an onprem bi-consultants trembling first steps to lift a dw into azure

March 12:th

It should

be

quite simple

to upload a

small

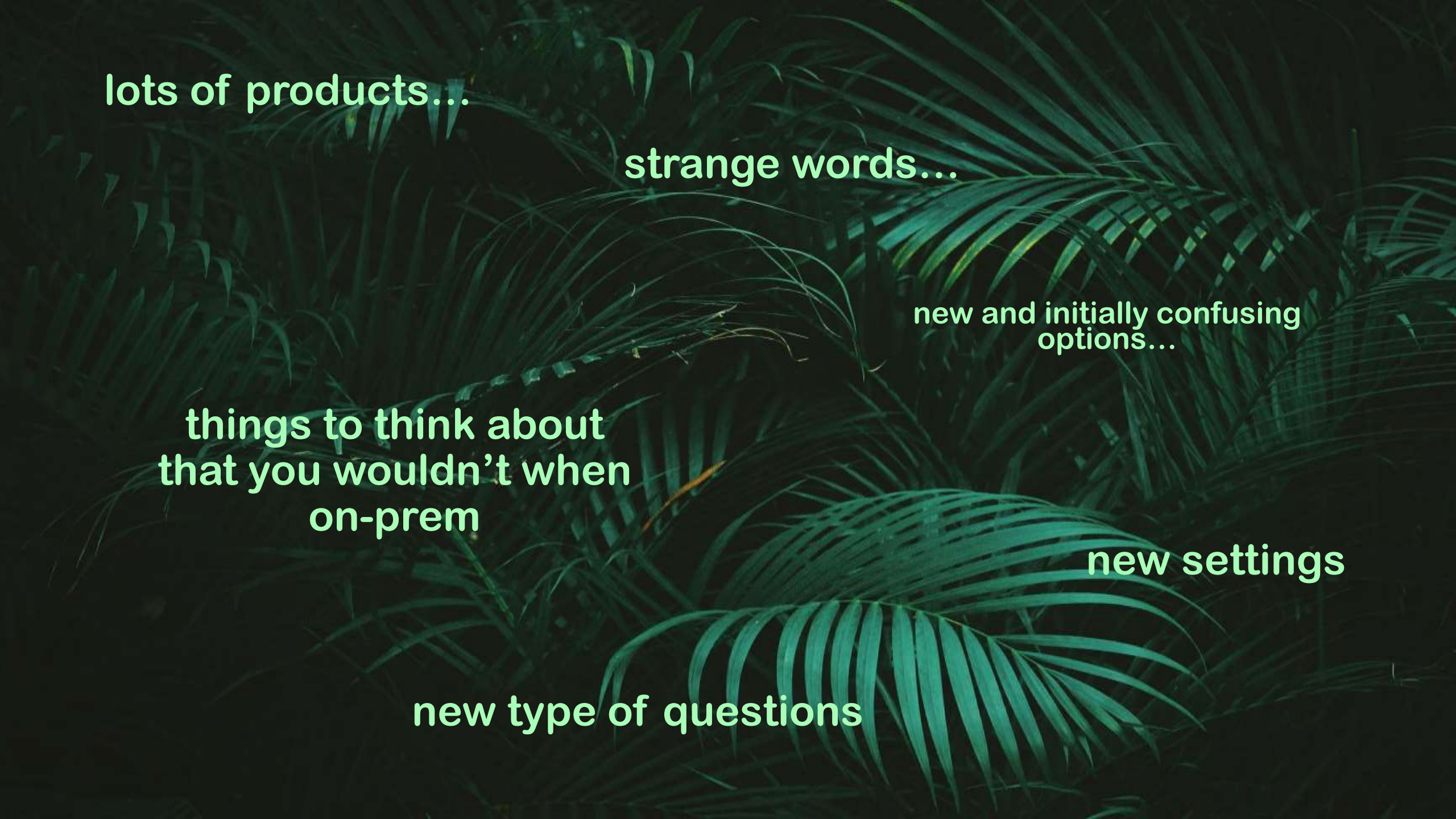
DW to Azure,

right?

So, this session *should* be done in a few seconds?

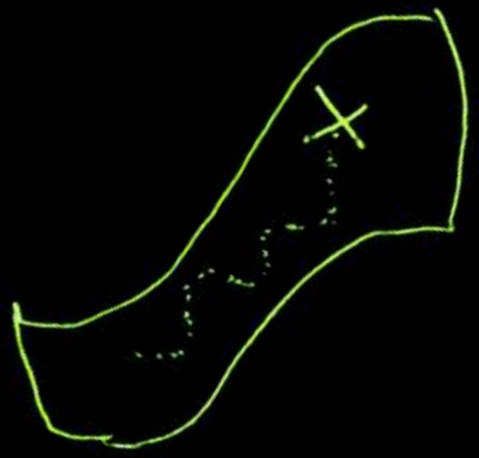
well…

it’s… ehh…


lots of products…
strange words…
new and initially confusing options…
things to think about that you wouldn’t when on-prem
new settings
new type of questions


Basically, it’s a jungle when you log in to Azure the first time

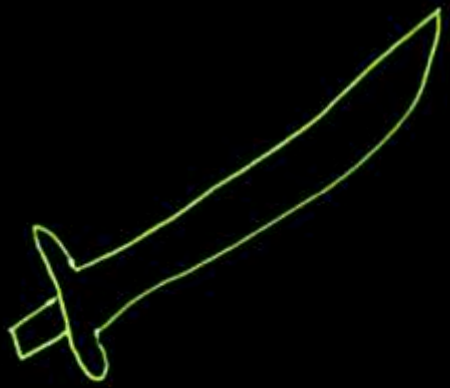
What do you need when going into a jungle?



A map

A knife

A guide



I am going to guide you

& move a database to Azure

& if you're interested, you will get a copy of my map – stay tuned!

Before all this let me just quickly introduce myself.

