

#### Who we are

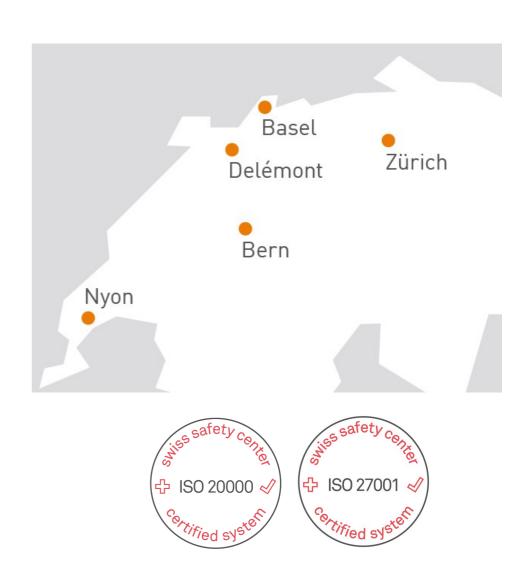


#### The Company

- > Founded in 2010
- More than 100 specialists
- > Specialized in the Middleware Infrastructure
  - > The invisible part of IT
- > Customers in Switzerland and all over Europe

#### **Our Offer**

- Consulting
- > Service Level Agreements (SLA)
- > Trainings
- > License Management



#### **About me**



**Daniel Westermann** 

Technology Leader
Principal Consultant

+41 79 927 24 46

<u>daniel.westermann@dbi-services.com</u>

@danielwestermann@mastodon.social

in <a href="https://www.linkedin.com/in/daniel-westerma">https://www.linkedin.com/in/daniel-westerma</a> nn/



## How it started way back in 2013 <a href="https://tinyurl.com/yuaj4zpe">https://tinyurl.com/yuaj4zpe</a>

#### Hi Listers,

we migrated an oracle datawarehouse to postgresql 9.1 (ppas 9.1.7.12) and are facing massive issues with response times in Postgres when compared to the oracle system. Both databases run on the same hardware and storage (rhel5.8 64bit).

•••

## I had an issue with performance Oracle DWH to PostgreSQL It was too slow!

### This was my first real contact with the PostgreSQL community

### ... and I really did something right! Guess what?

From: Daniel Westermann <Daniel(dot)Westermann(at)lcsystems(dot)ch> To: "pgsql-performance(at)postgresql(dot)org" <pgsql-performance(at)postgresql(dot)org>

### PostgreSQL Mailing Lists!?

### There are many, e.g.:

- general
- performance
  - hackers
  - announce

• • •

https://www.postgresql.org/list/

### But what about

- GitHub
- GitLab

- ...

https://github.com/postgres/postgres

## No! You really need to read/write emails! Prefrerrable in plain text!

### Why?

### It just works!

You can browse the archives back to the beginning! Everything is public, you only need

- A) Email
- B) Browser

The community is maintaining its own infrastructure!

No dependencies on third parties!

### Please have a look at this <a href="https://www.youtube.com/watch?v=vyenmLqJQjs">https://www.youtube.com/watch?v=vyenmLqJQjs</a>

"Linux Kernel Development, Greg Kroah-Hartman - Git Merge 2016" It is all plain text.

You can run it through Google translate, or whatever.
You can take a day, a week to respond.
We want people who have not English as their first language.

Email is just what you are writing.

### ... and

### Don't top-post! Why?

#### It is all about context!

```
On 03.01.2013 15:30, Daniel Westermann wrote: > What additionally makes me wonder is, that the same table in oracle is taking much less space than in postgresql
```

One difference is that numerics are stored more tightly packed on Oracle. Which is particularly good for Oracle as they don't have other numeric data types than number. On PostgreSQL, you'll want to use int4 for ID-fields, where possible. An int4 always takes up 4 bytes, while a numeric holding an integer value in the same range is typically 5-9 bytes.

https://en.wikipedia.org/wiki/Posting\_style

### But I've also done something wrong! Guess what?

Heikki Linnakangas <hlinnakangas(at)vmware(dot)com> writes:

- > One difference is that numerics are stored more tightly packed on
- > Oracle. Which is particularly good for Oracle as they don't have other
- > numeric data types than number. On PostgreSQL, you'll want to use int4
- > for ID-fields, where possible. An int4 always takes up 4 bytes, while a
- > numeric holding an integer value in the same range is typically 5-9 bytes.

