

PASS  
**Data Community**  
**SUMMIT 2021**

# DIY Database Clones

Let disposable databases into your process

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 @promicroNL

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I like to read, experiment, talk and write about software.

The fun I experience in my job is the combination of people and technology.

To be honest I'm not the greatest DBA, Developer or Sysadmin, but I like to follow up and combine a lot of the things those people do.

in 2021 I started to write small stories on Medium, because talking about software is one thing...

In my stories I explain Azure, SQL and other Microsoft technologies with (if possible) one central topic Whisky!

PS only interested in Whisky check:  tastewhisky

# Our menu

The what and why

- Disposable Databases
- What's on the market?

How can we DIY it?

- Microsoft Volume Shadow Service
- Windows Disk Management
- Demo 1

Less DIY, more community

- Sqlcollaborative/dbaclone
- Demo 2

Summary

Q&A



# The what and why

Why do I need clones of a (disposable) database?



# What are disposable databases ?

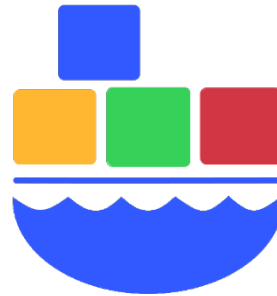
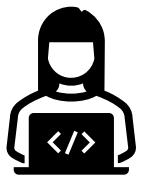
- Next level in dedicated DBs
- Test, Break, Repeat
- More realistic test scenarios (data)
- DBA friendly
- Automate provisioning in CI/CD



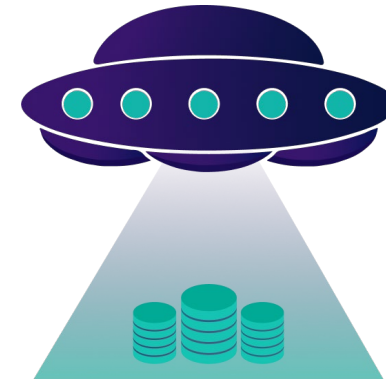
# How to create a disposable database?



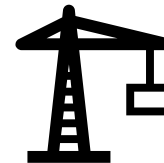
**Classic**



**Code**



**Containerize**



**Clone**



**“A computer that operates in a very similar way to the one that it was copied from”**

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# Database Cloning with SQL Clone

- Create image
- Create clones from the image
  - Over and over again
- Image at original disk space level
- Clone only at MBs of disk space level



