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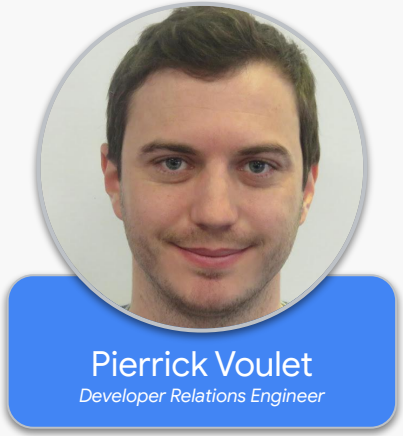
Error Handling & Testing

Optimization Score & Recommendations

The Google Ads API Developer Series



Pierrick Voulet
Developer Relations Engineer

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Google Ads API

Reporting

Mutating

Google

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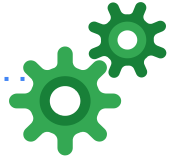

Pull recommendations

`GoogleAdsService`

Apply / Dismiss recommendations

`RecommendationService`

Google

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Recommendation

A change to optimize the performance of a campaign

Google

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recommendation

Search request

GAQL

```
SELECT
    recommendation.resource_name
FROM recommendation
```

Response

JSON

```
[{
  "recommendation": {
    "resourceName": "customers/x/recommendations/y"
  }
}]
```

Google

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RecommendationService.applyRecommendation

Apply request

JSON

```
{
  "resourceName": "customers/x/recommendations/y",
  "applyParameters": { ... }
}
```

Response

JSON

```
{
  "resourceName": "customers/x/recommendations/y"
}
```

Google

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RecommendationService.dismissRecommendation

Dismiss request

JSON

```
{
  "resourceName": "customers/x/recommendations/y"
}
```

Response

JSON

```
{
  "resourceName": "customers/x/recommendations/y"
}
```

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Error

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Authentication

Quota, System and Rate Limits

Internal

Google

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Empty Result

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Empty Result

Search request

GAQL

```
SELECT
    customer.resource_name,
    customer.optimization_score
FROM customer
```

Response processing

PHP

```
foreach ($response->iterateAllElements() as $result) {
  $score = $result->getCustomer()->getOptimizationScore();
  print "Score: " . ($score * 100)
}
```

Empty Result

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Search request

GAQL

```
SELECT
    customer.resource_name,
    customer.optimization_score
FROM customer
```

Response processing

PHP

```
foreach ($response->iterateAllElements() as $result) {
  $score = $result->getCustomer()->getOptimizationScore();
  if ($score) {
    print "Score: " . ($score * 100)
  } else {
    print "Unscored"
  }
}
```


Google

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Empty Result

Recommendation Lifecycle

Google

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Recommendation Lifecycle

`RECOMMENDATION_ALREADY_APPLIED`	The recommendation requested to apply has already been applied.
`RECOMMENDATION_INVALIDATED`	The recommendation requested to apply has been invalidated.
`RECOMMENDATION_ALREADY_DISMISSED`	The recommendation requested to dismiss has already been dismissed.

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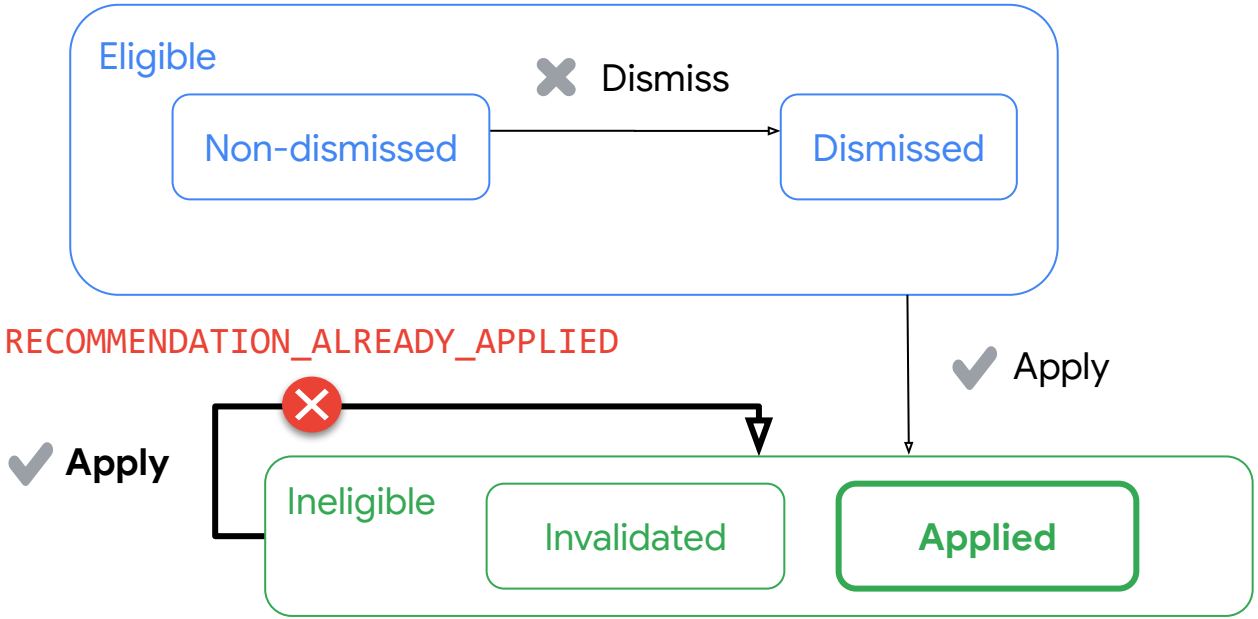
Recommendation Lifecycle



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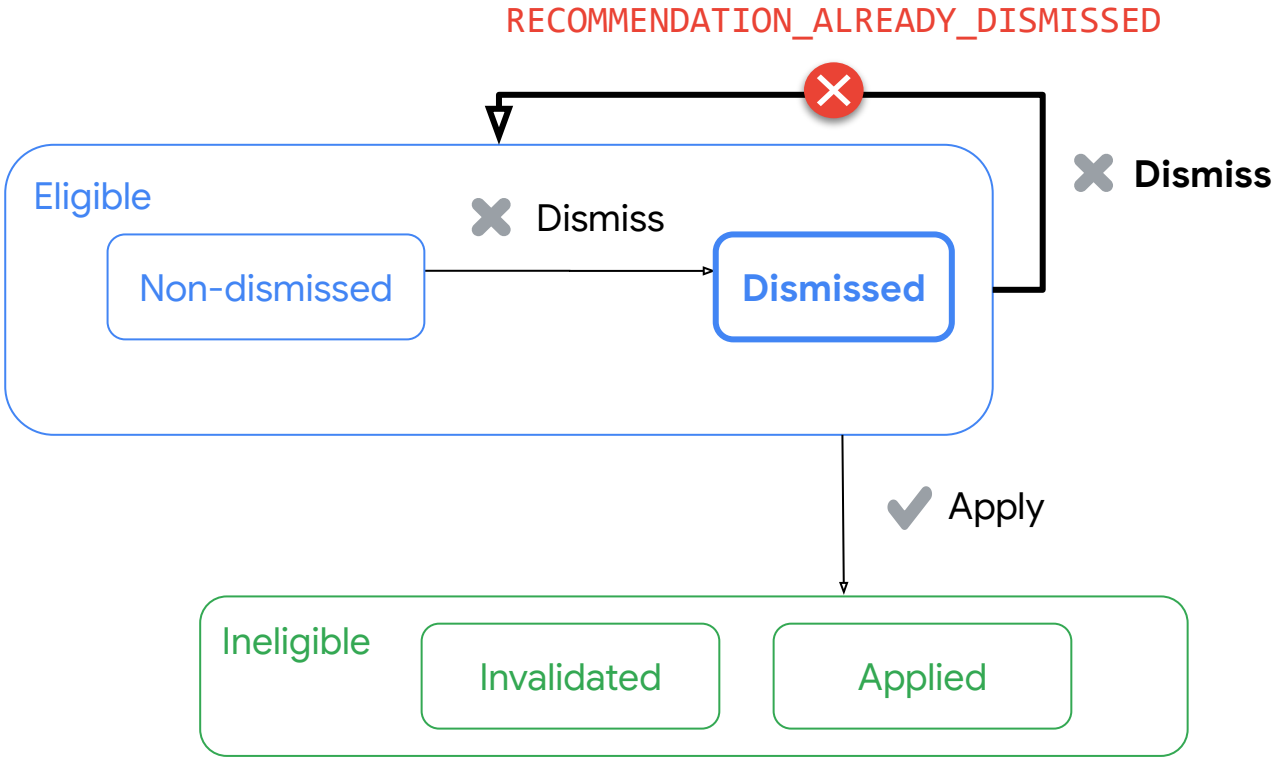
Recommendation Lifecycle