Replacing those numeric(8) and numeric(16) fields with int4 and int8 would be greatly beneficial to comparison and hashing performance, not just table size.

https://www.postgresgl.org/docs/current/datatype.html

regards, tom lane

Remember: It is about context, don't top post!

### Getting to know PostgreSQL - how does it work?

Don't do this!

https://wiki.postgresql.org/wiki/Don%27t\_Do\_This

### There is the PostgreSQL Wiki!

### Before posting SQL performance related questions

https://wiki.postgresql.org/wiki/

**Slow\_Query\_Questions** 

### Before starting a discussion about hints

https://wiki.postgresql.org/wiki/

**OptimizerHintsDiscussion** 

(please, don't)

## Before asking about autonomous transactions <a href="https://wiki.postgresql.org/wiki/Autonomous\_subtransactions">https://wiki.postgresql.org/wiki/Autonomous\_subtransactions</a> (please, don't)

## In general: A lot of discussions already took place, search the archives before posting

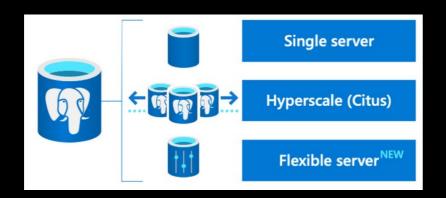
# Always remember: Answers/help on the mailing lists are for free. People are doing that in their spare time. There are humans on the other side, like you.

Of course, most of those people get paid. But they are not paid to support you for free!





### Btw. This is not PostgreSQL!





### If you need professional services

https://www.postgresql.org/

support/professional\_support/

### This does not mean that things can be improved! But please make yourself familiar with the history! There are reasons for the current

- implementation
  - limitations

### Expectations

"Why does this feature not exist in PostgreSQL?
Other databases can do that since ages.
I absolutely need this, and if I don't
have it, I cannot use PostgreSQL!"

### What's wrong with this?

"Why does this feature not exist in PostgreSQL?

Other databases can do that since ages.

I absolutely need this, and if I don't

have it I can not use PostgreSQL!"

## PostgreSQL is not

- MySQL/MariaDB
  - MSSQL
    - Oracle
      - DB2

•••

"Why does this feature not exist in PostgreSQL?
Other databases can do that since ages.
I absolutely need this, and if I don't
have it I cannot use PostgreSQL!"

# The common answer to this: "Patches welcome"

### What?

# PostgreSQL is a real community project This comes with consequences

### PostgreSQL depends on contributions!

### There is no roadmap!

PostgreSQL is a noncommercial, all volunteer, free software project, and as such there is no formal list of feature requirements required for development. We enjoy allowing developers to explore the topics of their choosing, though we also ensure that all new features committed to PostgreSQL are thoroughly vetted by our community of contributors and committers.

https://www.postgresql.org/developer/roadmap/

### If something is missing, you need to start a discussion (preferrable before coding anything)

## e.g. Declarative partitioning

### https://www.postgresql.org/message-id/flat/55D3093C.5010800%40lab.ntt.co.jp

From: Amit Langote <Langote\_Amit\_f8(at)lab(dot)ntt(dot)co(dot)jp>
To: Pg Hackers <pgsql-hackers(at)postgresql(dot)org>

Ηi,

I would like propose \$SUBJECT for this development cycle. Attached is a WIP patch that implements most if not all of what's described below. Some yet unaddressed parts are mentioned below, too. I'll add this to the CF-SEP.