David Stavegård

bi dev

&

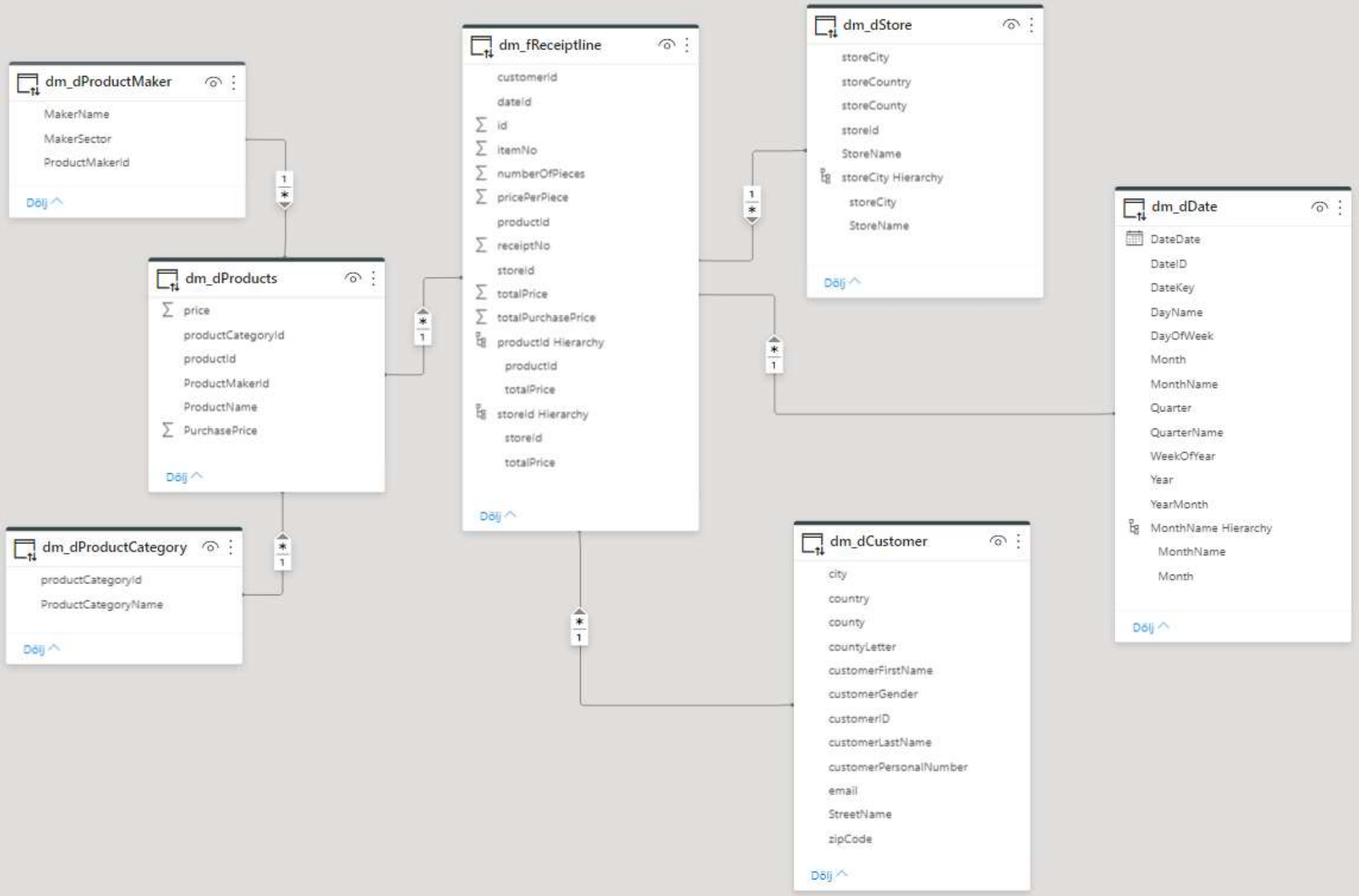
architect

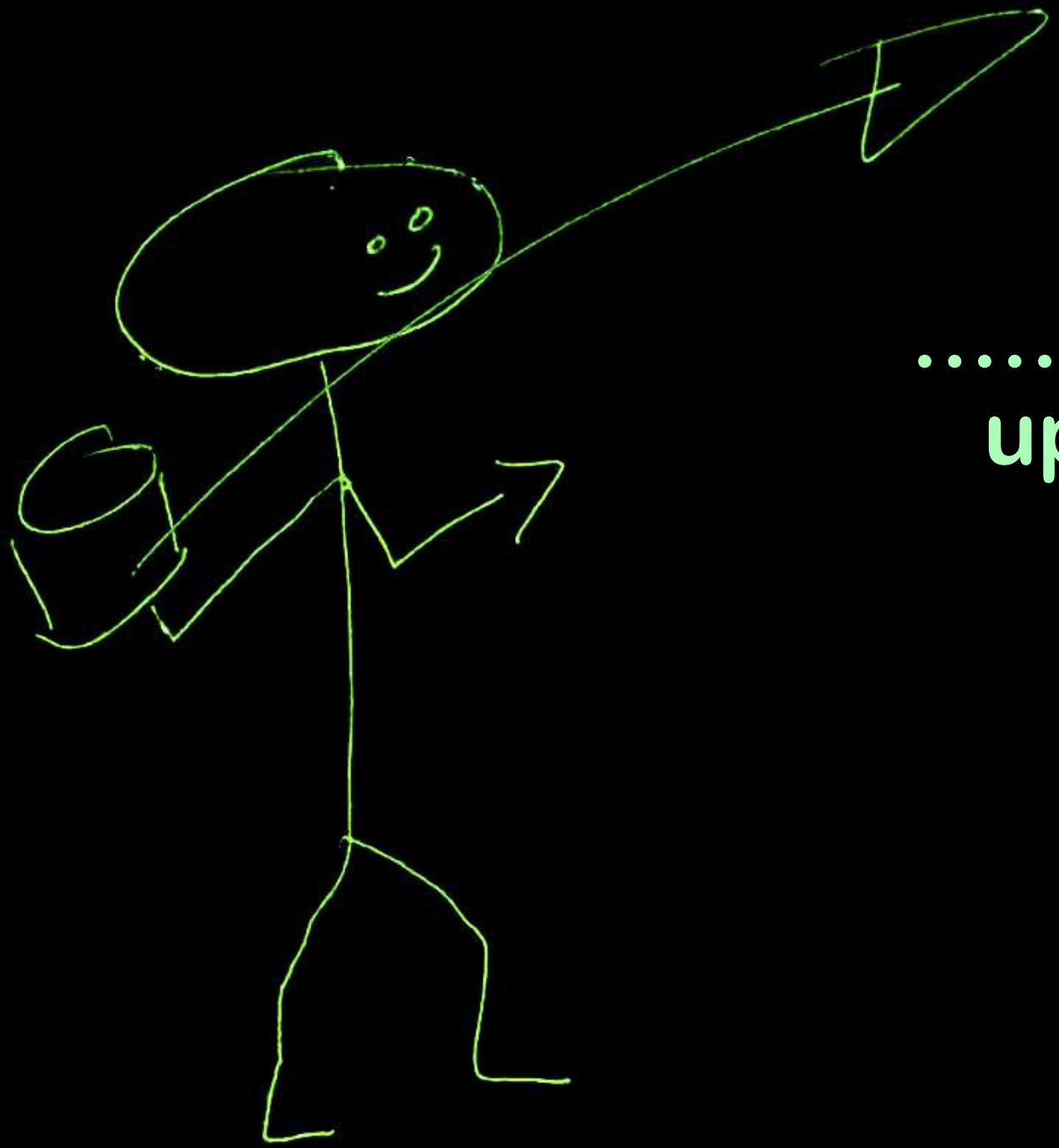
10 000 h
9 712 h
mgmt
TSQL-dev
Reports / PBIX
Kimball modelling / developement
Dws in the cloud

I am David

Thursdays on linkedin

My own test dw that we'll work with today