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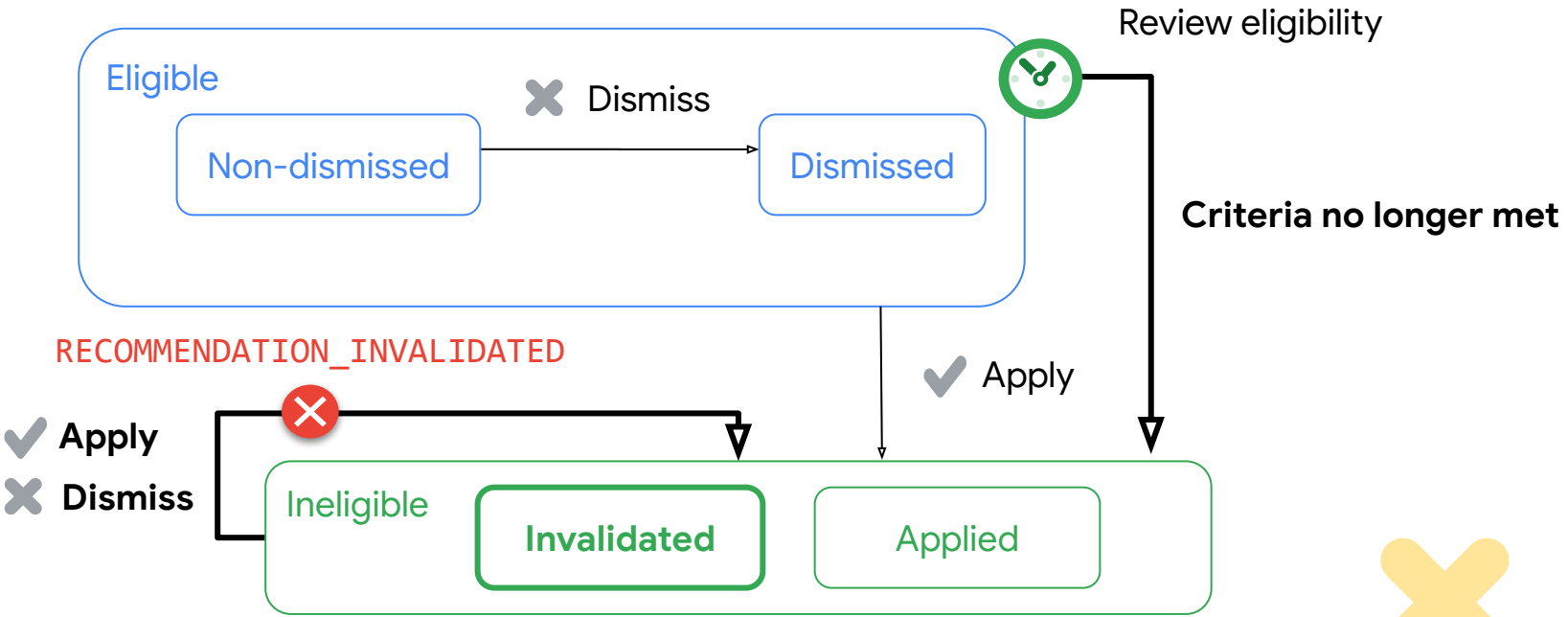
Recommendation Lifecycle



Google

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Empty Result

Recommendation Lifecycle

Validation

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Validation (Search Request)

BAD_ESCAPE_SEQUENCE	Query contains an invalid escape sequence.
BAD_FIELD_NAME	Field name is invalid.
BAD_LIMIT_VALUE	Limit value is invalid (i.e. not a number)
BAD_NUMBER	Encountered number can not be parsed.
BAD_OPERATOR	Invalid operator encountered.
BAD_PARAMETER_NAME	Parameter unknown or not supported.
BAD_PARAMETER_VALUE	Parameter have invalid value.
BAD_RESOURCE_TYPE_IN_FROM_CLAUSE	Invalid resource type was specified in the FROM clause.
BAD_SYMBOL	Non-ASCII symbol encountered outside of strings.
BAD_VALUE	Value is invalid.

Validation (Search Request)

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GAQL

```
SELECT
    recommendation.resource_name
FROM recommendation
WHERE
  recommendation.impact.potential_metrics.clicks
  - recommendation.impact.base_metrics.clicks > 5
```

UNEXPECTED_INPUT

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Validation (Search Request)

Request GAQL

```
SELECT
    recommendation.impact
FROM recommendation
```

Response processing PHP

```
foreach ($response->iterateAllElements() as $result) {
  $impact = $result->getRecommendation()->getImpact();
  if (
    $impact->getPotentialMetrics()->getClicks()
    - $impact->getBaseMetrics()->getClicks() > 5
  ) {
    // Do something
  }
}
```

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Validation (Mutate Request)

BUDGET_AMOUNT_TOO_SMALL	The specified budget amount is too low e.g. lower than minimum currency unit or lower than ad group minimum cost-per-click.
BUDGET_AMOUNT_TOO_LARGE	The specified budget amount is too large.
INVALID_BUDGET_AMOUNT	The specified budget amount is not a valid amount. e.g. not a multiple of minimum currency unit.
POLICY_ERROR	The specified keyword or ad violates ad policy.
INVALID_BID_AMOUNT	The specified bid amount is not valid. e.g. too many fractional digits, or negative amount.
ADGROUP_KEYWORD_LIMIT	The number of keywords in ad group have reached the maximum allowed.
INVALID_APPLY_REQUEST	The recommendation apply request was malformed and invalid.

Validation (Apply Request)

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JSON

```
{
  "resourceName": "customers/x/recommendations/y",
  "applyParameters": {
    "keyword": {
      "adGroup": "customers/x/adGroups/z",
      "matchType": BROAD,
      "cpcBidMicros": -1
    }
  }
}
```

INVALID_BID_AMOUNT

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Validation (Bulk Request)

`TOO_MANY_OPERATIONS`	The number of operations in a single request exceeds the maximum allowed.
`NO_OPERATIONS`	There are no operations in the request.
`DIFFERENT_TYPES_NOT_SUPPORTED`	Operations with multiple recommendation types are not supported when partial failure mode is not enabled.
`DUPLICATE_RESOURCE_NAME`	Request contains multiple operations with the same resource_name.

