User Guide: Observability Analytics Query Builder (Private Preview)

Private preview sign up form: https://forms.gle/76VBUxpP9xBzXNcN8

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Introduction

We are excited to announce that Observability Analytics (OA) query builder is now available for private preview!

If you are a Cloud Ops's Observability Analytics user (also known as Log Analytics), this feature is for you!

Observability query builder providing below key benefits:

- **No more writing SQL query:** Generating queries and getting results through a guided UI, no longer need to write SQL for most of your analytics questions. And you can continue writing SQL if you like.
- **Easy to extract, cast, and transform JSON data:** Query builder is designed to streamline some of the complexities of working with Observability Analytics data, such as extracting, casting, and transforming JSON data.
- **Toggle between builder and SQL**: You can toggle between query builder and automatically generated SQL, and make edits with the SQL to achieve more complex query.
- **Work with Log Scope**: Query builder enables you to query with log scope. So you can keep the scope consistent when doing deeper analysis and troubleshooting in log explorer.

This user guide will cover steps for enabling the query builder and provide some examples for common use cases. Its target users who are in the private preview. More detailed reference documentation will be available closer to public preview release.

Enable Observability Analytics

In order to use the query builder, first enable Log Analytics.

Then Sign up users from your organization using their email address in the private preview form.

Once users are enabled, they will be notified by the google contact person.

Observability UI Layout

Log view, trace views, analytics views, metrics view viewer: show the list of available views

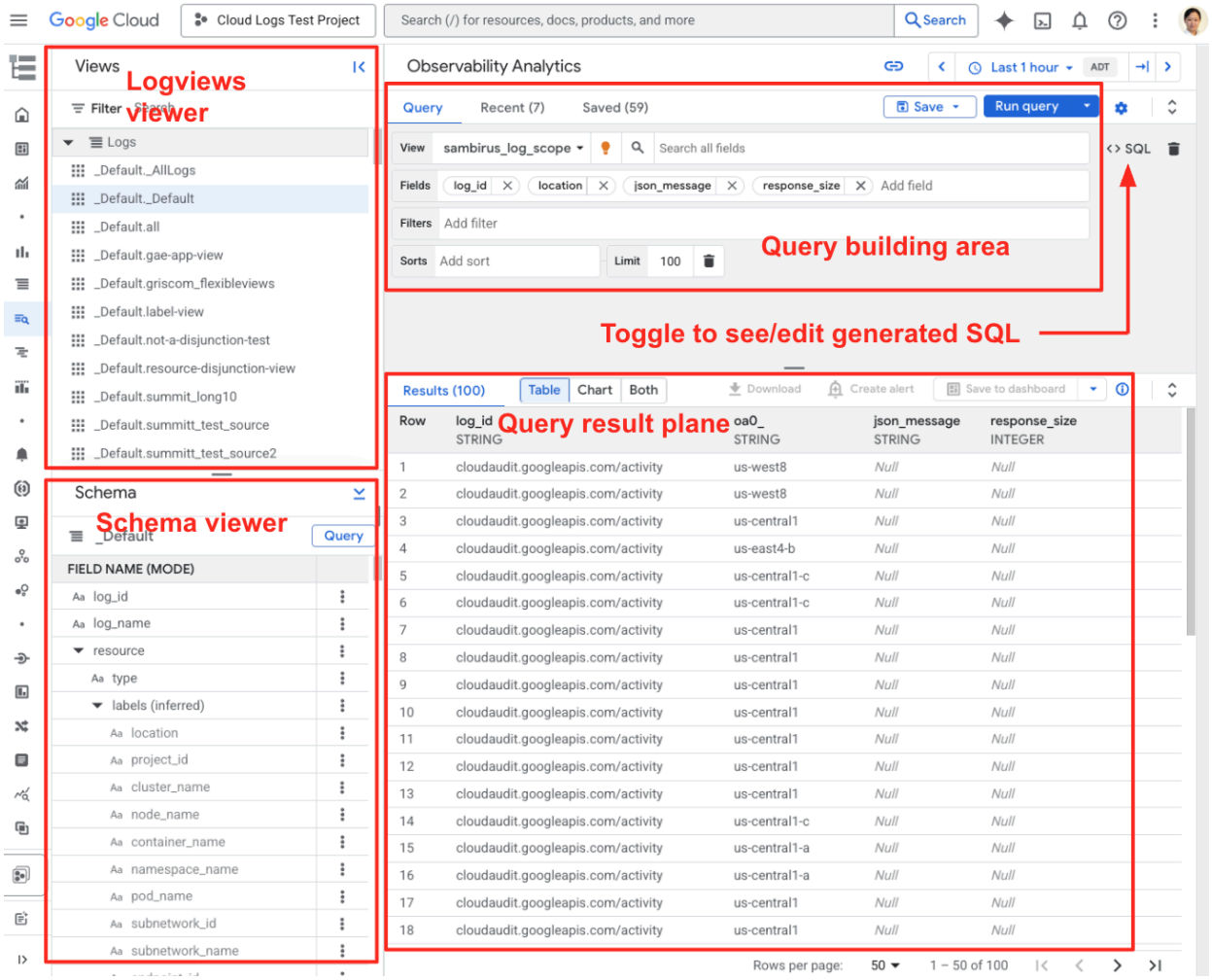
Log Schema viewer: Display log schema, including nested fields

