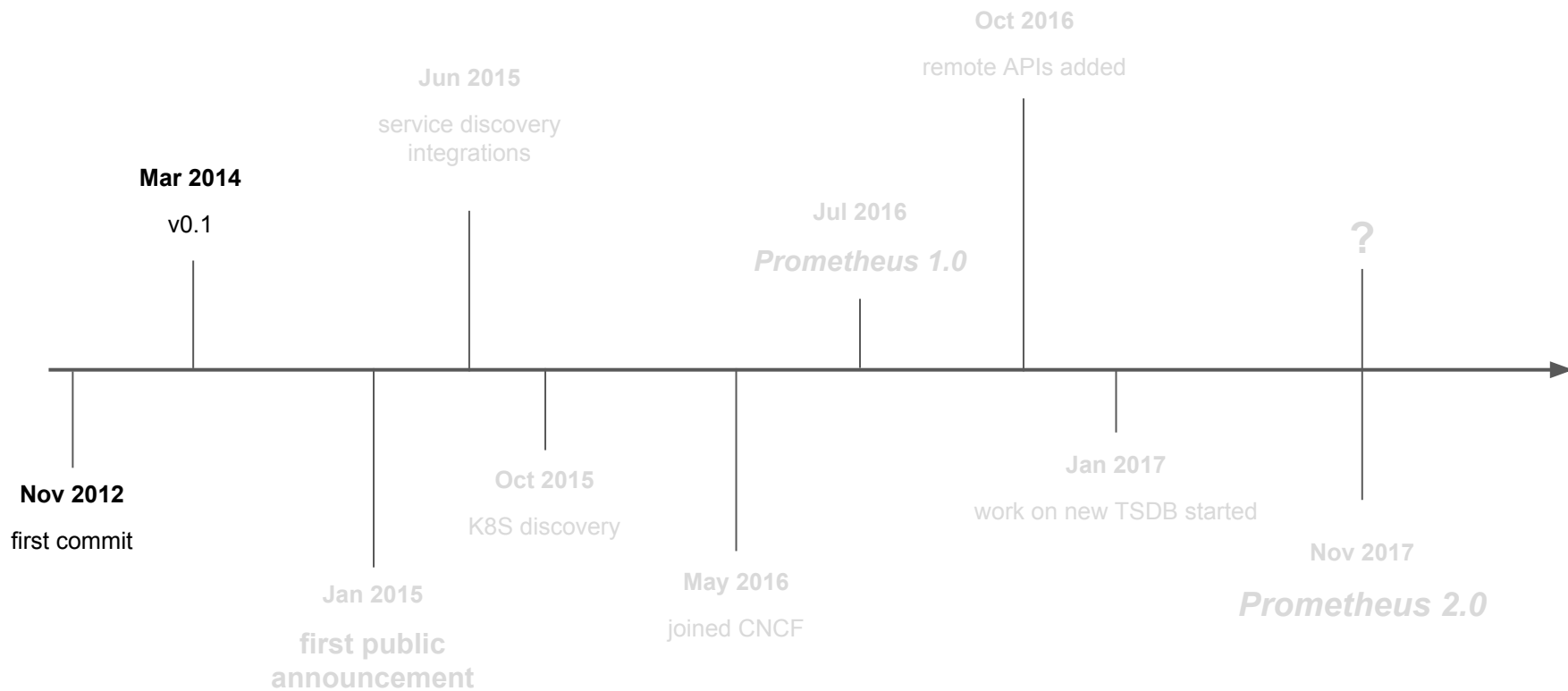
Fabian Reinartz

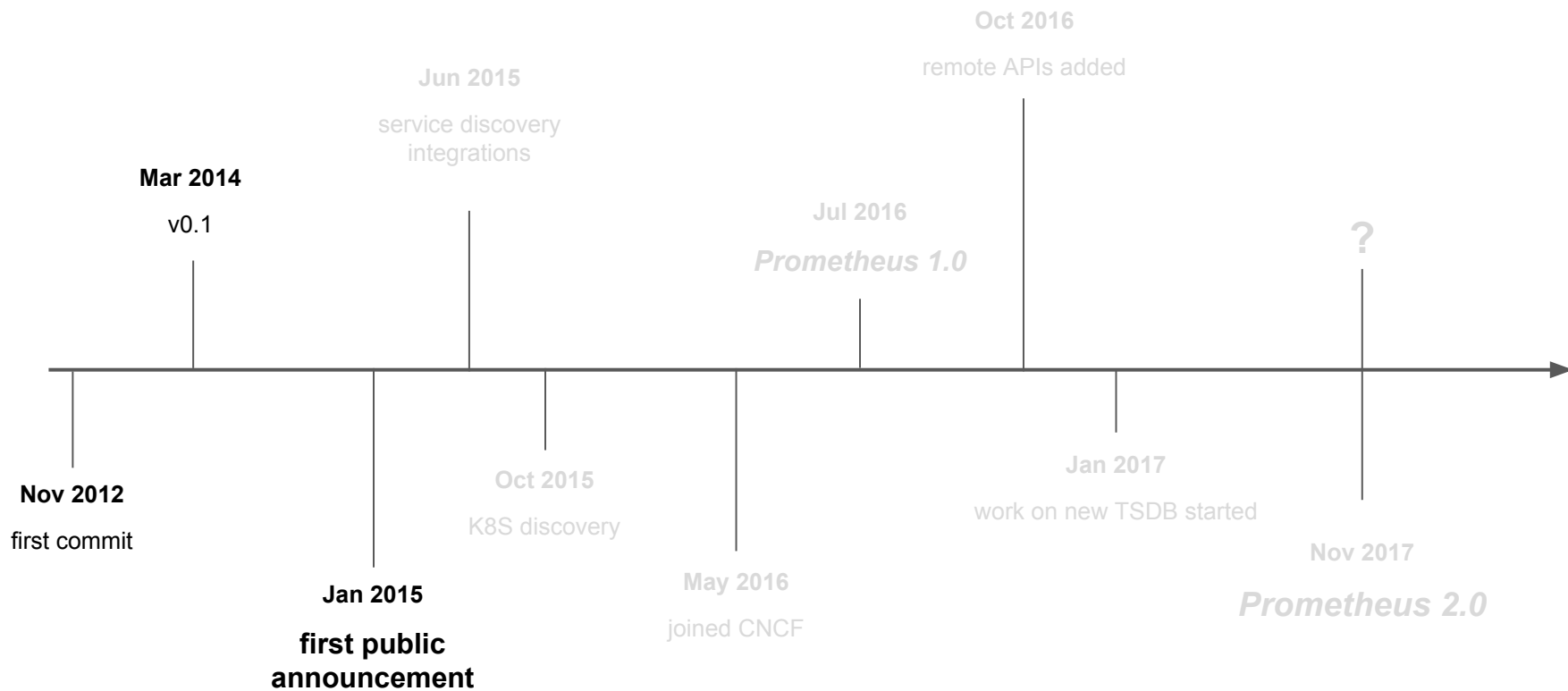
freinartz@google.com / @fabxc

