

Migration Best Practices

Google Ads API Migration Workshops - 2021



Thanet Knack Praneenararat, Developer Relations Engineer

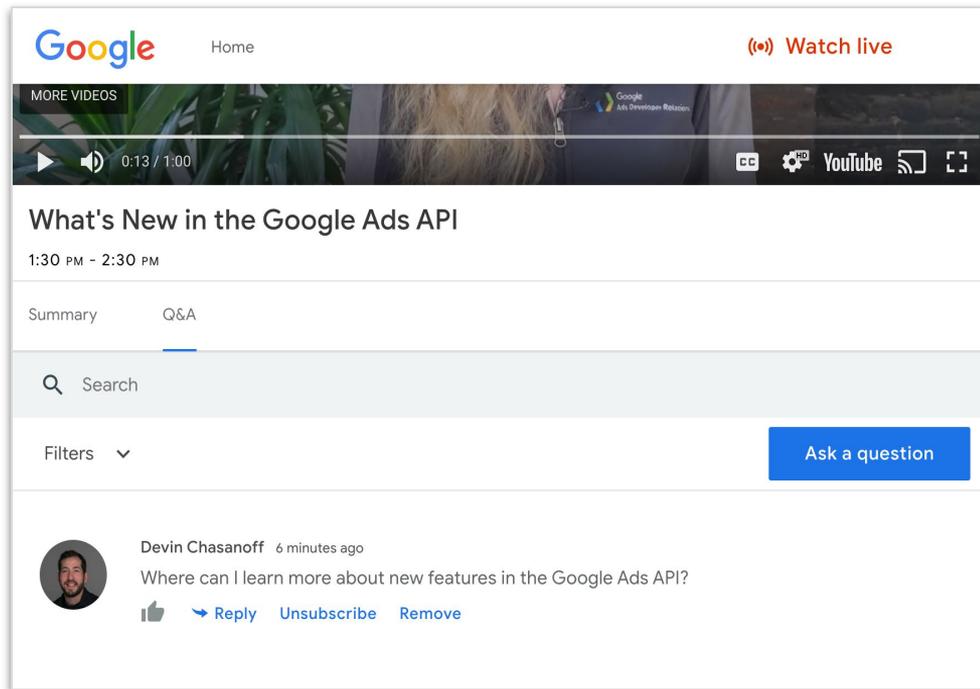
Presenter



**Thanet Knack
Praneenarat**
Developer Relations Engineer

We're here to help!

- Q&A forum located below the video
- Our team is standing by to help answer your questions
- Submit questions at anytime
- Upvote interesting questions



The screenshot shows a YouTube video player interface. At the top, the Google logo is on the left, 'Home' is in the center, and a red 'Watch live' button is on the right. Below the logo is a 'MORE VIDEOS' section with a video thumbnail. The video player shows a play button, a volume icon, and a progress bar at 0:13 / 1:00. To the right of the progress bar are icons for closed captions, settings, YouTube, and full screen. Below the video player is the video title 'What's New in the Google Ads API' and the time '1:30 PM - 2:30 PM'. There are two tabs: 'Summary' and 'Q&A', with 'Q&A' being the active tab. Below the tabs is a search bar with a magnifying glass icon and the text 'Search'. To the left of the search bar is a 'Filters' dropdown menu. To the right is a blue button labeled 'Ask a question'. Below the search bar is a Q&A post by 'Devin Chasanoff' from '6 minutes ago'. The post text is 'Where can I learn more about new features in the Google Ads API?'. Below the text are icons for a thumbs up, a reply arrow, and links for 'Reply', 'Unsubscribe', and 'Remove'.