Query Building area:

- **View select:** Selecting log view, **log scope**, metrics view, trace view and analytics views,
- Construct query and answer questions by selecting fields, filters, aggregations, sortings, apply regex, alias, casting value type (coming soon).

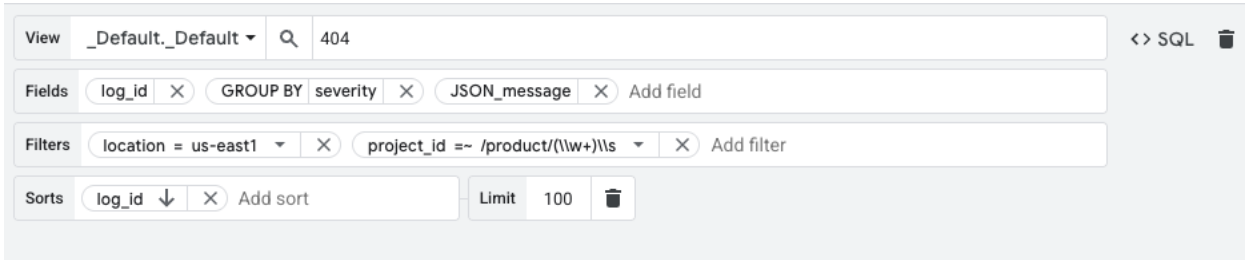
Query result plane:

- Display results from the construct.
- Data time range is automatically applied from the time range picker on the top right



Query Builder UI Component

The query builder UI is split into several fields.



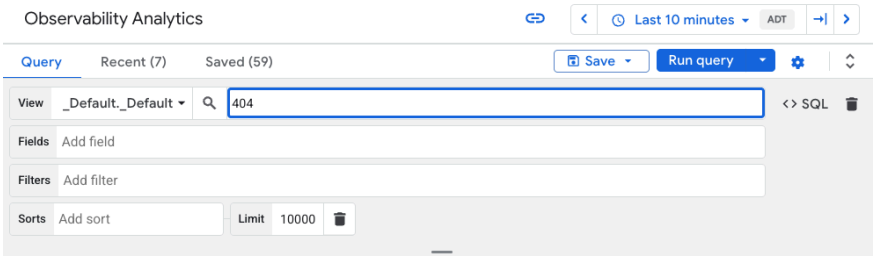
- “View” - allows you to pick the base view for the query, which will be presented in the FROM section. In addition to supporting log views and analytics views, there is also support for Log Scopes, which allow querying multiple views at once.
- “Search all fields” - Provides easy filtering using a simple text based search against the entire row, similar to the Logs Explorer’s search bar.
- “Fields” - Allows you to specify the columns that will appear in the output table

- “Filters” - Allows you to apply filters against fields of the source data
- “Sorts” - Allows you to specify the columns to sort by
- “Limit” - Set the number of output rows

Sample Use Cases

Example 1: Search ‘404’ in all fields

This query builder construct allows you to search term ‘404’ across all fields of the log, and return the log as long as there is a match in any field of the log.



