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SAnD-indeklima-case-grafana-guide.md

postgres

Her beskrives hvordan jeg opbyggede databasen samt styrer adgang til data.

create table

```
create table measurements (
    time      timestamp not null,
    applicationID int     not null,
    deviceName  varchar(50) not null,
    devEUI     char(16)   not null,
    battery     float,
    co2        int,
    humidity    int,
    light       int,
    motion      int,
    temperature float
);
SELECT create_hypertable('measurements', 'time');
create index applicationID on measurements (applicationID);
create index devEUI on measurements (devEUI);
create index time on measurements (time);
create index deviceName on measurements (deviceName);
```

views

```
create view app12 as select * from measurements where applicationid = 12;
```

auth

```
create role app12 with encrypted password 'some-random-very-secret-string' login;
grant select on app12 to app12;
```

grafana

Adgang

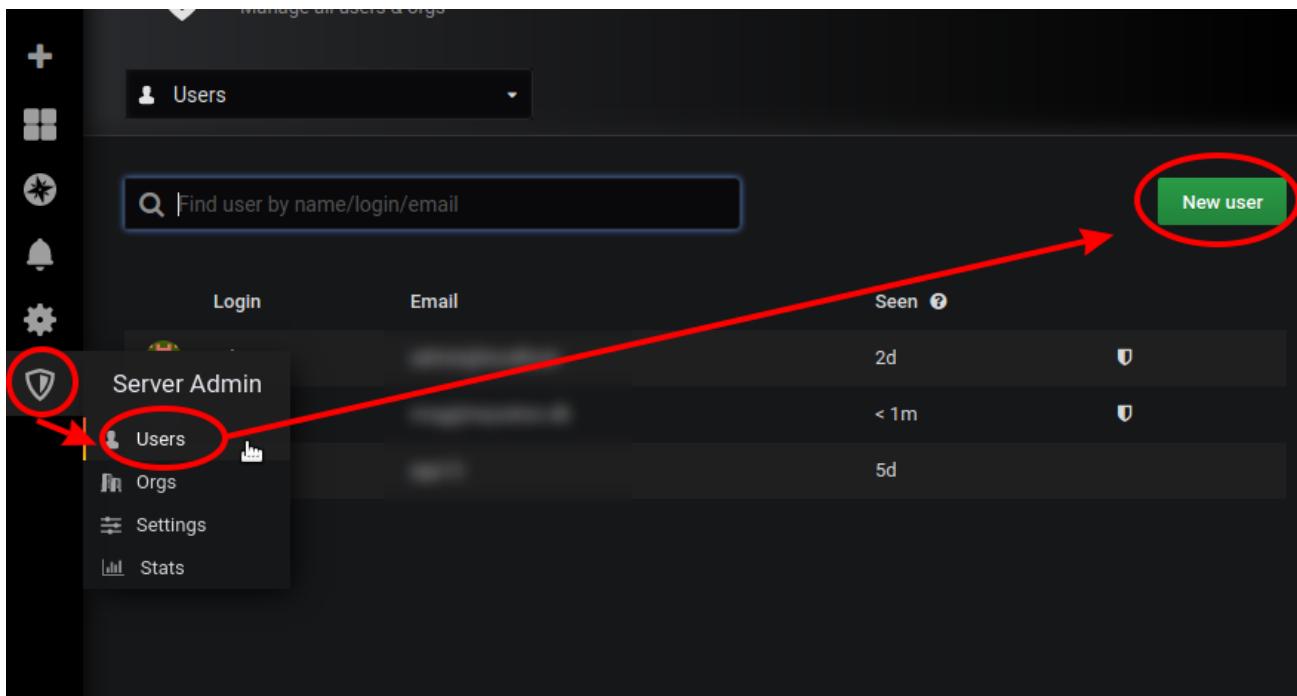
Som grafana administrator:

opret organisation

The screenshot shows the 'Server Admin' interface with the title 'Manage all users & orgs'. On the left, there's a sidebar with icons for Home, Orgs, Users, Settings, and Stats. The 'Orgs' icon is highlighted with a red circle. The main area displays a table with columns 'Id' and 'Name'. A single row is visible for 'Server Admin'. To the right of the table, there are several red 'x' buttons. In the top right corner, there's a green button labeled 'New org' with a red arrow pointing towards it.