Agenda

- Efficient data retrieval
- Efficient mutate
- Excelling at GAQL queries



Efficient data retrieval

Use cases

- Retrieving values of properties and metrics
- Reporting
- Local sync



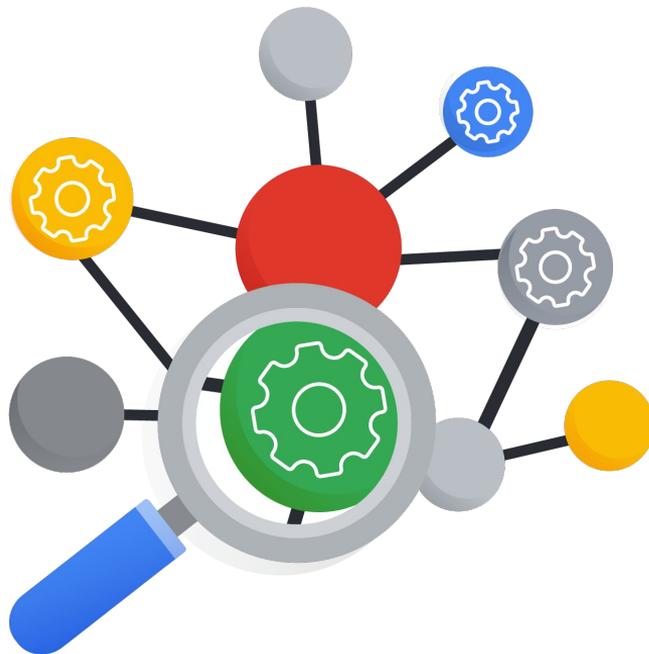
SearchStream vs. Search vs. Get

SearchStream

- Allows you to retrieve information for unlimited rows with a single request
- When to use SearchStream:
 - By default
 - Especially for large downloads
 - Except when you need Search...

Search

- Retrieves information one page at a time
- **Always** set the [page size](#) to be 10,000 unless you are severely memory constrained
- Client libraries handle pagination automatically, except if you want to go backwards