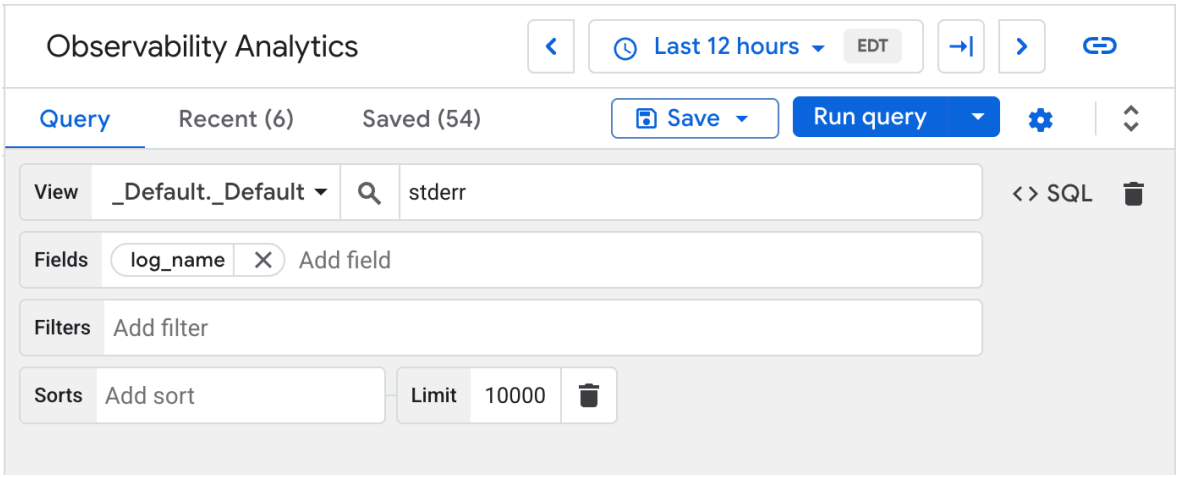
Corresponding manual query

```
SQL
SELECT
 *
FROM
 query-builder-test-project.global._Default._Default
WHERE
 SEARCH('query-builder-test-project.global._Default._Default', '404')
LIMIT
 10000
```

Expected results

Row	log_id	text_payload	timestamp
	STRING	STRING	TIMESTAMP
1	stdout	10.0.3.1 - - [02/May/2025:18:29:06 +0000] "GET /sendgrid.env HTTP/1.1" 404 153 "-" "l9explore/1.2.2" "-"	2025-05-02 14:29:06.268 EDT

Example 2: Search 'stderr' in log_name field



Corresponding manual query

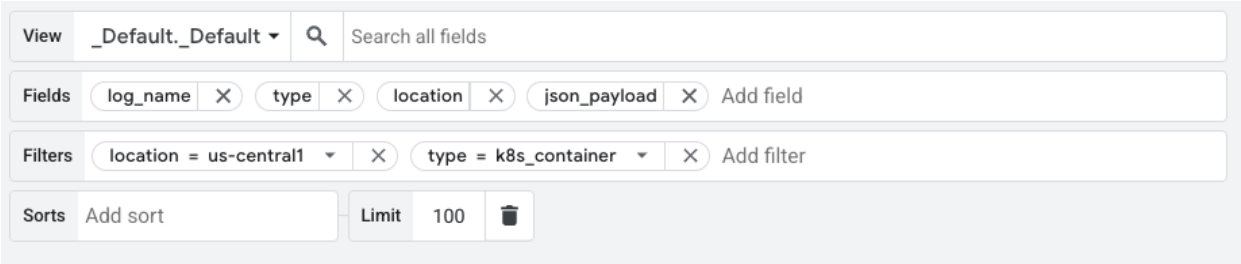
```
SQL
SELECT
 log_name
FROM
 query-builder-test-project.global._Default._Default
WHERE
 SEARCH('query-builder-test-project.global._Default._Default', 'stderr')
LIMIT
 10000
```

Expected results

Row	log_name
	STRING
1	projects/query-builder-test-project/logs/stderr
2	projects/query-builder-test-project/logs/stderr

Example 3: Select fields with filters (equality filter)

This query builder construct allows you to select log name, resource type, resource location, JSON payload from logs, where resource type is k8s_container and location is us-central1