The screenshot shows the 'New Organization' dialog. The title is 'New Organization'. Below it, a text block explains that each organization contains its own dashboards, data sources, and configurations, and that users may belong to multiple organizations. The input field 'Org. name' contains 'mogul-test-org', which is circled in red. A red arrow points from the 'Create' button at the bottom left to the 'Org. name' field. The 'Create' button itself is also circled in red.

opret bruger



The screenshot shows the 'Add new user' form. It has fields for Name (Morten Guldager), Email (spamtrap@mogul.dk), Username (mogul-test-bruger), and Password (represented by four dots). A green 'Create' button at the bottom is circled in red.

| Name | Morten Guldager |
|----------|-------------------|
| Email | spamtrap@mogul.dk |
| Username | mogul-test-bruger |
| Password | |

tilføj bruger til organisation

klik på ny burger

The screenshot shows the 'Server Admin' interface with a sidebar containing icons for users, organizations, sessions, and more. The main area is titled 'Users' with a search bar and a 'New user' button. Below is a table with columns: Login, Email, Seen, and a shield icon. The user 'mogul-test-bruger' is highlighted with a red oval.

| Login | Email | Seen | |
|-------------------|-------------------|------|------------|
| [redacted] | [redacted] | 2d | [redacted] |
| [redacted] | [redacted] | 3m | [redacted] |
| [redacted] | [redacted] | 5d | |
| mogul-test-bruger | mogul-test-bruger | 10y | |

rul lidt ned og slet medlemskab af main org

The screenshot shows the 'Organizations' section with an 'Add' button and a search bar. Below is a table with columns: Name and Role. The 'Main Org' row has a 'Viewer' role, which is circled in red.