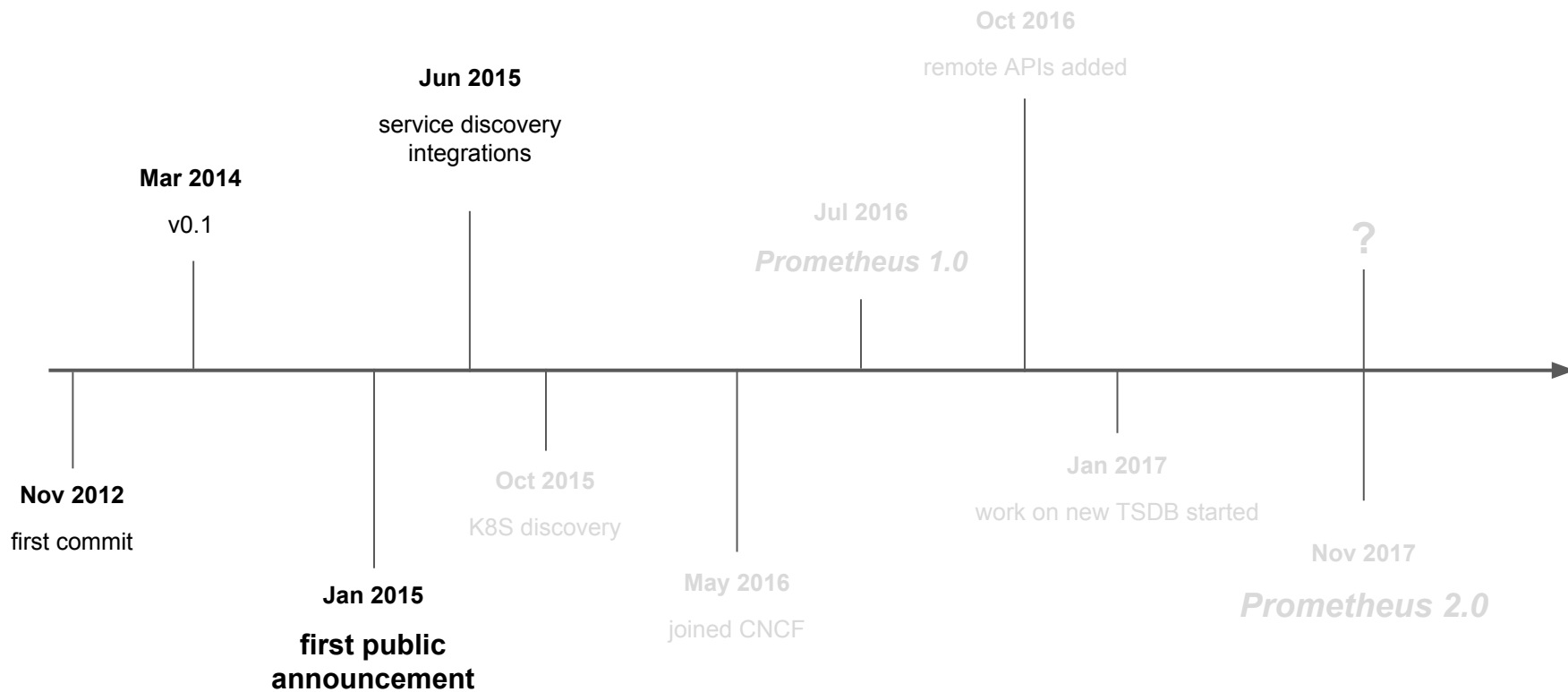


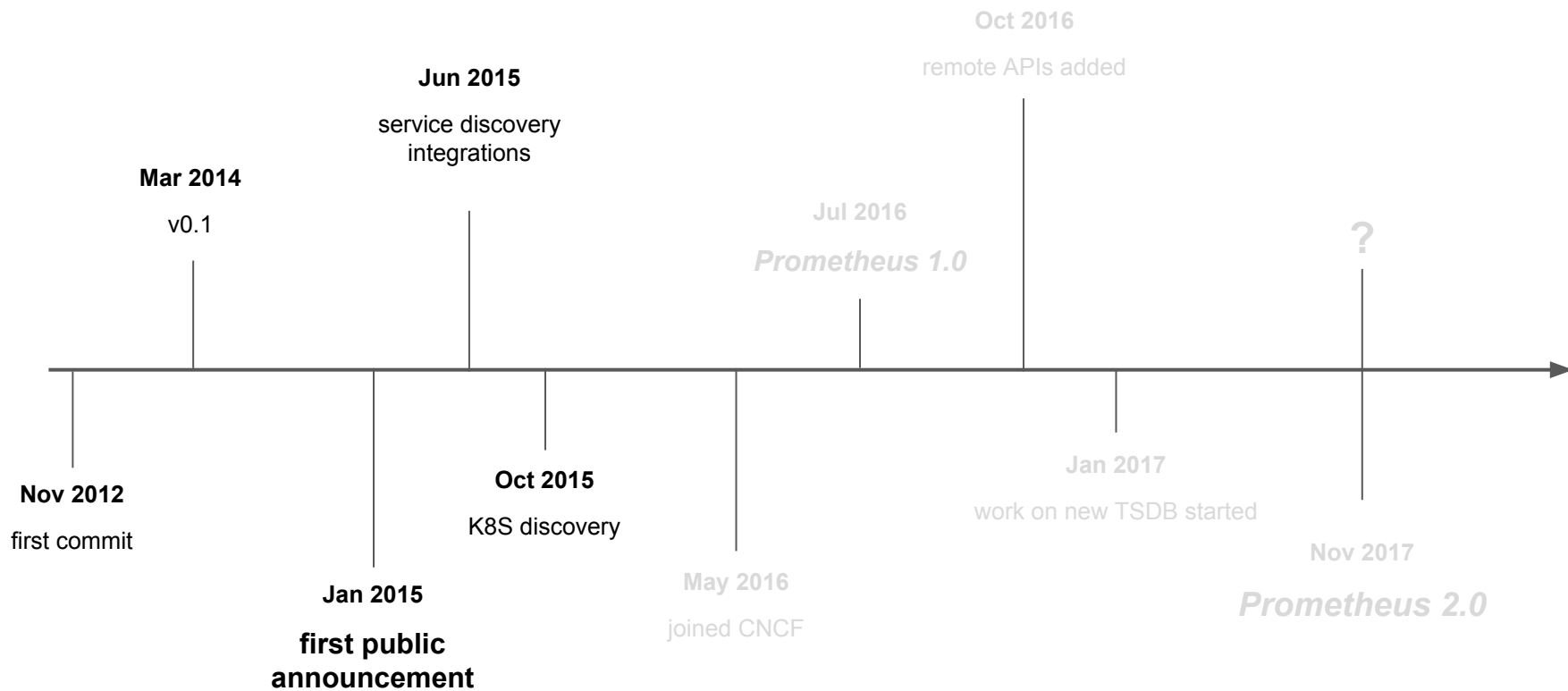
How did we get here?

