

DATABASE SCHEMA SPECIFICATION

Paid Media Performance Dashboard (V1)

1. Overview

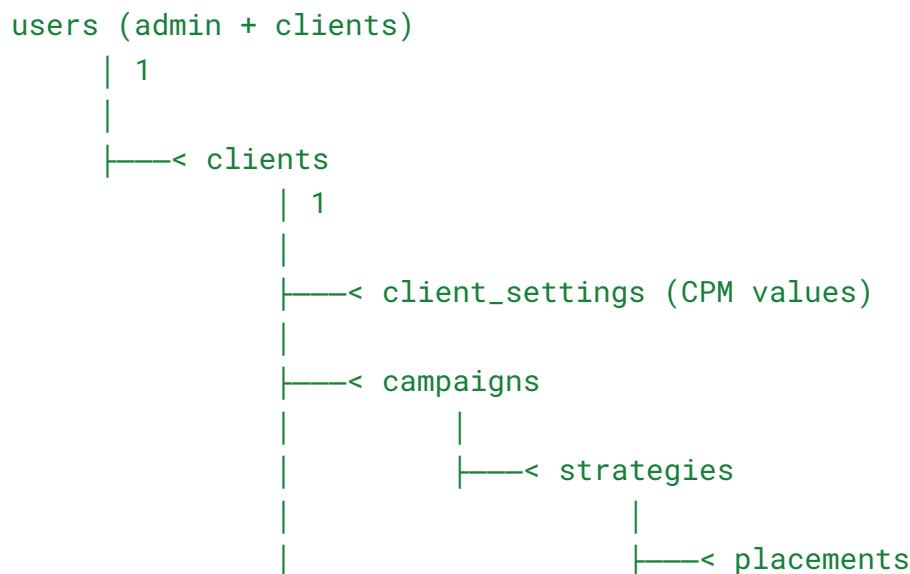
This schema supports:

- Daily S3 data ingestion
- Historical record storage
- CPM-based derived metric calculations
- Multi-level performance breakdowns
- User authentication
- Client management
- Weekly & monthly summaries
- Ingestion logging
- Admin portal features

All tables use **PostgreSQL** conventions.

Foreign keys use **ON UPDATE CASCADE, ON DELETE RESTRICT** unless defined otherwise.

2. Entity Relationship Diagram (Text Summary)



```

    |
    |
    |
    |   |
    |   |
    |   |   |
    |   |   |   < creatives
    |   |   |
    |   |   < daily_metrics
    |   |
    |   |   < weekly_summaries
    |   |   |
    |   |   < monthly_summaries
    |
ingestion_logs (standalone)
staging_media_raw (standalone for ingestion pipeline)

```

3. TABLE DEFINITIONS

Below is each table, its columns, data types, defaults, indexes, and notes.

3.1 users

Stores authenticated users (admin and clients).

Column	Type	Notes
id	UUID PK	Primary key
email	VARCHAR(255)	Unique
password_has_h	TEXT	Bcrypt/argon2
role	VARCHAR(20)	'admin' or 'client'
created_at	TIMESTAMP	Default NOW()
updated_at	TIMESTAMP	Auto-update

Indexes:

- idx_users_email_unique

3.2 clients

One record per client company.

Column	Type	Notes
id	UUID PK	
name	VARCHAR(255)	Display name
status	VARCHAR(20)	'active' or 'disabled'
created_at	TIMESTAMP	
updated_at	TIMESTAMP	

Indexes:

- `idx_clients_name`

3.3 client_settings

Stores CPM and other client-specific configuration.

Column	Type	Notes
id	UUID PK	
client_id	UUID FK	→ clients.id
cpm	DECIMAL(10,4)	Client CPM rate
effective_date	DATE	Optional
created_at	TIMESTAMP	
updated_at	TIMESTAMP	

Indexes:

- `idx_client_settings_client_id`

3.4 campaigns

Campaigns are unique per client.

Column	Type	Notes
id	UUID PK	
client_id	UUID FK	→ clients.id
name	VARCHAR(255)	Campaign name
created_at	TIMESTAMP	
updated_at	TIMESTAMP	

Indexes:

- `idx_campaign_client_name` (client_id + name unique)

3.5 strategies

Each strategy belongs to a campaign.

Column	Type	Notes
id	UUID PK	
campaign_id	UUID FK	→ campaigns.id
name	VARCHAR(255)	Strategy name
created_at	TIMESTAMP	
updated_at	TIMESTAMP	

Indexes:

- `idx_strategy_campaign_name` (campaign_id + name unique)

3.6 placements

Placement belongs to a strategy.

Column	Type	Notes
id	UUID PK	
strategy_id	UUID FK	→ strategies.id
name	VARCHAR(255)	Placement name
created_at	TIMESTAMP	
updated_at	TIMESTAMP	

3.7 creatives

Creative-level items belong to a placement.

