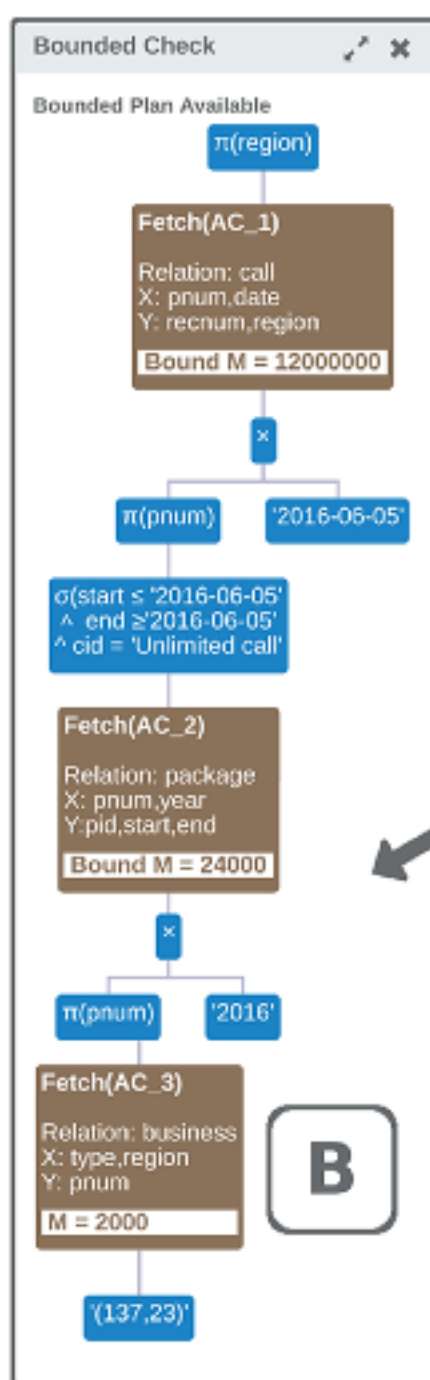




[7] Y. Cao, W. Fan, Y. Wang, T. Yuan, Y. Chen: BEAS: Bounded Evaluation of SQL Queries, SIGMOD 2017 (demo)



BEAS Demo Home Query Analysis Access Schema

Dataset & Access Schema Config

dataset: TLC-20 scale factor: 20 attributes: 285 size: 224.58GB
benchmark: TLC relations: 12 tuples: 2,220,000,194 access constraints: 35

select dataset select scale factor browse dataset schema browse access schema

Query Input

user input/built-in select ☐ built-in query Q1 budget 12000000

*supported mode: exact/approximate
*supported system: BEAS/PostgreSQL/MySQL/MariaDB

check boundedness optimize mode exact system BEAS execute

A

BEAS Demo Home Query Analysis Access Schema

Access Schema Management

Display Update Incremental Maintenance Discover

dataset select TLC-20 storage limit 300MB

Query Load

upload query load queryload.txt

Objective Criteria

index size ☒ performance ☐ bounded coverage ☒ criteria combination linear

discover & show

D

Access Schema Browse

Add Delete Update Select

access schema TLC-AS-1

E

<input checked="" type="checkbox"/>	name	relation	x	y	n
<input checked="" type="checkbox"/>	AC_1	call	pnum,date	recnum,region	500
<input checked="" type="checkbox"/>	AC_2	package	pnum,year	pid,start,end	12
<input checked="" type="checkbox"/>	AC_3	business	type,region	pnum	2000

confirm

Execute

Task Overview: #start time: 17:24:07 #finish time: 17:24:08 #execution time: 96.31ms

Task Resource Usage: CPU usage (%) Memory usage (%)

performance analysis

C

Result Overview: #tuples: 97 #attributes: 1

Result Relation Table:

#	region
6	Capital District, New York
7	Central New York
8	Westchester County, New York

Showing 9 rows per page 1 2 ... 33

export result as *.csv

Bounded Check

Bounded Plan Available

```

graph TD
    A["π(region)"] --> B["Fetch(AC_1)  
Relation: call  
X: pnum,date  
Y: recnum,region  
Bound M = 12000000"]
    B --> C["x"]
    C --> D["π(pnum)"]
    C --> E["'2016-06-05'"]
    D --> F["σ(start ≤ '2016-06-05'  
^ end ≥ '2016-06-05'  
^ cid = 'Unlimited call'"]
    F --> G["Fetch(AC_2)  
Relation: package  
X: pnum,year  
Y: pid,start,end  
Bound M = 24000"]
    G --> H["x"]
    H --> I["π(pnum)"]
    H --> J["'2016'"]
    I --> K["Fetch(AC_3)  
Relation: business  
X: type,region  
Y: pnum  
M = 2000"]
    K --> L["(137,23)"]
    
```

B

BEAS Demo

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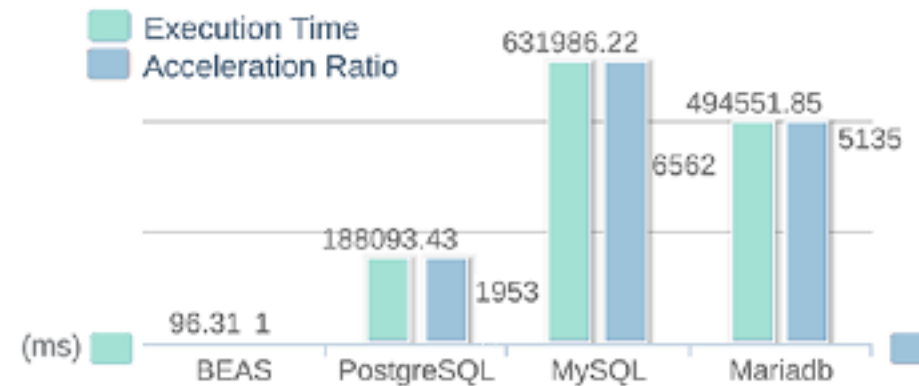
Result Relation Table:

#	region
6	Capital District, New York
7	Central New York
8	Westchester County, New York

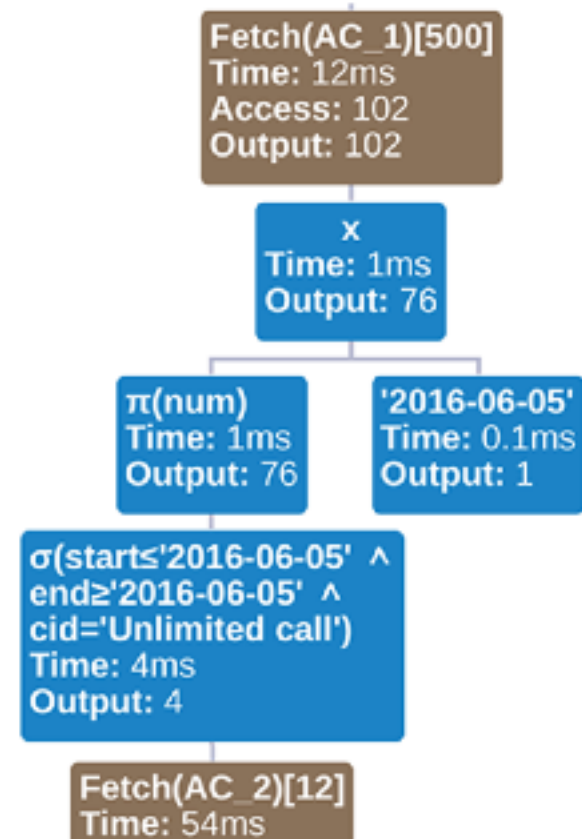
Showing 9 rows per page 1 2 ... 33

export result as *.csv

dataset: TLC-20 actually accessed tuples: 1259
scale factor: 20 employed constraints: 3

[detail](#)

BEAS Plan



DBMS Plan