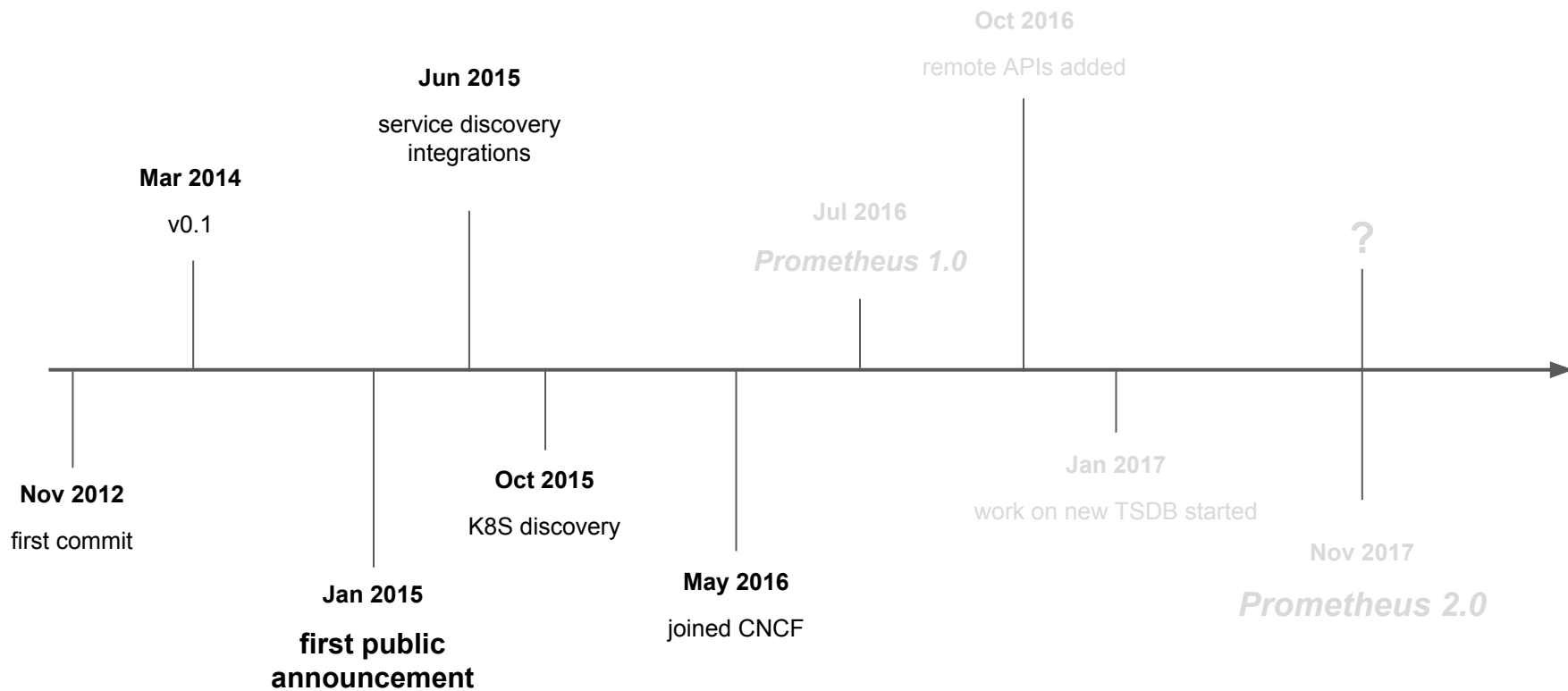


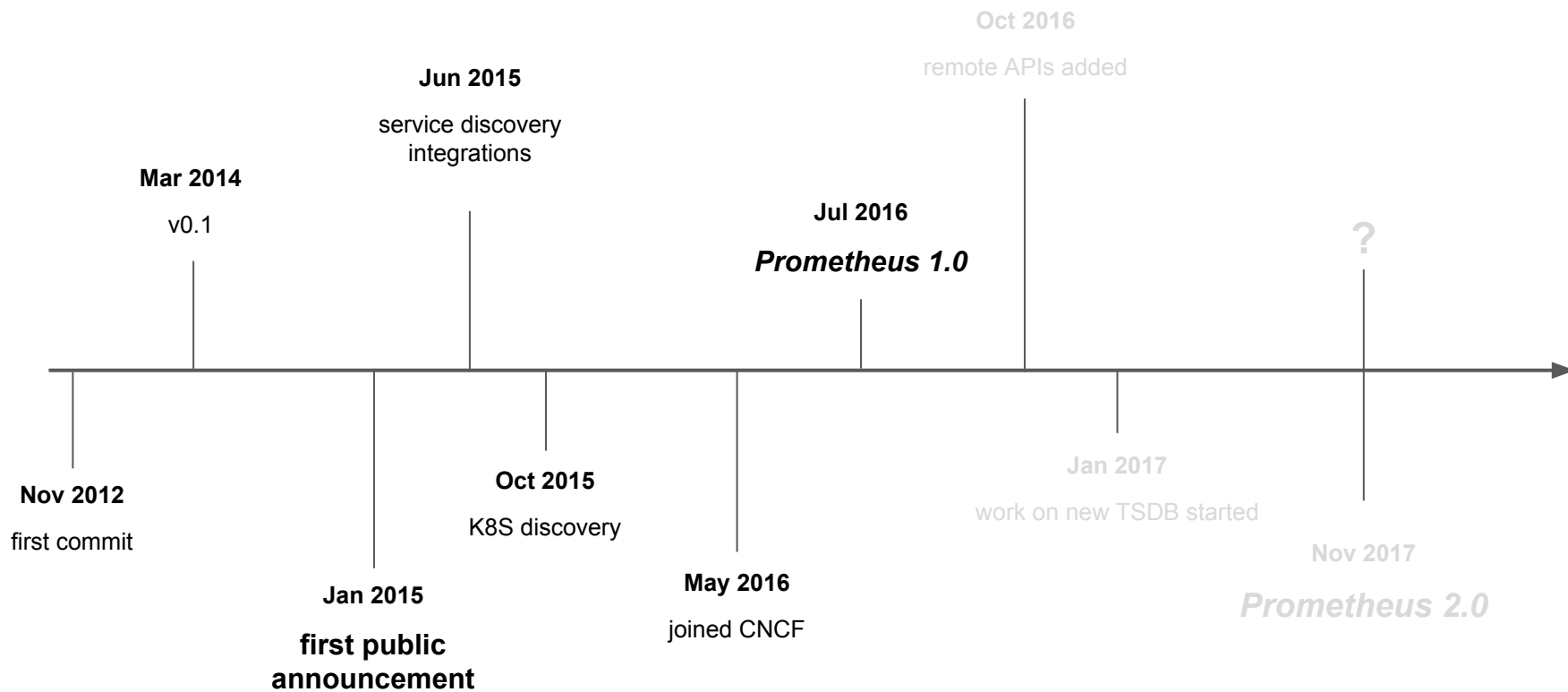


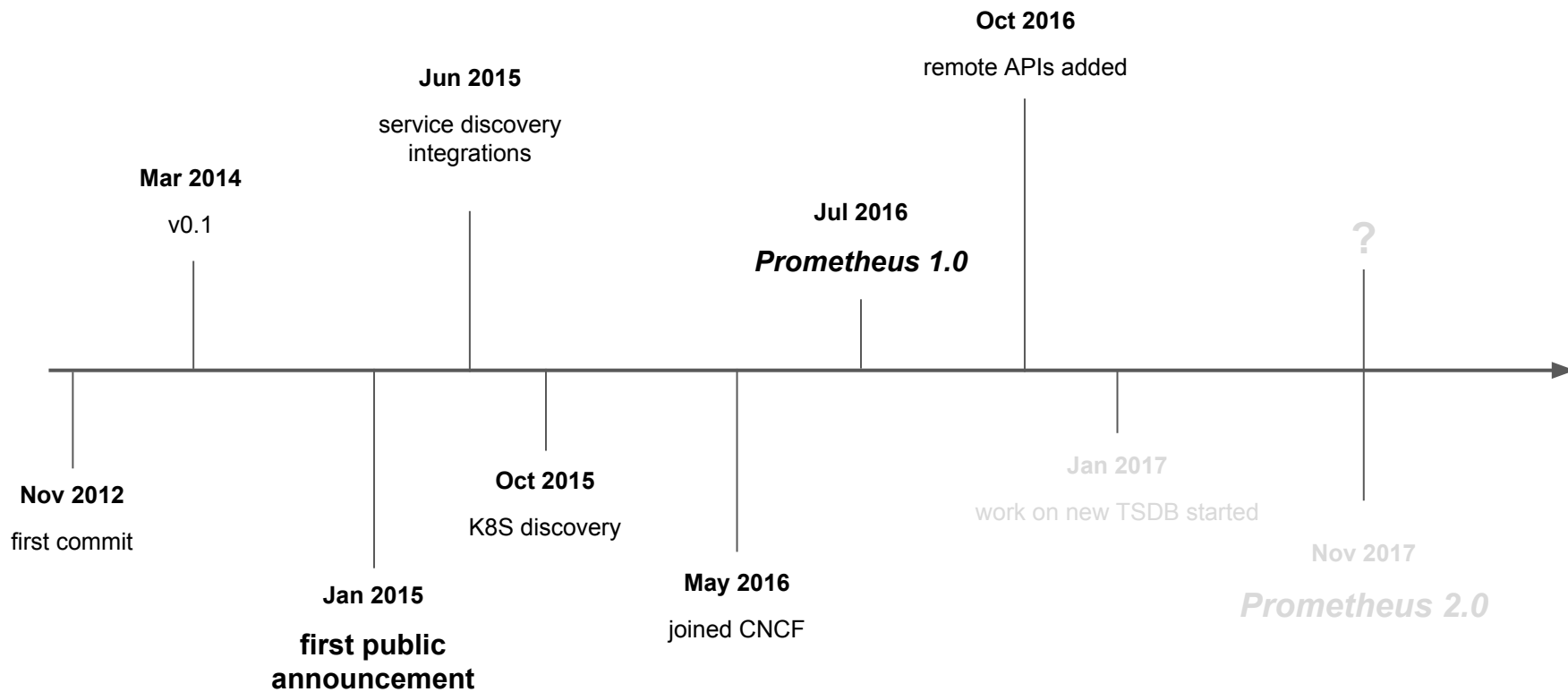


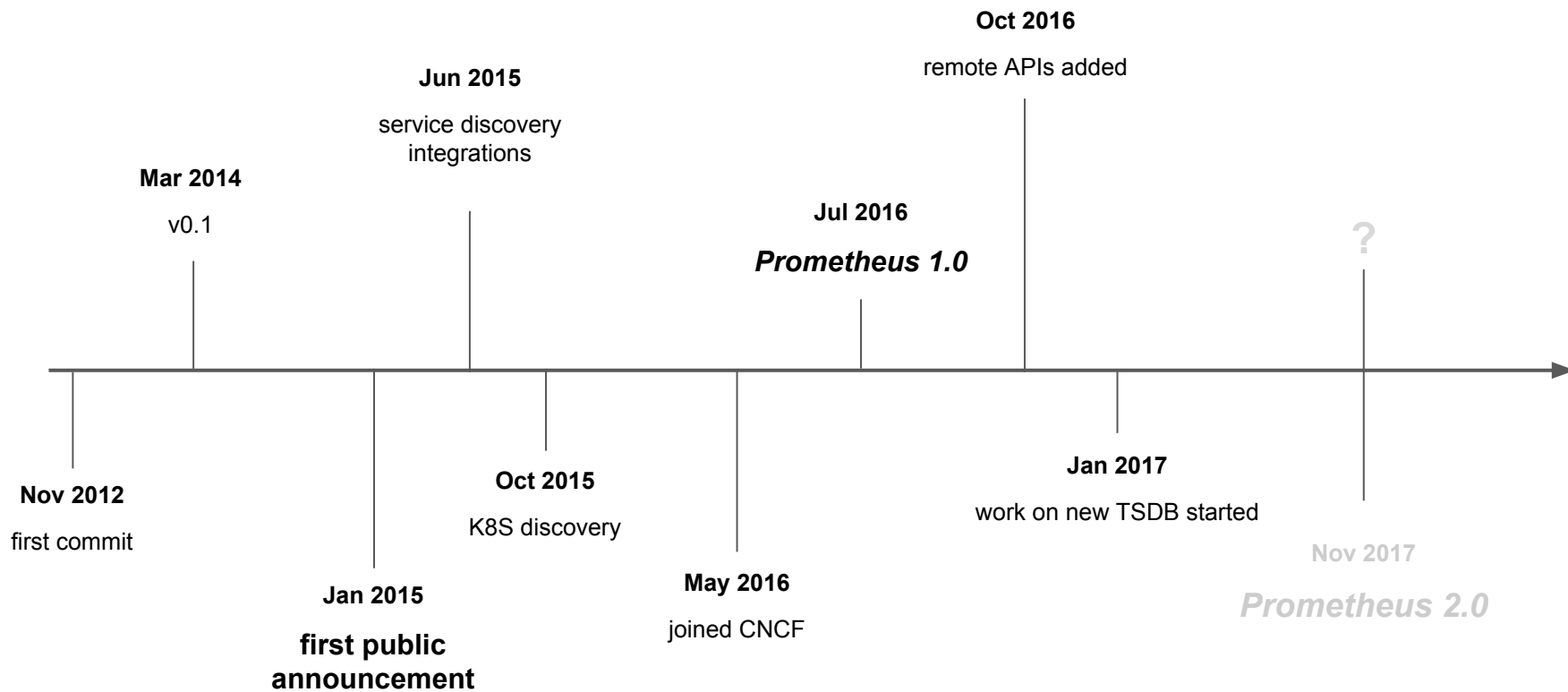


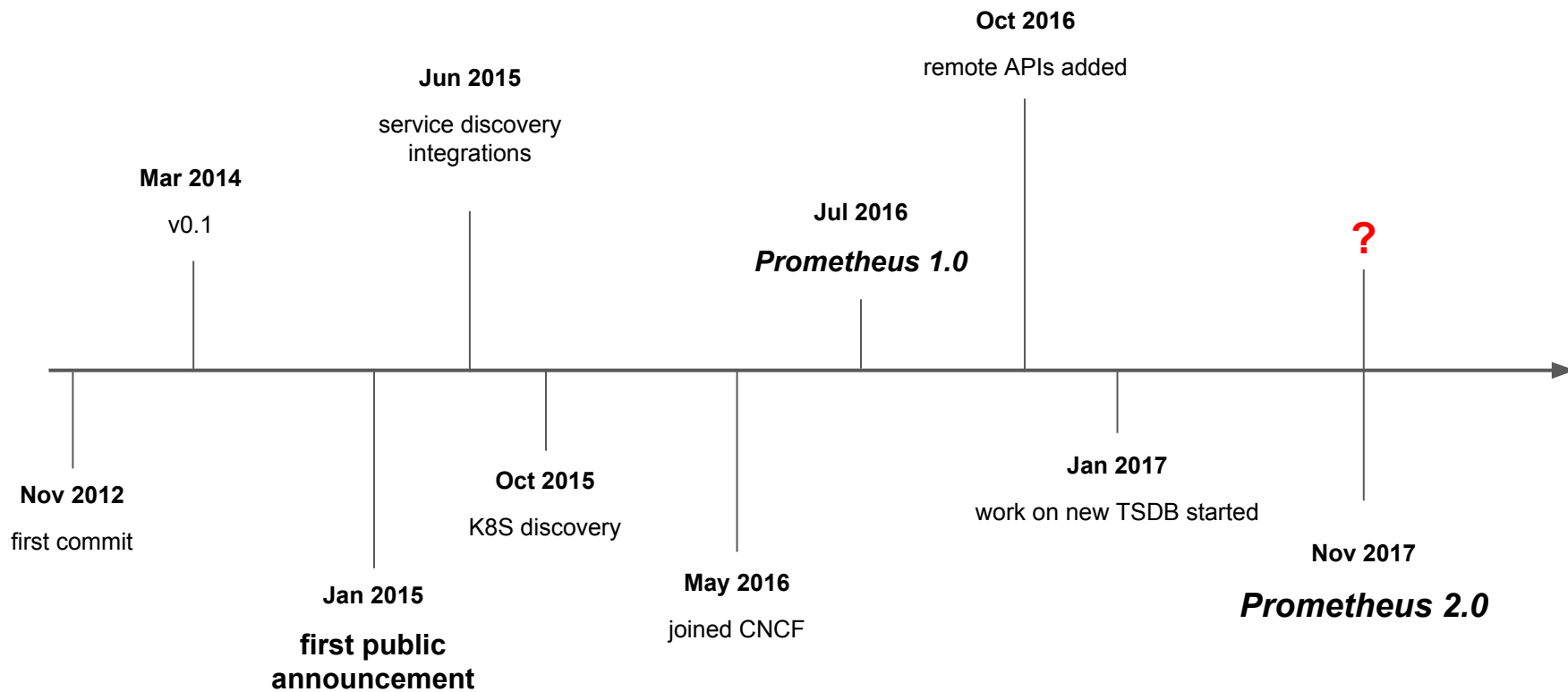