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Validation (Bulk Request)

Request

JSON

```
[{
  "resourceName": "customers/x/recommendations/y"
},
//...
{
  "resourceName": "customers/x/recommendations/z"
}]
```

Response

JSON

```
[{
  "resourceName": "customers/x/recommendations/y"
},
//...
{
  "resourceName": "customers/x/recommendations/z"
}]
```


Google

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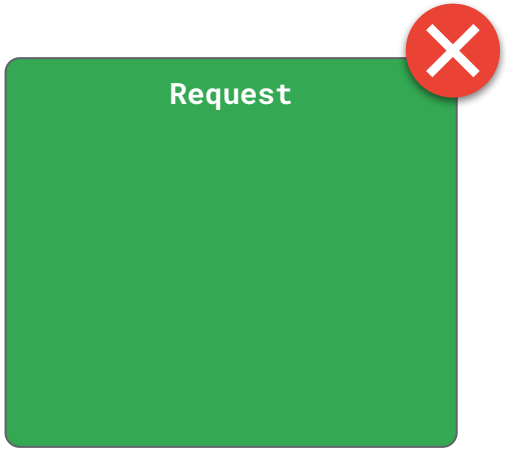
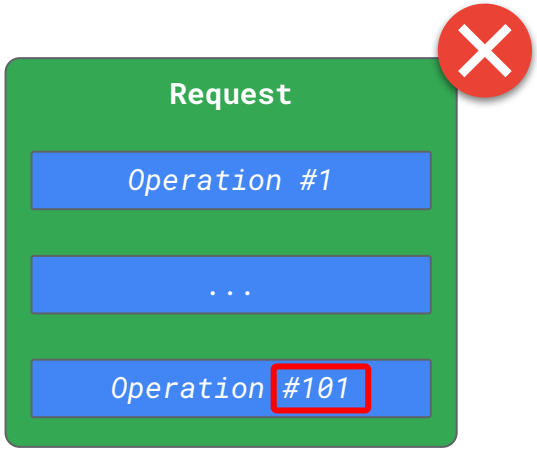
Validation (Bulk Request)

NO_OPERATIONS



TOO_MANY_OPERATIONS



Send at least one operation but not too many

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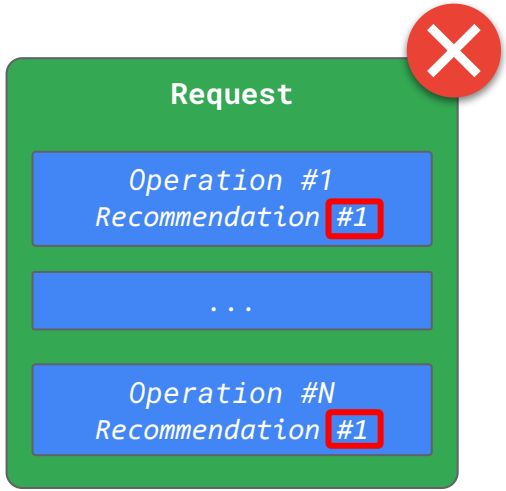
Validation (Bulk Request)

DUPLICATE_RESOURCE_NAME



Send only one operation per recommendation

Google

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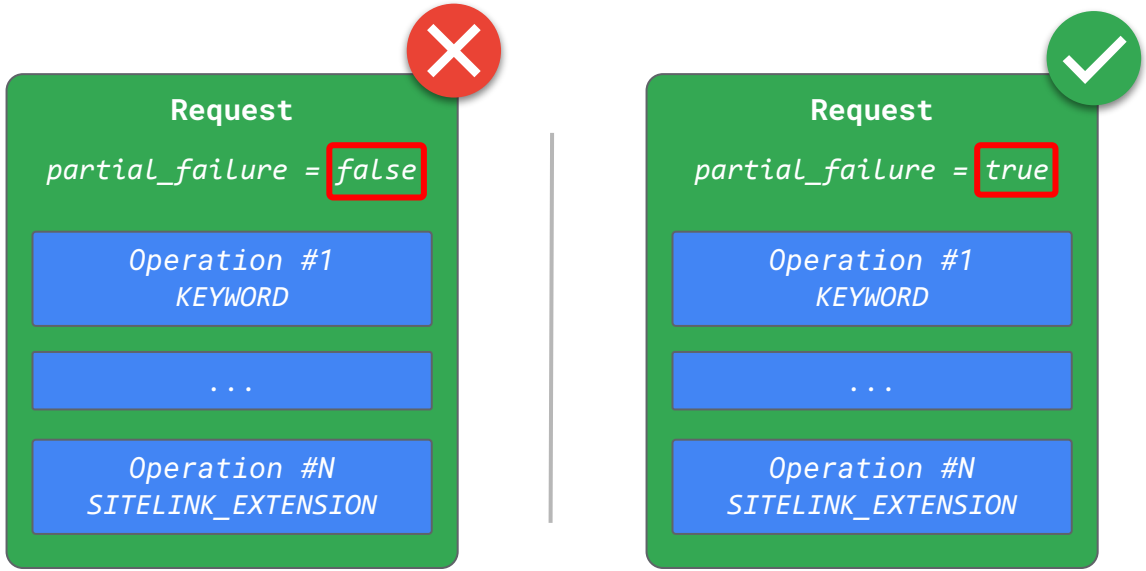
Validation (Bulk Request)

DIFFERENT_TYPES_NOT_SUPPORTED



Enable `partial_failure` to send operations on different recommendation types

Google

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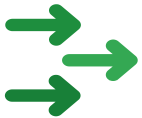
Empty Result

Recommendation Lifecycle

Validation



Concurrency

Google

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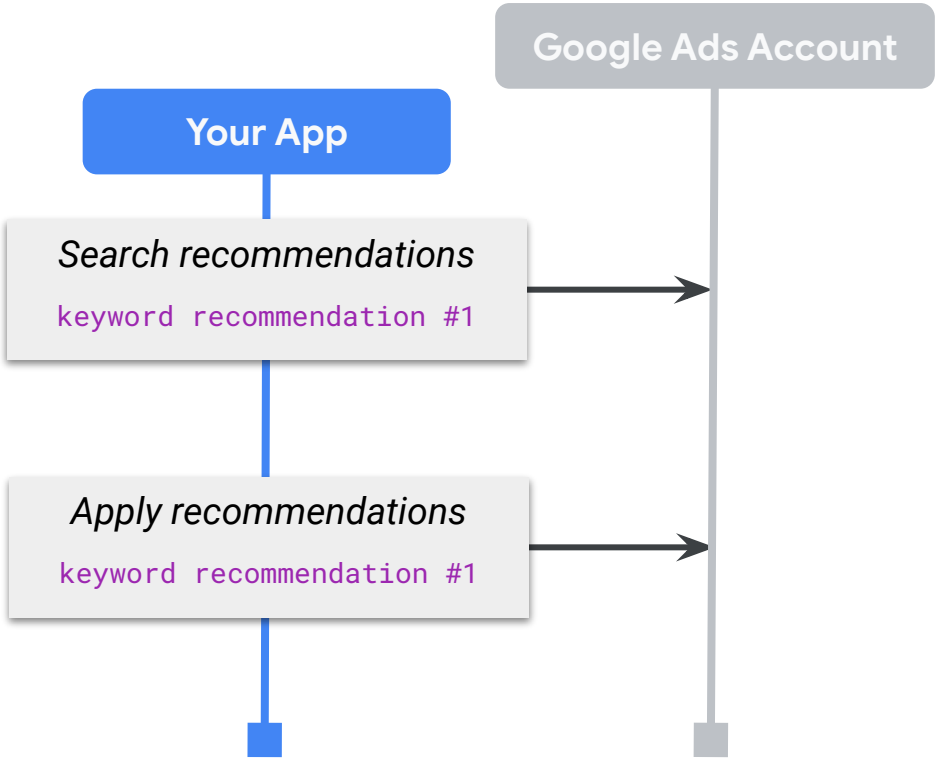
Concurrency (Database)



