

The screenshot displays the DBeaver database management tool interface. On the left sidebar, the 'Servers' tree shows two PostgreSQL instances; the first instance is expanded, revealing its 'Databases' folder. The main workspace at the top contains a toolbar with icons for file operations, query execution, and editing. Below the toolbar are tabs for 'Query' and 'Query History'. The 'Query' tab is active, displaying a SQL statement: 'CREATE INDEX idx_flights_actual_departure ON flights (actual_departure);'. At the bottom of the interface, there are three tabs: 'Data Output', 'Messages', and 'Notifications'. The 'Messages' tab is selected, showing a confirmation message: 'Query returned successfully in 2 secs 45 msec.'. The status bar at the very bottom indicates 'Total rows: Query complete 00:00:02.045' and the current cursor position as 'Ln 2, Col 31'.

Servers (2)

PostgreSQL 17

Databases (4)

Login/Group Roles

Tablespaces

PostgreSQL 18

airport_database/postgres@PostgreSQL 17*

airport_database/postgres@PostgreSQL 17

No limit

Query

Query History

1

2

3

CREATE UNIQUE INDEX idx_flights_flight_no_scheduled_departure

ON flights (flight_no, scheduled_departure);

Data Output

Messages

Notifications

CREATE INDEX

Query returned successfully in 879 msec.

Total rows:

Query complete 00:00:00.879

LF

Ln 3, Col 1

✓ Query returned successfully in 879 msec.

Servers (2)

PostgreSQL 17

Databases (4)

Login/Group Roles

Tablespaces

PostgreSQL 18

airport_database/postgres@PostgreSQL 17*

airport_database/postgres@PostgreSQL 17

No limit

Query

Query History

1

2

CREATE INDEX idx_flights_departure_arrival

ON flights (departure_airport_id, arrival_airport_id);

Data Output

Messages

Notifications

CREATE INDEX

Query returned successfully in 1 secs 715 msec.

Total rows:

Query complete 00:00:01.715

LF

Ln 2, Col 55

✓ Query returned successfully in 1 secs 715 msec.

✗

air

Servers (2)

PostgreSQL 17

Databases (4)

Login/Group Roles

Tablespaces

PostgreSQL 18

airport_database/postgres@PostgreSQL 17*

airport_database/postgres@PostgreSQL 17

No limit

Query

Query History

1

-- 4.1 Query by actual_departure

2

EXPLAIN ANALYZE

3

SELECT *

4

FROM flights

5

WHERE actual_departure = '2024-01-01';

6

7

-- 4.2 Query by flight_no and scheduled_departure

8

EXPLAIN ANALYZE

9

SELECT *

10

FROM flights

11

WHERE flight_no = 'KC123'

12

AND scheduled_departure = '2024-02-10';

13

14

-- 4.3 Query by departure_airport_id and arrival_airport_id

15

EXPLAIN ANALYZE

16

SELECT *

17

FROM flights

18

WHERE departure_airport_id = 1

Data Output

Messages

Notifications

SQL

Showing rows: 1 to 7

Page No: 1 of 1

	QUERY PLAN	
	text	
1	Bitmap Heap Scan on flights (cost=4.30..9.97 rows=2 width=61) (actual time=0.032..0.058 rows=2 loops=1)	
2	Recheck Cond: ((departure_airport_id = 1) AND (arrival_airport_id = 2))	
3	Heap Blocks: exact=2	
4	-> Bitmap Index Scan on idx_flights_departure_arrival (cost=0.00..4.29 rows=2 width=0) (actual time=0.027..0.027 rows=2 loo...	
5	Index Cond: ((departure_airport_id = 1) AND (arrival_airport_id = 2))	
6	Planning Time: 0.061 ms	
7	Execution Time: 0.070 ms	

Successfully run. Total query runtime: 330 msec. 7 rows affected.