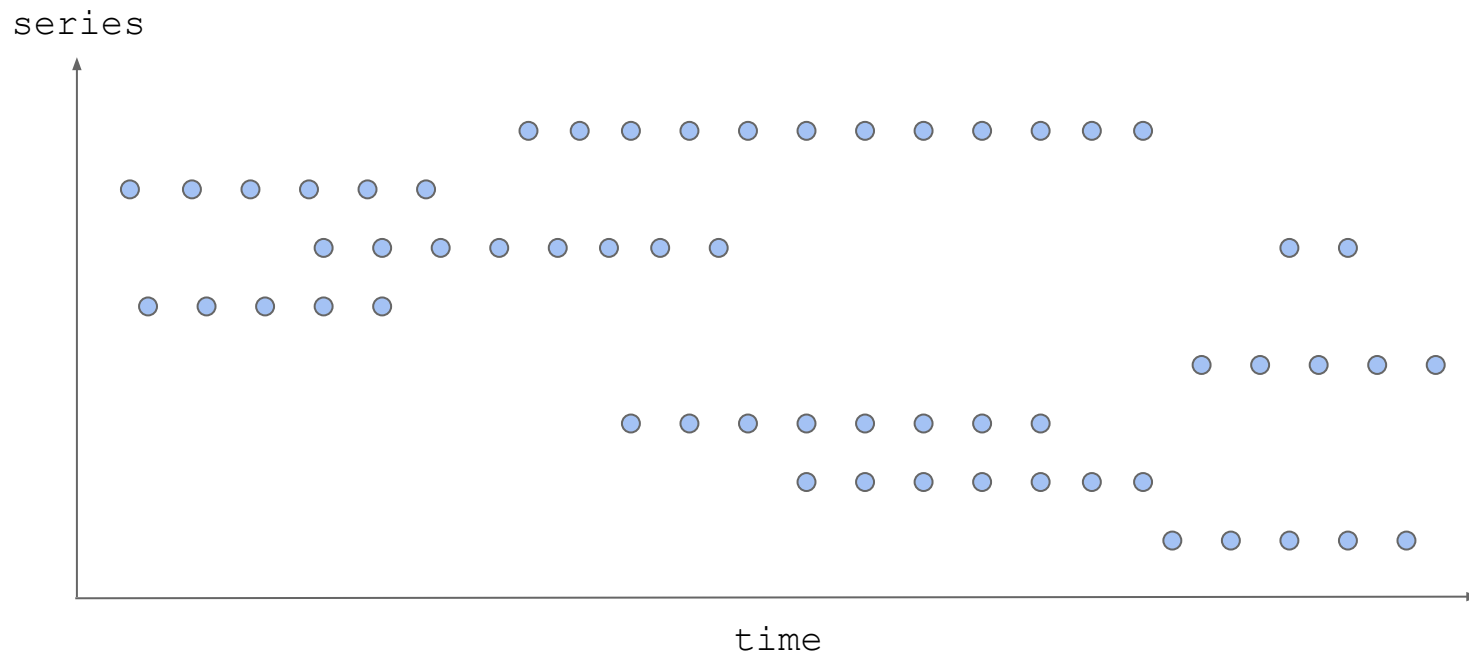




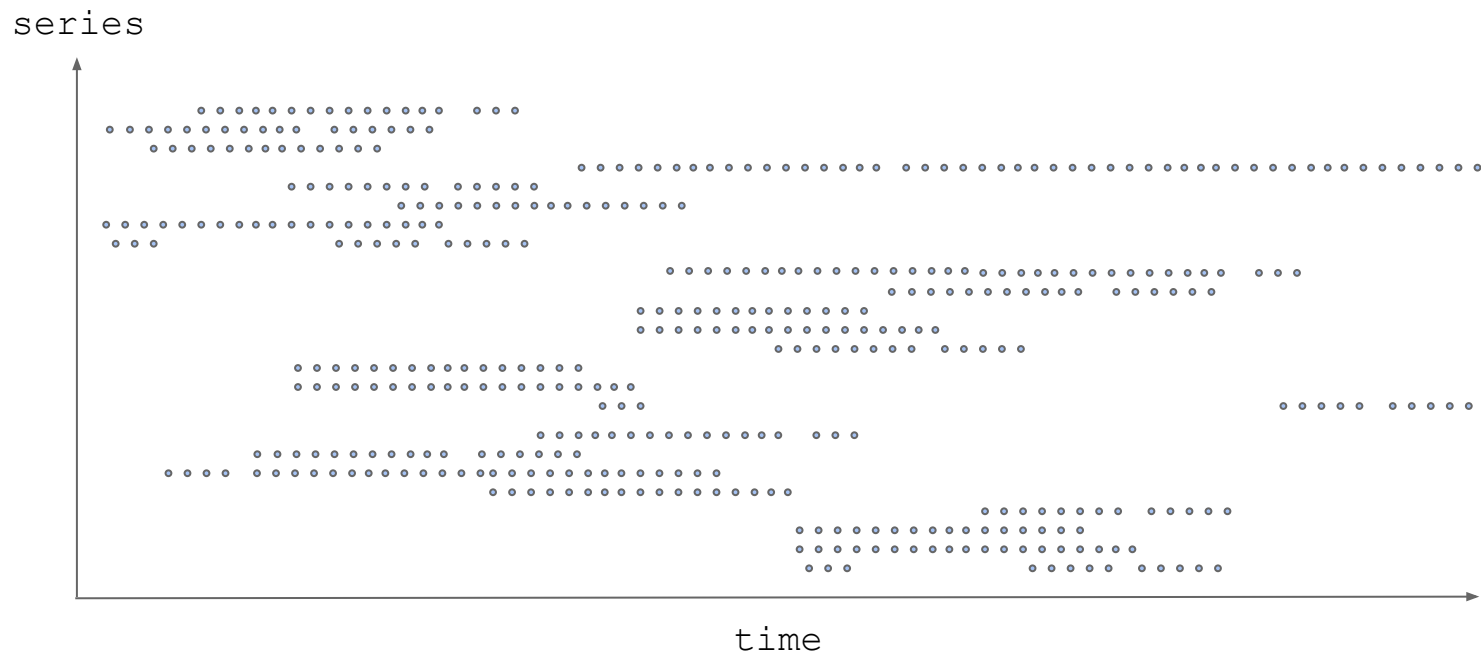




Time series in Kubernetes/CN environments



Time series in Kubernetes/CN environments



