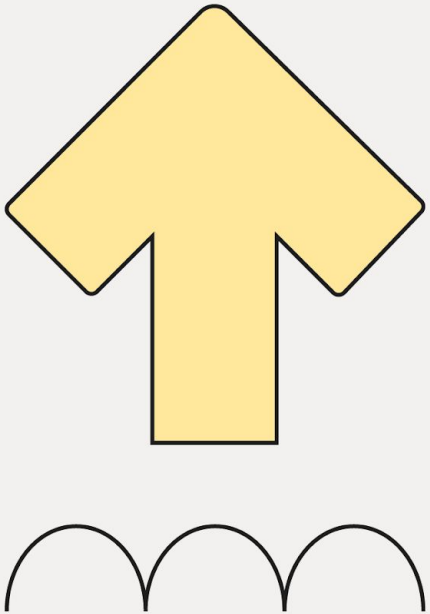
From Data Ingestion to Alert Firing: How Observability Works Under the Hood



Putu Sintia

Google Developer Groups

Hi!! I’m Sintia

Balinese IE with 2 years experience in cloud infrastructure, DevOps and observability.

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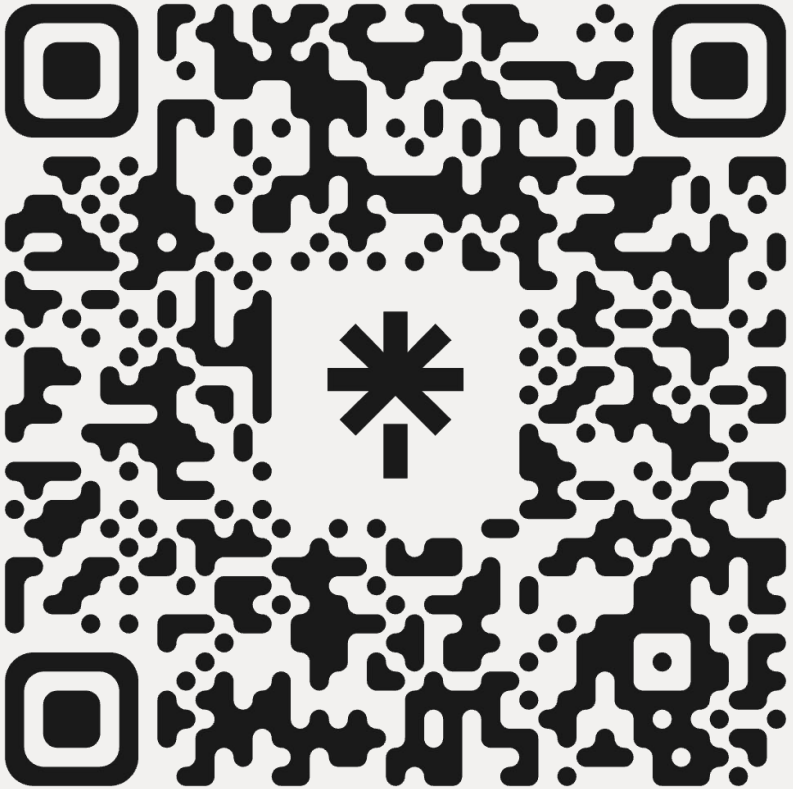
More about me, you can see in my linktree with scan the barcode here or go to the link below

https://linktr.ee/putusintia



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This is related from previous topic,

“*Beyond console.log: Observability for Frontend Engineer*”

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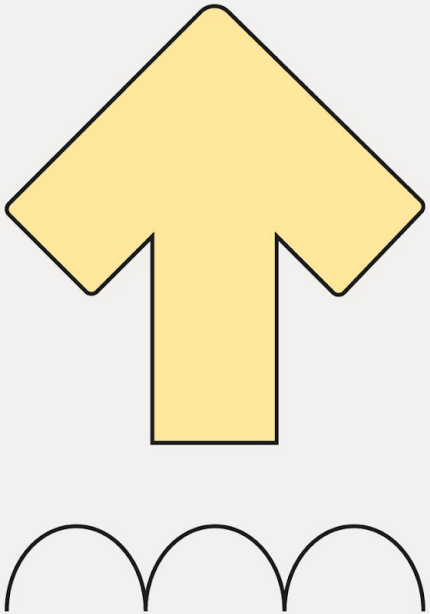
01