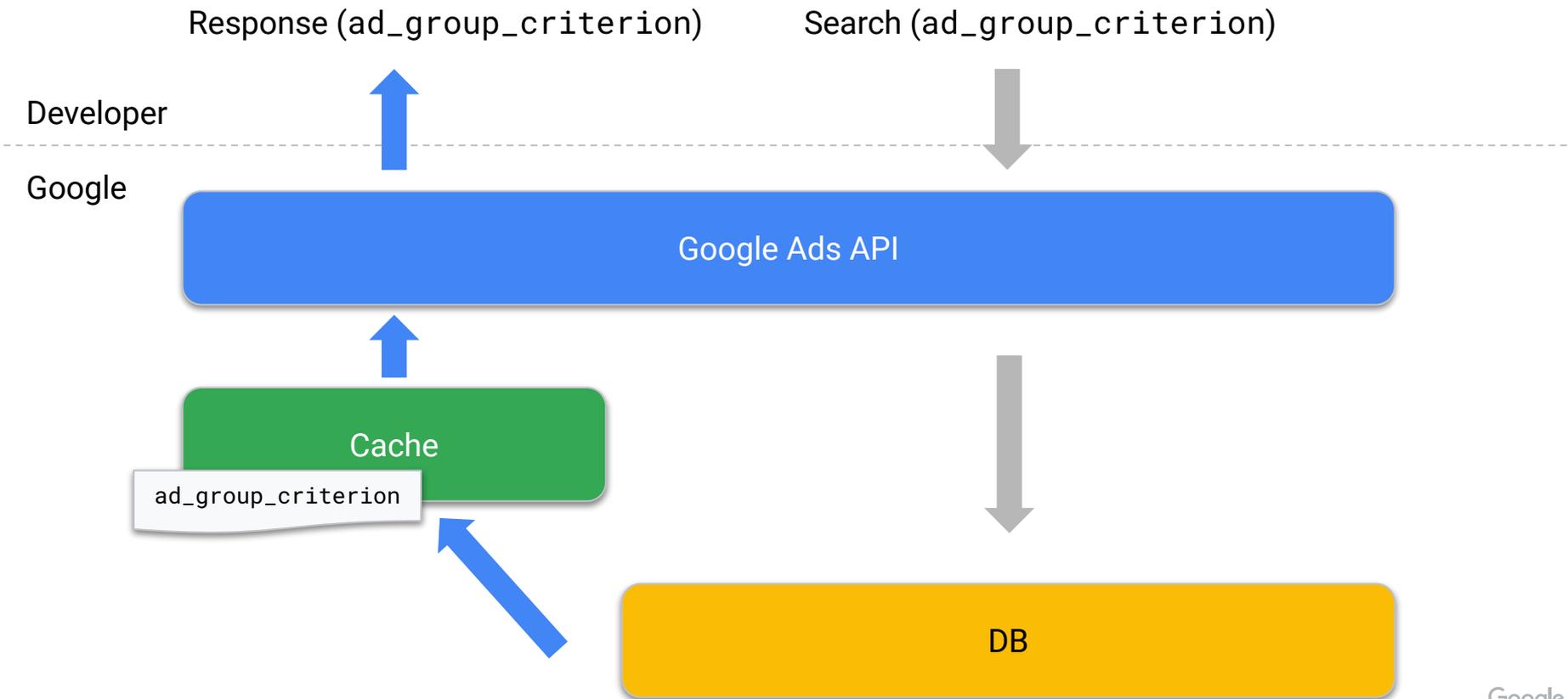


Common scenarios to use Search / paging

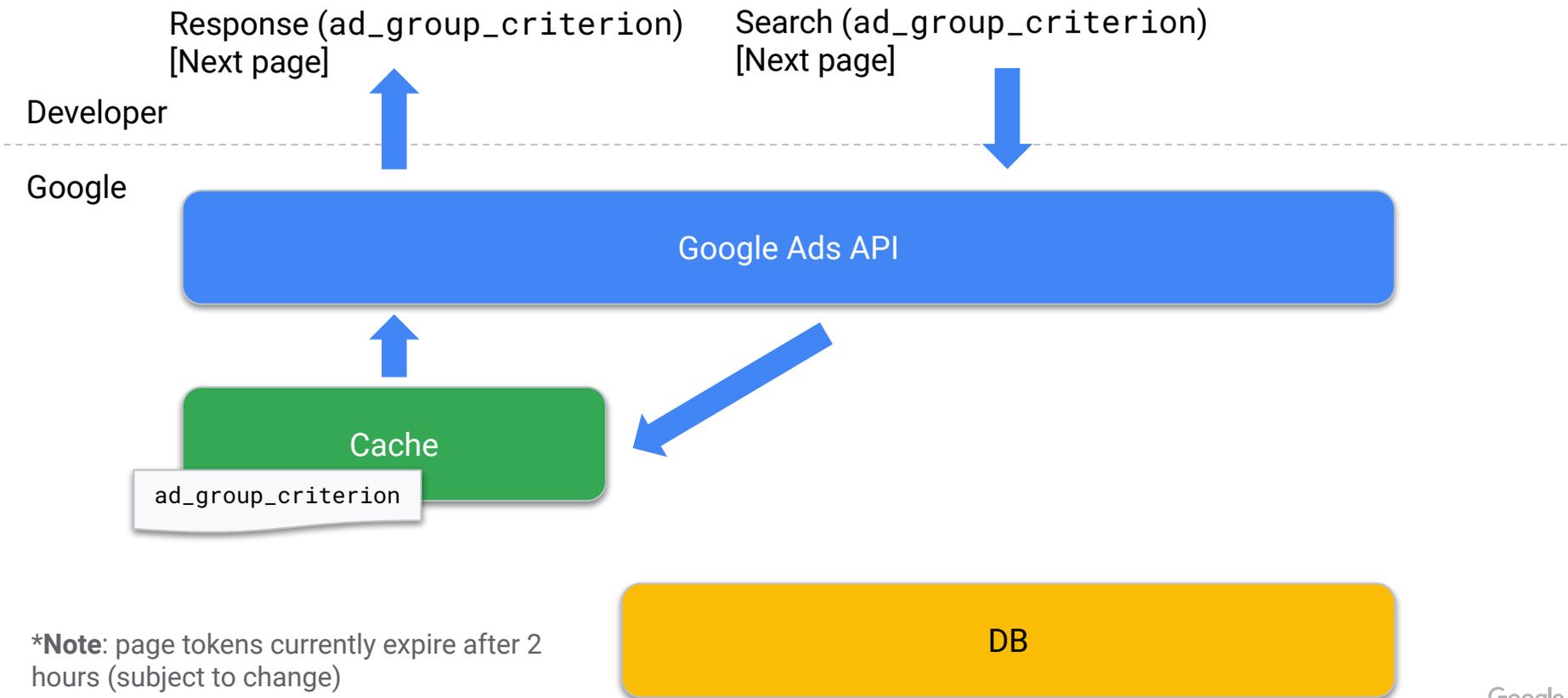
- **Unstable connection:** paging allows retries of specific pages
- **Need to go backward:** store the [next_page_token](#)