New TSDB `github.com/prometheus/tsdb`

- Improved time series indexing
- Big improvements along virtually all performance dimensions
- Can persist 1,000,000+ samples/core/sec to disk
- Stand-alone library, easy to reuse for custom tooling

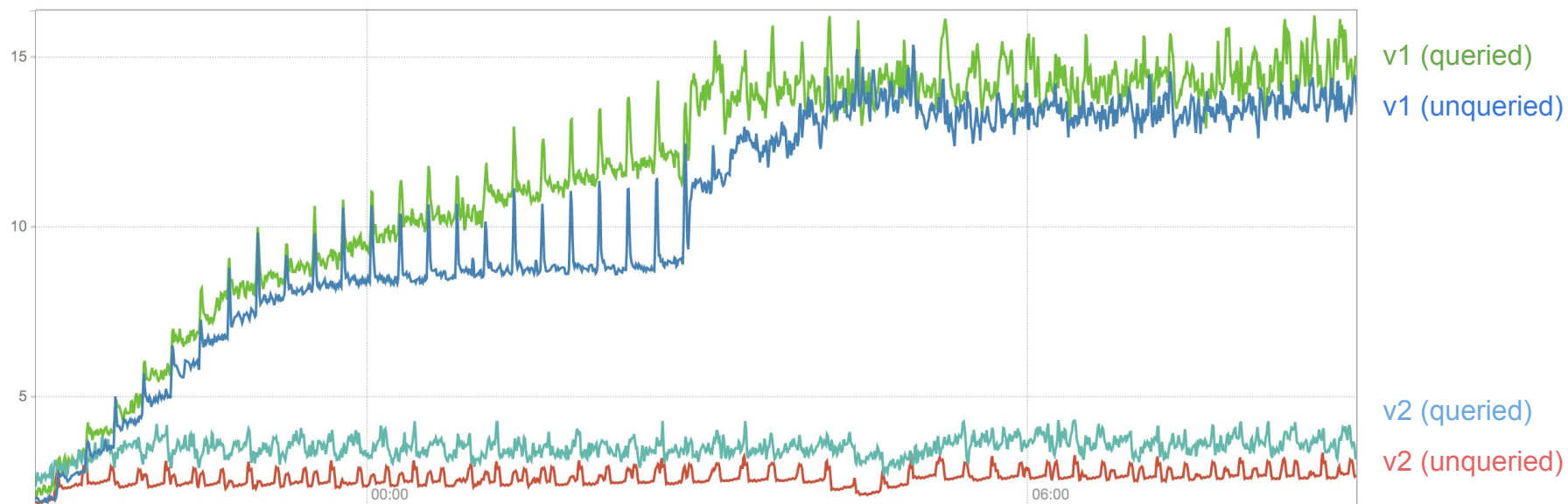
Integrating TSDB

- Virtually all resources being spent outside of the DB itself
- Needed to optimize scraping layer to reap the performance benefits

