ANDRÁS IN WINDOWSLAND
A DBA'S (MIS)ADVENTURES

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CYBERTEC
POSTGRESQL SERVICES & SUPPORT
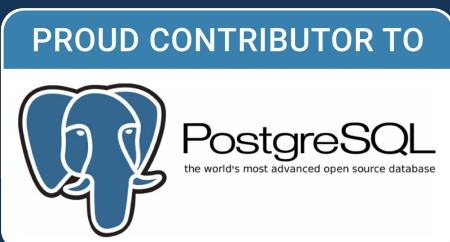
ABOUT ME

- With Postgres since 2007

- Mostly a DBA

- Main mission is trying to be helpful

Walheimat Berlin

ANDRÁS IN WINDOWSLAND

TL;DR: DOES POSTGRES WORK ON WINDOWS?

YES

Thank you for your attention!

One more thing...

WOULD I RECOMMEND WINDOWS FOR THIS PURPOSE?

NO

WHY WINDOWS?

- That's what you know

- Licences are already paid for

- Everything is on Windows

  - Caveat: this will possibly change very soon

INSTALLATION

- EDB installers
  - The latest ones are available from their downloads page
  - Others are there as well, but there is no list
    - Installer: **https://get.enterprisedb.com/postgresql/postgresql-17.3-1-windows-x64.exe**
    - **Binaries**
  - Installs as a native service

INSTALLATION

- Windows packaging with Patroni
  - **https://github.com/cybertec-postgresql/patroni-windows-packaging/releases**
  - On-demand releases, not all Postgres versions are there
  - Uses an install script (requires Powershell 7)
  - Depends on a service wrapper
    - Which is a 3rd party open-source piece, the last commit is from January 2023 (and not for the lack of issues)
   - Still, this is the best (maybe only?) wrapper available

UPGRADE

- Upgrade what?
  - Windows: restart
    - Bye-bye uptime, bye-bye SLAs
  - Postgres: nothing *very* unusual
    - A major upgrade will be a bit **tricky** though
  - Patroni: maintenance mode doesn't really work, stopping Patroni will stop Postgres
    - Mostly, but I've seen cases where they detached completely - could never reproduce it
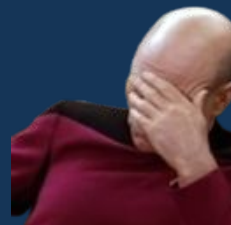
INTERFACE - THE CONSULTANT'S DISTORTED VIEW
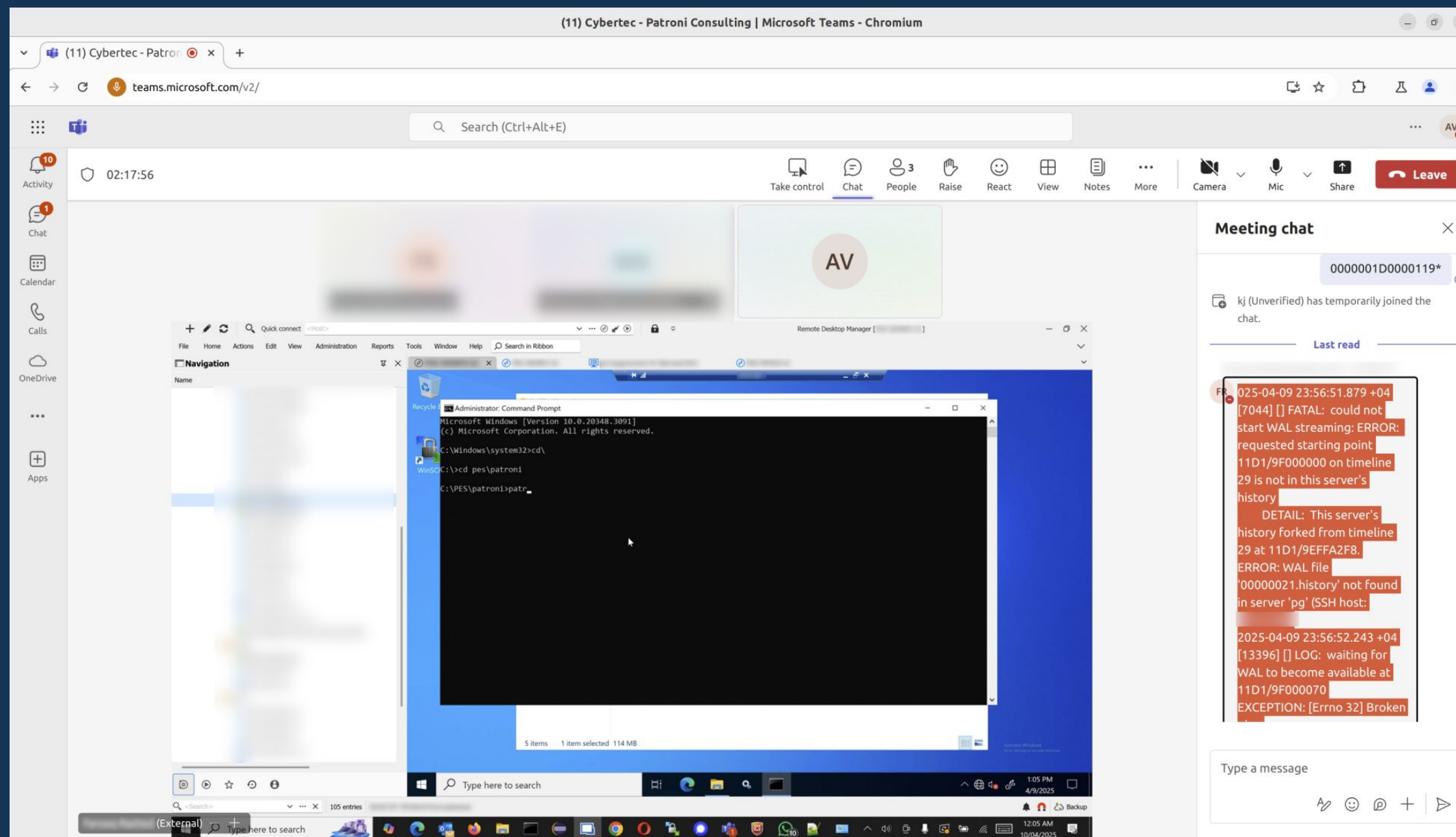
INTERFACE - REMOTE DESKTOP