# Even if there is no roadmap, you can follow what is currently going on

### Either by subscribing to:

https://www.postgresql.org/list/pgsql-hackers/

(This will blow your inbox)

### Or by checking the Commitfests:

https://commitfest.postgresql.org/

### Contribute by testing/rewieving

Target version		
Authors	Pavel Stehule (okbobcz)	
Reviewers	Daniel Gustafsson (d_gustafsson), Justin Pryzby (justinpryzby)	Become reviewer
Committer		
Links		
Emails	proposal: possibility to read dumped table's name from file X  First at 2020-05-29 14:21:00 by Pavel Stehule <pavel.stehule at="" gmail.com="">  Latest at 2021-10-27 09:15:31 by Pavel Stehule <pavel.stehule at="" gmail.com="">  Latest attachment (pg_dump-filteropt-20211027.patch) at 2021-10-27 09:15:31 from Pavel Stehule <pavel.stehule at="" gmail.com="">  +</pavel.stehule></pavel.stehule></pavel.stehule>	Attach thread

### You don't have to be a C-programmer to contribute

# Contribute by improving the documentation <a href="https://www.postgresql.org/list/pgsql-docs/">https://www.postgresql.org/list/pgsql-docs/</a>

```
From: Tom Lane <tgl(at)sss(dot)pgh(dot)pa(dot)us>
To: "Daniel Westermann (DWE)" <daniel(dot)westermann(at)dbi-services(dot)com>
Cc: Laurenz Albe <laurenz(dot)albe(at)cybertec(dot)at>, "pgsql-
docs(at)lists(dot)postgresql(dot)org" <pgsql-
docs(at)lists(dot)postgresql(dot)org>
"Daniel Westermann (DWE)" <daniel(dot)westermann(at)dbi-services(dot)com>
writes:
Subject: Re: Be more clear what names can be used for tables with "CREATE
TABLE"?
>> "The name of the table must be distinct from the name of any other
>> relation (table, sequence, index, view, materialized view, or foreign
```

- > Works for me, +1
- Done that way, then.

### regards, tom lane

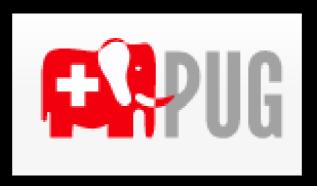
>> table) in the same schema."

### This is what I can contribute - documentation Documentation is important

### Other ways to contribute

# Conferences / Events <a href="https://www.postgresql.org/about/events/">https://www.postgresql.org/about/events/</a>

## Find your local user group, in my case it is <a href="https://www.swisspug.org/">https://www.swisspug.org/</a>



### Submit talks (this was 2016)



#### — Die Schweizer Tagung zur freien DB PostgreSQL

Organisation

Zeit	Technical Track - Raum 5.002	Business Track - Raum 5.001	
08:15 - 08:50	Registration - bei der Cafeteria im Gebäude 1		
08:50 - 09:00	■ Stefan Keller (HSR) - Begrüssung - Raum 5.002		
09:00 - 09:50	Charles Clavadetscher,  Puzzy Suche in PostgreSQL  Picture	Andreas Kretschmer,	
10:00 - 10:50	Daniel Westermann, ❷ Positioning a real open source database in your enterprise, PostgreSQL as a central reporting hub ❷ Slides ❷ Picture	Thomas Koch, ■Moderne Datenbankentwicklung mit PostgreSQL – Tools & Konzepte ■Slides ■Picture	
11:00 - 11:50	Hans-Jürgen Schönig, ■PostgreSQL auf viele CPUs skalieren ■Slides ■Picture	Daniel Pocock,  Postbooks: free and open source accounting/ERP with PostgreSQL  Slides  Picture	
12:00 - 12:50	Johannes Graën,   Korpuslinguistik mit PostgreSQL  Slides  Picture	Harald Armin Massa, @Daten auf mehreren Systemen @Slides @Picture	
12:50 - 14:00	Mittagessen - Location Mensa Gebäude 4		
14:00 - 14:50	Stefan Keller, PostGIS – Ein Überblick mit Tipps und Tricks Sildes Picture	Stephan Wagner,  Postgres-Clients  Slides  Picture	
15:00 - 15:50	Philippe Marschall,	Daniel Westermann,   Von Oracle nach PostgreSQL migrieren   Slides   Picture	
15:50 - 16:00	■ Stefan Keller (HSR) - Abschluss		

### Go larger - https://2023.pgconf.de/



### Go very large - https://2023.pgconf.eu/



### PostgreSQL Conference Europe

Prague, Czechia

December 12-15, 2023

### Volunteer for

- Organizational help
  - Room hosts
  - Sponsoring

• • •

### You will meet the community there!

Talk about what you do.
Not to promote yourself.
But to promote the project.

