

libTSDB

The library that powers Prometheus 2.0

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Prometheus (2.0)

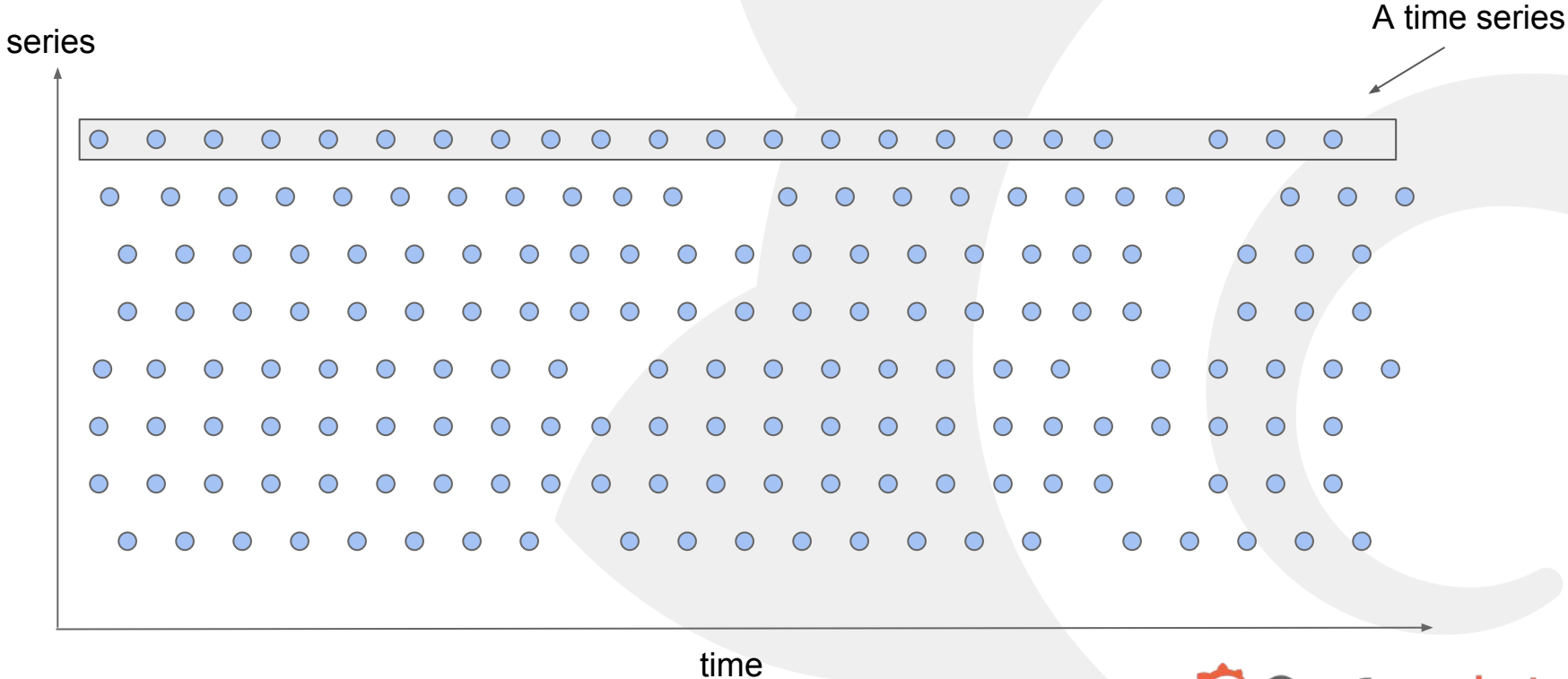
- A monitoring system with an **embedded time-series database**
- Part of **CNCF**
- Started in 2012, public announcement in 2015
- 1.0 in July 2016, 2.0 in November 2017
- 1.0 was great! 2.0 is *better!* Mainly due to TSDB

*Embedded **Time-Series** Database*

$(t_0, v_0), (t_1, v_1), (t_2, v_2), (t_3, v_3), \dots$



Embedded *Time-Series* Database



*Embedded **Time-Series** Database*

```
weather_celcius{city="berlin", sensor="gorli"}
```

```
weather_celcius{city="berlin", sensor="kreuzberg"}
```

```
weather_celcius{city="copenhagen", sensor="bella"}
```

...

Embedded *Time-Series* Database

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weather_celcius{city="berlin", sensor="gorli"}
```

```
weather_celcius{city="berlin", sensor="kreuzberg"}
```

```
weather_celcius{city="copenhagen", sensor="bella"}
```

```
Select: weather_celcius
```

*Embedded **Time-Series** Database*

```
weather_celcius{city="berlin", sensor="gorli"}
```

```
weather_celcius{city="berlin", sensor="kreuzberg"}
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```
weather_celcius{city="copenhagen", sensor="bella"}
```

```
Select: weather_celcius{city="berlin"}
```

Embedded Time-Series Database

- Store and retrieve time-series
- **MILLIONS** of them!
- Okay, why not MySQL/Cassandra/(insert new hot-db)?
- Purpose built, hence **FAST!** And **SMALL!**

Embedded Time-Series Database

5 million active time series
30 second scrape interval
1 month of retention

166,000 samples/second
432 billion samples

8 byte timestamp + 8 byte value ⇒ **7 TB** on disk

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12x Savings with TSDB!

Embedded Time-Series Database

- Crash Resiliency using a WAL
- Granular deletes
- BACKUPS!
- In Go, as a library! Ultra simple, streaming API!
- Battle tested, Prometheus uses it!

Embedded Time-Series Database

<https://github.com/prometheus/tsdb>

prometheus / tsdb

Unwatch 45

★ Unstar 332

Fork 64

<> Code

Issues 39

Pull requests 26

Projects 0

Wiki

Insights

Settings

No description, website, or topics provided.

Edit

Add topics

729 commits

24 branches

0 releases

29 contributors

Apache-2.0

Branch: master

New pull request

Create new file

Upload files

Find file

Clone or download

mattbostock and brian-brazil db: Match comment case to function name (#316)

Latest commit def6e5a 18 days ago

chunkenc

fix some comments typos (#315)

23 days ago

chunks

fix megacheck issues: os.SEEK_SET is deprecated: Use io.SeekStart, io...

a month ago

Embedded Time-Series Database

- Prometheus **imports** it!
- Well documented and already used in other projects!
- More features being added! Well maintained!
- Talk to us, contribute! Use it!

Join the deep-dive!

Thursday, May 3 • **14:45 - 15:20**

Audi 11 + 12