- The popular choice

- Full GUI access

- Depending on your OS (or client), a local directory or a drive can be shared with the remote sessions

  - Available under something like **\\tsclient_home_andras_consulting**

  - Can be mapped to a drive letter for ease of use:
    net use s: \\tsclient_home_andras_consulting /persistent:yes

    - In some cases remapping is not possible until a reboot
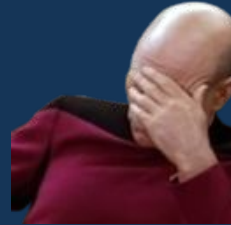
FACEPALM #1

Task: remap such a shared location after changing what's shared

```
 1| PS C:\> net use s: /d
 2| s: was deleted successfully.
 3|
 4| PS C:\> net use s: \\tsclient\_home_andras_consulting_tasks
 5| System error 85 has occurred.
 6| The local device name is already in use.
 7|
 8| PS C:\> net use
 9| Status       Local        Remote                Network
10| -------------------------------------------------------------------
11|                          \\TSCLIENT\_home_andras_consulting_tasks
```

FACEPALM #1

But on another host:

```
1| PS C:\> net use s: \\tsclient\_home_andras_consulting_tasks
2| s: has a remembered connection to \\tsclient\_home_andras_consulting.
3| Do you want to overwrite the remembered connection? (Y/N) [Y]:
```

INTERFACE: CMD VS POWERSHELL

- CMD for MS DOS enthusiasts (?)
  - Feels a bit weird
- Powershell is way more flexible and versatile
  - It might even feel familiar first
  - Default version is 5. That's an old one.

INTERFACE: POWERSHELL AS A SEMI-ACQUAINTANCE

```
 1| PS C:\PES> ls
 2|
 3|     Directory: C:\PES
 4|
 5| Mode                 LastWriteTime         Length Name
 6| ----                 -------------         ------ ----
 7| d----         4/14/2025 7:29 AM                  patroni
 8| d----         4/14/2025 7:29 AM                  pgsql
 9| d----         4/14/2025 7:21 AM                  vip-manager
10| -a---         3/27/2025 8:10 AM           4257 install.ps1
11| -a---         3/27/2025 8:10 AM            166 patronictl.bat
```

THE TRICK: SET-ALIAS

```
 1| PS C:\PES> Get-aLIas -Definition remove-iteM # sic!
 2|
 3| CommandType       Name                              Version Source
 4| -----------       ----                              ------- ------
 5| Alias             del -> Remove-Item
 6| Alias             erase -> Remove-Item
 7| Alias             rd -> Remove-Item
 8| Alias             ri -> Remove-Item
 9| Alias             rm -> Remove-Item
10| Alias             rmdir -> Remove-Item
```
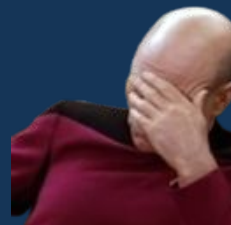
THE TRICK: CAVEAT

One cannot set an alias to a command with parameters.
Functions come to the rescue:

```
1| function patronictl {
2|     python C:\pes\patroni\patronictl.py
3|         -c C:\pes\patroni\patroni.yaml $args
4| }
```

FACEPALM #2 🤦

You can set `Shift+CTRL+C` to copy from Powershell. A right click also copies stuff.
Now paste these to somewhere (results in the respective order):

