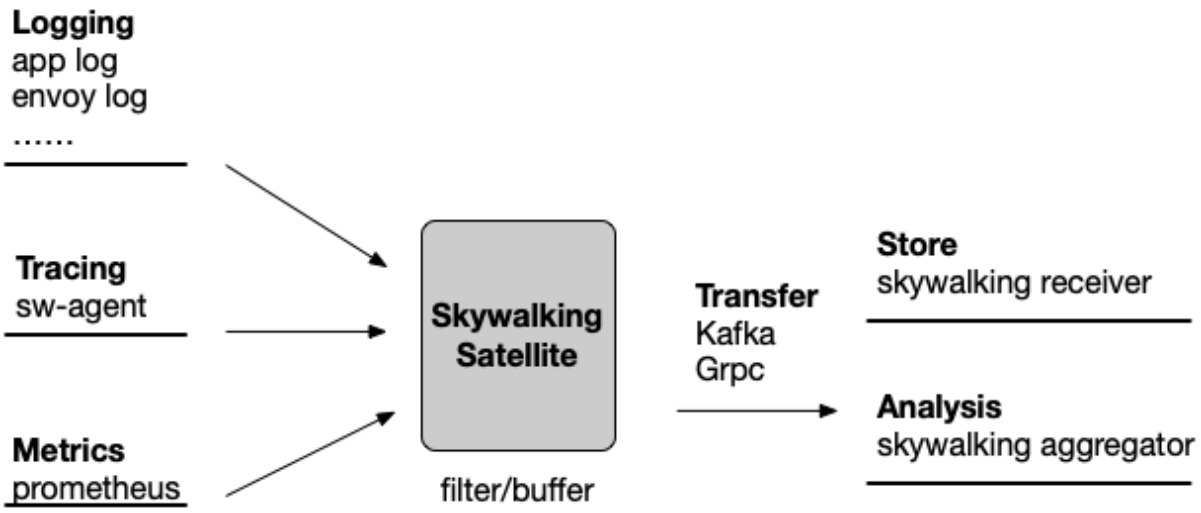
Skywalking Satellite

1. Overview

Skywalking Satellite is a one-stop open-source APM data collector located in the cloud-native scenario.

- Input source: Support multiple APM data sources, such as app logs, trace segments, metrics fetched by Prometheus SDK, etc.
- Output source: Support multiple transport protocols to connect with the original Skywalking OAP receiver, such as MQ, Grpc, etc.
- Internal processes: Support preprocessing for the input data.



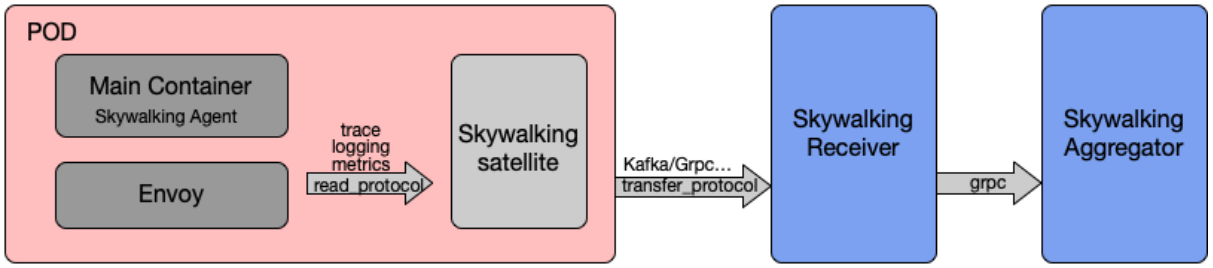
2. Advantages

- One-stop APM data collector product that covers tracing, logging, and metrics.
- Reduce the operation and maintenance costs of heterogeneous services.
- Technical advantages
    - Better security guarantees with TLS or mTLS.
    - Convert the Prometheus fetch mode to a safer push mode.
    - Sampling in the supersize scale deployment to reduce data transfer throughput.
    - Share the responsibilities of the agents. For example, the MQ transport mode should work in the Satellite rather than working in the agents of every language.

    - Support proxy or service discovery to avoid the uneven load problem on GRPC long connections.
    - ……..

3. The Future Architecture

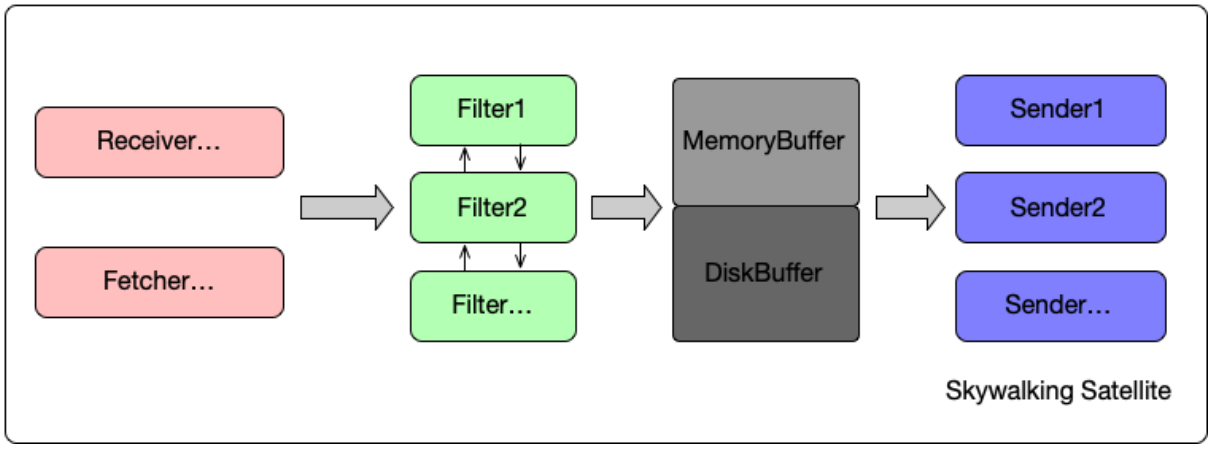
- Satellite
    - Unified APM data collection.
    - APM data preprocessing.
    - Unified APM data sending.
- Receiver
    - Store original record data.
    - Analyze the data created by the Satellite preprocessing.
    - Memory aggregate the metrics store.
    - Forward data to OAP aggregator.
- Aggregator
    - Aggregate the metrics data in Memory.
    - Persistence of the metrics data.



4. Satellite Internal Architecture

- Receiver/Fetcher
    - Receiving the trace data created by the different language Skywalking agents.
    - Fetching or receiving the metrics data created by other metrics SDK, such as Prometheus SDK.
    - Collecting the logs in the different containers, such as app logs, envoy logs, etc.
- Filter chain
    - Support preprocess the input APM data. There are some possible scenarios on the following:
        - Sampling in the supersize scale deployment to reduce data transfer throughput.
        - Structured processing of logs to support log alarm.
- Buffer
    - Data cache

    - Data disaster recovery
- Sender
    - Connect with the original Skywalking OAP receiver.



5. The Meeting Process

https://www.bilibili.com/video/BV1Lr4y1w77f