Corresponding manual query

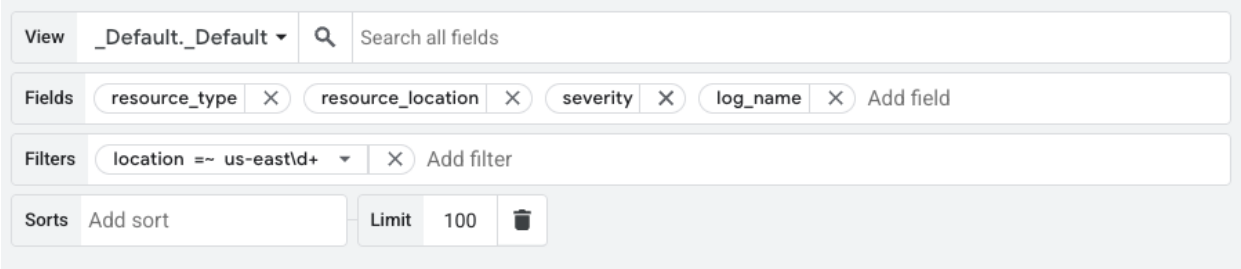
```
SQL
SELECT
  log_name,
  resource.type,
  JSON_VALUE( resource.labels.location ),
  json_payload
FROM
 query-builder-test-project.global._Default._Default
WHERE
  resource.type = 'k8s_container'
  AND JSON_VALUE( resource.labels.location ) = 'us-central1'
LIMIT
  100
```

Expected results

Row	log_name STRING	type STRING	oa0_ STRING	json_payload
1	projects/query-builder-test-project/logs/stdout	k8s_container	us-central1	*Null*
2	projects/query-builder-test-project/logs/stdout	k8s_container	us-central1	*Null*
3	projects/query-builder-test-project/logs/stdout	k8s_container	us-central1	*Null*

Example 4: Alias selected fields, with regex filters

Selecting resource type, resource location, severity and log name where resource locations are in all of us-east locations.



Corresponding manual query

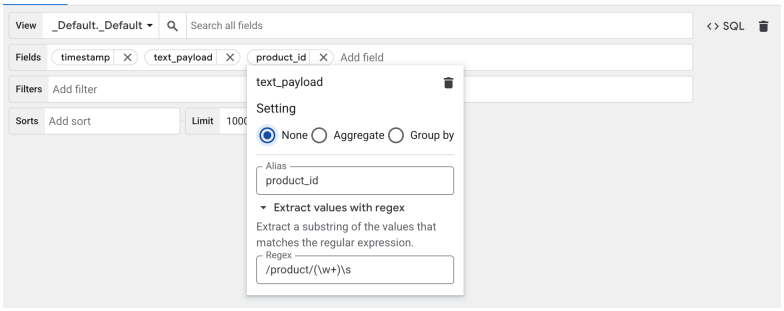
```
SQL
SELECT
  resource.type AS resource_type,
  JSON_VALUE( resource.labels.location ) AS resource_location,
  severity,
  log_name
FROM
  query-builder-test-project.global._Default._Default
WHERE
  REGEXP_CONTAINS( JSON_VALUE( resource.labels.location ), 'us-east\\d+')
LIMIT
  100
```

Expected results

Row	resource_type STRING	resource_location STRING	severity STRING	log_name STRING
1	k8s_cluster	us-east1-a	DEFAULT	projects/query-builder-test-project/logs/cloudaudit.googleapis.com%2Factivity
2	k8s_cluster	us-east4-b	DEFAULT	projects/query-builder-test-project/logs/cloudaudit.googleapis.com%2Factivity

Example 5: Alias selected field with regex extraction

Selecting timestamp, text_payload, and an aliased product_id from the text_payload column with a regex extraction applied.



Corresponding manual query

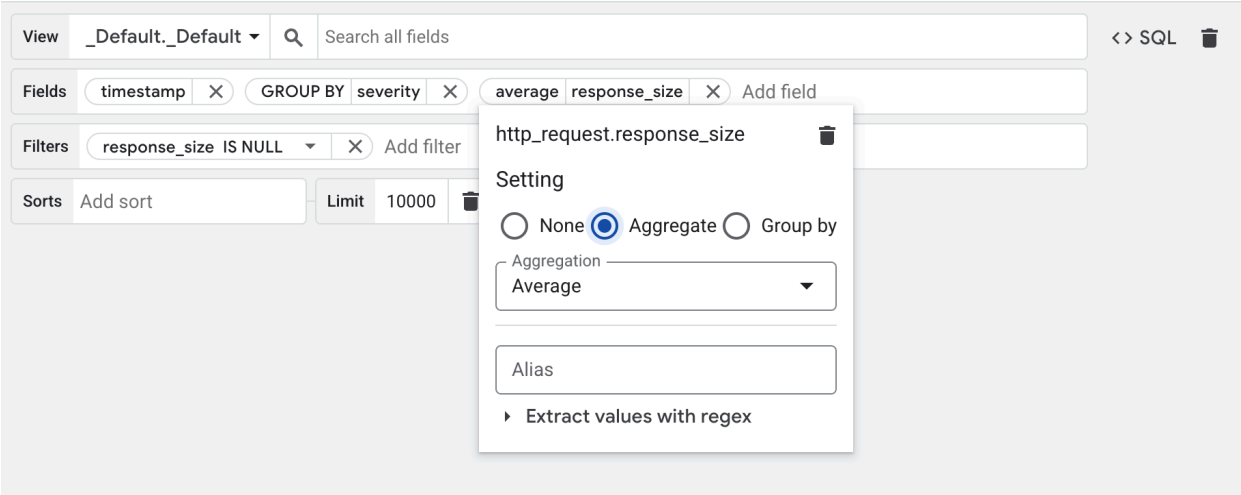
```
SQL
SELECT
  timestamp,
  text_payload,
  REGEXP_EXTRACT( text_payload, '/product/(\\w+)\\s') AS product_id
FROM
  query-builder-test-project.global._Default._Default
```