..... and I just want to upload this to Azure...

...so, you log into Azure and...

Log in to Azure...

”First things first – what about that free account thingie?!”

What is a free account?

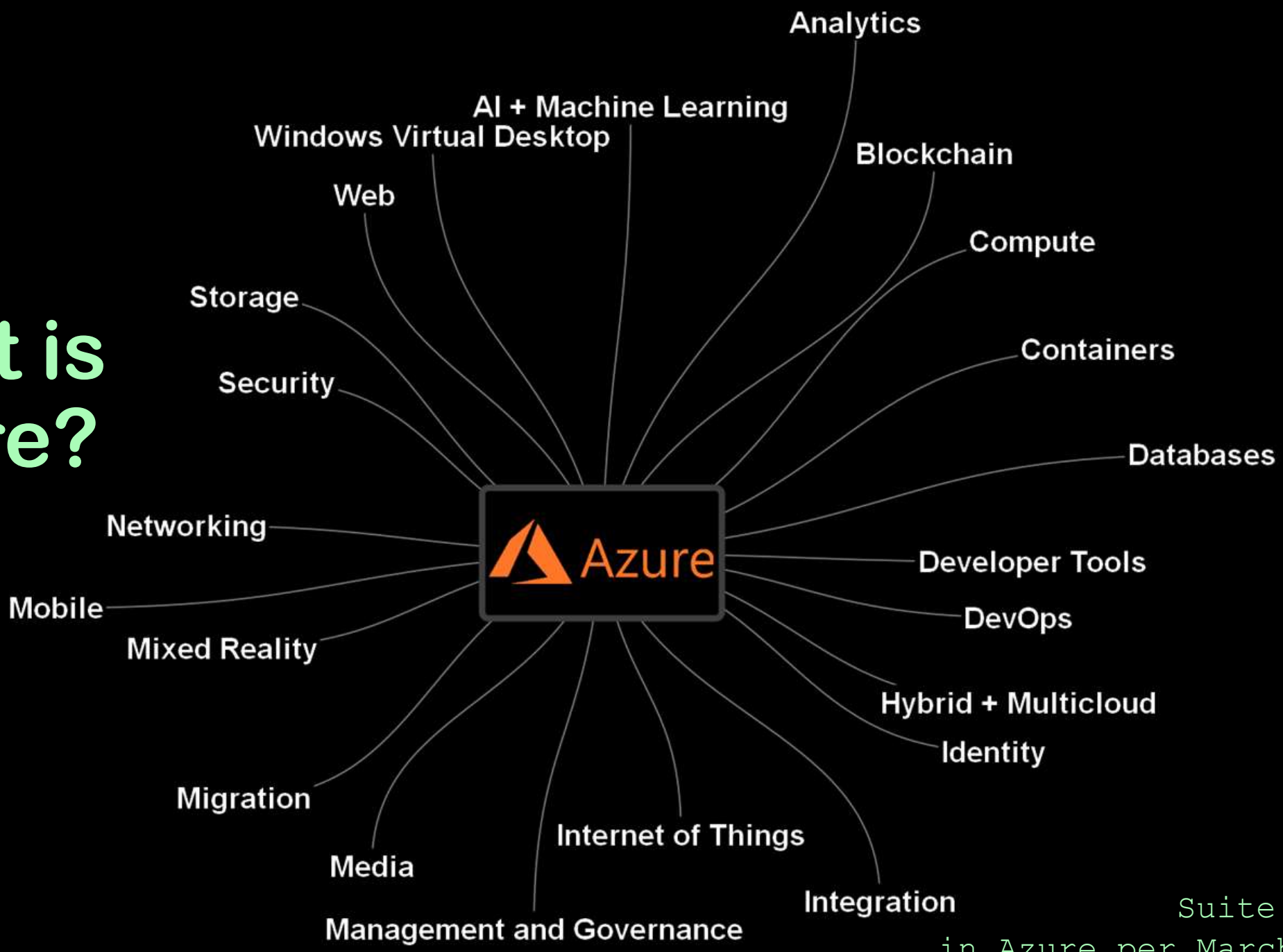
No starting fee
(you get $200 to spend the first 30 days)