Simplified Google Ads API architecture



Simplified Google Ads API architecture



How to use Search to go backwards

- Store the first page of the result and the `next_page_token`
 - You must always store the first page because there is no “next page” token for it
- For each page, keep track of each `next_page_token*` (assuming `page_size=10_000`):

Request Number	Rows Returned	Next Page Token
1	1 - 10,000	token="t2"
2	10,001 - 20,000	token="t3"
3	20,001 - 30,000	token="t4" ...

Example of using Search to go backwards

- **Example:** you are downloading row 25,000 (page 3) but need row 15,000 (page 2)
 1. Store `next_page_token` for "t4"
 2. Go back: `GAS.Search(next_page_token="t2")`
 3. Resume: `GAS.Search(next_page_token="t4")`

Request Number	Rows Returned	Next Page Token
1	1 - 10,000	token="t2"
2	10,001 - 20,000	token="t3"
3	20,001 - 30,000	token="t4" ...

When to use Get

- **Only** for development / debugging purposes

Never in production

Three ways to retrieve information

	<u>GAS.SearchStream</u>	<u>GAS.Search</u>	<u><service>.Get</u>
Primary use	Most scenarios	Special circumstances	Debugging and testing only (Limited to 1,000 requests per day)
# of rows	All sizes	<u>Up to 10k rows</u> per page, unlimited pages	One row, one object
# of columns	Explicit in query	Explicit in query	All columns

Bottom line: to retrieve information,

use SearchStream by default

Caching Metrics

- Same infrastructure for *account statistics (metrics)* for both Google Ads UI and API
- Metrics calculation
 - Most metrics (such as clicks, conversions) are delayed **< 3 hours**
 - *Some* metrics are only calculated **once per day**
- Best practices
 - No need to retrieve metrics **more frequently than they are calculated**
 - **Cache metrics** using the [data freshness guidelines](#)

CSV considered harmful

- The legacy AdWords API provided report download in [several CSV flavors](#)
- The Google Ads API reports are **more advanced**:
 - **Full mutable** objects (as protobuf) rather than exported text
 - The full object **hierarchy** is *preserved* rather than flattened into CSV
 - Reducing duplication of columns ("normalization")
 - **Note:** Exporting from protobuf to JSON would result in a **larger size** than the equivalent GZIPed CSV