### Yes, this requires to spend some spare time

### Other ways to contribute

# Provide test machines <a href="https://tinyurl.com/mrrv33wj">https://tinyurl.com/mrrv33wj</a>

### Final (personal) tipps

### Subscribe to announce

https://www.postgresql.org/list/pgsql-announce/

### Subscribe to committers

https://www.postgresql.org/list/pgsql-committers/

### Subscribe to bugs

https://www.postgresql.org/list/pgsql-bugs/

# Make yourself familiar with Git <a href="https://wiki.postgresql.org/wiki/Working\_with\_Git">https://wiki.postgresql.org/wiki/Working\_with\_Git</a>

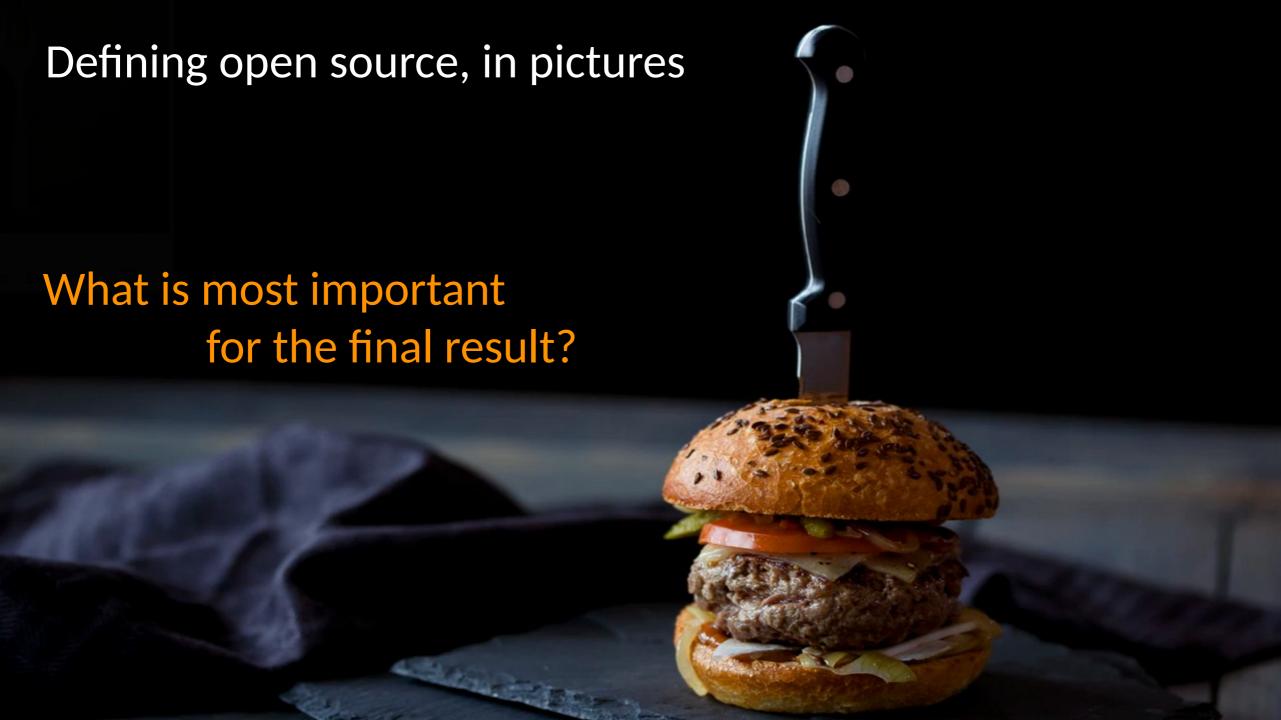
# Don't be shy The PostgreSQL community is very welcoming