`Security warning`

Above you see a single 552 character long line... with all the whitespace there
is in the Powershell windows copied.

```
Security warning
Run only scripts that you trust. While scripts from the internet can be
useful, this script can potentially harm your computer. If you trust this
script, use the Unblock-File cmdlet to allow the script to run without
this warning message. Do you want to run S:\run_remote_command.ps1?
[D] Do not run   [R] Run once    [S] Suspend   [?] Help (default is "D"):
```
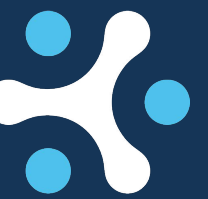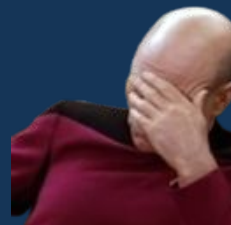
FACEPALM #3 🤦
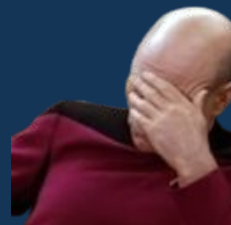
```
 1| PS S:\> .\run_remote_command.ps1 create_users
 2| .\run_remote_command.ps1 : File S:\run_remote_command.ps1 cannot be
 3| loaded. The file S:\run_remote_command.ps1 is not digitally signed.
 4| You cannot run this script on the current system. For more information
 5| about running scripts and setting execution policy, see
 6| about_Execution_Policies at https:/go.microsoft.com/fwlink/?LinkID=135170.
 7| At line:1 char:1
 8| + .\run_remote_command.ps1 create_users
 9| + ~~~~~~~~~~~~~~~~~~~~~~~~~
10|     + CategoryInfo          : SecurityError: (:) [], PSSecurityException
11|     + FullyQualifiedErrorId : UnauthorizedAccess
```

FACEPALM #3

```
1| PS S:\> powershell -executionpolicy bypass
2| Windows PowerShell
3| Copyright (C) Microsoft Corporation. All rights reserved.
4|
5| PS S:\> .\run_remote_command.ps1 create_users
6| OK, no problem!
```

● not fully unlike bypassing **sudoers** rules by double sudo...

TOOLING: BACKUPS

- **pg_dump?** Works!

- pgBackRest?
There was a GSoC project to port pgBackRest to Windows, which was unsuccessful. In the process we discovered that the port was a larger project than we had anticipated, in part due to quirks in MSVC. In the end we decided not to continue with the port.

- Barman?
  - There might have been a Windows installer for it, at least there are some hints. What's sure there isn't one.
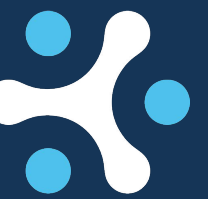
- WAL-g?
  - Maybe works using WSL, instructions unclear

TOOLING: BACKUPS

- Commvault and friends?
  - Enterprise stuff, they can backup everything
  - But good luck figuring out what's being done on a primary-replica setup, especially around failover time

- pgBackRest and Barman could probably work from inside WSL, further testing needed
- Otherwise set up a Linux host for Barman

TOOLING: BACKUPS - BARMAN

- Operates remotely from the DB

- Can use streaming protocol to back up the DB

  - the other option being SSH+rsync, this is the only option for Windows based DBs

- Streams WAL as well

- Remote restore doesn't work on plain Windows for the lack of rsync

TOOLING: HIGH AVAILABILITY

- Patroni works (needs to be wrapped as a service)
  - etcd: works (needs to be wrapped as a service)
  - vip-manager: works (needs to be wrapped as a service)
  - **PES** does it all for you
- HAProxy? nope (as far as I can tell, not even the enterprise edition)
  - Could run on a (pair of) Linux host(s)

WHY *NOT* WINDOWS
(IF YOU NEEDED MORE ARGUMENTS)?

- Limited user base

  - Therefore limited community-based support

- SQL Server is available for Linux

- Even Microsoft moved to Linux for their Azure managed Postgres

AUSTRIA (HQ)
CYBERTEC POSTGRESQL
INTERNATIONAL (HQ)

ESTONIA
CYBERTEC POSTGRESQL
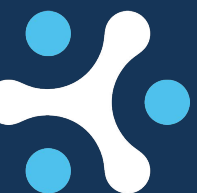NORDIC

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CYBERTEC POSTGRESQL
POLAND

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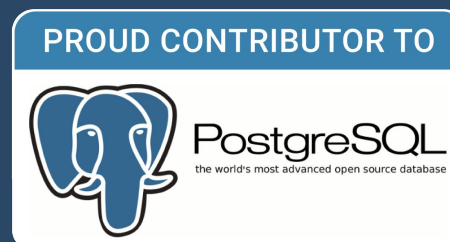## DATABASE CONSULTANT

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