Expected results

Row	timestamp	text_payload	product_id
	TIMESTAMP	STRING	STRING
1	2025-05-02 10:16:29.749 EDT	GET /product/1PUX7V6EV0 12345 12345(100.00%) | 11 2 3333 00 | 0.00 0.00	1PUX7V6EV0
2	2025-05-02 10:16:31.755 EDT	GET /product/1PUX7V6EV0 12345 85483(100.00%) | 11 2 3333 00 | 0.00 0.00	1PUX7V6EV0
3	2025-05-02 10:22:44.673 EDT	GET /product/1PUX7V6EV0 12345 12345(100.00%) | 11 2 3333 00 | 0.30 0.30	1PUX7V6EV0

Example 6: Fields with aggregation and grouping, filter with IS NOT NULL

Select average response size and group by severity and timestamp



Corresponding manual query

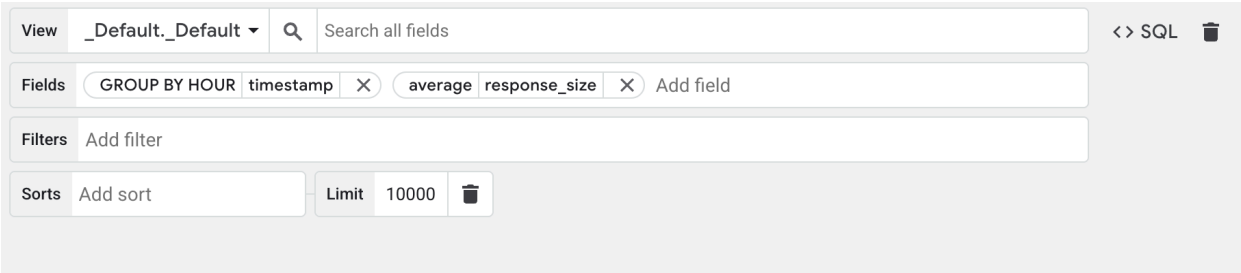
```
SQL
SELECT
  timestamp,
  severity,
  AVG(proto_payload.request_log.response_size) AS response_size
FROM
  `query-builder-test-project.global._Default._Default`
WHERE
  proto_payload.request_log.response_size IS NOT NULL
GROUP BY
  timestamp,
  severity
LIMIT
  20;
```

