

# GA4 setup — *the events that survive.*

A printable checklist for setting up GA4 so it reconciles with your CRM and your ad platforms. Container architecture, BigQuery export, consent-mode v2, the dozen events that survive the next browser update.

SECTION 01 · ARCHITECTURE

# Two containers, *not one.*

Web GTM stays in the browser. Server-side GTM runs on a subdomain you control. The split is what makes the data clean and the cookies live longer than 7 days.

## Why both

- Web GTM is for the browser-native stuff.** Page views, click handlers, scroll depth. Anything that needs `document` or `window`.

---

- Server GTM is for the durable stuff.** Conversions API calls, GA4 measurement protocol, first-party-cookie writes via the `_ga` response header. Doesn't trip ad-blockers. Doesn't die when Safari shortens cookies.

---

- Cost ladder.** Web container is free. Server container is ~\$120/month on Cloud Run for most sites, scales linearly with traffic.

## Account structure

LAYER	ONE PER	NAMING
Account	Company / legal entity	Acme Inc
Container	Site or brand	acme-marketing-web
Workspace	Person working on a change	sean / ga4-events / 2026-06

## Naming convention

Three tokens, separated by hyphens: `{env}-{purpose}-{site}`. Example: `prod-marketing-acme`, `stg-marketing-acme`, `prod-checkout-acme`. The env token first means filtering and sorting are free.

SECTION 02 · EVENT SCHEMA

# The twelve events we ship *on every retainer.*

A short list. Anything not on it usually overlaps something on it.

Recommended params per event — name and type. If a row says "auto", GA4 sets it for you and you should leave it alone.

EVENT	TRIGGER	RECOMMENDED PARAMS
page_view	auto	page_location, page_referrer, page_title
view_item	PDP load	items[] (item_id, item_name, price, item_category, item_brand)
add_to_cart	Cart button click	currency, value, items[]
begin_checkout	Checkout step 1	currency, value, items[], coupon
purchase	Order confirmation	transaction_id, value, tax, shipping, items[]
generate_lead	Sales-qualified form	value (est. LTV), currency, form_id
form_submit	Any form submit	form_id, form_destination, form_name
file_download	PDF / asset click	file_name, file_extension, link_url
video_complete	90% watched	video_title, video_duration, video_provider
sign_up	Account created	method (email, google, sso)
login	Authenticated session	method, user_id (hashed)
search	Search submit	search_term, results_count

*"If the events table has 40 rows, you're tracking noise. If it has 12, you're tracking outcomes."*

— ANALYTICS SOP / 03

## SECTION 03 · BIGQUERY

# BigQuery export, *set up once.*

Free up to 1 million events / day. Worth turning on every time, even on small properties. The schema is what you'll model dbt against.

## Setup

---

- 1 Link from GA4 Admin**

Admin → BigQuery Links → Link. Pick a project, pick a region (match where dbt runs). Daily export + streaming export both on. Streaming is intraday, daily is the full export.
- 2 Partition + cluster**

GA4 partitions by `event_date` automatically. Cluster on `event_name` and `user_pseudo_id` for the queries you'll run most.
- 3 Set retention**

Default is 60 days. Set to "Never expire" or your data lake will silently delete the past. Storage is \$0.02/GB/month.
- 4 Naming**

Dataset: `analytics_<propid>`. Tables: `events_YYYYMMDD`. Don't rename — every downstream tool expects the default.

## What to model in dbt

- Sessions table** from `events_*` rolled up by `session_id`. The source of truth for "did this user convert in this session?"
- Users table** by `user_pseudo_id`, joined to your CRM via the hashed `user_id` on `login` / `sign_up`.
- Pages table** for content reporting — title, URL, sessions, conversions per page.
- Channels table**, with your own rules (not GA4 default), so paid social attribution matches your CRM.

## Sampling caveats

BigQuery export is unsampled. The GA4 UI samples above ~10M events in a query. If a number in the UI doesn't match dbt, that's why. Trust the warehouse.

## SECTION 04 · CONSENT-MODE V2

# Consent-mode v2, *wired right.*

Required in the EU and the UK since 2024. Default deny, then update on the visitor's choice. Cookieless pings still fire and Google models the conversions you miss.

## Default vs advanced

MODE	WHAT FIRES BEFORE CONSENT	WHAT GETS MODELED
Default	Nothing. Standard cookie-blocker behavior.	Nothing modeled. Worst conversion volume.
Advanced	Cookieless pings — no client ID, redacted IP, no ad personalization. Just enough for Google to model.	Google fills in the missing conversions via behavioral modeling. Recovers ~30–50%.

## The wiring

- ### 1 Set defaults before any other tag fires

In GTM, a "Consent Initialization" trigger with all consent types denied. Region-scope to EU + UK so US visitors don't lose data.
- ### 2 Wire the CMP to `gtag('consent', 'update', {...})`

Most CMPs (OneTrust, Cookiebot, iubenda) have a built-in GTM integration. If yours doesn't, the four flags to set: `ad_storage`, `analytics_storage`, `ad_user_data`, `ad_personalization`.
- ### 3 Debug with the GA4 Tag Assistant

Open `gtag.dev` (the Tag Assistant). Reload the site without consent — confirm cookieless pings. Accept the banner — confirm the events get a client ID.
- ### 4 Verify in GA4 Admin

Admin → Data Streams → Web Stream → Consent Settings. The status should read "Receiving consent signals". Reports → Advertising → Attribution → Modeled conversions confirm the modeled volume.

## SECTION 05 · CROSS-DOMAIN · SECTION 06 · VALIDATION

# Cross-domain, *validation, alerts.*

## Cross-domain config

- Set the **Linker** parameter in your GA4 config tag — add every domain that should share a session.
- \_gl** on outbound links encodes the client ID. Don't strip it in URL canonicalization.
- Subdomains share by default — linker is only for entirely different registered domains.
- Payment redirects (Stripe, PayPal) drop **\_gl** . Pass through as **client\_reference\_id** , re-attach on return.

## Validation + monitoring

- DebugView** with **?debug\_mode=true** . Validate params, not just event names.
- Realtime report** side-by-side with the live site. Anything missing is a tag that didn't fire.
- Looker Studio skeleton** — four scorecards (Users, Sessions, Conversions, Revenue), one trend each, one Channels table, one Top Pages. Twelve tiles, one page.

## Four alerts on every account

- Conversion drop > 30% day-over-day**. Custom Insight in GA4, email on trigger.
- Zero events from a key tag, 1 hour**. BigQuery scheduled query + Slack webhook.
- Server GTM container down**. Cloud Run uptime check, PagerDuty escalation.
- BigQuery export delayed > 6 hours**. Daily cron checks the latest **events\_YYYYMMDD** partition.

## Want this run on your stack?

Send us your GA4 property + container links. We come back with a triaged list and a fixed cost.

[Book a working session →](#)

[socialcatnip.com/contact](https://socialcatnip.com/contact)