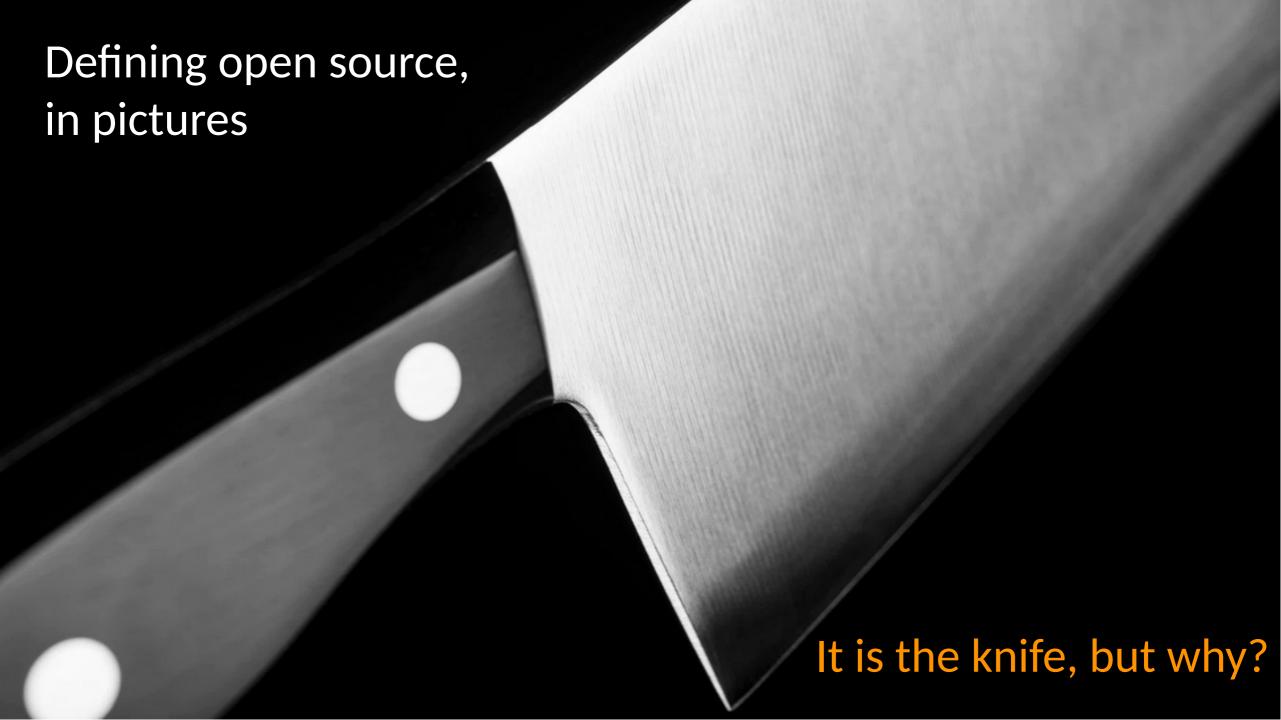
regards, tom lane

# Convince your company, that open source is the right way (this will come with costs, but much greater benefits)

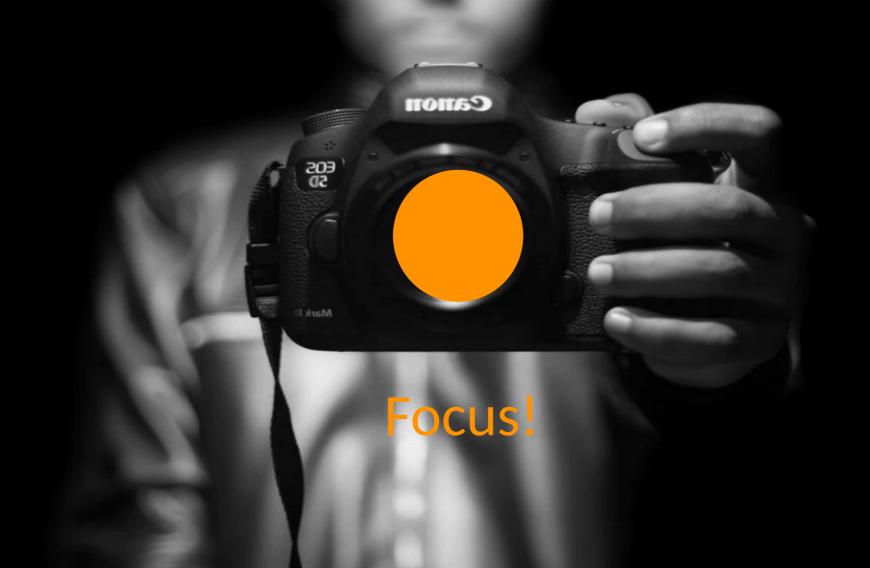
## I've tried, and it worked!