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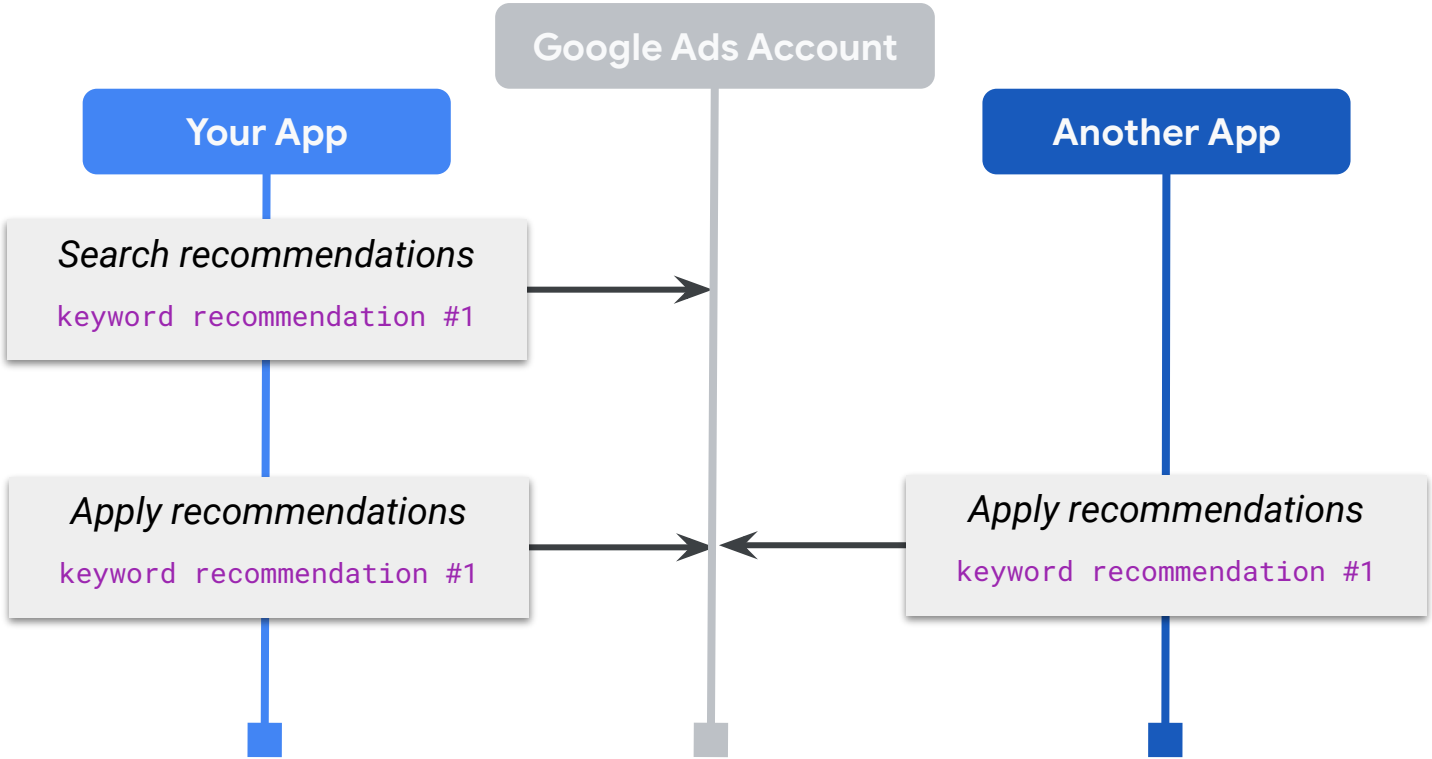
Concurrency (Database)



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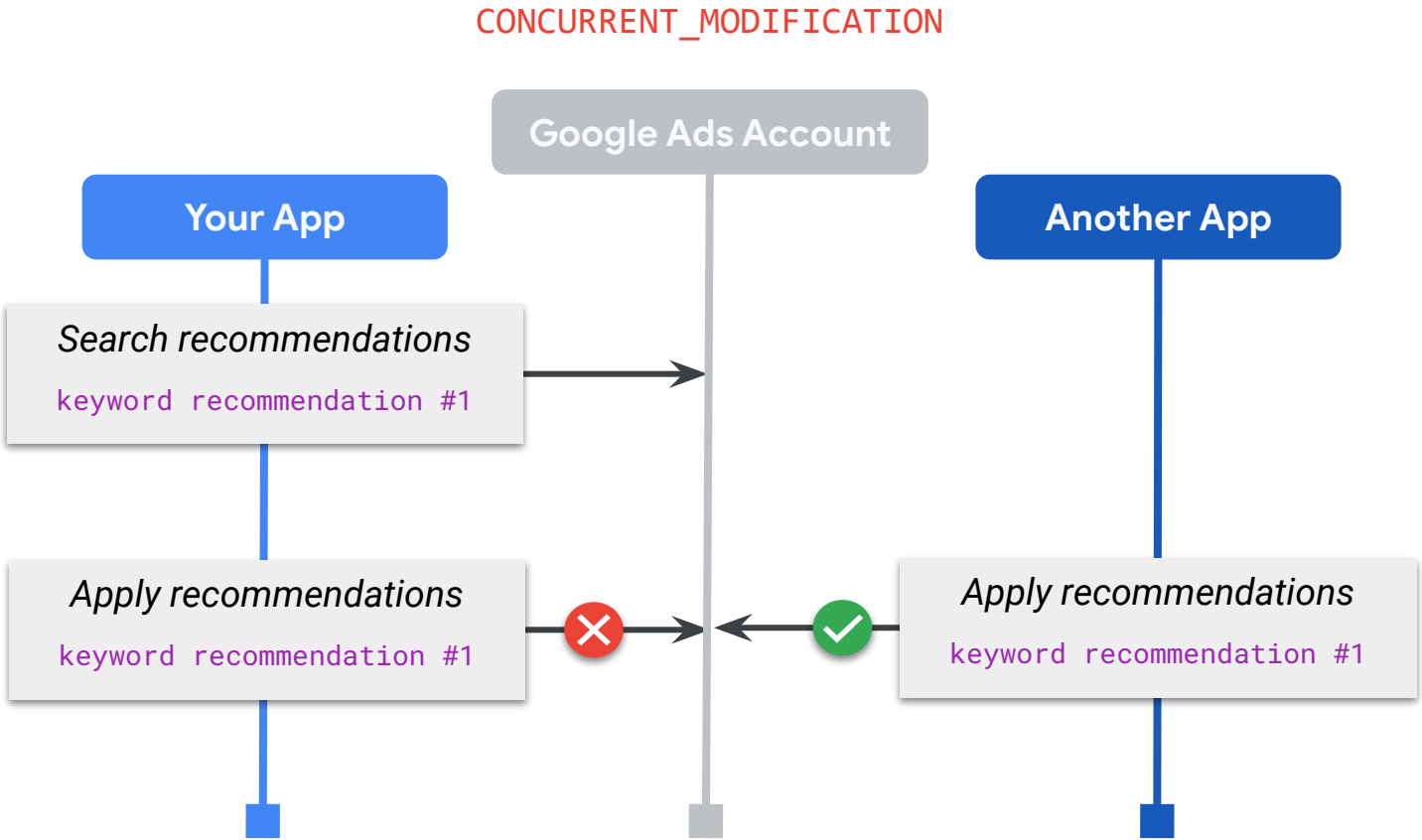
Concurrency (Database)