Optimizing Scraping

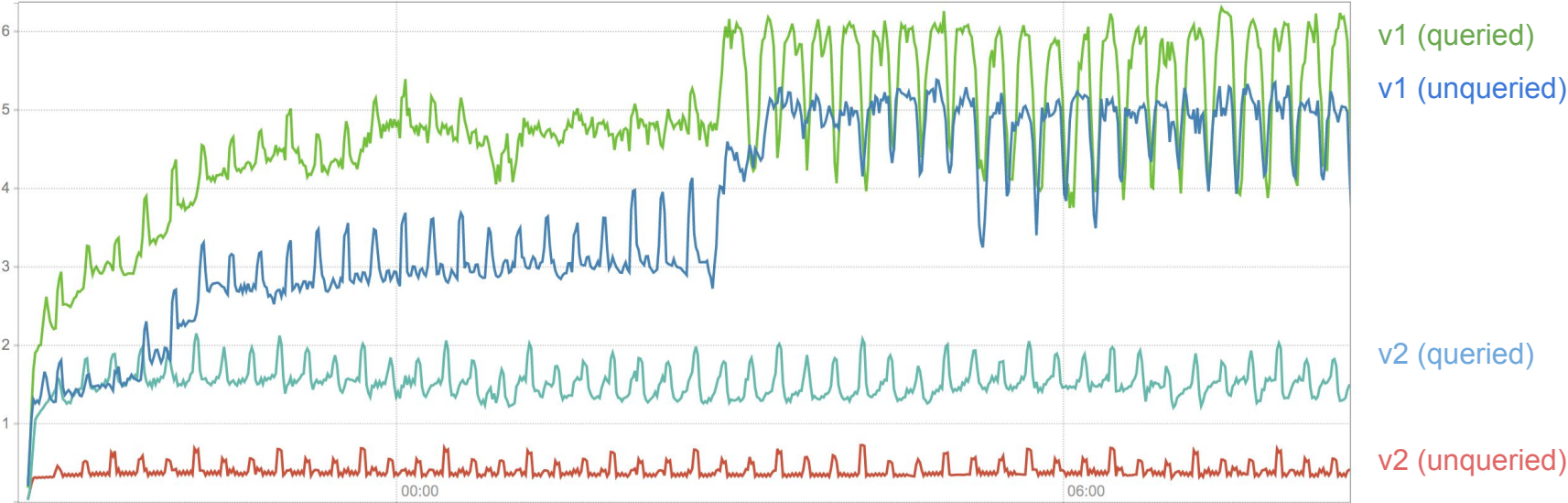
- Low-level optimizations for ingestion based on the text format
- Protobuf support dropped for now

Benchmarks



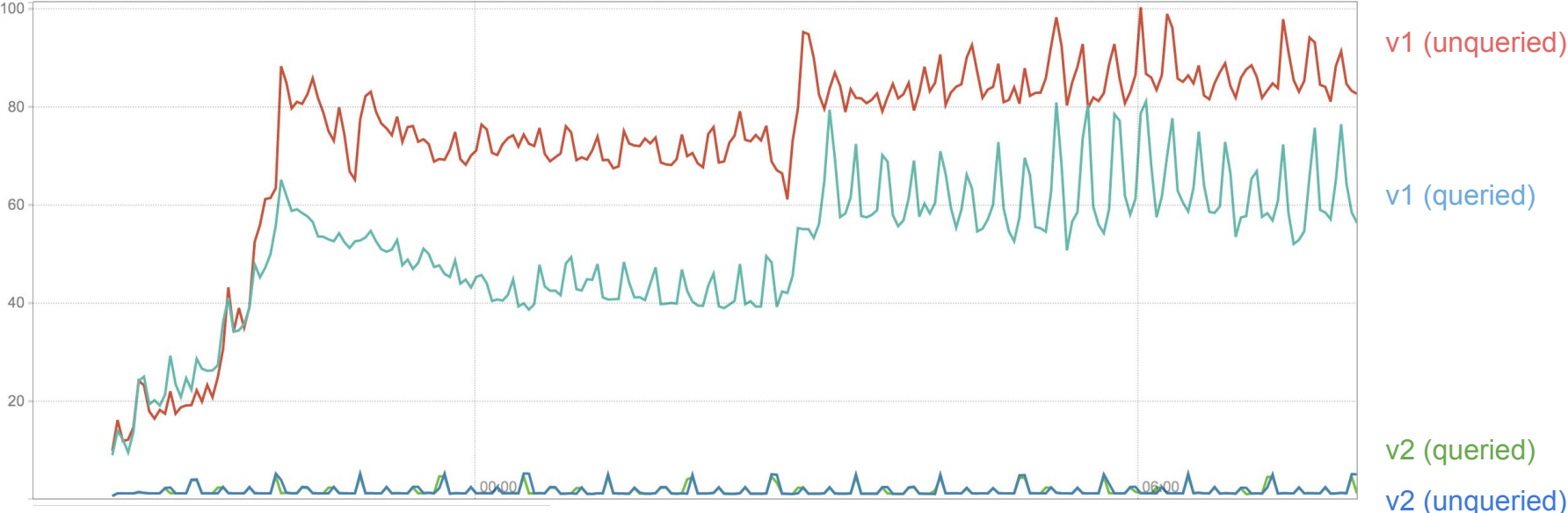
Memory consumption (GB)