Efficient mutate

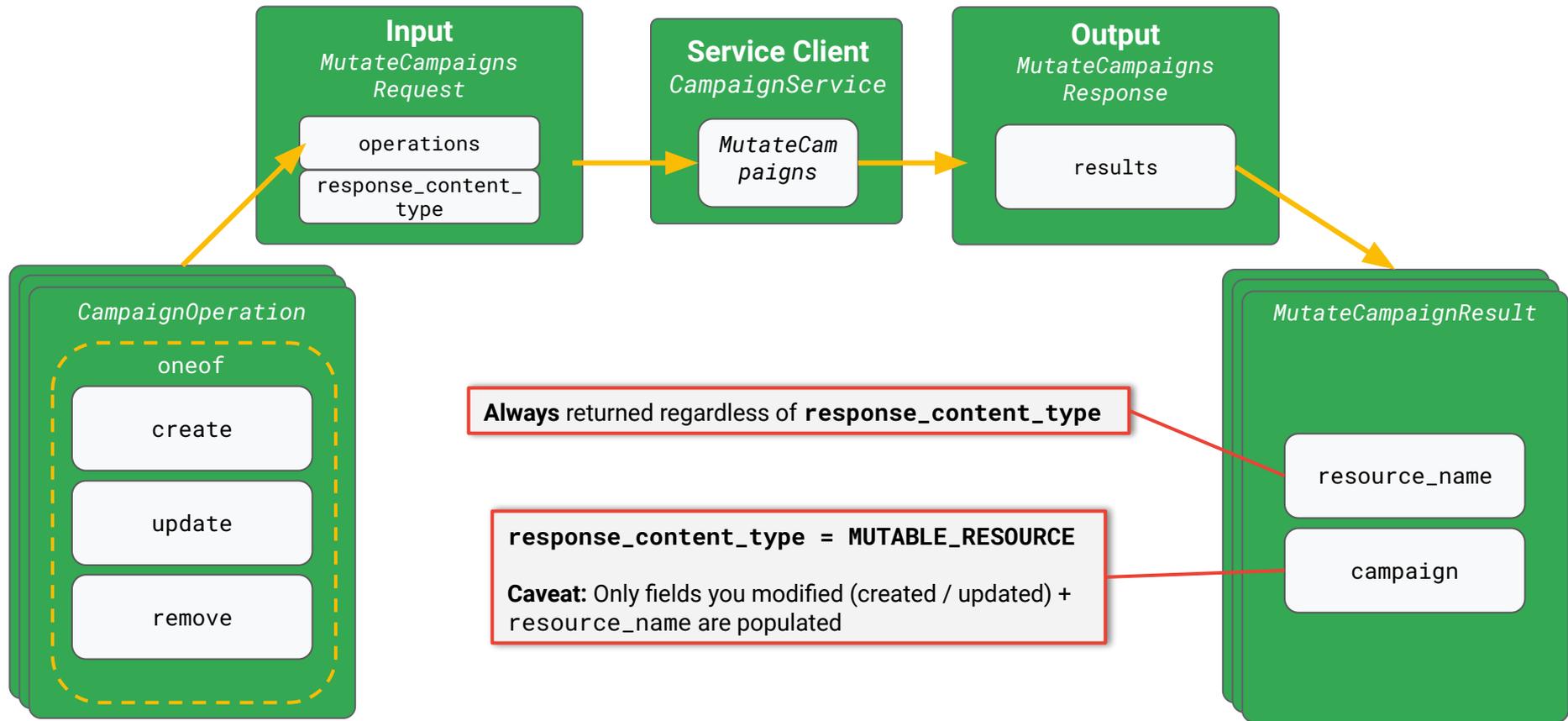
Recap - mutate method types

	Single-resource	Multi-resource 	Batch processing
Service	e.g., CampaignService.MutateCampaigns	GoogleAdsService.Mutate	BatchJobService
Request	5,000 operations*	5,000 operations*	1 million operations
Entity Mixture	One resource type	Mixed resource types	Mixed resource types
Timing	Synchronous	Synchronous	Asynchronous
Resource	All	Subset	Subset
Timeout	60 seconds	60 seconds	Unlimited
Scenario	Grouped operations	Grouped operations	Large processing, concurrent jobs
Error	Fully manual	Fully manual	Semi-automatic (transient retries)

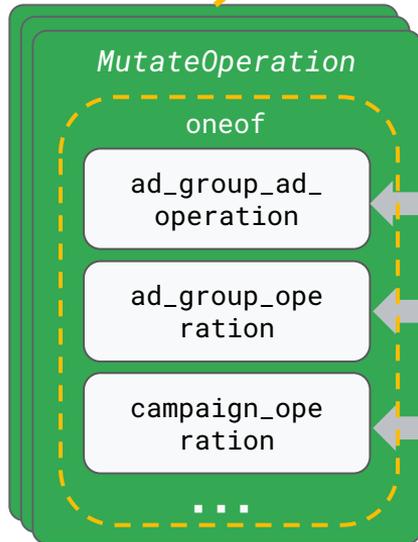
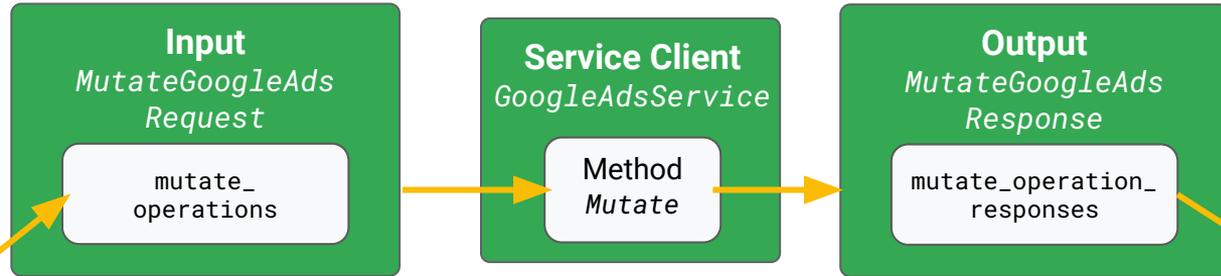
* with some exceptions e.g., 1 for billing setup