Total rows: 7

Query complete 00:00:00.330

LF

Ln 12, Col 42

Servers (2)

- PostgreSQL 17
 - Databases (4)
 - Login/Group Roles
 - Tablespaces
- PostgreSQL 18

airport_database/postgres@PostgreSQL 17*

airport_database/postgres@PostgreSQL 17

No limit

E

Query

Query History

1

EXPLAIN ANALYZE

2

SELECT *

3

FROM flights

4

WHERE departure_airport_id = 1

5

AND arrival_airport_id = 2;

Data Output

Messages

Notifications

Showing rows: 1 to 7

Page No: 1 of 1

QUERY PLAN

text

1

Bitmap Heap Scan on flights (cost=4.30..9.97 rows=2 width=61) (actual time=0.028..0.030 rows=2 loops=1)

2

Recheck Cond: ((departure_airport_id = 1) AND (arrival_airport_id = 2))

3

Heap Blocks: exact=2

4

-> Bitmap Index Scan on idx_flights_departure_arrival (cost=0.00..4.29 rows=2 width=0) (actual time=0.018..0.018 rows=2 loo...)

5

Index Cond: ((departure_airport_id = 1) AND (arrival_airport_id = 2))

6

Planning Time: 0.117 ms

7

Execution Time: 0.053 ms

Total rows: 7

Query complete 00:00:02.036

Successfully run. Total query runtime: 2 secs 36 msec. 7 rows affected.

LF

Ln 5, Col 32

Servers (2)

- PostgreSQL 17
 - Databases (4)
 - Login/Group Roles
 - Tablespaces
- PostgreSQL 18

airport_database/postgres@PostgreSQL 17*

airport_database/postgres@PostgreSQL 17

No limit

Query Query History

```
1 CREATE UNIQUE INDEX idx_passengers_passport_number
2 ON passengers (passport_number);
3
4 -- check
5 SELECT indexname, indexdef
6 FROM pg_indexes
7 WHERE tablename = 'passengers'
8     AND indexname = 'idx_passengers_passport_number';
9
```

Data Output Messages Notifications

Showing rows: 1 to 1 Page No: 1 of 1

	indexname name	indexdef text
1	idx_passengers_passport_num...	CREATE UNIQUE INDEX idx_passengers_passport_number ON public.passengers USING btree (passport_nu...

✓ Successfully run. Total query runtime: 835 msec. 1 rows affected.

Total rows: 1 | Query complete 00:00:00.835 | LF | Ln 9, Col 1

Servers (2)

- PostgreSQL 17
 - Databases (4)
 - Login/Group Roles
 - Tablespaces
- PostgreSQL 18

airport_database/postgres@PostgreSQL 17*

airport_database/postgres@PostgreSQL 17

No limit

Query Query History

1
2
3
4
5
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15

```
CREATE INDEX idx_passengers_name_dob_citizenship
ON passengers (first_name, last_name, date_of_birth, country_of_citizenship);

--ANALYZE
EXPLAIN ANALYZE
SELECT
    passenger_id,
    first_name,
    last_name,
    date_of_birth,
    country_of_citizenship
FROM passengers
WHERE country_of_citizenship = 'Philippines'
AND date_of_birth BETWEEN '1984-01-01' AND '1984-12-31';
```

Data Output Messages Notifications

Showing rows: 1 to 5 | Page No: 1 of 1

	QUERY PLAN
1	Seq Scan on passengers (cost=0.00..6.50 rows=1 width=31) (actual time=0.014..0.056 rows=1 loops=1)
2	Filter: ((date_of_birth >= '1984-01-01'::date) AND (date_of_birth <= '1984-12-31'::date) AND ((country_of_citizenship)::text = 'Philippines'::text))
3	Rows Removed by Filter: 199
4	Planning Time: 0.462 ms
5	Execution Time: 0.069 ms

Total rows: 5 | Query complete 00:00:00.751

Successfully run. Total query runtime: 751 msec. 5 rows affected.

LF | Ln 4, Col 10

Servers (2)

- PostgreSQL 17
 - Databases (4)
 - Login/Group Roles
 - Tablespaces
- PostgreSQL 18

airport_database/postgres@PostgreSQL 17*

airport_database/postgres@PostgreSQL 17

No limit

E

?

Query

Query History

1 SELECT indexname, indexdef

2 FROM pg_indexes

3 WHERE tablename = 'passengers';

4

5 DROP INDEX IF EXISTS idx_passengers_passport_number;

6 DROP INDEX IF EXISTS idx_passengers_name_dob_citizenship;

7

Data Output

Messages

Notifications

DROP INDEX

Query returned successfully in 1 secs 746 msec.

Total rows:

Query complete 00:00:01.746

LF

Ln 1, Col 1