Arsitektur pipeline observability

perjalanan data dari
FE lewat collector
sampai storage



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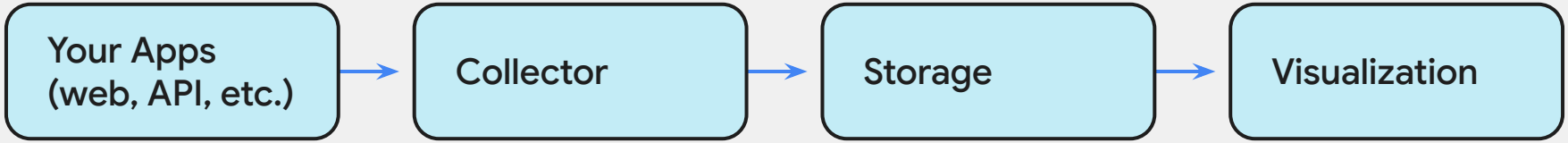
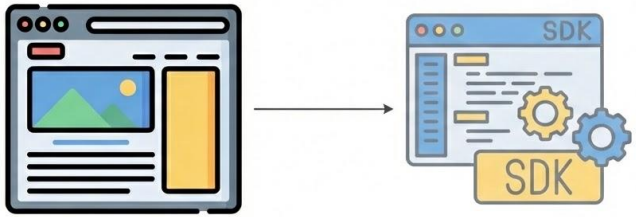
Observability Pipeline