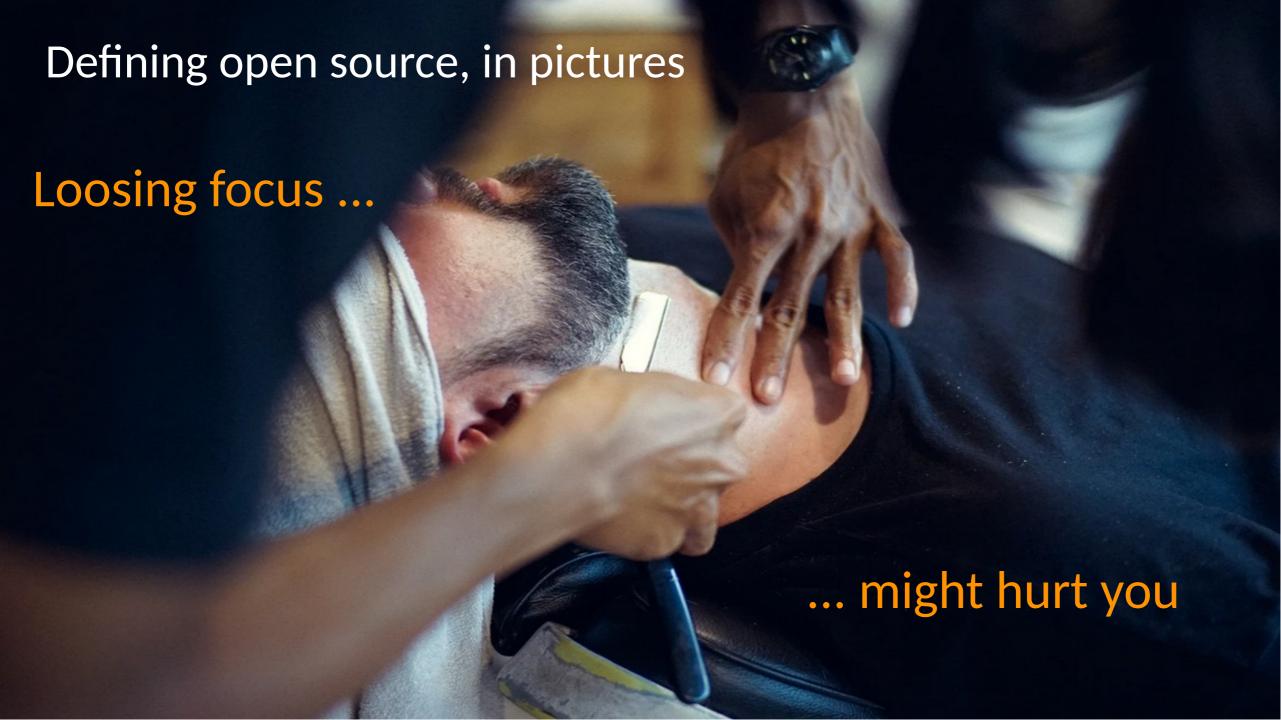














Focus is on the technology!







### It all depends on YOU!



Last famous words:

If you really want to blame someone
#blamemagnus
(seems we do not do that anymore:))



#### Any questions?

Please do ask!



# We would love to boost your IT-