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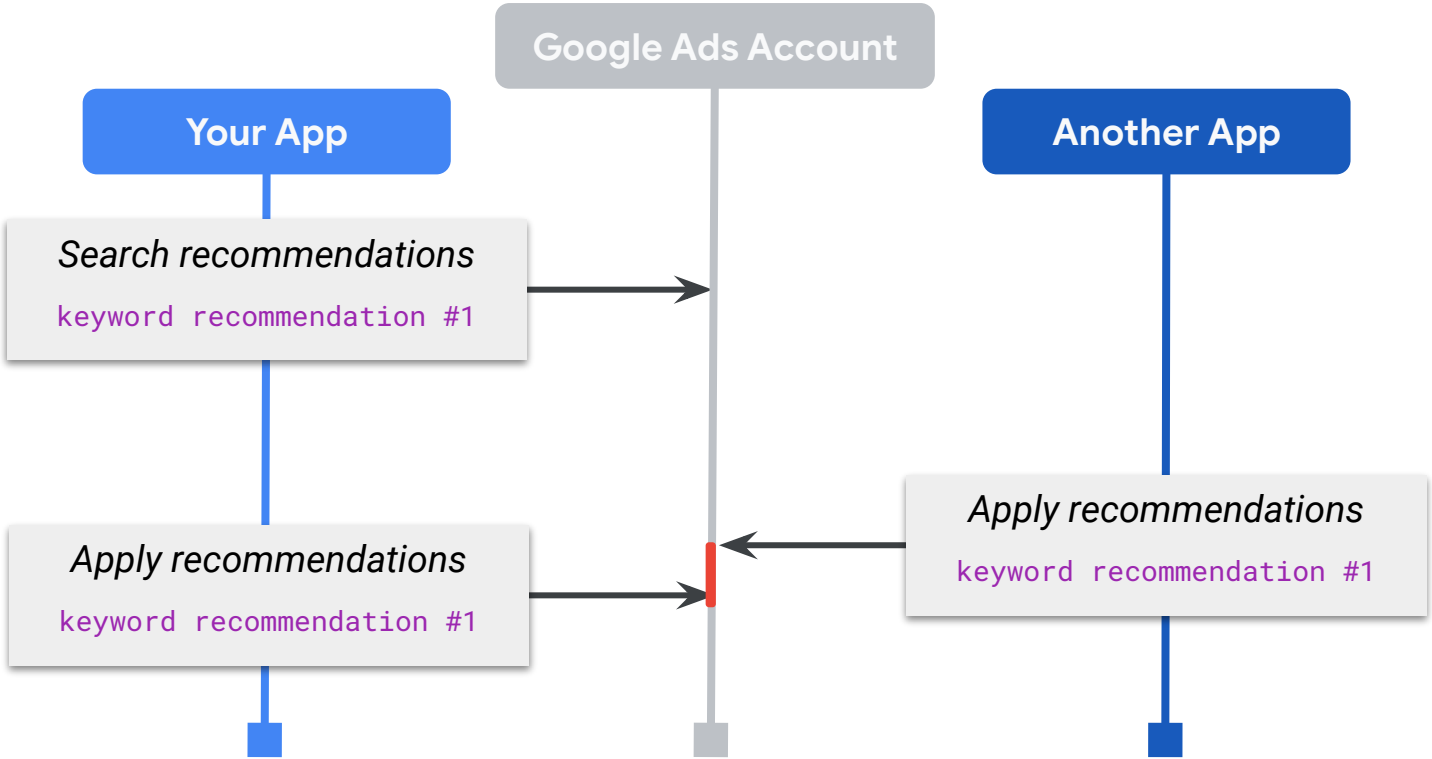
Concurrency (Recommendation Lifecycle)



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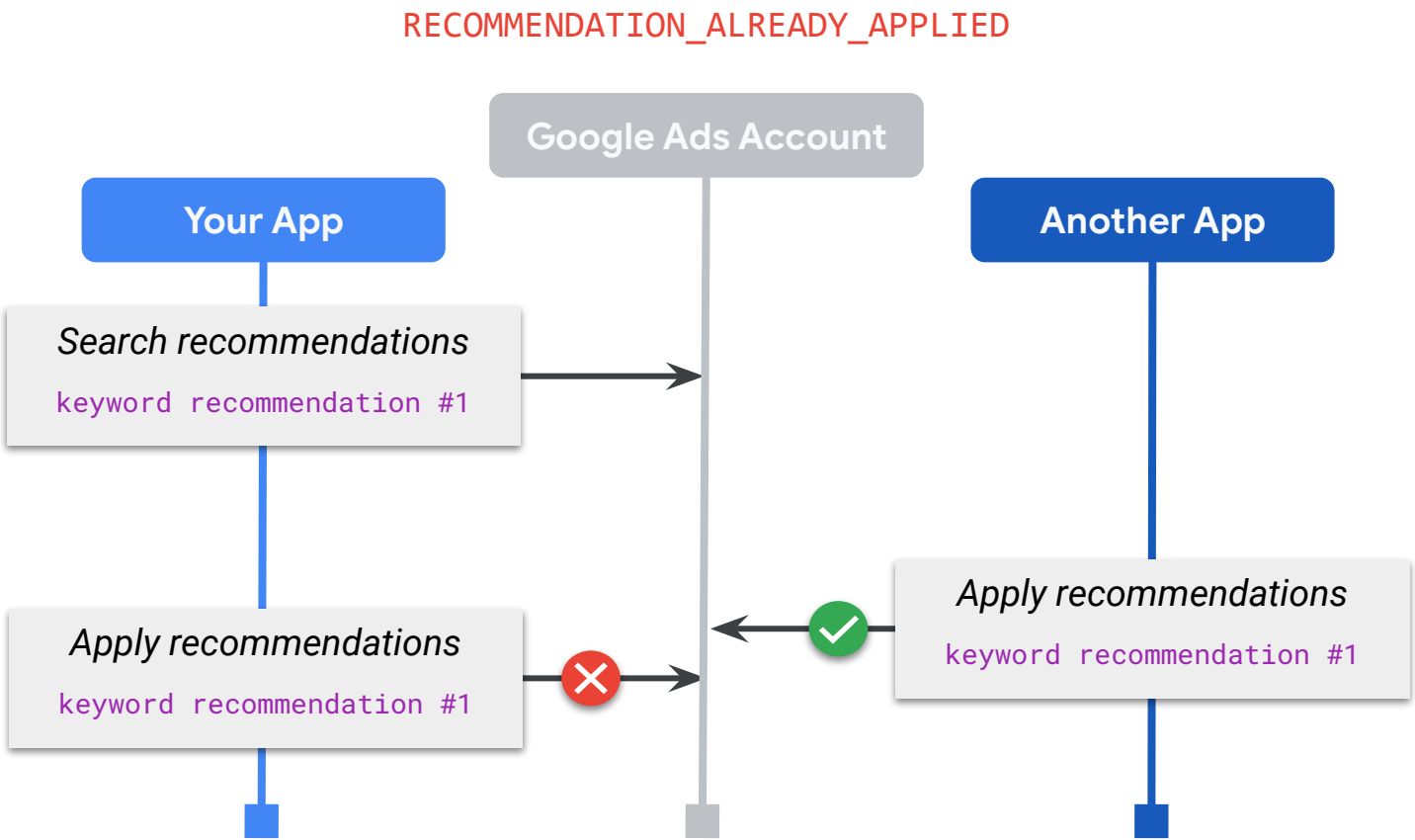
Concurrency (Recommendation Lifecycle)



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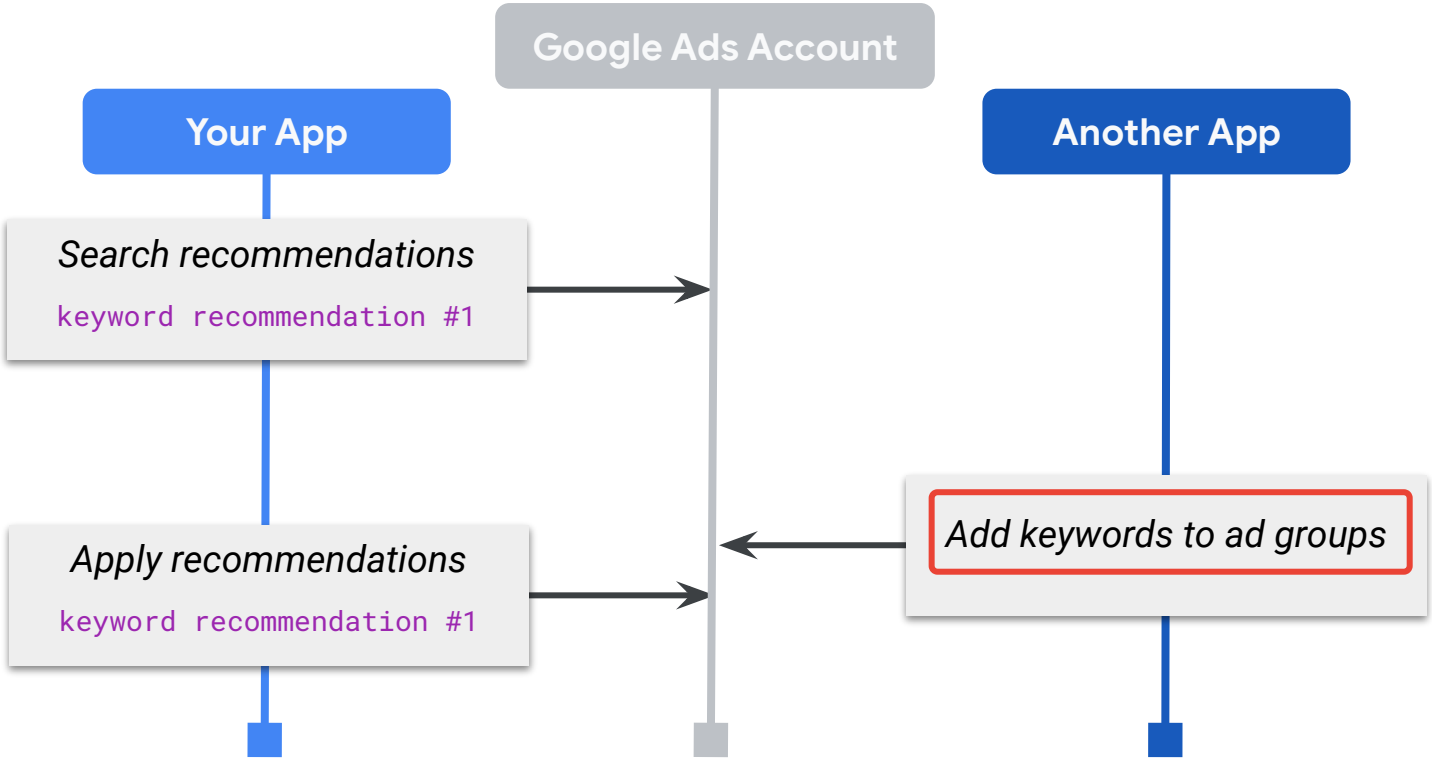
Concurrency (Mutate Request)