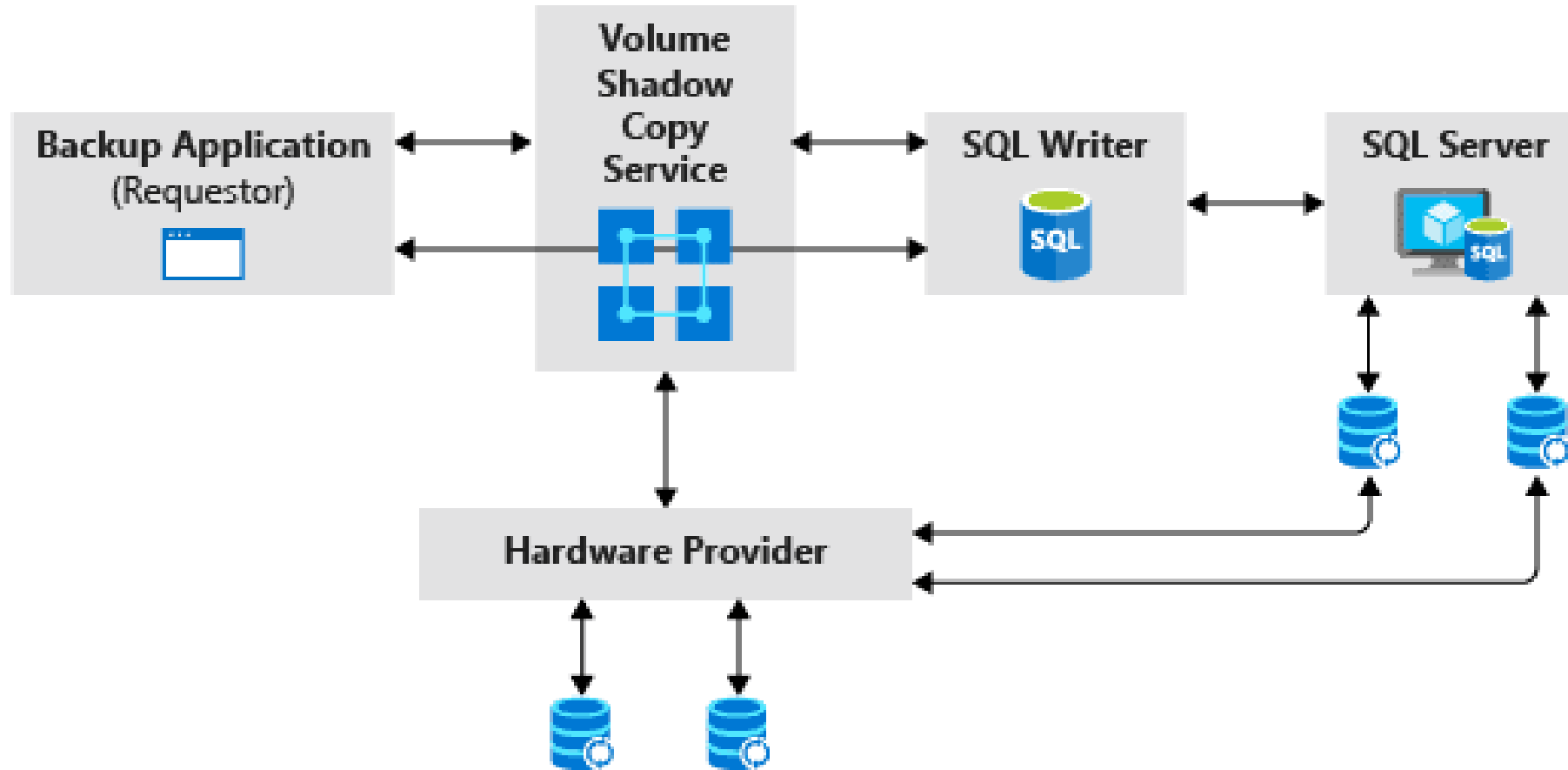
# How can we DIY it?

Clone the clone!

# Volume Shadow Service (VSS)

- Baked into Windows – so free of charge
- Copy a file or disk while in use:  
Shadow copies
- Well-known other examples:
  - Windows System Restore
  - Backup applications