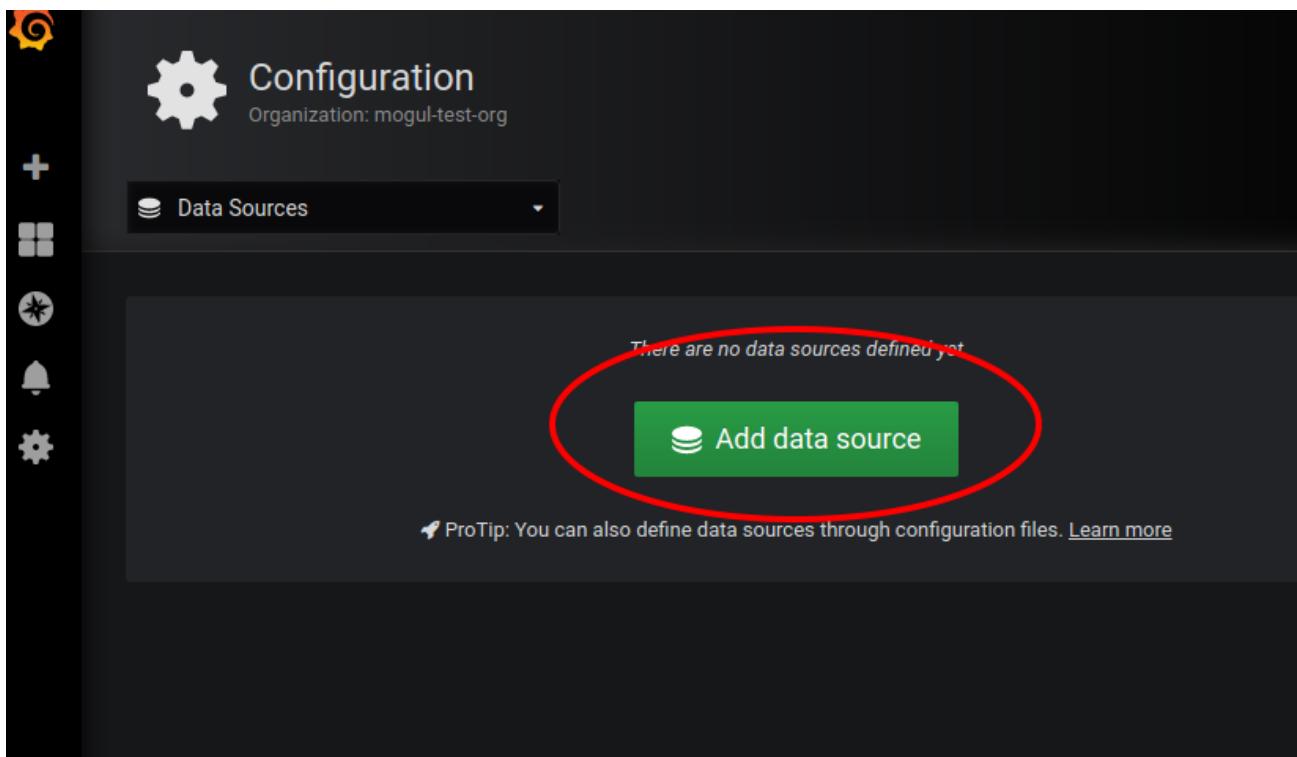
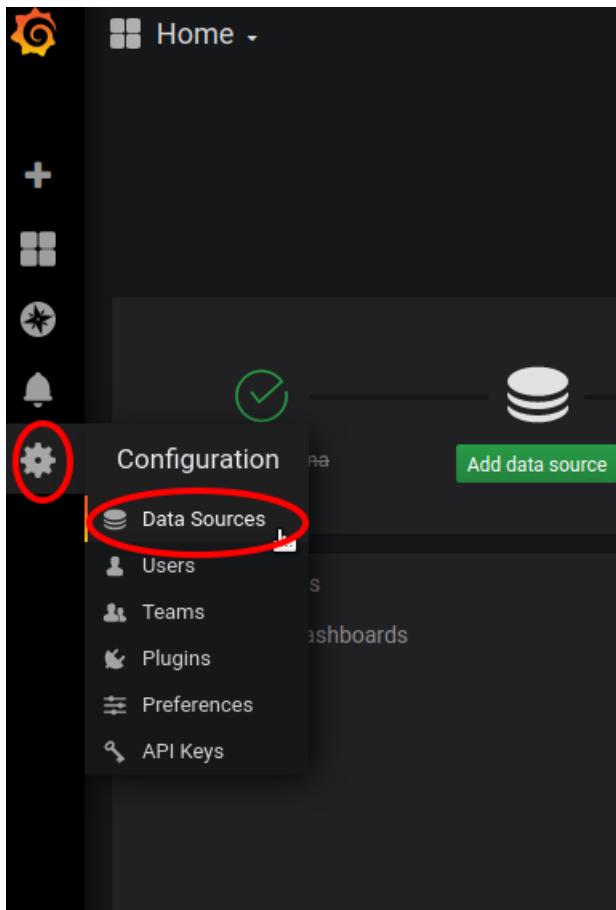
| Name | Role |
|-------------------|--------|
| Main Org. Current | Viewer |

og tilføj så den nye organisation med rollen admin

The screenshot shows the 'Permissions' section with a 'Grafana Admin' toggle switch (circled in red). Below is the 'Organizations' section, which includes an 'Add' button, a search bar with 'mogul-test-org', a 'Role' dropdown set to 'Admin', and a green 'Add' button (all three are circled in red).

datasource

Som nyligt oprettet bruger:



Rul lidt ned og find PostgreSQL

Add data source: Add data source - Grafana - Google Chrome

Incognito (2)

grafana.sand.inqvation.dk/datasources/new

InfluxDB
Open source time series database

Logging & document databases

- Loki
Like Prometheus but for logs. OSS logging solution from Grafana Labs
- Elasticsearch
Open source logging & analytics database

SQL

- MySQL
Data source for MySQL databases
- PostgreSQL
Data source for PostgreSQL and compatible databases Select
- Microsoft SQL Server
Data source for Microsoft SQL Server compatible databases

Cloud

- Stackdriver
Data source for Google's monitoring service
- CloudWatch
Data source for Amazon AWS monitoring service
- Azure Monitor
Data source for Microsoft Azure Monitor & Application Insights
- Grafana Cloud

konfigurer og test herefter

The screenshot shows the PostgreSQL Connection configuration page. At the top, there is a header with a gear icon, the name "PostgreSQL", a "Default" toggle switch (which is turned on), and a "reset" button. Below the header, the "PostgreSQL Connection" section contains the following fields, each highlighted with a red circle:

- Host: timescaledb_timescaledb_1:5432
- Database: indeklima
- User: app12
- SSL Mode: disable

Below these fields is a "Connection limits" section with three rows:

| Max open | unlimited |
|--------------|-----------|
| Max idle | 2 |
| Max lifetime | 14400 |

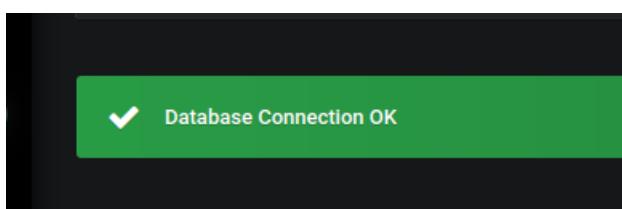
Under "PostgreSQL details", there are three sections:

- Version: 10
- TimescaleDB: A toggle switch that is turned off.
- Min time interval: 1m

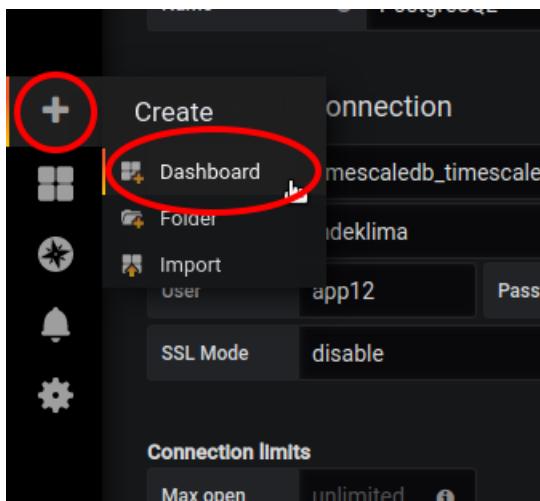
At the bottom of the page is a "User Permission" section containing a note about granting SELECT permissions and a "Save & Test" button, which is highlighted with a red circle.

Buttons at the bottom include: a question mark icon, "Save & Test" (green), "Delete" (red), and "Back".

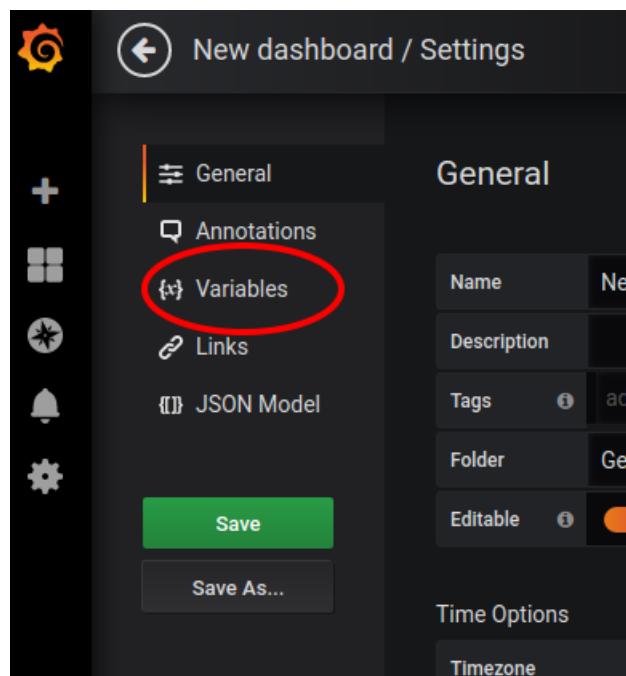
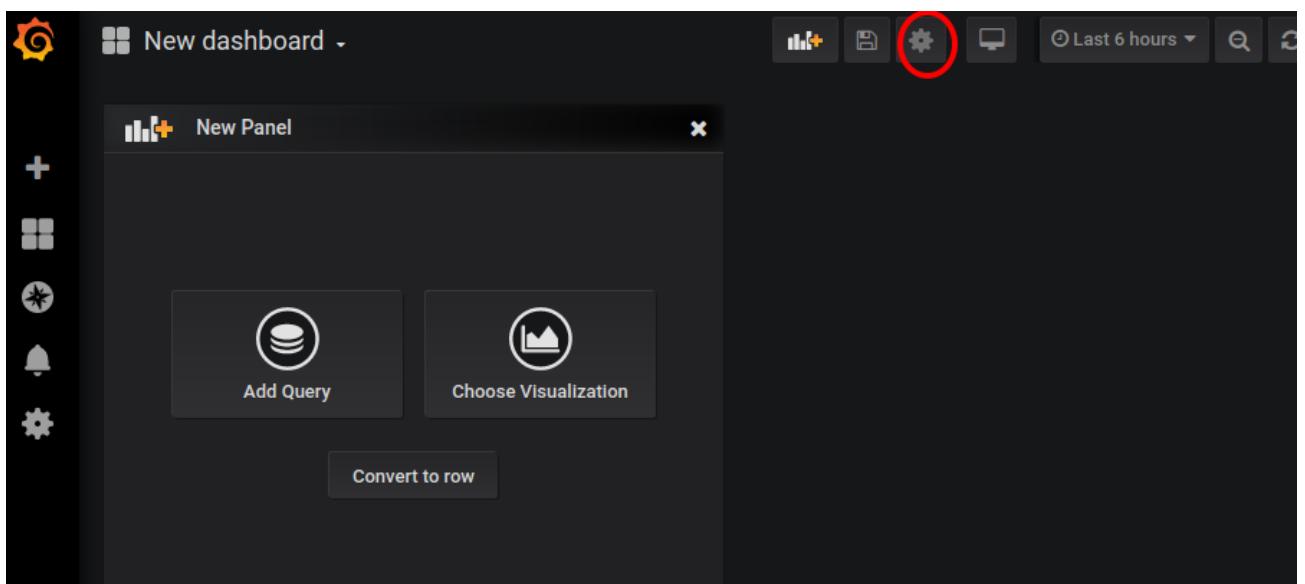
Skal give følgende



