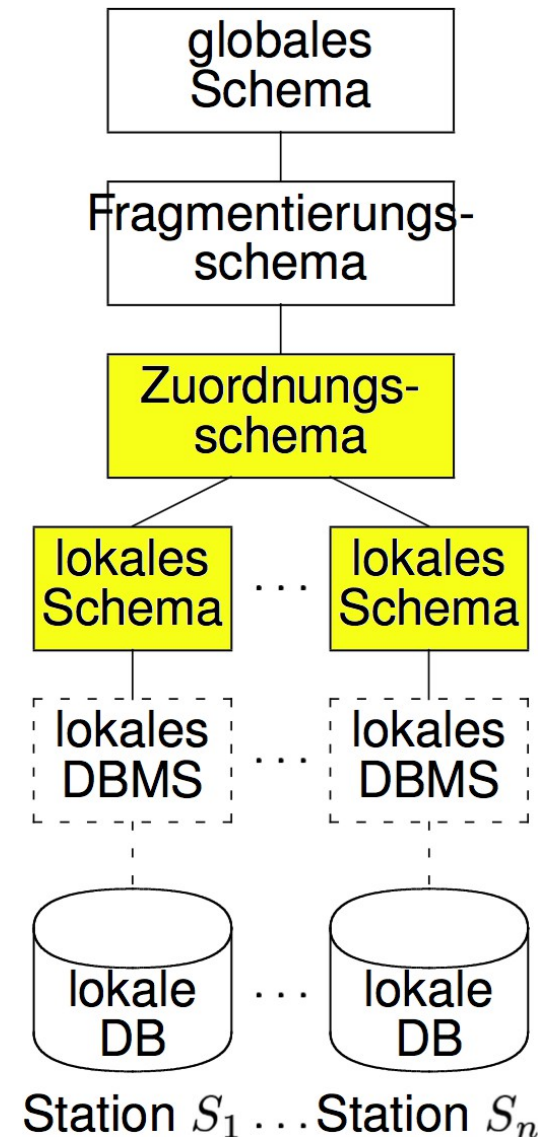# Verteilte Datenbanken
Postgres

Status

- **Lokale Datenbank**

- **Fragmentierung**
  - horizontal
  - vertical
  - combination

- **Allokation**
  - Postgres
  - Oracle

Konfiguration Postgres
Foreign Data Wrapper

- Verwendung des Postgres Moduls postgres_fdw module
- „used to access data stored in external PostgreSQL servers"
- Documentation:
  http://www.postgresql.org/docs/9.4/static/postgres-fdw.html

- Lokale Datenbank
  - alle Bestellungen von Quartal 3 und 4
    → horizontal.orders_q34
- Entfernte Datenbank
  - alle Bestellungen von Quartal 1 und 2
    → horizontal.orders_q12

Konfiguration Postgres
Foreign Data Wrapper

- Postgres on Local Database (psql cmd: user ds2, db ds2)
  - o activation of postgres extionsion
    ```
    CREATE EXTENSION postgres_fdw;
    ```

  - o definition server
    ```
    CREATE SERVER foreign_server
    FOREIGN DATA WRAPPER postgres_fdw
    OPTIONS
      (host '10.5.105.87', port '5432', dbname 'ds2');
    ```

  - o definition user mapping
    ```
    CREATE USER MAPPING FOR ds2
    SERVER foreign_server
    OPTIONS (user 'ds2', password 'ds2');
    ```

Konfiguration Postgres
Foreign Data Wrapper

o definition of remote table

```
CREATE FOREIGN TABLE horizontal.remote_orders_q12 (
        orderid SERIAL,
        orderdate DATE NOT NULL,
        customerid INT,
        netamount NUMERIC NOT NULL,
        tax NUMERIC NOT NULL,
        totalamount NUMERIC NOT NULL
)
SERVER foreign_server
OPTIONS
   (schema_name 'horizontal', table_name 'orders_q12');
```

Konfiguration Postgres
Foreign Data Wrapper

- Postgres on Remote Databas / settings postgres server
  - postgresql.conf
    (/etc/postgresql/9.4/main)
    ```
    #------------------------------------------------------
    # CONNECTIONS AND AUTHENTICATION
    #------------------------------------------------------
    listen_addresses = '*'
    #listen_addresses = 'localhost'
    ```

    postgresql restarten

  - pg_hba.conf
    (/etc/postgresql/9.4/main)
    ```
    # TYPE    DATABASE         USER              ADDRESS           METHOD
      local   all              all                                 peer
      host    all              all               127.0.0.1/32      md5
      host    all              all               ::1/128           md5
      host    ds2              ds2               samenet           md5
    ```