# Volume Shadow Service (VSS)



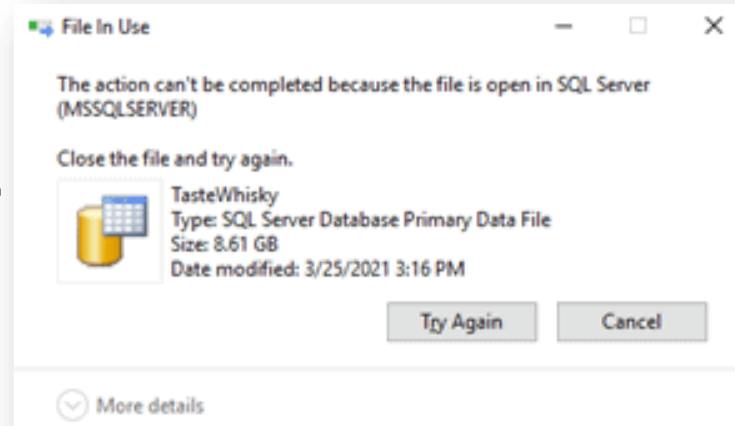
# VSS Requestor

- Windows Explorer
- HoboCopy

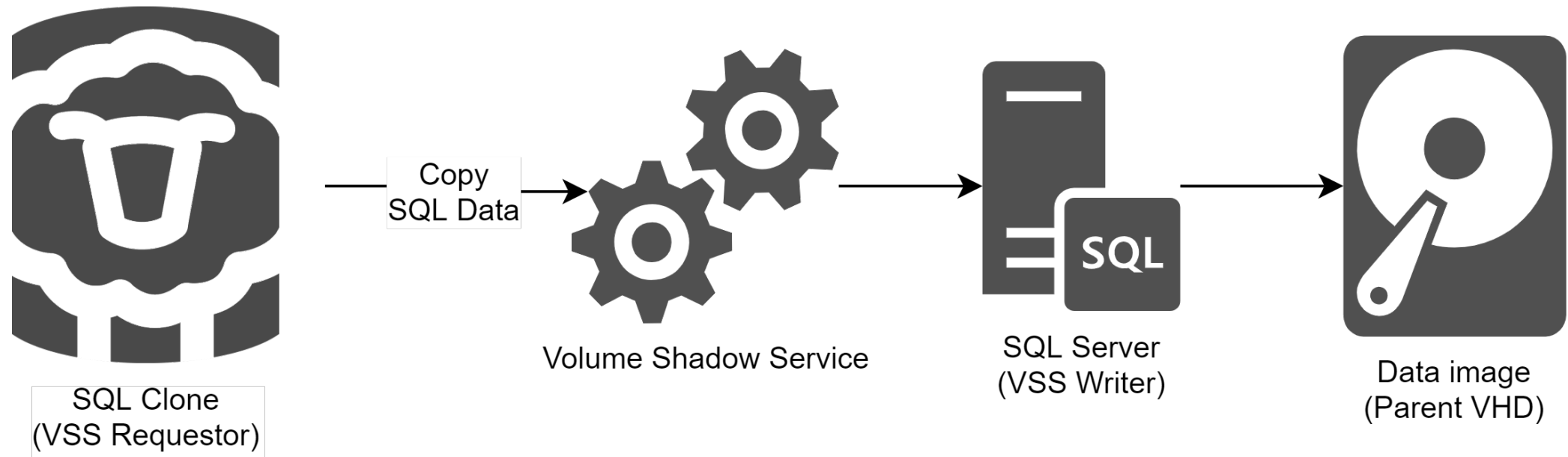
<https://github.com/candera/hobocopy>

- AlphaVss

<https://github.com/alphaleonis/AlphaVSS>