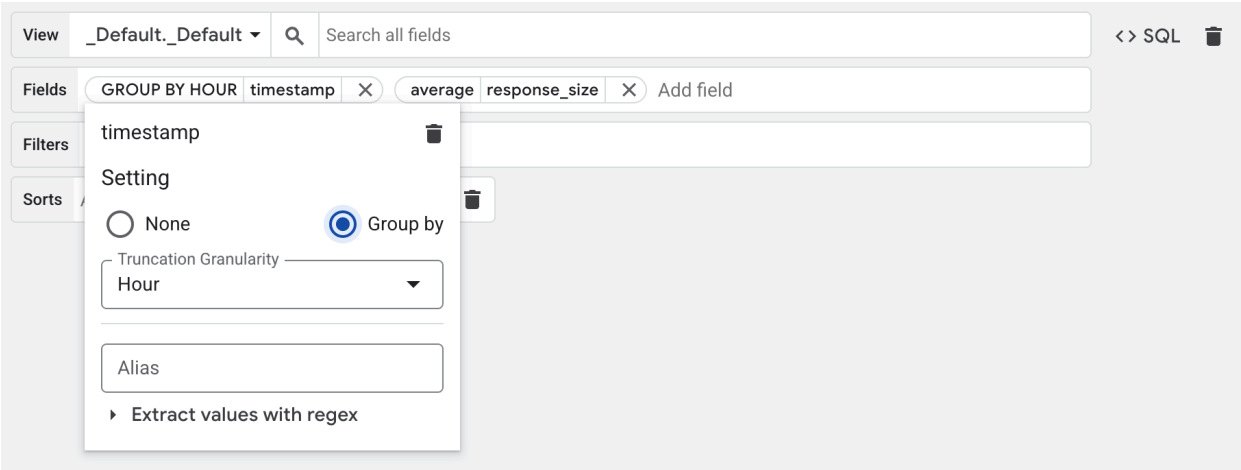
Expected results

Row	timestamp	severity	response_size
	TIMESTAMP	STRING	INTEGER
1	2025-05-02 14:00:00.000 EDT	INFO	431
2	2025-05-02 13:00:00.000 EDT	NOTICE	2540

Example 7: Group by hour truncation from timestamp

Group response size by hours exacted from timestamp





Corresponding manual query

SQL

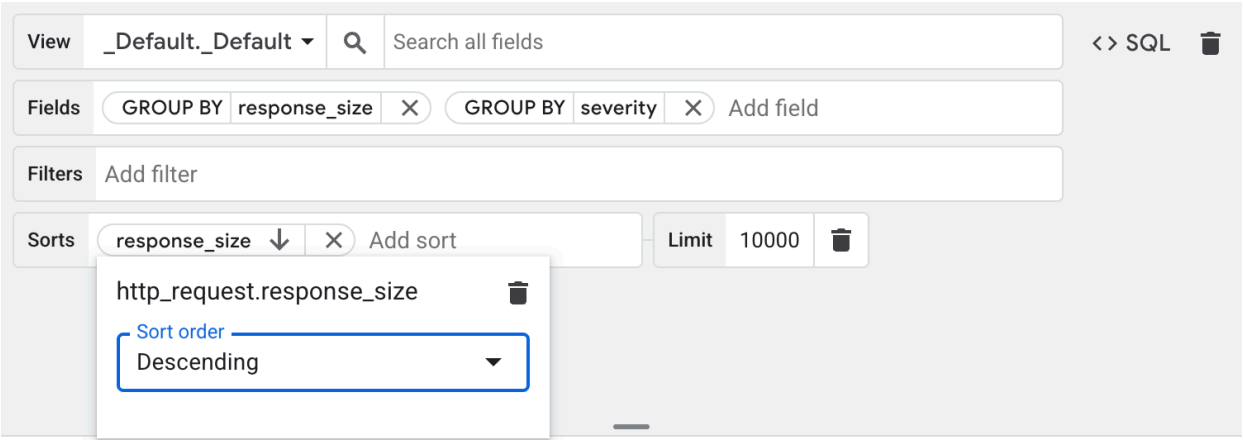
```
SELECT
  TIMESTAMP_TRUNC(timestamp, HOUR) as event_hour,
  AVG(proto_payload.request_log.response_size) AS avg_response_size
FROM
  `query-builder-test-project.global._Default._Default`
WHERE
  proto_payload.request_log.response_size IS NOT NULL
GROUP BY
  event_hour
LIMIT
  20;
```

Expected results

Row	event_hour	response_size
	TIMESTAMP	FLOAT
1	2025-05-02 14:00:00.000 EDT	756.93939393939
2	2025-05-02 08:00:00.000 EDT	761.92473118279