Google

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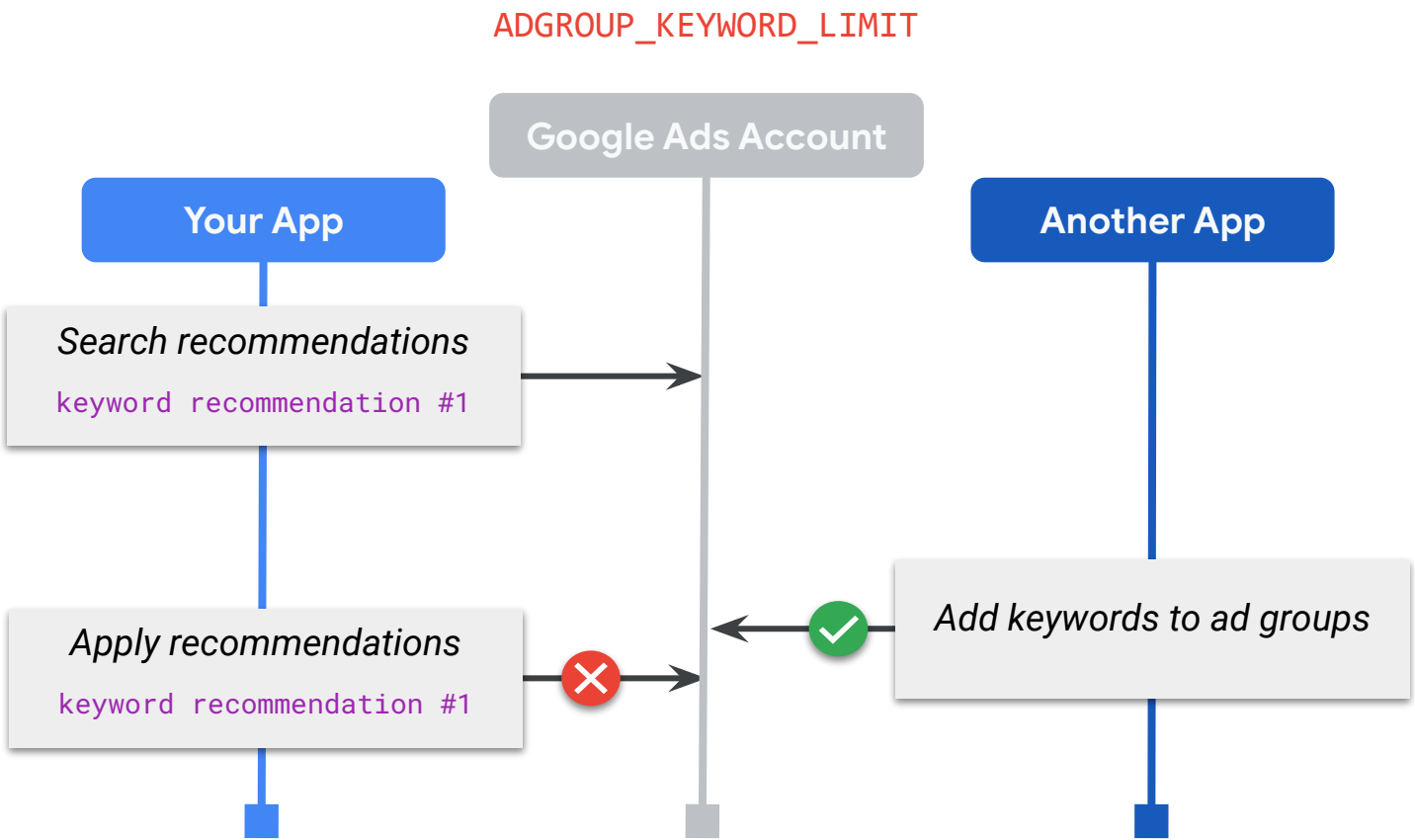
Concurrency (Mutate Request)



Google

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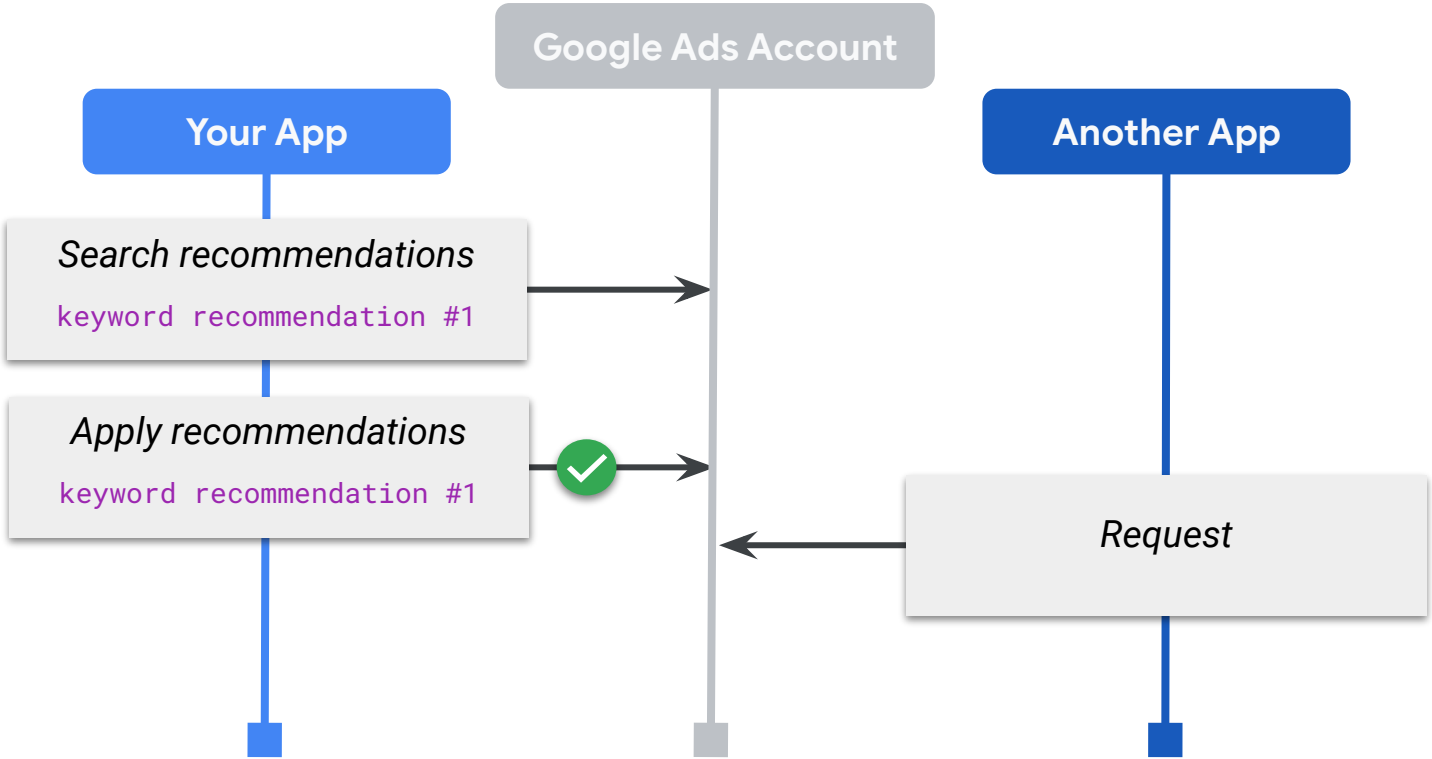
Concurrency (Mutate Request)