# Creating the image

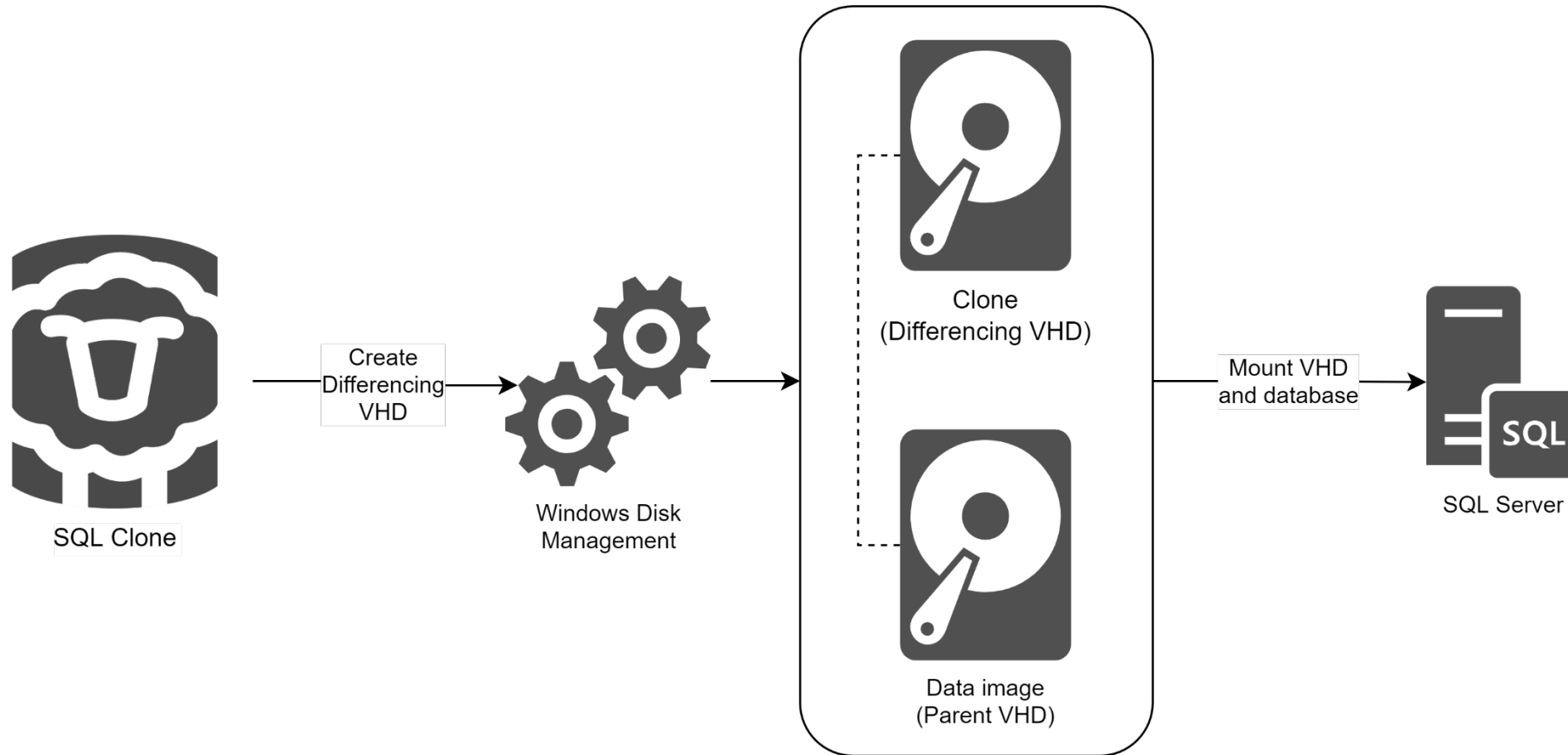


# Virtual HDs (Windows Disk Management)

- Baked into Windows – so free of charge
- VHD is a file as a disk
- Mount a VHD as a folder
- Share same VHD via network
- Parent – Child / differencing disks
- Hyper-V Powershell library