Anatomy of a mutate request of single-resource service vs GoogleAdsService

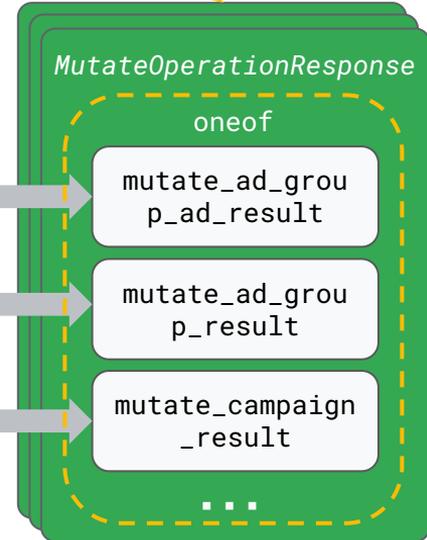
Anatomy of a mutate in a single-resource service (example of CampaignService)



Anatomy of a mutate in GoogleAdsService



The corresponding result of the sent operation will be set, e.g., `mutate_ad_group_result` is returned for `ad_group_operation`



Grouping / ungrouping of operations

- Grouping operations in a small number of requests is **much more efficient**
 - For example, sending 10 requests with 5000 operations is **better than** 50,000 requests with 1 operation each
- Using [partial failure](#) will ungroup operations and allow some to fail and others to succeed
- Some features like [conversion uploads](#) require backend processing
 - Your request may succeed, but the backend process *may fail* later on
 - Therefore, Google Ads API requests are *not always atomic*

Preventing orphaned resources

- **Scenario:** Adding an App ad campaign ([code example](#)) requires
 - Create a budget
 - Create a campaign
 - Set campaign targeting
 - Create an ad group
 - Create an App ad
- What if a step fails? How do you handle errors gracefully?
 - If not, some orphaned resources (like the budget) may exist

Preventing orphaned resources

- Use [GoogleAdsService.Mutate](#) to prevent that!
 - All operations will succeed or fail **together**
 - Single error status to check for the set of operations
 - Less requests -> more efficient for you
- Use temporary IDs as placeholder for forward references in your operations
 - Such as linking a budget to a campaign in the next operation
 - Review the **A Simple Model for Mutates** session for more details

Temporary IDs are placeholders for forward references

REST

```
POST /v1/customers/1234567890/googleAds:mutate
```

```
mutate_operations: [  
  {  
    campaign_operation: {  
      create: {  
        resource_name: "customers/<YOUR_CUSTOMER_ID>/campaigns/-1",  
        ...  
      }  
    },  
    ad_group_operation: {  
      create: {  
        campaign: "customers/<YOUR_CUSTOMER_ID>/campaigns/-1"  
        ...  
      }  
    }  
  }  
]
```

New



Temporary IDs will be assigned the real IDs by the Google Ads API server

Reference



What if I have many resources to mutate?

- A single `GoogleAdsService.Mutate` request can contain [up to 5000](#) operations.
 - Any combination of create / update / remove for any set of resources
- Use [batch processing](#) if you have **millions of operations** to perform
 - Runs operations in parallel
 - Automatically retries transient errors
 - Uses [temporary IDs](#) (same as `GoogleAdsService.Mutate`)
 - **Up to 1,000,000 operations** per batch job
 - **Up to 100 active** or pending jobs at one time
 - *Don't* submit multiple operations that mutate **the same object in the same job**
 - The order is not guaranteed

Use ResponseContentType only as needed

[ResponseContentType](#) determines the mutate response

- (Default) RESOURCE_NAME_ONLY: returns only the **resource name** of mutated entity
 - Very efficient, low overhead
- MUTABLE_RESOURCE: returns **resource name** and **mutable fields**
 - The response will contain all mutable fields, *suitable for further mutates*
 - **Only mutable fields that you modified** will be returned
 - If a field is not returned, it isn't mutable or it isn't modified in the request
 - To get remaining fields including **non-mutable**, use search/searchStream
 - Specify your desired fields in the query