dashboard



opret en variabel





General



Annotations



{x} Variables



Links

{x} JSON
Model

Save

Save As...

Variables

There are no variables yet

{x} Add variable

Variables enable more interactive and dynamic dashboards. Instead of hard-coded or sensor names in your metric queries you can use variables in their place, dropdown select boxes at the top of the dashboard. These dropdowns make it easier to change the data being displayed in your dashboard. Check out the [Templating documentation](#) for more information.

New dashboard / Settings

Variables > New

General

Name: devicename (circled)
Type: Query (circled)

Label: optional display name
Hide

Query Options

Data source: PostgreSQL (circled)
Query: select distinct devicename from app12 (circled)
Refresh
On Dashboard Load (circled)

Regex: /.-(.*)-./
Sort: Disabled

Selection Options

Multi-value: Off
Include All option: Off

Value groups/tags (Experimental feature)

Enabled: Off

Preview of values

HTK_136 HTK_140 HTK_143 HTK_135 HTK_134 HTK_139 HTK_145 HTK_141 HTK_142 HTK_133 HTK_146 HTK_132 HTK_138 HTK_137

Add (circled)

New dashboard / Settings

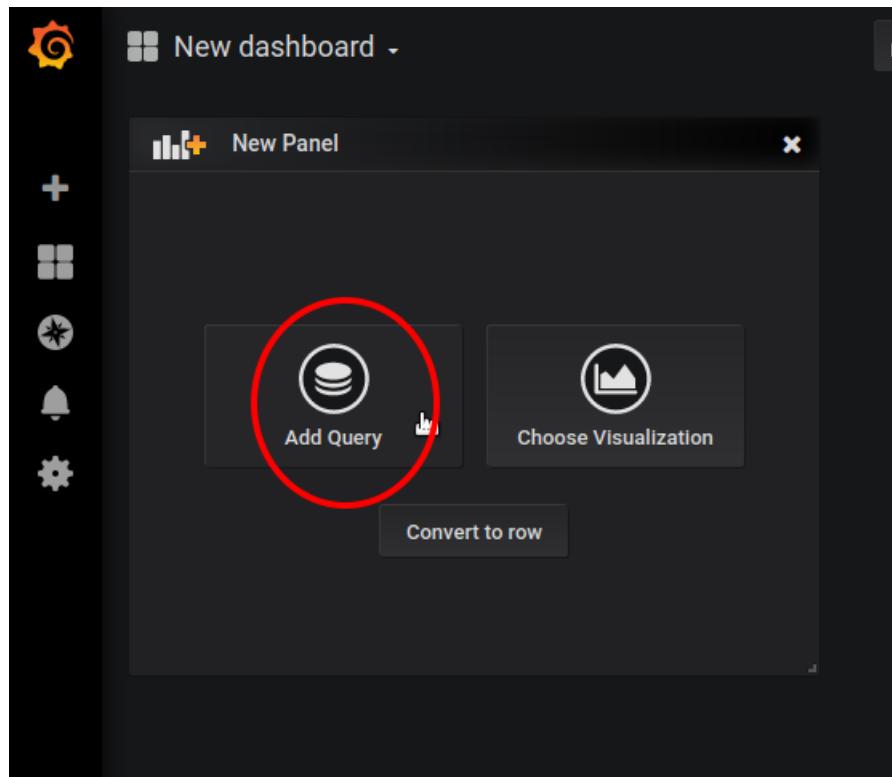
Variables

| Variable | Definition |
|--------------|---------------------------------------|
| \$devicename | select distinct devicename from app12 |

General
Annotations
Variables
Links
JSON Model

Save
Save As...

Iav data panel

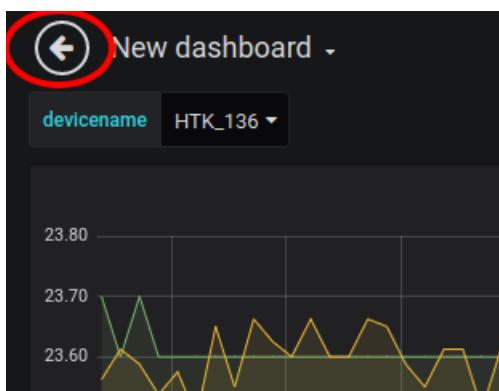
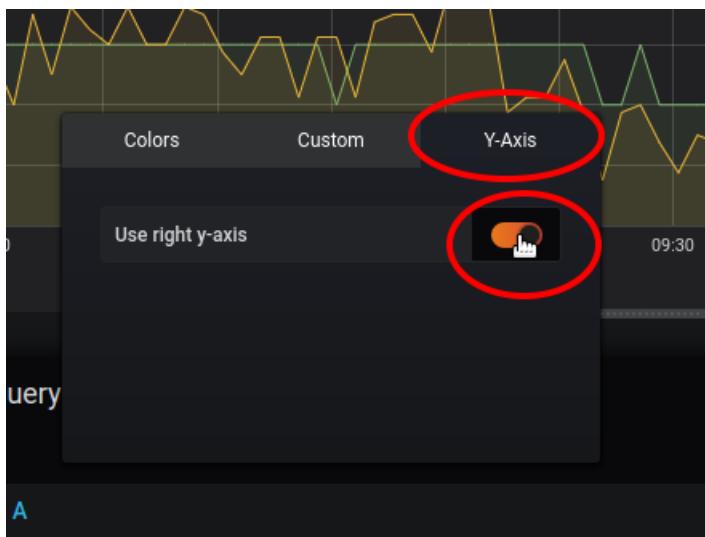
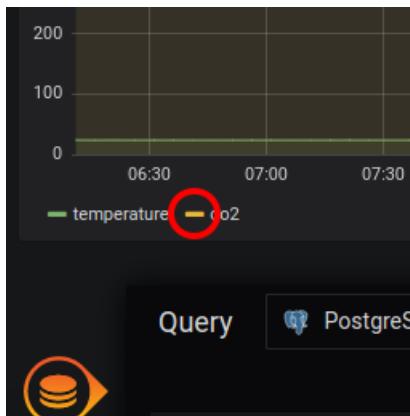


The screenshot shows the Grafana query editor. On the left, there's a sidebar with icons for database, chart, settings, and notifications. The main area shows a query editor with the following structure:

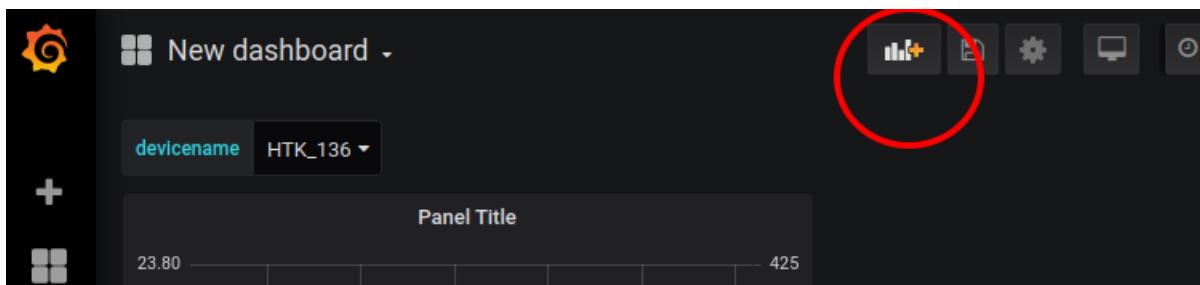
```
Query: PostgreSQL
FROM app12 Time column "time" Metric column none
SELECT Column: temperature +
      Column: co2 +
WHERE Macro: ${__timeFilter} Expr: devicename = '$devicename'
GROUP BY +
```