# Creating clones from the image



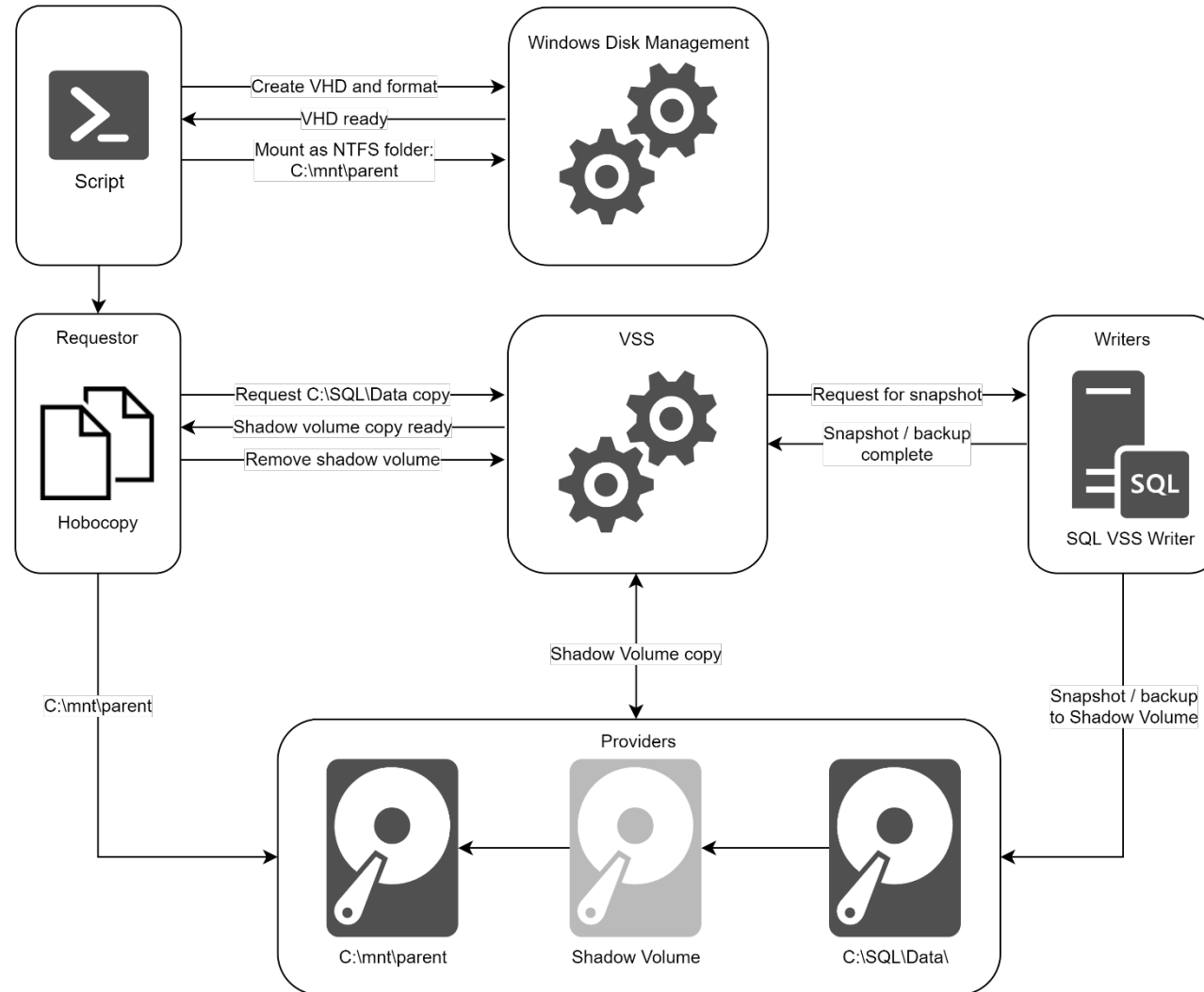


<https://github.com/promicroNL>

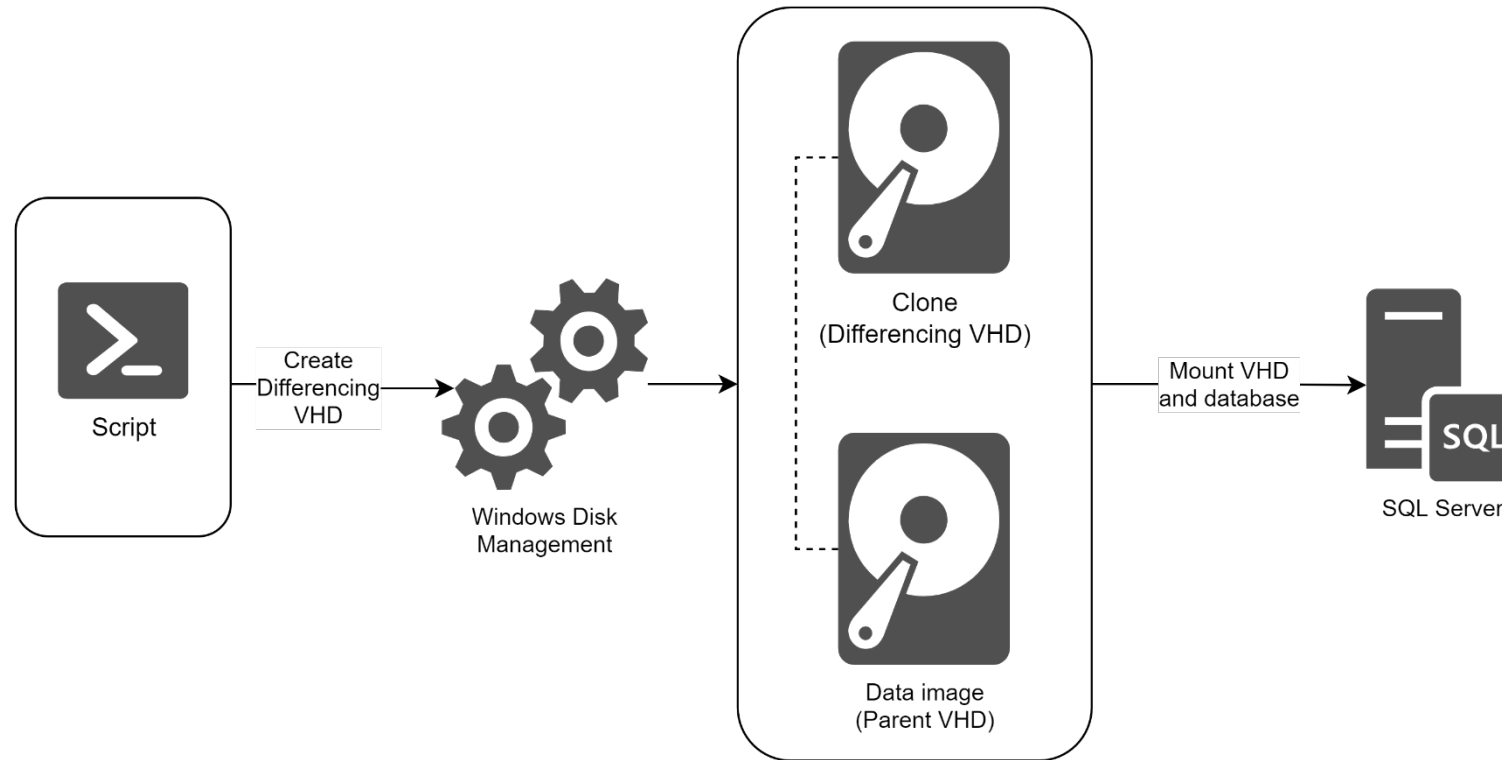
# Demo 1

Finally ;-)

# Illustration of what we just did (image)



# Illustration of what we just did (clone)



# Less DIY, more community

“Alone, we can do so little; together, we can do so much”

Helen Keller

**“Alone, we can do so little; together,  
we can do so much”**

Helen Keller (1880 - 1968)





# Sqlcollaborative/dbaclone

- First commit June 2018(github)
- No dependency of VSS
- No dependency of Hyper-V
- Powershell module -> **ÍñşţǎłłŃộđụłêđầçłộê**



<https://github.com/promicroNL>

## Demo 2

Why did that take so long?

# Summary

The wrap up

# Summary

- Start using disposable databases
- Acquire a great tool
- DIY (and share it!)
- Use the power of the community



# Thank you

Do you have questions?

Join the live QA:

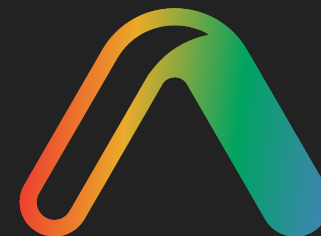
**November 10, 2021 - 11:45 AM EST**

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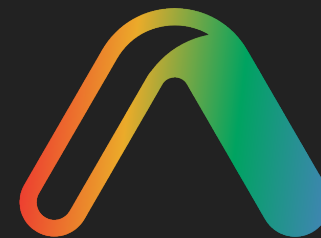
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