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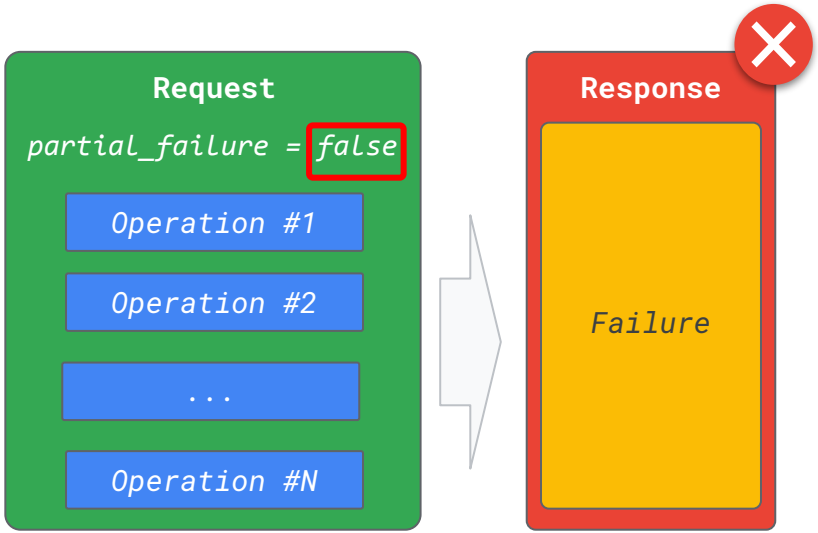
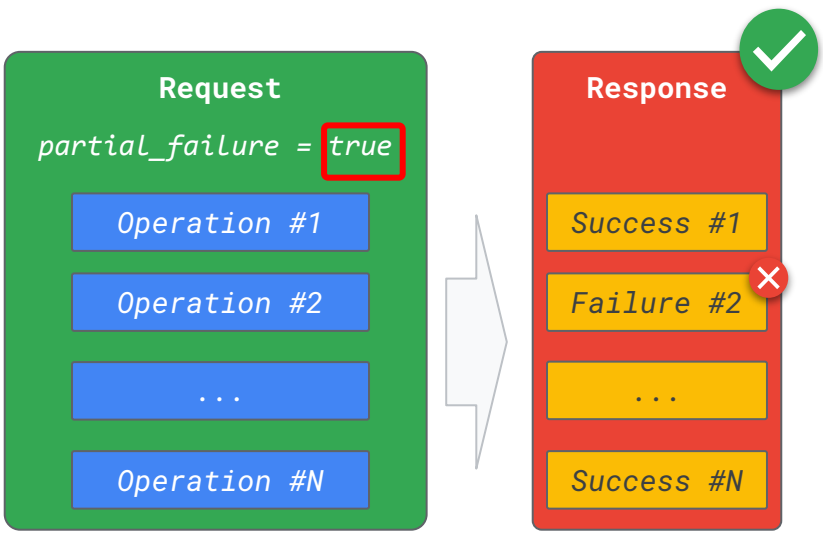
Partial Failure



Complete failure



Partial failure

Google

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Retry

Fail **Wait** **Send Again**

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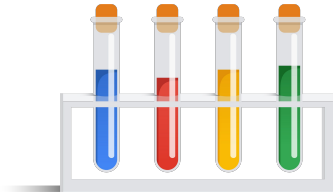

Test

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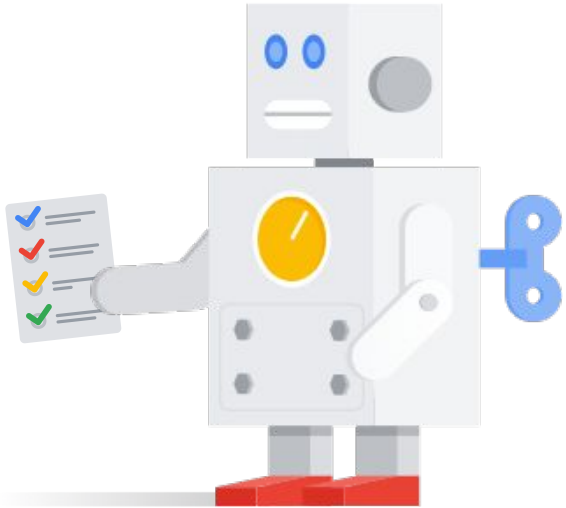
Unit Testing (Client Libraries)



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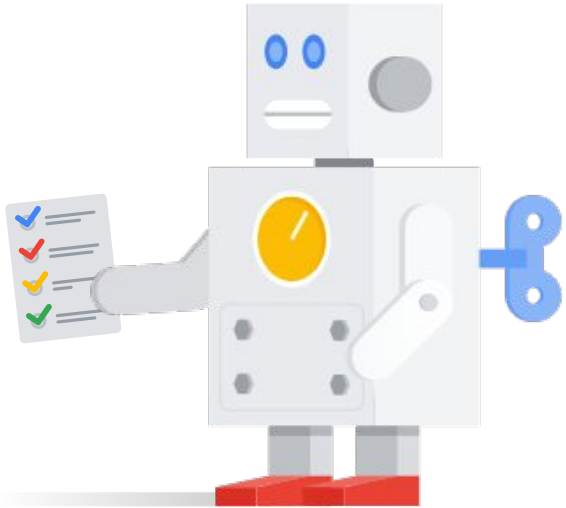
Integration Testing



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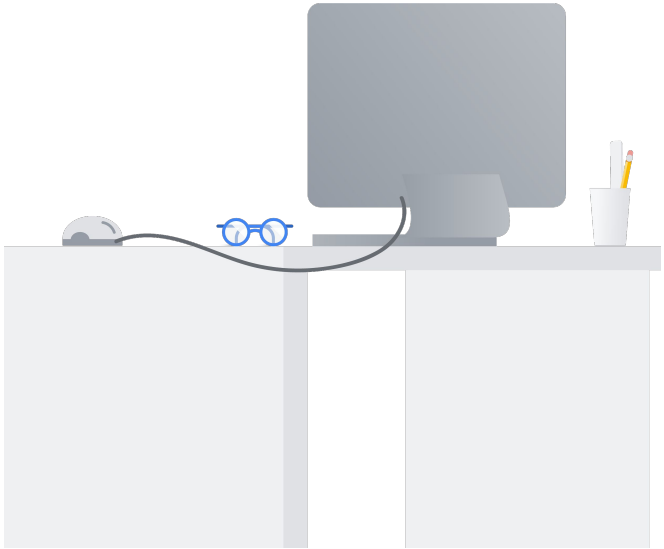
Manual Testing



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Google Ads Account

Search request

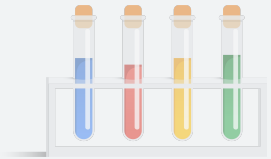
GAQL

```
SELECT
    recommendation.resource_name
FROM recommendation
```

Response

JSON

```
[{
  "recommendation": {
    "resourceName": "customers/xxx/recommendations/zzz"
  }
}]
```



Google

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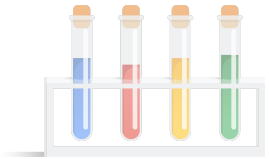
Goals

Settings

Evaluation of recommendations

Performance



Google

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Google Ads **Test** Account

Search request

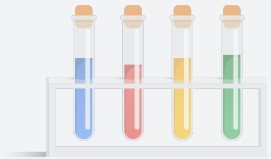
GAQL

```
SELECT
    recommendation.resource_name
FROM recommendation
```

Response

JSON

```
[
  // No results
]
```



Google

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Google Ads **Test** Account

Search request

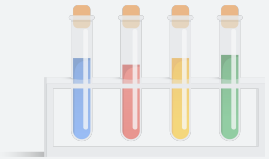
GAQL

```
SELECT
    customer.resource_name,
    customer.test_account,
    customer.optimization_score,
    customer.optimization_score_weight
FROM customer
```

Response

JSON

```
[{
  "resourceName": "customers/xxx",
  "testAccount": true,
}]
```



Google

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Retrieve Optimization Scores and Recommendations

Use real accounts **you have access to**

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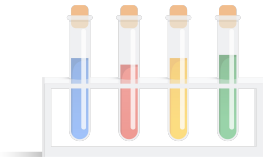
Apply / Dismiss Recommendations

Request message for `RecommendationService.ApplyRecommendation`.