3	2025-05-02 14:00:00.000 EDT	*Null*

Example 8: Filter and some number of fields with sort



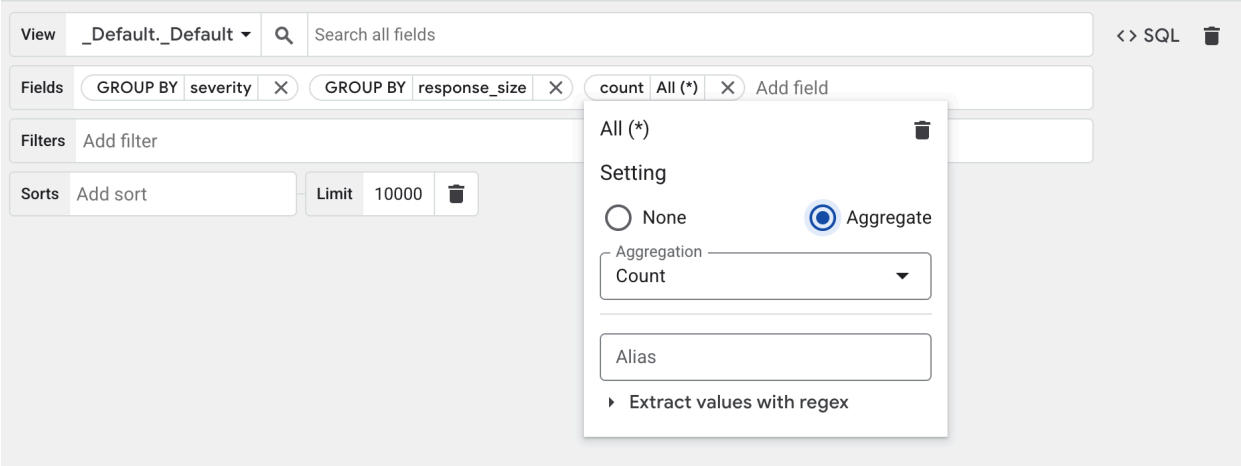
Corresponding manual query

```
SQL
SELECT
    severity,
    http_request.response_size
FROM
    `query-builder-test-project.global._Default._Default`
GROUP BY
    severity,
    http_request.response_size
ORDER BY
    http_request.response_size DESC
```

Expected Results

Row	severity	response_size
	STRING	INTEGER
1	NOTICE	3076
2	DEBUG	3075
3	NOTICE	*Null*

Example 9: Some number of fields with groupings and a COUNT aggregation



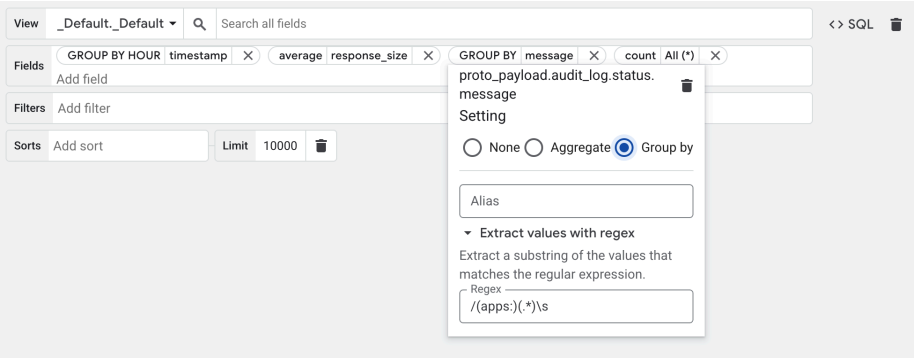
Corresponding manual query

```sql
SELECT
  severity,
  proto_payload.request_log.response_size as response_size,
  count(*) as count
FROM
  `query-builder-test-project.global._Default._Default`
GROUP BY
  severity,
  response_size
LIMIT
  1000
```

Expected results

Row	severity	response_size	count
	STRING	INTEGER	INTEGER
1	NOTICE	3075	274
2	DEBUG	*Null*	518816
3	WARNING	*Null*	14720

Example 10: Filter and some number of fields with aggregations including aliases, regexp, COUNT, grouping, sort, and search term



Corresponding manual query

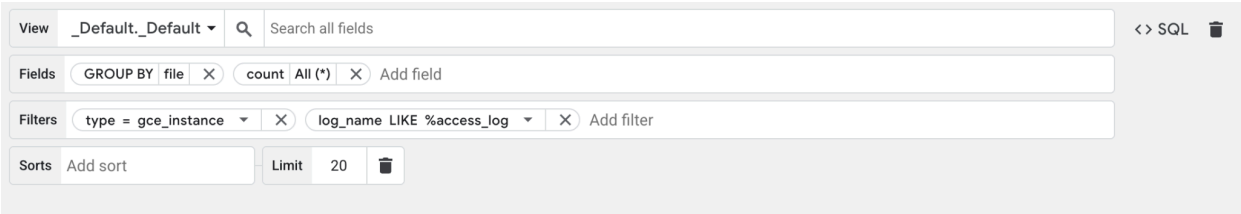
```
SQL
SELECT
    TIMESTAMP_TRUNC(timestamp, HOUR) AS timestamp,
    AVG(http_request.response_size) AS response_size,
    REGEXP_EXTRACT( proto_payload.audit_log.status.message, '/apps:.*\\s') AS
message_failure,
    COUNT(*) AS count
  FROM
    query-builder-test-project.global._Default._Default
  GROUP BY
    timestamp,
    proto_payload.audit_log.status.message
ORDER BY
  AVG(http_request.response_size) DESC
```