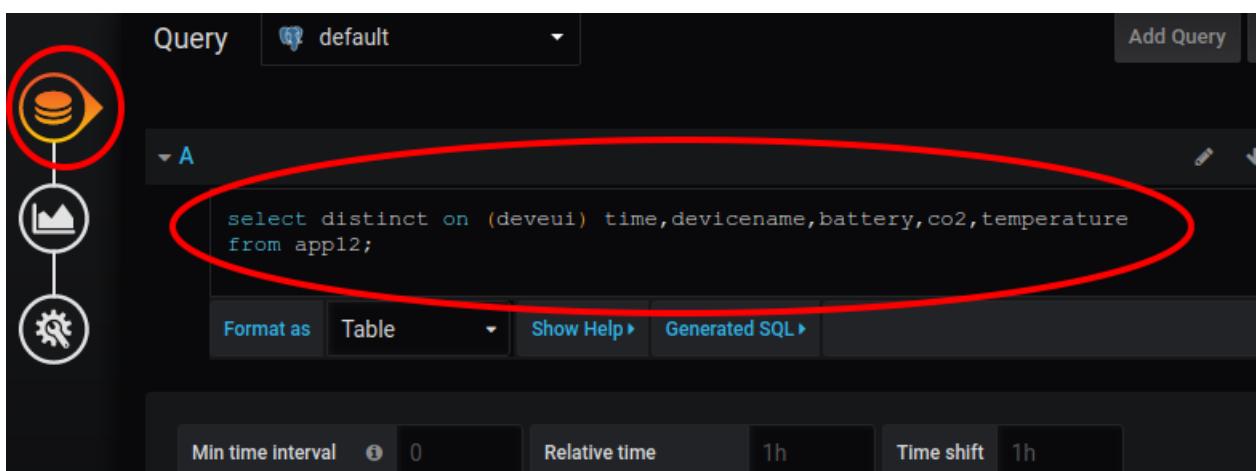
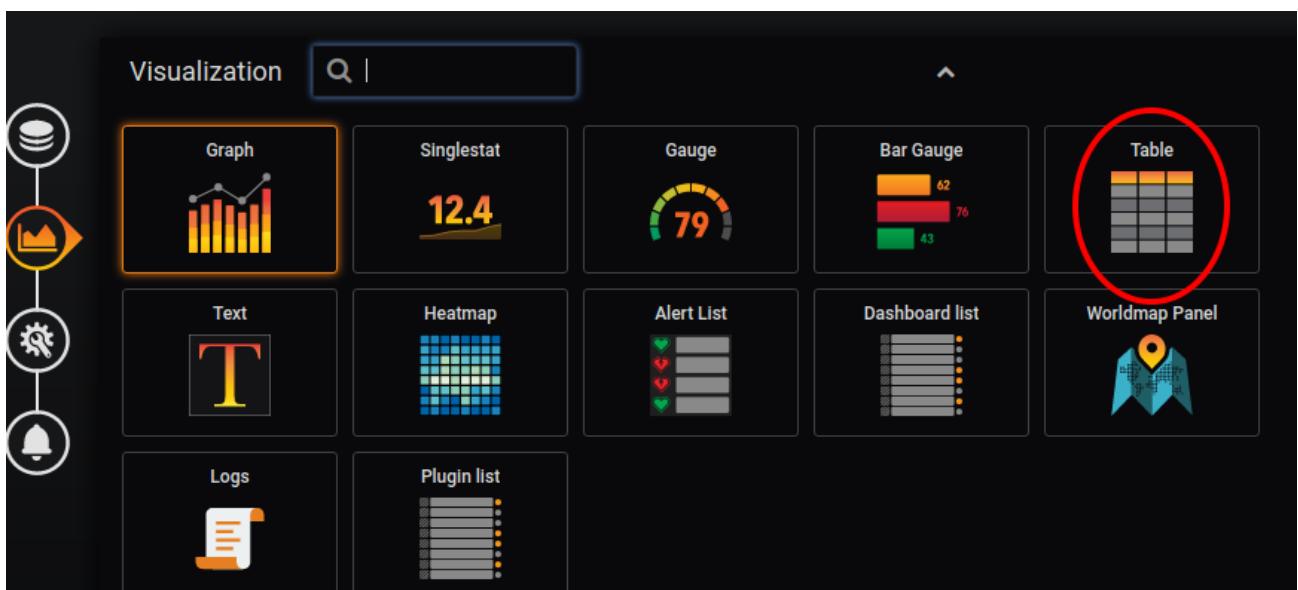
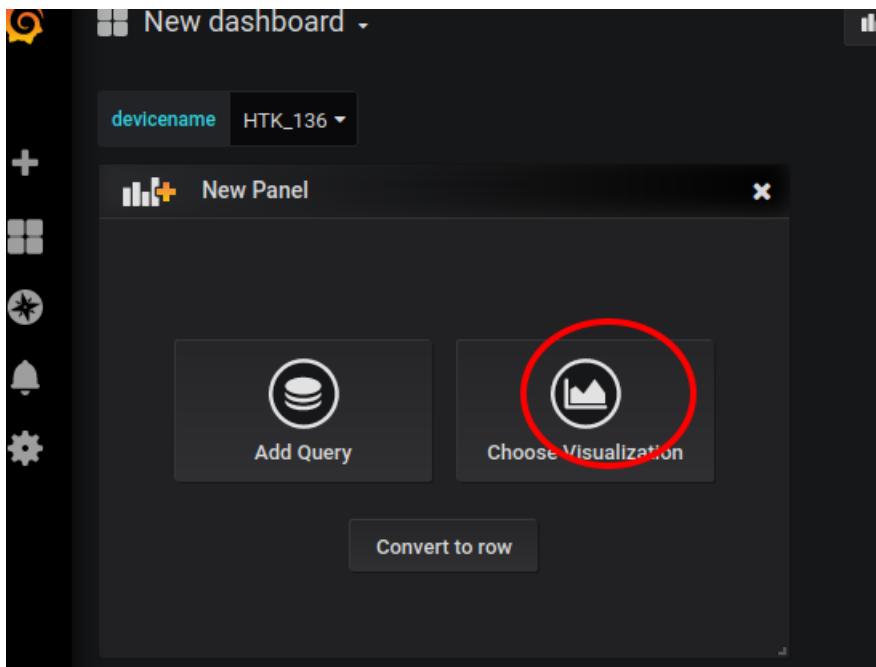
Below the query editor are buttons for 'Format as' (Time series), 'Edit SQL', 'Show Help', and 'Generated SQL'. At the bottom, there are controls for 'Min time interval' (0), 'Relative time' (1h), 'Time shift' (1h), and a 'Generated SQL' button.

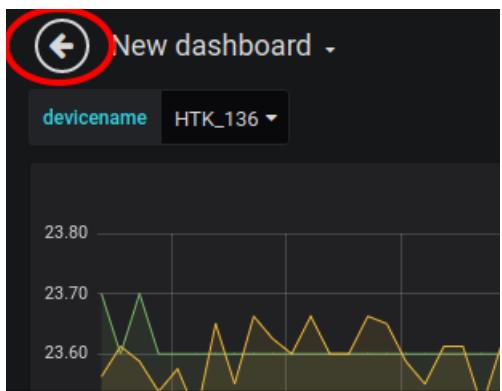
flyt CO2 akse til højre side



Lav et device oversigs panel







flyt rundt og eksperimenter

tag fat i panelerne og placer dem hvor de skal være

save