Using mutate validation for testing

- <Resource>Service mutate requests have an optional `validate_only` parameter
- This improves chances of success, but does not guarantee it
 - Downstream business logic may cause an error during execution

[ad_group_ad_service.proto](#)

```
message MutateAdGroupAdsRequest {  
  string customer_id = 1 [(google.api.field_behavior) = REQUIRED];  
  repeated AdGroupAdOperation operations = 2 [(google.api.field_behavior) = REQUIRED];  
  bool validate_only = 4;  
  // ...  
}
```

Proto3

Excelling at GAQL queries

What happened to SELECT *

- Explicit Google design choice to **not** include SELECT *
- Retrieving all columns and metrics is **very expensive**
 - Reason why Get is limited to 1,000 requests per day
- Use the [GoogleAdsFieldService](#) to fetch the list of fields available for the report you're requesting



Use WHERE effectively to filter only what's necessary

- By default, resources are returned even if they have been removed. Most of the time, add

```
WHERE <resource>.status != REMOVED
```

- Select a reasonable [date range](#) or use a [predefined](#) one

```
WHERE segments.date DURING LAST_BUSINESS_WEEK
```

- Use (NOT) IN to narrow results to the desired subset, for example to retrieve only

Search and Display campaigns

```
WHERE AdvertisingChannelType IN (SEARCH, CONTENT)
```

Use LIMIT and ORDER BY for key results

- The [GAQL language](#) permits *multiple ordering subclauses*
 - For example, ORDER BY ad_group_id, campaign_id
- When combined with LIMIT, precise reporting can be efficiently achieved

Example: find the top 5 impressions dates in the last 30 days

GAQL

```
SELECT
  segments.date, metrics.impressions
FROM ad_group
WHERE segments.date DURING LAST_30_DAYS
ORDER BY metrics.impressions DESC
LIMIT 5
```

Example: find the most expensive ad groups with a low click-through rate (CTR)

Proprietary + Confidential

GAQL

```
SELECT
  ad_group.id, metrics.cost_micros, segments.ad_network_type
FROM ad_group
WHERE metrics.ctr < [THRESHOLD]
  AND ad_group.status != REMOVED
  AND segments.ad_network_type IN (CONTENT, SEARCH)
ORDER BY metrics.cost_micros DESC
LIMIT 10
```

Understanding segmentation

- Segmentation occurs when you add *either* of the following to your query
 - **segments.<field_name>** such as `segments.date`
 - A field of **segmenting resources** such as adding `ad_group.<field_name>` when `feed_item` is in the FROM clause of the query
- Google Ads API allows segmentation of **more than one field** (UI allows only one)
 - **Caution:** Number of rows increases *exponentially* for each additional segment
- *Not all* segments and metrics can be selected together
 - Check **Selectable With** in the [reference](#)
- The resource specified in the FROM clause **always segments** the report
 - `resource_name` and the segment's metrics are always returned

Special rules for segmentation

- Core date segments (CDSs): **date, week, month, quarter, year**
 - a. *Except for CDSs*, when a segment is in the WHERE clause, it **must also be** in the SELECT clause
 - ✓ `SELECT ad_group.id FROM ad_group WHERE segments.date = "2021-04-17"`
 - ✗ `SELECT ad_group.id FROM ad_group
WHERE segments.ad_network_type = SEARCH`
 - b. If **any of** CDSs are in the SELECT clause, a **valid, finite date range** composed of CDSs (which can be *different from* those in SELECT) must be specified in the WHERE clause
 - ✓ `SELECT segments.week FROM ad_group WHERE segments.date DURING TODAY`
 - ✗ `SELECT segments.week FROM ad_group
WHERE segments.date DURING TODAY AND segments.date DURING LAST_MONTH`

Special rules for segmentation

- Some views are *implicitly* segmented by **more than one token** of the resource name
 - For example, `search_term_view` is segmented by *ad group* and a *search term*
 - Reflected by its resource name, such as
`"customers/123/searchTermViews/111-222-Z29vyBpb3M"`

 - This is true when the last token (such as the *search term*) is *not* globally unique
 - Visit [this section](#) to check the uniqueness of object IDs

Useful tools: Google Ads Query Builder

- [Google Ads Query Builder](#) is available for **all resources**
- Select from available fields *interactively*
- **Automatically validate** the syntax for you
 - Show warning messages for special rules

Home > Products > Google Ads API > Reports

ad_group 

[Help me build a query](#)

An ad group.