You get 12 months of free products
(and after that pay-as-you-go-rates)

All you need is

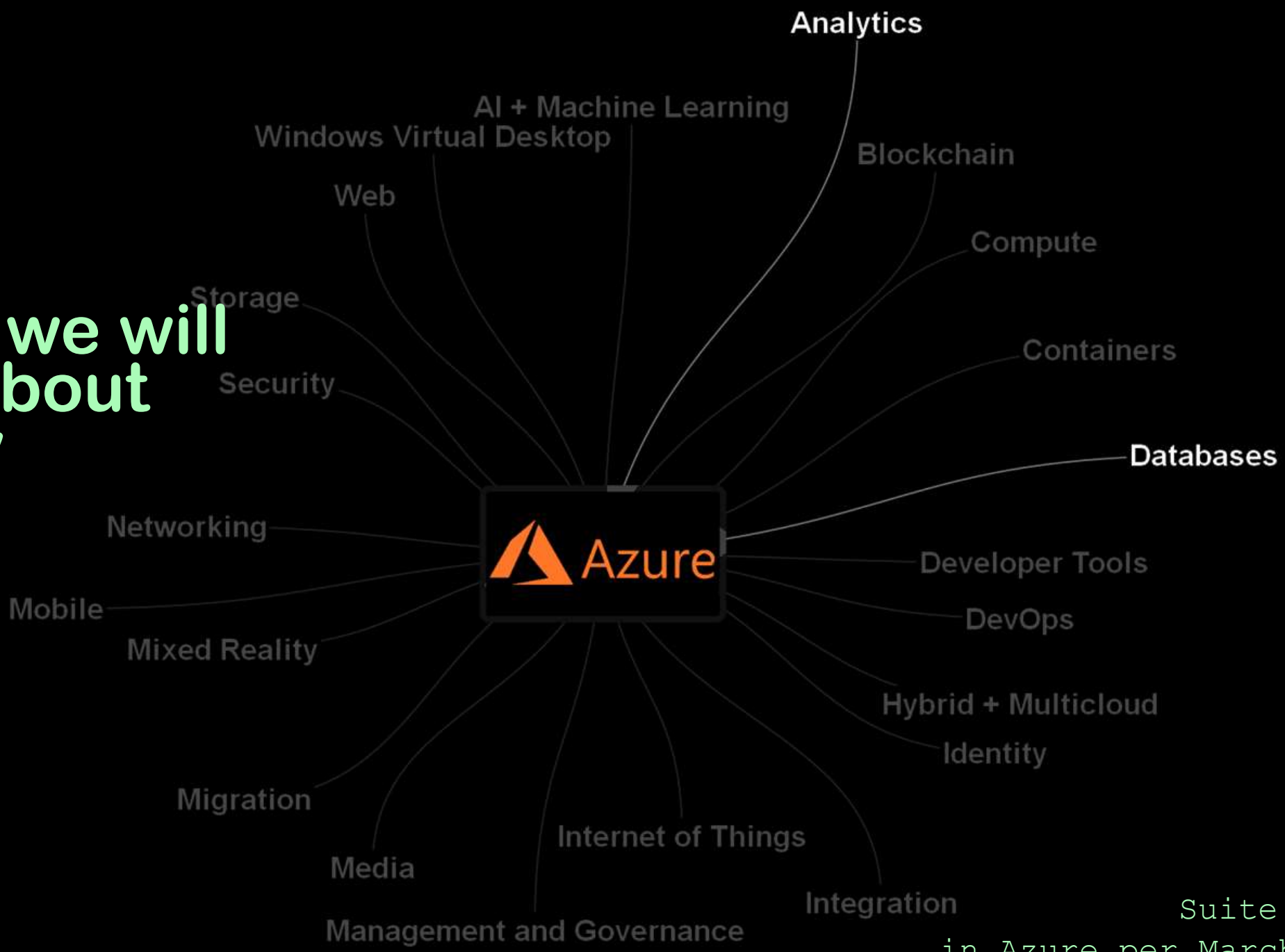
* A phone number
* A credit card
* GitHub or Microsoft account

What is Azure?



Suite of products in Azure per March 12:th 2021

What we will talk about today



Suite of products
in Azure per March 12:th 2021


MICROSOFT

How Microsoft categories their offerings

Databases

- Azure SQL Database
- Azure SQL Managed Instance
- SQL Server on a virtual machine
- Azure db for PostgreSQL
- Azure db for MySQL
- Azure db for Maria DB
- Azure Cosmos DB
- Azure Cache for Redis

Analytics

- Azure Synapse
- Azure Purview
- HDInsight
- Machine Learning packages
- Datalakes, streaming data…