Frontend layer

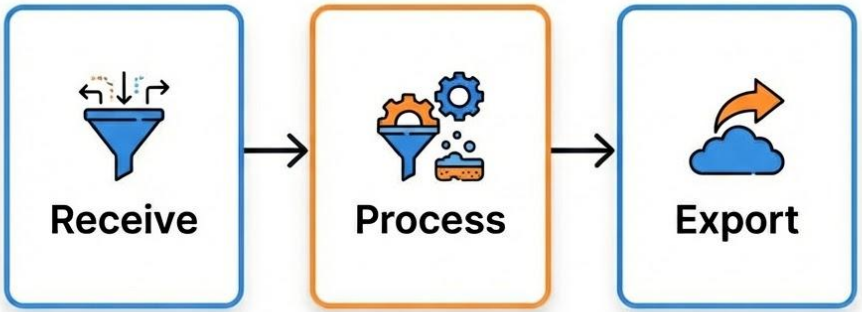


Merekam metrics, logs, traces — lalu kirim via OTLP

Grafana

Faro

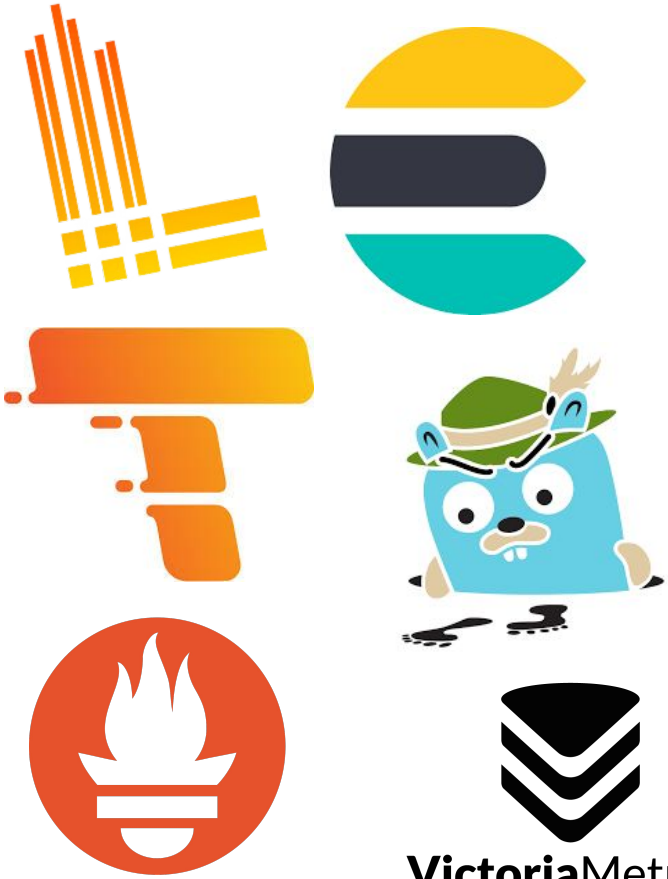
Collector layer



Filter · Bersihkan PII · Routing

Grafana Alloy

Storage & Visualisasi



Data dipisah, dikorelasikan di satu UI

"Data sudah sampai di storage — dipisah jadi tiga. Cuma . . . "