Type a keyword to filter

You can also access it from each reference, such as [ad_group](#)

Google Ads Query Builder

ad_group [Send feedback](#)

Use this page to build a GAQL query that selects fields from the `ad_group` resource. The list below includes all of the resources, fields, segments, and metrics that are selectable when `ad_group` is the resource in the FROM clause of your GAQL query. The list below will update dynamically based on your selections.

Your GAQL Query

```
SELECT campaign.bidding_strategy, ad_group.campaign FROM ad_group WHERE metrics.active_view_ctr > 2 ORDER BY ad_group.id
```

Standard Pretty Print Interactive Mode [Clear Selections](#) [Enter or edit a query](#)

Start typing to search for fields, segments, and metrics below

Choose a Clause to Select From

SELECT WHERE ORDER BY LIMIT PARAMETERS

Attribute Resource Fields [Click to expand](#)

Segments [Click to expand](#)

Metrics [^](#)

- metrics.absolute_top_impression_percentage 
- metrics.active_view_cpm 
- metrics.active_view_ctr 

metrics.active_view_ctr > 2 

[+](#) Add filtering condition on metrics.active_view_ctr

Useful tools: Google Ads Query Validator

Query Validator

Enter a query below, and click submit. If the entered query is valid, you will be able to continue editing your query using the interactive query builder. Otherwise, you will be presented with a list of errors, which you can fix to create a valid GAQL query. Most errors will pertain to topics such as query syntax, field validity, field compatibility, and field selectability.

Limitations of the Query Validator ⓘ

Your GAQL Query

Enter GAQL Query

```
SELECT|* from ad_group
```

Validate Query

Don't forget to check the limitations

Type your GAQL query here

! Invalid Query

Fix your query to address the errors below and re-submit.

- '*' is not a valid field in the SELECT clause when 'ad_group' is the resource in the FROM clause. Fields in the SELECT must be 'Selectable'.
- Query must contain at least one valid field in the SELECT clause.

Result is shown here. If the query is invalid, suggestion for the fix is shown

Useful References

Resources

Documentation, Guides, Links

[Google Ads API Developer Site](https://developers.google.com/google-ads/api/docs/start)

<https://developers.google.com/google-ads/api/docs/start>

[Mutate Best Practices](https://developers.google.com/google-ads/api/docs/mutating/best-practices)

<https://developers.google.com/google-ads/api/docs/mutating/best-practices>

[Segmentation](https://developers.google.com/google-ads/api/docs/reporting/segmentation)

<https://developers.google.com/google-ads/api/docs/reporting/segmentation>

[Batch Processing Best Practices and Limitations](https://developers.google.com/google-ads/api/docs/batch-processing/best-practices)

<https://developers.google.com/google-ads/api/docs/batch-processing/best-practices>

[Best Practices](https://developers.google.com/google-ads/api/docs/best-practices/overview)

<https://developers.google.com/google-ads/api/docs/best-practices/overview>

[Client Libraries & Code Examples](https://developers.google.com/google-ads/api/docs/client-libs)

<https://developers.google.com/google-ads/api/docs/client-libs>

[Developer Tools](https://developers.google.com/google-ads/api/fields/latest/overview_query_builder)

[Google Ads Query Builder](https://developers.google.com/google-ads/api/fields/latest/overview_query_builder)

https://developers.google.com/google-ads/api/fields/latest/overview_query_builder

[Query Validator](https://developers.google.com/google-ads/api/fields/latest/query_validator)

https://developers.google.com/google-ads/api/fields/latest/query_validator

[Getting Support](https://ads-developers.googleblog.com)

[Google Ads Developer Blog](https://ads-developers.googleblog.com)

<https://ads-developers.googleblog.com>

[Google Ads API Forum](https://groups.google.com/forum/#!forum/adwords-api)

<https://groups.google.com/forum/#!forum/adwords-api>

[Dedicated Support](mailto:googleadsapi-support@google.com)

googleadsapi-support@google.com