Benchmarks



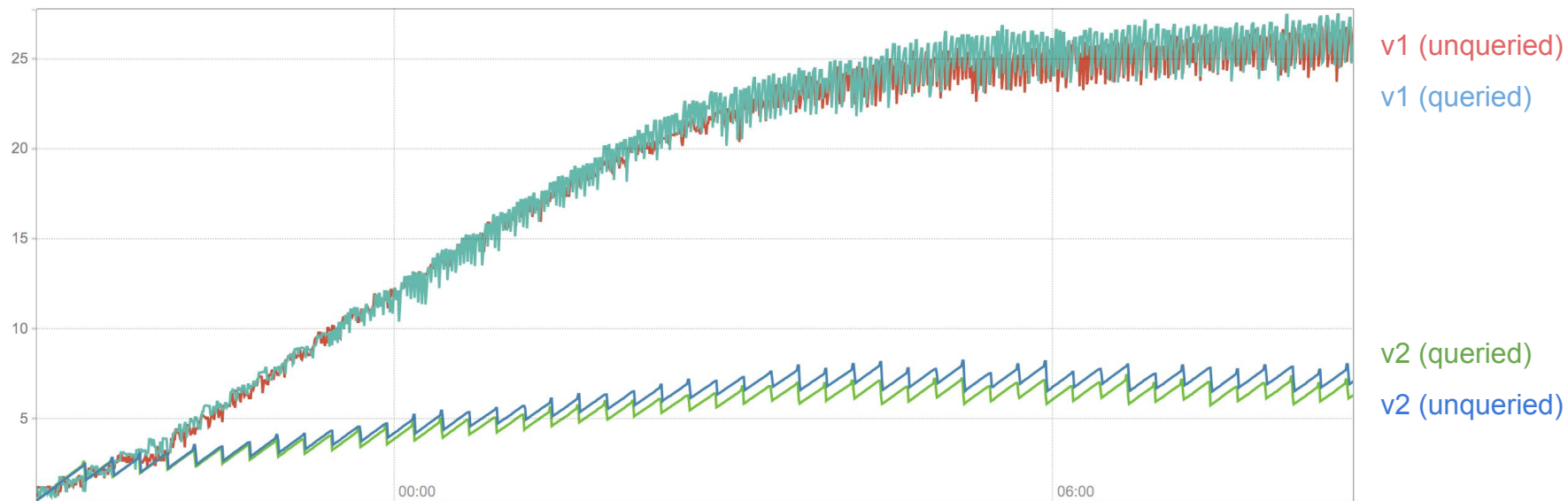
CPU usage (cores/sec)

Benchmarks



Disk writes (MB/sec)

Benchmarks



Disk usage (GB)

Benchmarks



Query latency (sec)

Rule Format

```
ALERT ErrorsHigh
```

```
IF rate(request_errors_total[5m]) > 50
```

```
FOR 5m
```

```
LABELS {
```

```
    severity = "critical"
```

```
}
```

```
ANNOTATIONS {
```

```
    runbook = "http://docs..."
```

```
}
```



```
alert: ErrorsHigh
```

```
if: rate(request_errors_total[5m]) > 50
```

```
for: 5m
```

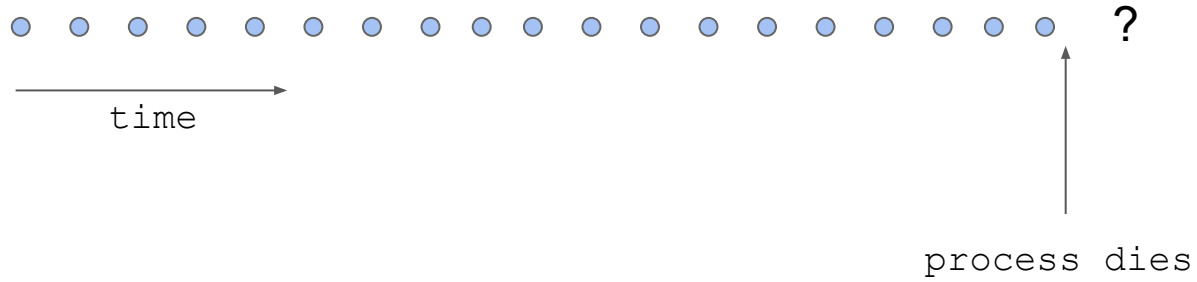
```
labels:
```

```
    severity: "critical"
```

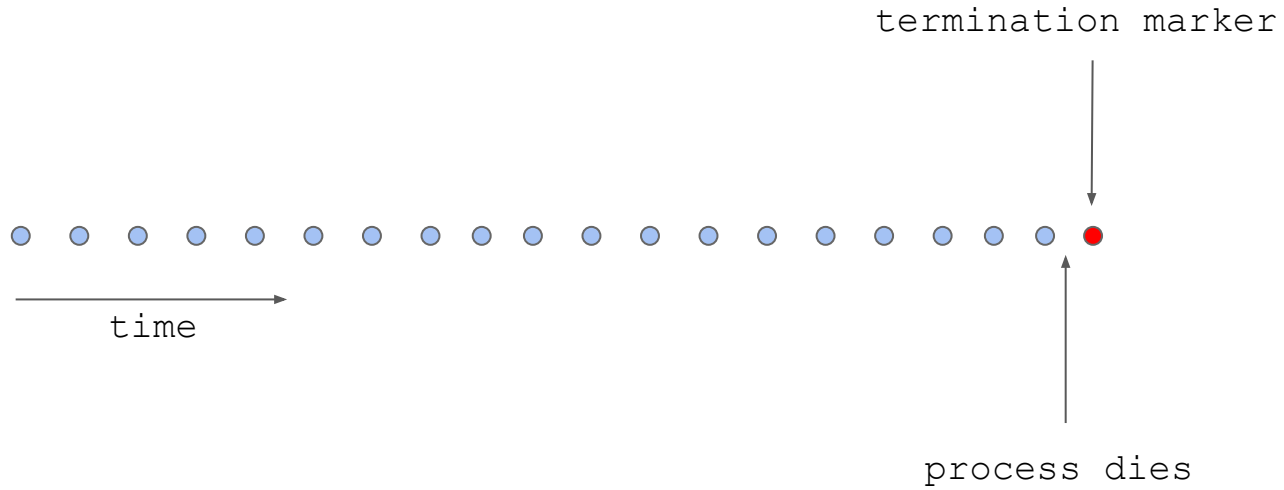
```
annotations:
```

```
    runbook: "http://docs..."
```

Staleness



Staleness



What's next?

- Improve query engine performance
- Investigate gRPC APIs
- Enhanced integration for long-term storages
- Stay engaged with OpenMetrics



weavecortex

github.com/weaveworks/cortex



influxdb

github.com/influxdata/influxdb



Thanos

github.com/improbable-eng/thanos

O'REILLY®



Prometheus Up & Running

INFRASTRUCTURE AND APPLICATION PERFORMANCE MONITORING

Brian Brazil