kenapa harus tiga?

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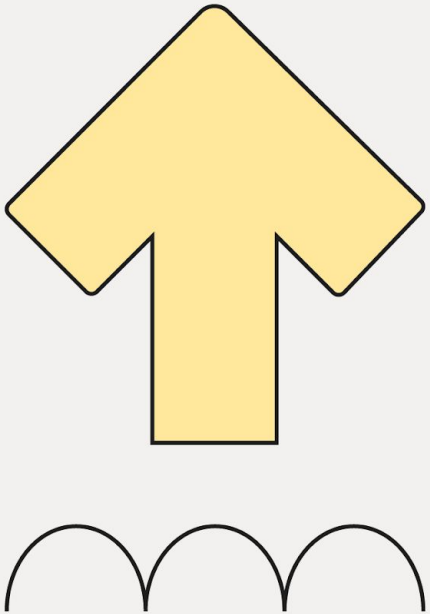
02



Three pillars (metrics, logs, traces)

Bagaimana ketiganya saling melengkapi saat debugging incident

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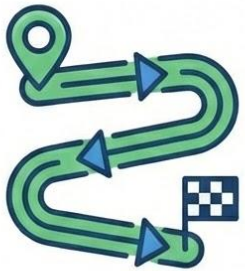
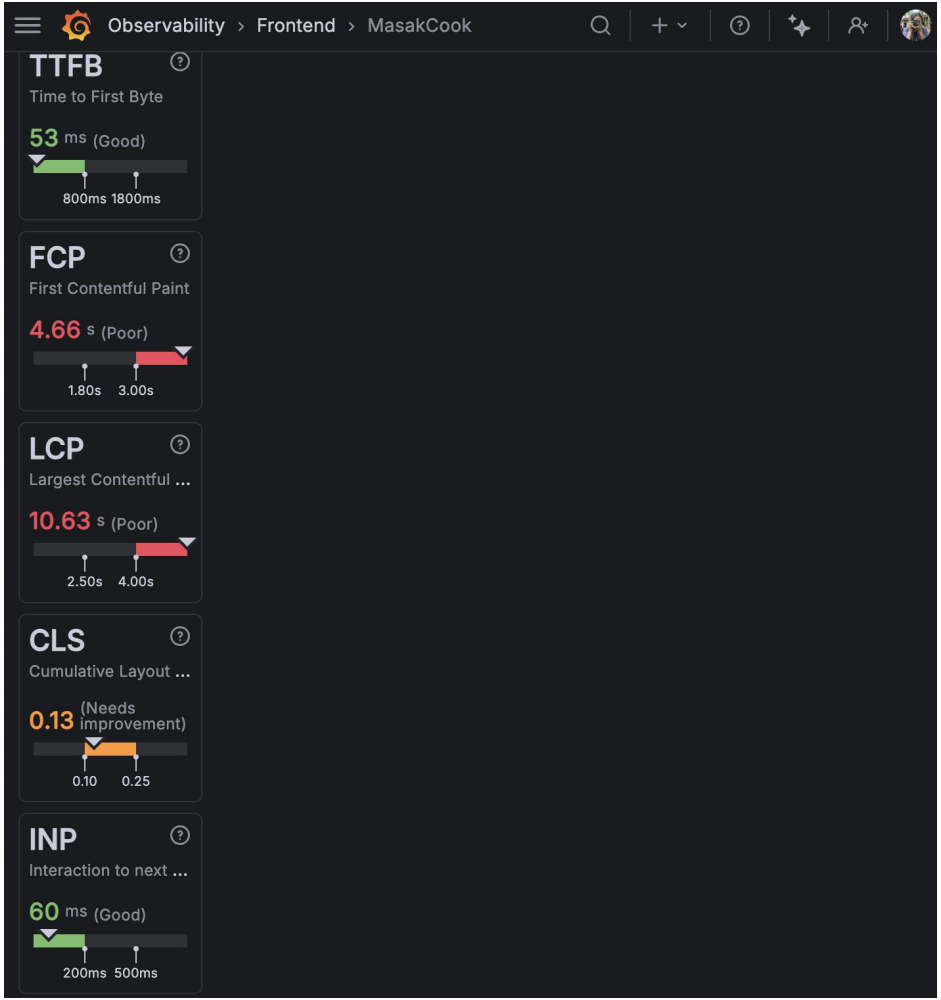
Metrics