Product -> Databases -> Databases

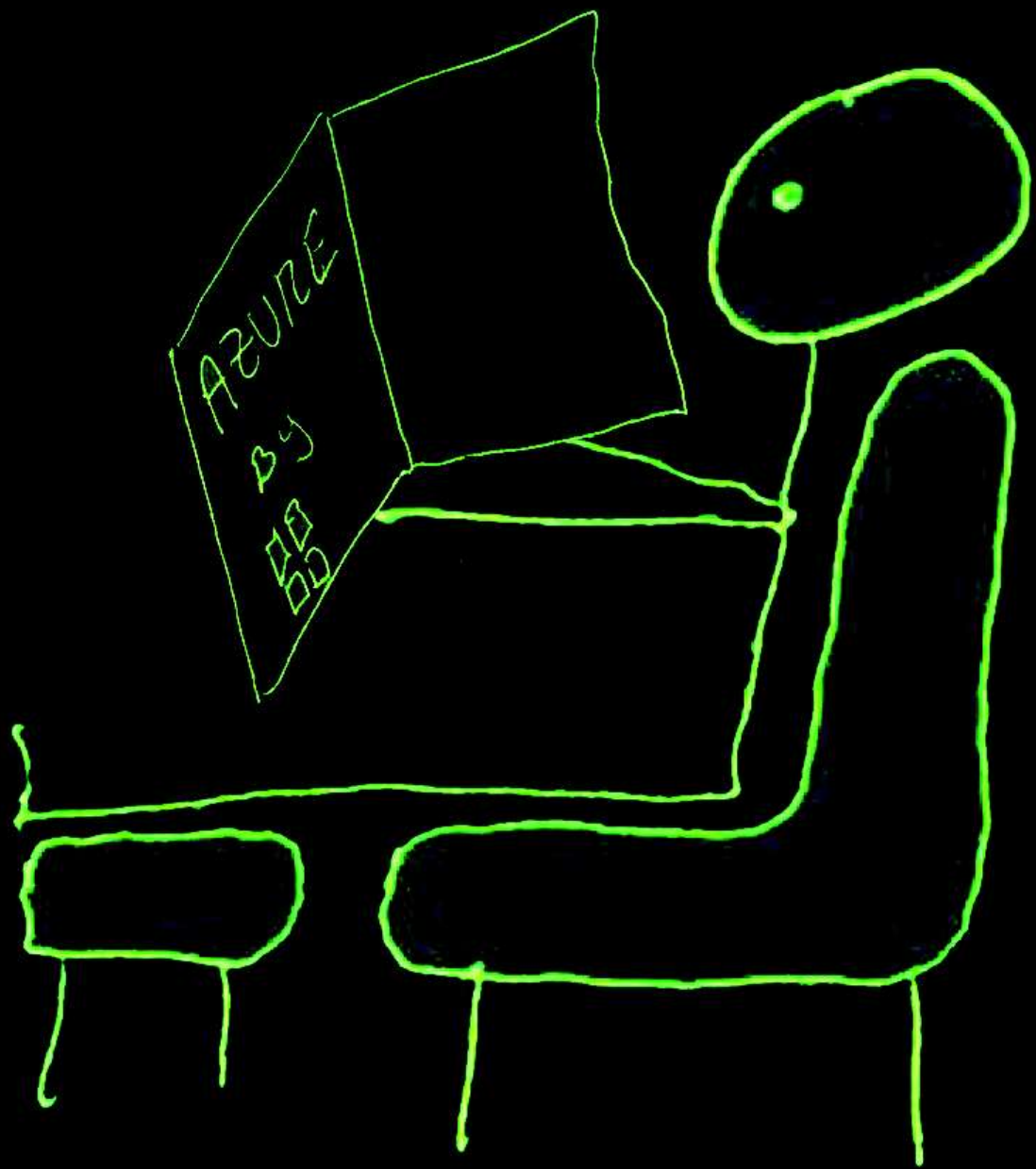
https://azure.microsoft.com/en-us/product-categories/databases/

Microsoft Azure

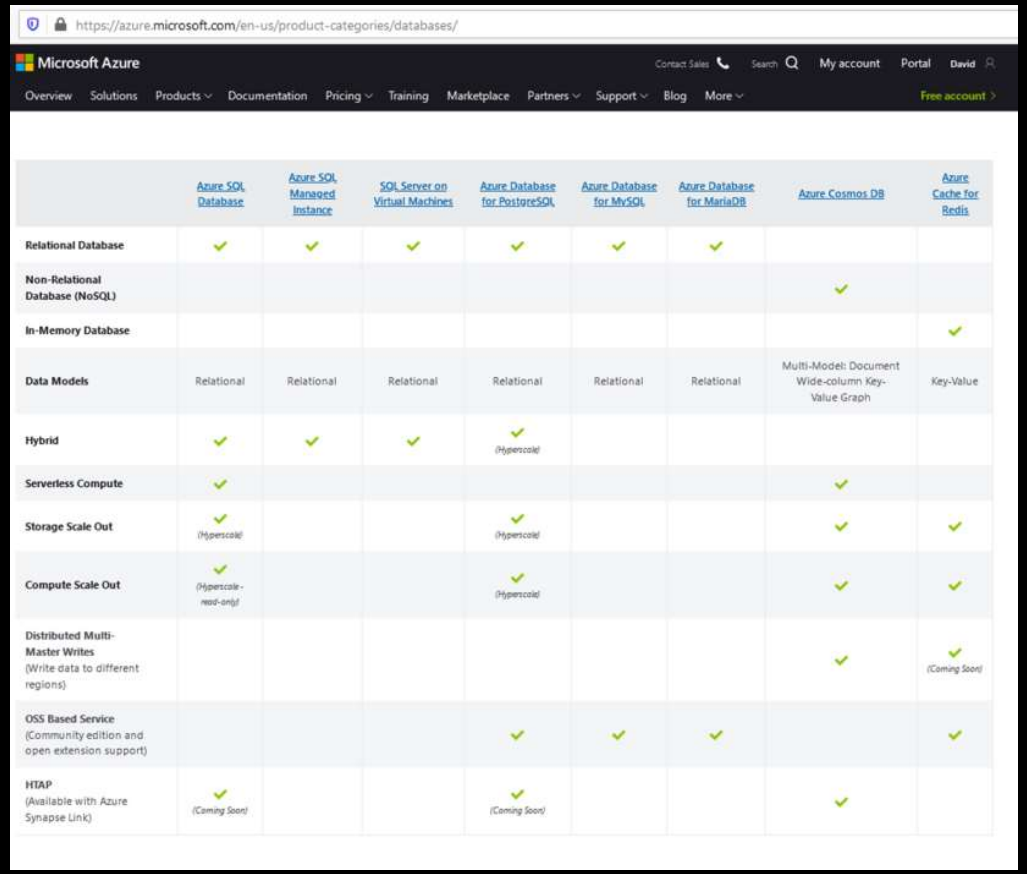
Contact Sales | Search | My account | Portal | David