Column	Type	Notes
id	UUID PK	
placement_id	UUID FK	→ placements.id
name	VARCHAR(255)	Creative name
preview_url	TEXT	Optional (phase 2+ if provided by partner)
created_at	TIMESTAMP	
updated_at	TIMESTAMP	

3.8 daily_metrics

Stores processed data with CPM-adjusted spend and derived metrics.

Column	Type	Notes
id	UUID PK	
client_id	UUID FK	→ clients.id

date	DATE	Reporting date
campaign_id	UUID FK	
strategy_id	UUID FK	
placement_id	UUID FK	
creative_id	UUID FK	
impressions	BIGINT	
clicks	BIGINT	
ctr	DECIMAL(12,6)	CTR
conversions	BIGINT	
conversion_revenue	DECIMAL(12,2)	
spend	DECIMAL(12,2)	CPM-adjusted spend
cpc	DECIMAL(12,4)	Derived
cpa	DECIMAL(12,4)	Derived
roas	DECIMAL(12,4)	Derived
created_at	TIMESTAMP	
updated_at	TIMESTAMP	

Indexes:

- `idx_metrics_client_date`
- `idx_metrics_campaign`
- `idx_metrics_strategy`
- `idx_metrics_placement`
- `idx_metrics_creative`

3.9 weekly_summaries

Aggregated weekly performance results.

Column	Type	Notes
id	UUID PK	
client_id	UUID FK	
week_start	DATE	Monday
week_end	DATE	Sunday
impressions	BIGINT	
clicks	BIGINT	
conversions	BIGINT	
revenue	DECIMAL(12,2)	
spend	DECIMAL(12,2)	
ctr	DECIMAL(12,6)	
cpc	DECIMAL(12,4)	
cpa	DECIMAL(12,4)	
roas	DECIMAL(12,4)	
top_campaigns	JSONB	Array of ranked items
top_creatives	JSONB	Array of ranked items
created_at	TIMESTAMP	

3.10 monthly_summaries

Similar to weekly, for calendar months.

Column	Type	Note
id	UUID PK	
client_id	UUID FK	
month_start	DATE	
month_end	DATE	
impressions	BIGINT	
clicks	BIGINT	
conversions	BIGINT	
revenue	DECIMAL(12,2)	
spend	DECIMAL(12,2)	
ctr	DECIMAL(12,6)	
cpc	DECIMAL(12,4)	
cpa	DECIMAL(12,4)	
roas	DECIMAL(12,4)	
top_campaign	JSONB	
top_creatives	JSONB	
created_at	TIMESTAMP	

3.11 staging_media_raw

Used during ingestion.

Column	Type	Notes
id	UUID PK	
ingestion_run_id	UUID	Links to ingestion_logs
client_id	UUID FK	

date	DATE
campaign_name	VARCHAR(255)
strategy_name	VARCHAR(255)
placement_name	VARCHAR(255)
creative_name	VARCHAR(255)
impressions	BIGINT
clicks	BIGINT
ctr	DECIMAL(12,6)
conversions	BIGINT
conversion_revenue	DECIMAL(12,2)
created_at	TIMESTAMP

3.12 ingestion_logs

Tracks every ingestion attempt.

Column	Type	Notes
id	UUID PK	
run_date	DATE	Date of the file ingested
status	VARCHAR(20)	'success' or 'failed'
message	TEXT	Error or success message
records_loaded	INT	Number of rows parsed
records_failed	INT	Number of rows rejected
started_at	TIMESTAMP	
finished_at	TIMESTAMP	

```
file_name      VARCHAR(255)
created_at     TIMESTAMP      Default NOW()
```

4. Index Strategy

We apply indexing in 3 areas:

1. **Query speed** (dashboards filter by date, client, campaign)
2. **Ingestion speed**
3. **Weekly/monthly summary generation**

Important indexes include:

- `idx_metrics_client_date` (PRIMARY for dashboard speed)
- `idx_campaign_client_name`
- `idx_strategy_campaign_name`
- `idx_users_email_unique`

5. Row-Level Security (Optional but recommended)

To ensure clients only see their own data:

Enable PostgreSQL RLS on:

- `daily_metrics`
- `weekly_summaries`
- `monthly_summaries`
- campaigns, strategies, placements, creatives

Policy:

```
client_id = (SELECT client_id FROM users WHERE id = current_user_id)
```

6. Future Expandability

The schema is intentionally built to support:

- Adding new channels (SEO, GA4, CRM)

- Adding new metrics
- Multiple media partners
- Seasonal pacing models
- Client white-labeling
- Role-based permissions
- Multi-user login per client