Logs

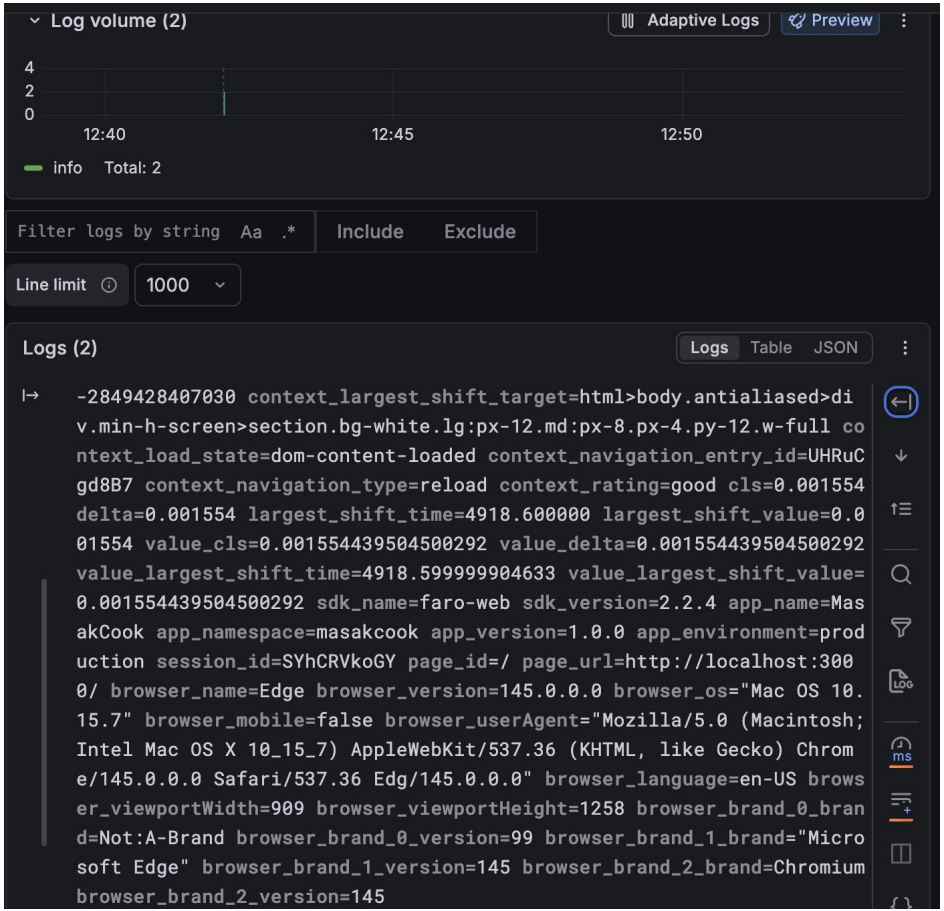


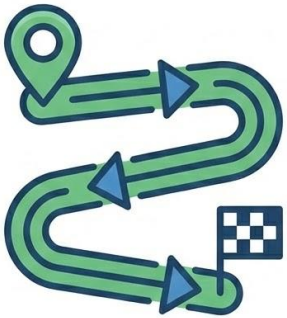
Traces

Metrics


Observability › Frontend › MasakCook
TTFB
Time to First Byte
53 ms (Good)
800ms 1800ms
FCP
First Contentful Paint
4.66 s (Poor)
1.80s 3.00s
LCP
Largest Contentful ...
10.63 s (Poor)
2.50s 4.00s
CLS
Cumulative Layout ...
0.13 (Needs improvement)
0.10 0.25
INP
Interaction to next ...
60 ms (Good)
200ms 500ms

Logs


Log volume (2)
Adaptive Logs
Preview
4
2
0
12:40
12:45
12:50
info
Total: 2
Filter logs by string
Aa
.*
Include
Exclude
Line limit
1000
Logs (2)
Logs
Table
JSON
-2849428407030 context_largest_shift_target=html>body.antialiased>div.min-h-screen>section.bg-white.lg:px-12.md:px-8.px-4.py-12.w-full context_load_state=dom-content-loaded context_navigation_entry_id=UHRuCgd8B7 context_navigation_type=reload context_rating=good cls=0.001554 delta=0.001554 largest_shift_time=4918.600000 largest_shift_value=0.001554 value_cls=0.001554439504500292 value_delta=0.001554439504500292 value_largest_shift_time=4918.599999904633 value_largest_shift_value=0.001554439504500292 sdk_name=faro-web sdk_version=2.2.4 app_name=MasakCook app_namespace=masakcook app_version=1.0.0 app_environment=production session_id=SYhCRVkoGY page_id=/ page_url=http://localhost:3000/ browser_name=Edge browser_version=145.0.0.0 browser_os="Mac OS 10.15.7" browser_mobile=false browser_userAgent="Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/145.0.0.0 Safari/537.36 Edg/145.0.0.0" browser_language=en-US browser_viewportWidth=909 browser_viewportHeight=1258 browser_brand_0_brand=Not:A-Brand browser_brand_0_version=99 browser_brand_1_brand="Microsoft Edge" browser_brand_1_version=145 browser_brand_2_brand=Chromium browser_brand_2_version=145



Traces

Service & Op... 0µs 688.5ms 1.38s 2.07s 2.75s

MasakCook HTTP GET (2.75s)

HTTP GET

Logs for this span | Session for this span | Share

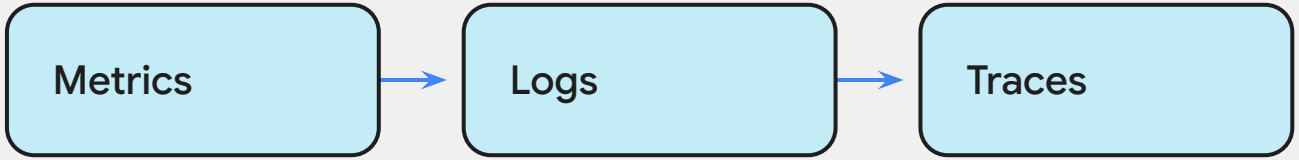
Service: MasakCook Duration: 2.75s Start Time: 0µs (11:36:07.513) Kind: client

Status: unset Library Name: @opentelemetry/instrumentation-fetch Library Version: 0.212.0

Span attributes

component	"fetch"
http.host	"localhost:3000"
http.method	"GET"
http.response_content_length	166
http.response_content_length_uncompressed	323
http.scheme	"http"
http.status_code	200
http.status_text	"OK"
http.url	"http://localhost:3000/recipes/5?_rsc=1r34m"
http.user_agent	"Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/145.0.0.0 Safari/537.36 Edg/145.0.0.0"
session.id	"SYhCRVkoGY"
url.template	"http://localhost:3000/recipes/*"