Overview | Solutions | Products | Documentation | Pricing | Training | Marketplace | Partners | Support | Blog | More | Free account

	Azure SQL Database	Azure SQL Managed Instance	SQL Server on Virtual Machines	Azure Database for PostgreSQL	Azure Database for MySQL	Azure Database for MariaDB	Azure Cosmos DB	Azure Cache for Redis
Relational Database	✓	✓	✓	✓	✓	✓		
Non-Relational Database (NoSQL)							✓	
In-Memory Database								✓
Data Models	Relational	Relational	Relational	Relational	Relational	Relational	Multi-Model: Document Wide-column Key-Value Graph	Key-Value
Hybrid	✓	✓	✓	✓ *(Hyperscale)*				
Serverless Compute	✓						✓	
Storage Scale Out	✓ *(Hyperscale)*			✓ *(Hyperscale)*			✓	✓
Compute Scale Out	✓ *(Hyperscale - read-only)*			✓ *(Hyperscale)*			✓	✓
Distributed Multi-Master Writes (Write data to different regions)							✓	✓ *(Coming Soon)*
OSS Based Service (Community edition and open extension support)				✓	✓	✓		✓
HTAP (Available with Azure Synapse Link)	✓ *(Coming Soon)*			✓ *(Coming Soon)*			✓	


AZURE

Let's be wild and crazy!



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Microsoft Azure — Contact Sales — Search — My account — Portal — David

Overview — Solutions — Products — Documentation — Pricing — Training — Marketplace — Partners — Support — Blog — More — Free account

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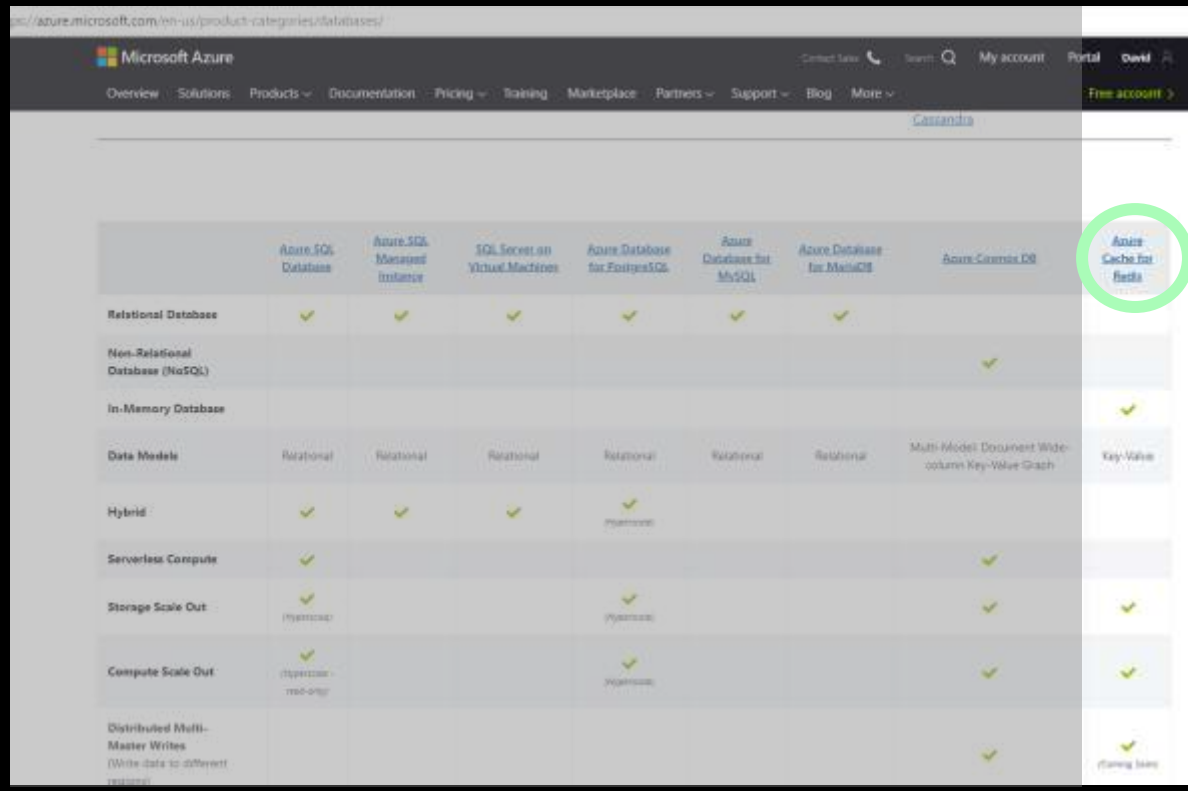
Azure Cache for Redis

