



PromCon
2023

OpenTelemetry Metrics Ingestion In Prometheus

Haoyu Sun
Red Hat



RemoteWrite with
OpenTelemetry Collector



OTLP Native



Scrape OpenTelemetry Collector



Application



OpenTelemetry
Collector



Prometheus



Advantages

- Compatibility and efficiency.
- Leverage existing operational knowledge.
- Resistant to small disruptions thanks to WAL.

Considerations

- Complexity of configuration and maintenance
- Requires fine tuning.
- Reliability: network disruption, Prometheus overloading

Native OpenTelemetry Endpoint



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OTLP



Prometheus



OTLP



OTLP



Prometheus

OpenTelemetry
Collector



Advantages

- No format conversion from OpenTelemetry to the Remote Write.
- Direct ingestion from applications emitting OpenTelemetry metrics.

Considerations

- Only new version of Prometheus support OpenTelemetry endpoint.
- Potential performance & reliability impact.
- Label changes in conversion from OTLP to Prometheus

OpenTelemetry Collector Metrics Scrape



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Application



OpenTelemetry
Collector



Scrape /metrics



Prometheus

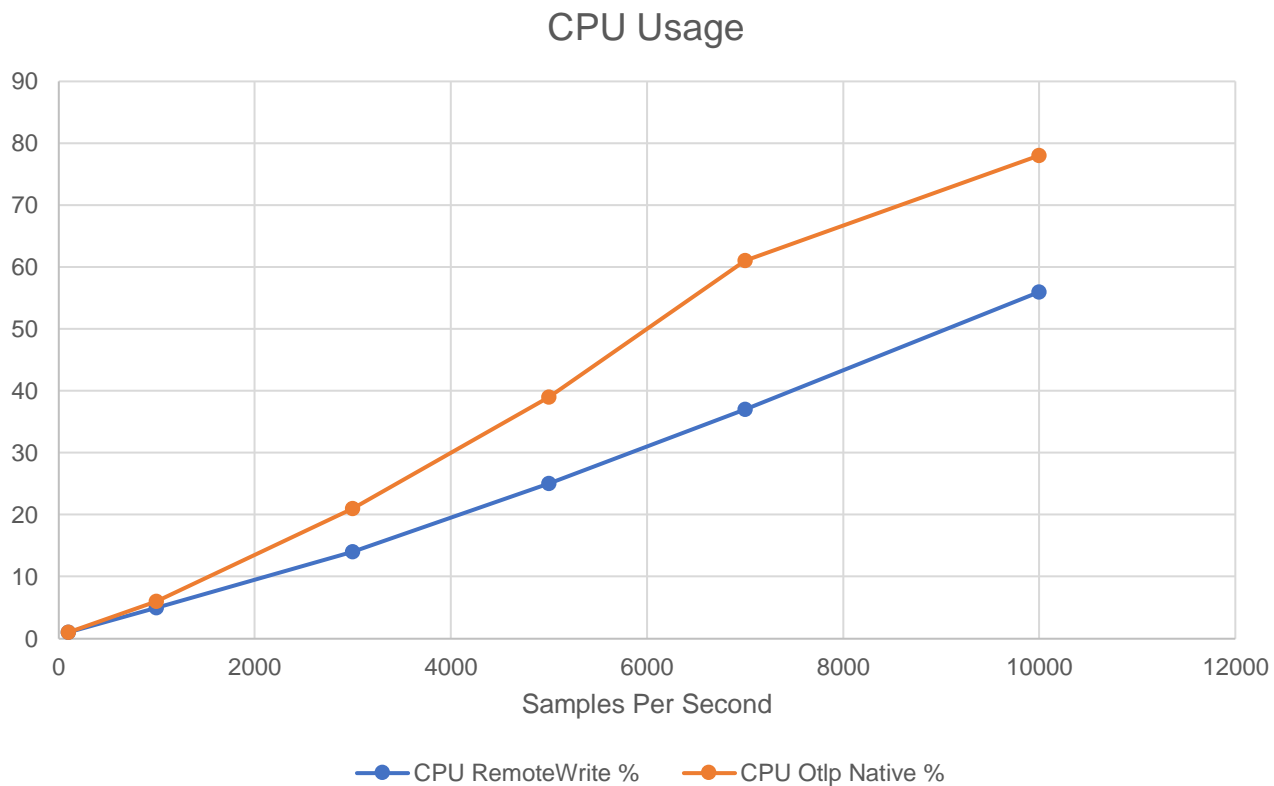


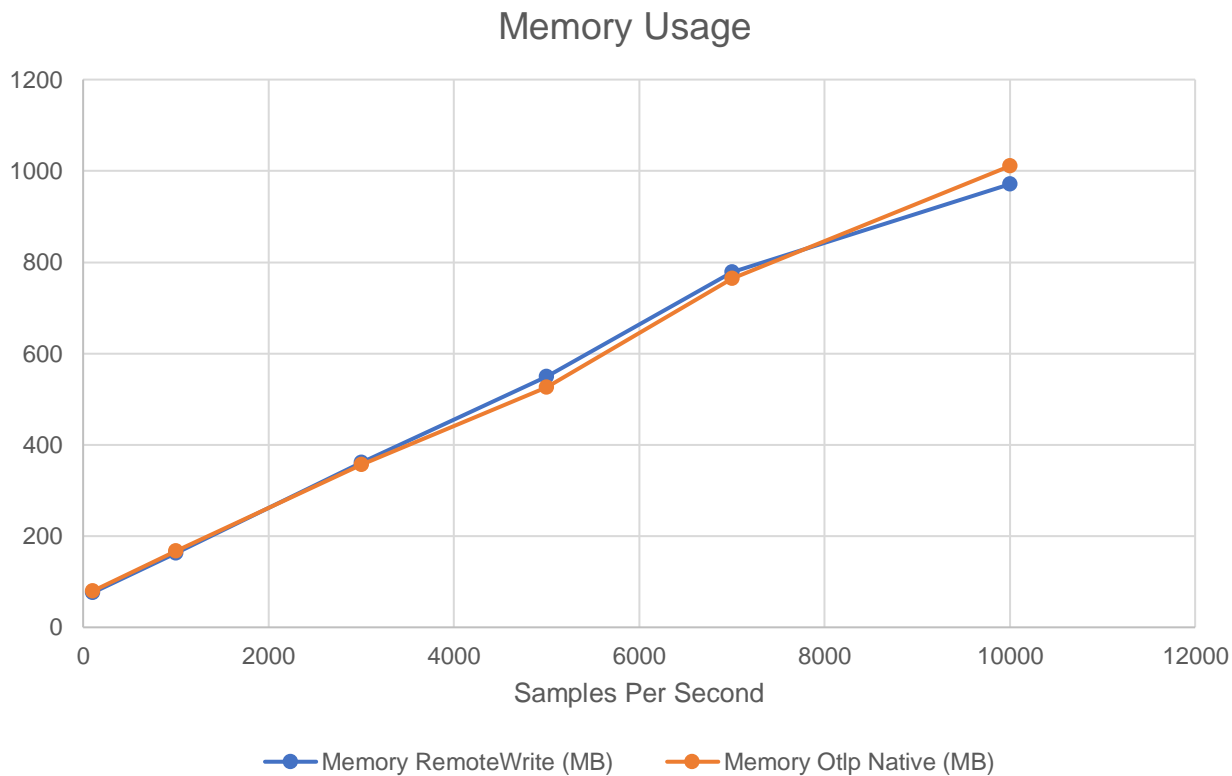
Advantages

- Pull mechanism, avoid congestion.
- Smooth integration with existing Prometheus based monitoring system.
- Reliability.

Considerations

- Potential data loss due to long scrape interval.
- Operational considerations for collector (e.g. HA)







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