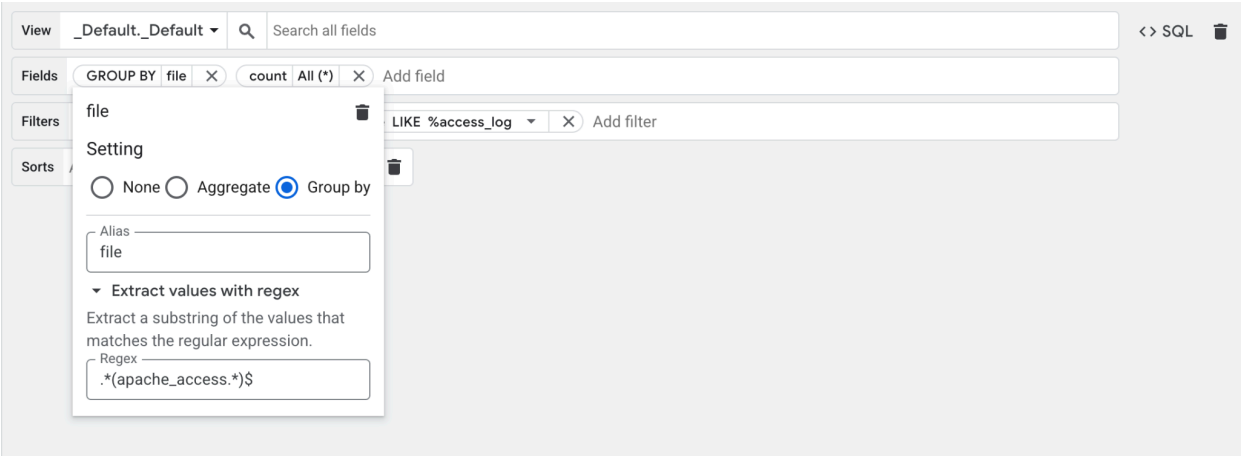
Expected Results

Row	timestamp	response_size	message_failure	count
	TIMESTAMP	FLOAT	STRING	INTEGER
1	2025-05-02 09:00:00.000 EDT	849.8276422764229	app-1-test not found	979292
2	2025-05-02 10:00:00.000 EDT	825.1137295081982	*Null*	978058
3	2025-05-02 02:00:00.000 EDT	814.1943597560974	*Null*	456324

Example 11: Regex extraction - the top 20 files accessed

The following construct shows the top 20 files accessed and shows the use of regex extraction that matches string patterns of “%access_log”.





Corresponding manual query

```
SQL
SELECT
  REGEXP_EXTRACT(JSON_VALUE(json_payload.file), r".*(apache_access.*)$") as
file,
  COUNT(*) as count,
FROM
       `query-builder-test-project.global._Default._Default`
WHERE
  resource.type = "gce_instance" AND
  log_name LIKE "%access_log"
GROUP BY file
LIMIT 20
```

Expected result:

Row	file	count
	STRING	INTEGER

1	test_file	12101518

Supported Comparison Operators

- =
- !=
- = regex
- !=regex
- >
- >=
- <
- <=
- IS NULL
- IS NOT NULL
- LIKE

Not Supported Features

List of features current version of query builder does not support in the preview:

Coming Soon

- Cast value type

To be scheduled

- OR operator in filter
- Partition clause in fields
- Array as input
- TIMESTAMP
    - Filter comparisons
    - FORMAT_TIMESTAMP
    - Timestamp_SUB
- Subquery
- IN, NOT IN comparison
- Use regex extraction, aggregation in filter or sort
- Having clause in filter

FAQ

Can I use log scope?

Yes. Log scope is available in query builder. If you need to write more complex query to the same log scope, you can edit your own query by using the log scope CTE generated by query builder.

Can I save the query builder construct?

No. Builder UI construct cannot be saved.

Can I join tables?

No. Join is not supported. But you can use the SQL editor to write SQL.

Does it support “two way mapping” if I write a SQL query?

No. Query builder will auto generate SQL query for valid construct, but it does not support translate your query into builder.