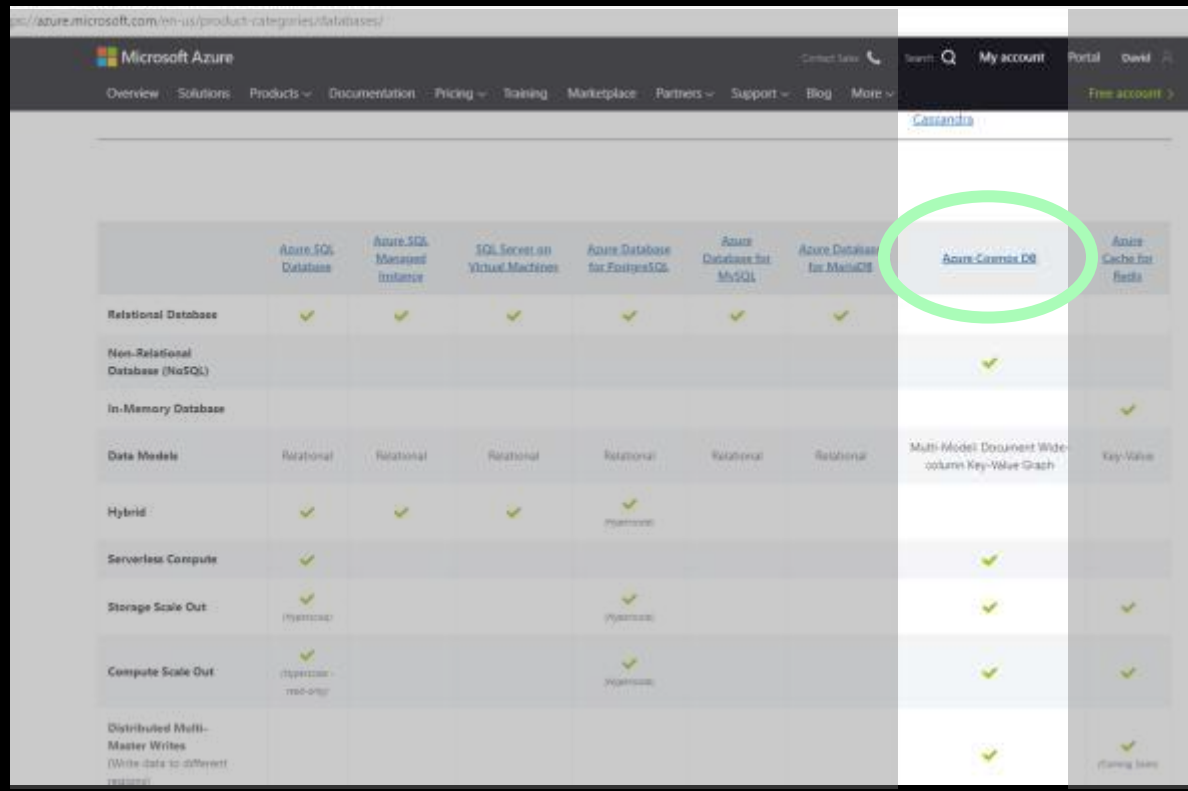
- An in-memory database interface for huge volumes and lots of speed
- Typical usecase: social media platforms that have alot of data and traffic
- I read about a company who used ACfR as database engine for their website



Is this where I should upload my Kimball modelled DW?

Azure Cosmos DB

- Gigantic databases
- Globally distributed, multi-modelled databases
- Have interfaces that are compatible with Cassandra and Mongo DB



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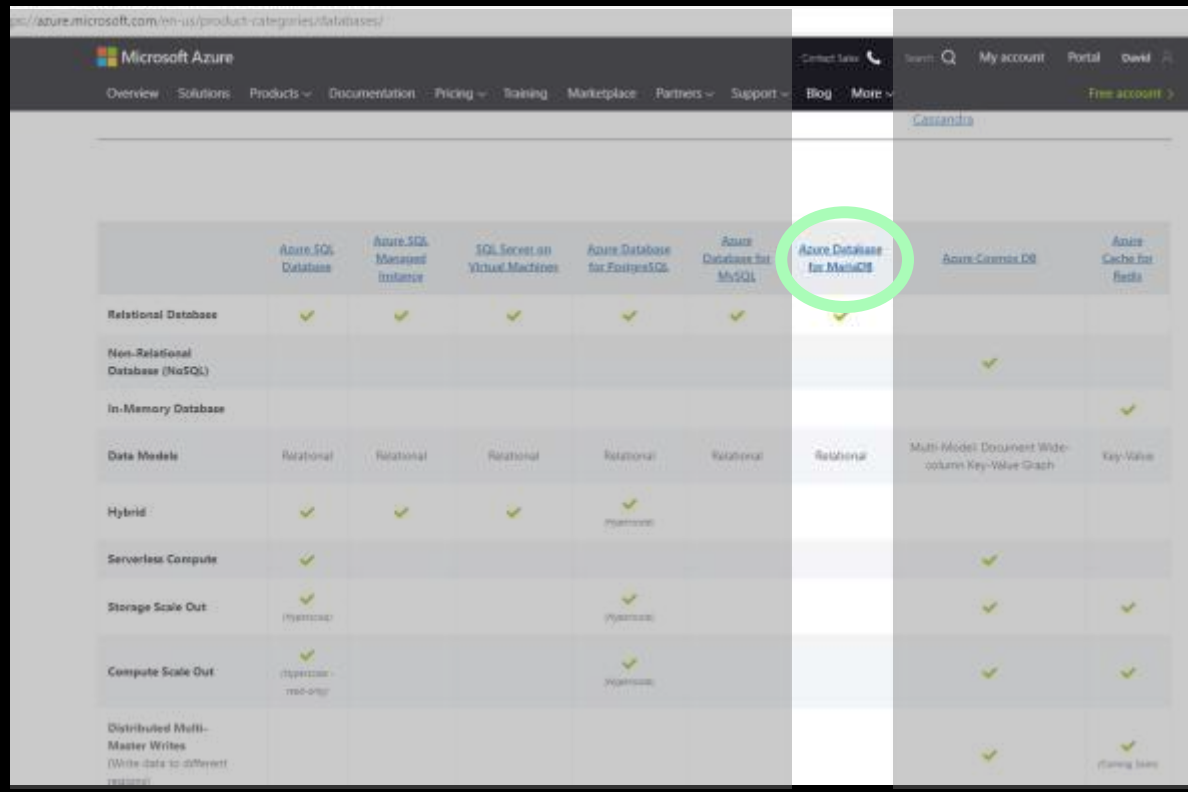
Azure database for Maria DB