Fields	
customer_id	`string` Required. The ID of the customer with the recommendation.
operations[]	`ApplyRecommendationOperation` Required. The list of operations to apply recommendations. If partial_failure=false all recommendations should be of the same type There is a limit of 100 operations per request.
partial_failure	`bool` If true, successful operations will be carried out and invalid operations will return errors. If false, operations will be carried out as a transaction if and only if they are all valid. Default is false.

Request message for `RecommendationService.DismissRecommendation`.

Fields	
customer_id	`string` Required. The ID of the customer with the recommendation.
operations[]	`DismissRecommendationOperation` Required. The list of operations to dismiss recommendations. If partial_failure=false all recommendations should be of the same type There is a limit of 100 operations per request.
partial_failure	`bool` If true, successful operations will be carried out and invalid operations will return errors. If false, operations will be carried in a single transaction if and only if they are all valid. Default is false.



Google

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Apply / Dismiss Recommendations

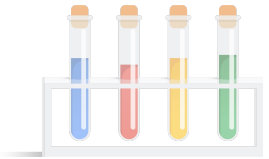
Request message for `RecommendationService.ApplyRecommendation`.

Fields	
`customer_id`	`string` Required. The ID of the customer with the recommendation.
`operations[]`	`ApplyRecommendationOperation` Required. The list of operations to apply recommendations. If partial_failure=false all recommendations should be of the same type There is a limit of 100 operations per request.
`partial_failure`	`bool` If true, successful operations will be carried out and invalid operations will return errors. If false, operations will be carried out as a transaction if and only if they are all valid. Default is false.

Request message for `RecommendationService.DismissRecommendation`.

Fields	
`customer_id`	`string` Required. The ID of the customer with the recommendation.
`operations[]`	`DismissRecommendationOperation` Required. The list of operations to dismiss recommendations. If partial_failure=false all recommendations should be of the same type There is a limit of 100 operations per request.
`partial_failure`	`bool` If true, successful operations will be carried out and invalid operations will return errors. If false, operations will be carried in a single transaction if and only if they are all valid. Default is false.

`validate_only`



Google

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Apply / Dismiss Recommendations

Use real accounts you can **safely edit**

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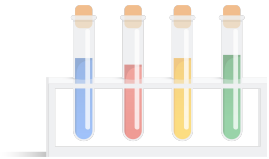
Apply / Dismiss Recommendations

Create real accounts **dedicated to testing**



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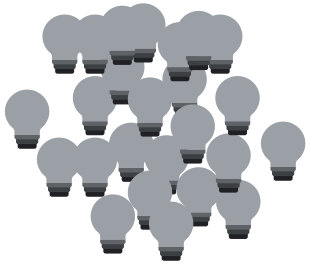
Apply / Dismiss Recommendations



Type #1

Type #2

Type #3

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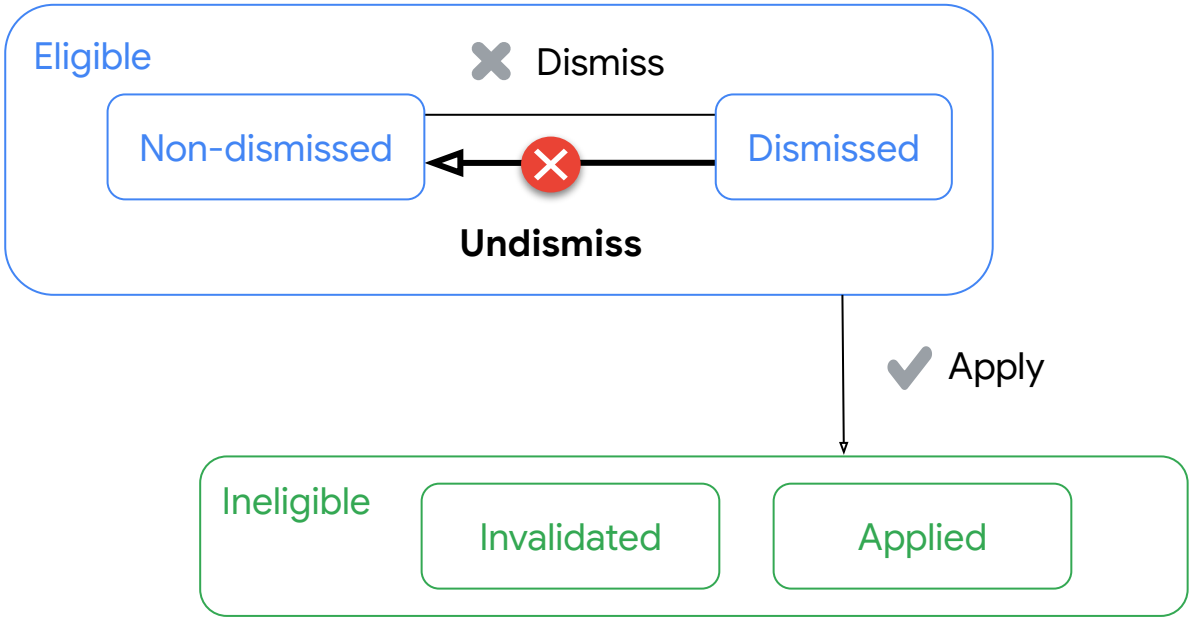
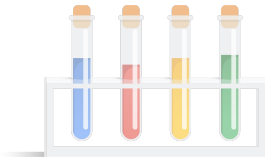
Apply / Dismiss Recommendations





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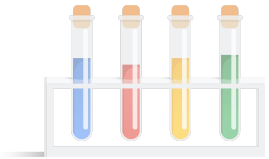
Apply / Dismiss Recommendations

1. Retrieve

2. Apply / Dismiss

3. Revert

4. Wait



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Product documentation

Technical Guide

API Reference

- `Recommendation`, `Customer`, `Campaign`
- Operations: Apply, Dismiss
- Error: Management, Partial failures, Retry

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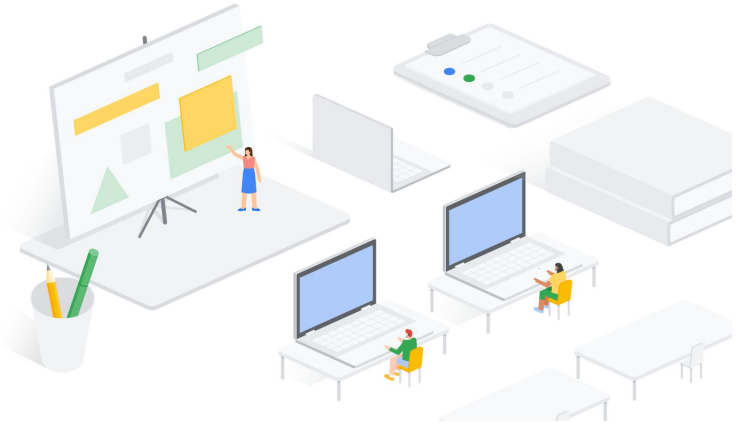
Thanks for watching

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