Alur investigasi



Dari gambaran besar → makin spesifik

“Kita sudah bisa analisis data. Tapi tidak mungkin mantengin layar terus”

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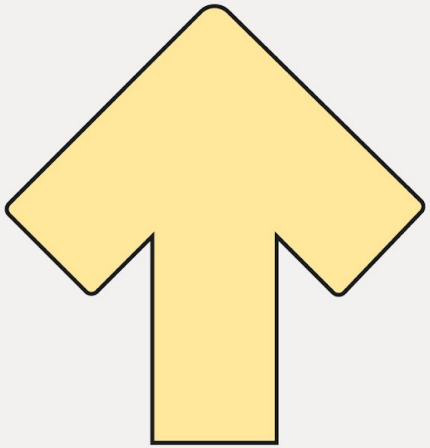
03

Alerting

kenapa penting dan
bagaimana membuat
meaningful alert



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Kenapa alerting penting?

POV: kamu dapet 99+ notifikasi alert

...dan semuanya false positive

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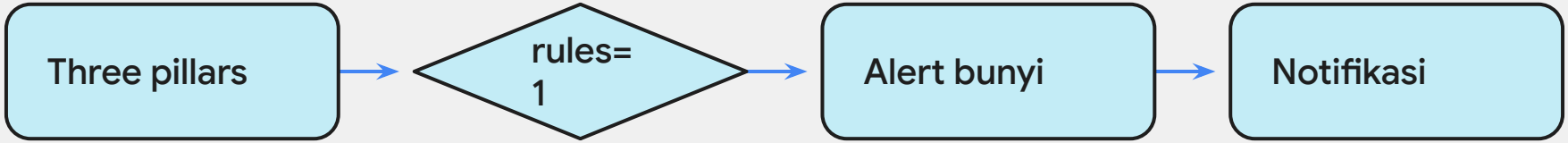
Alert pipeline



Rules + threshold

Alert fatigue

Terlalu banyak alert
=
tidak ada yang dipedulikan

Alerting: The Noise vs. The Meaningful

"The Noise" (Bad Alert) ❌

⚠️ **Title:** [CRITICAL] Error in Frontend.
Content: An error occurred in the production environment. Please check the logs immediately.

Kesan:
Panik, tidak tahu harus mulai dari mana, "apa yang rusak?", "siapa yang kena?".

"The Meaningful" (Good Alert) ✅

✅ **Title:** [WARNING] Checkout Failure Rate > 2%.
Content:

- **Symptom:** User gagal klik tombol 'Bayar'.
- **Scope:** Terjadi pada browser Safari iOS (Versi 17.x).
- **Impact:** ~50 user terdampak dalam 5 menit terakhir.
- **Runbook:** [Link: Cara rollback deployment FE]

Kesan:
Tenang, tahu masalahnya spesifik (Safari), tahu cara memperbaikinya.

Key Takeaways

1

Unified Pipeline (The Flow)

End-to-End: Data mengalir dari SDK Frontend → Collector → Storage → Visualize.

2

The Power of Three (The Pillars)

Alur Investigasi: Selalu mulai dari yang ringan ke dalam: Metrics → Logs → Traces.

3

Smart Alerting (The "Sleep-Well" Strategy)

Alert pada apa yang dirasakan user (Error/Latency), bukan sekedar angka teknis

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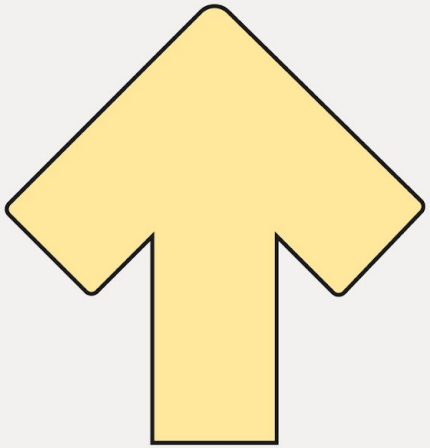
QnA



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Thank You!

Questions? Let's discuss!

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Zero One Group

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linkedin.com/in/putusintia

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