Fork of MySQL

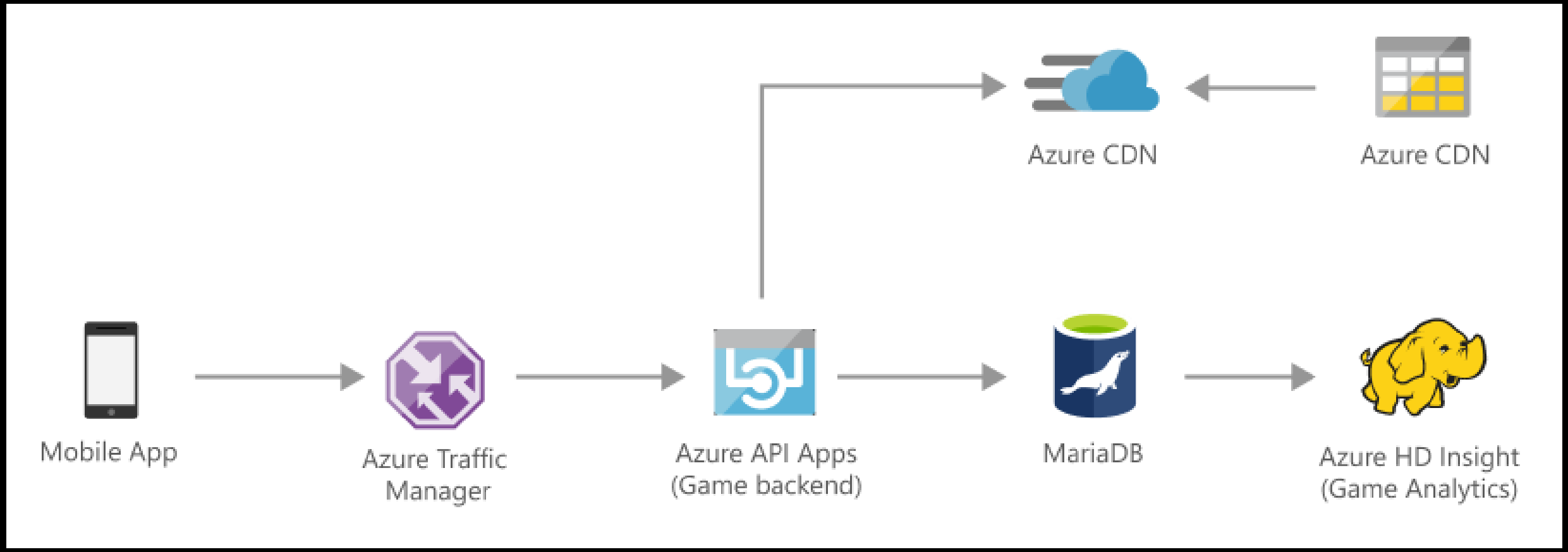
Maria DB and MySQL goes in different directions

Infrastructure as a Service
or
Platform as a Service



Is this where I should upload my Kimball modelled DW?

Example of a use-case for a MariaDB

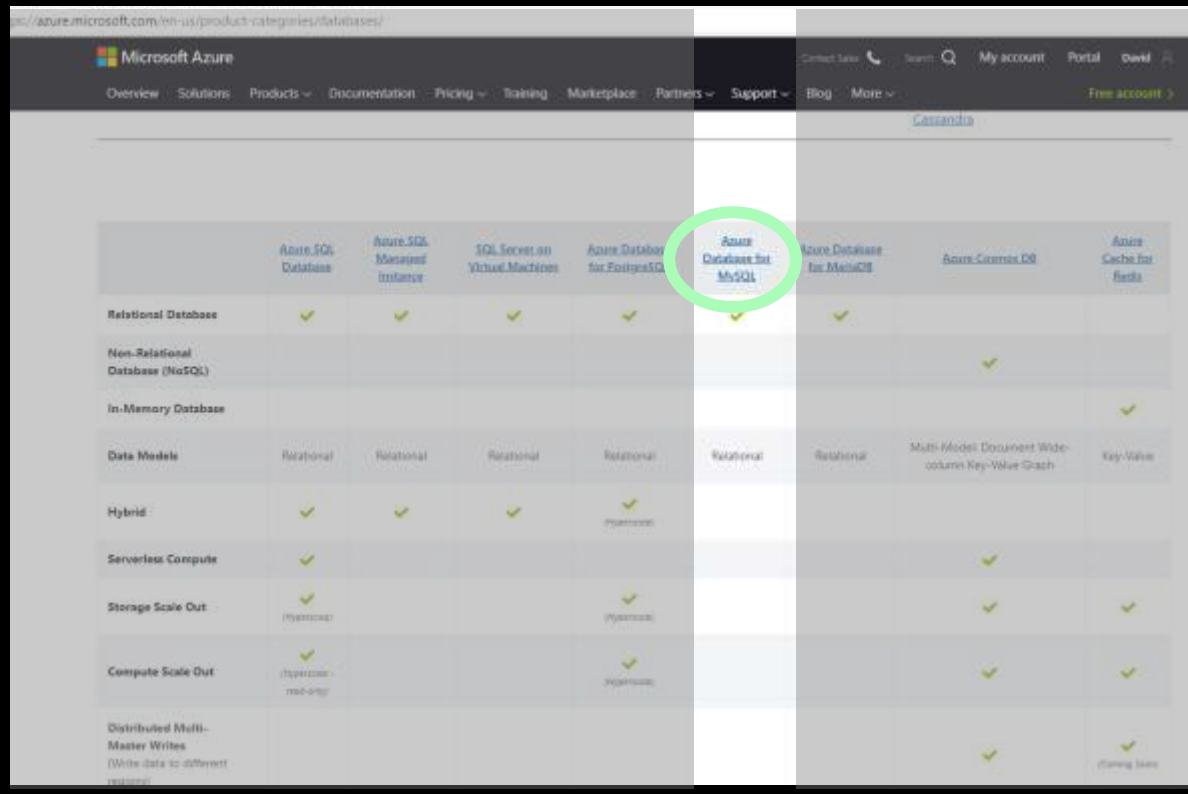


Azure database for MySQL

Single server or flexible* server (* in preview in March of 2021)

Data protection and automated maintenance of hardware and OS

A very pink example comes in two slides.



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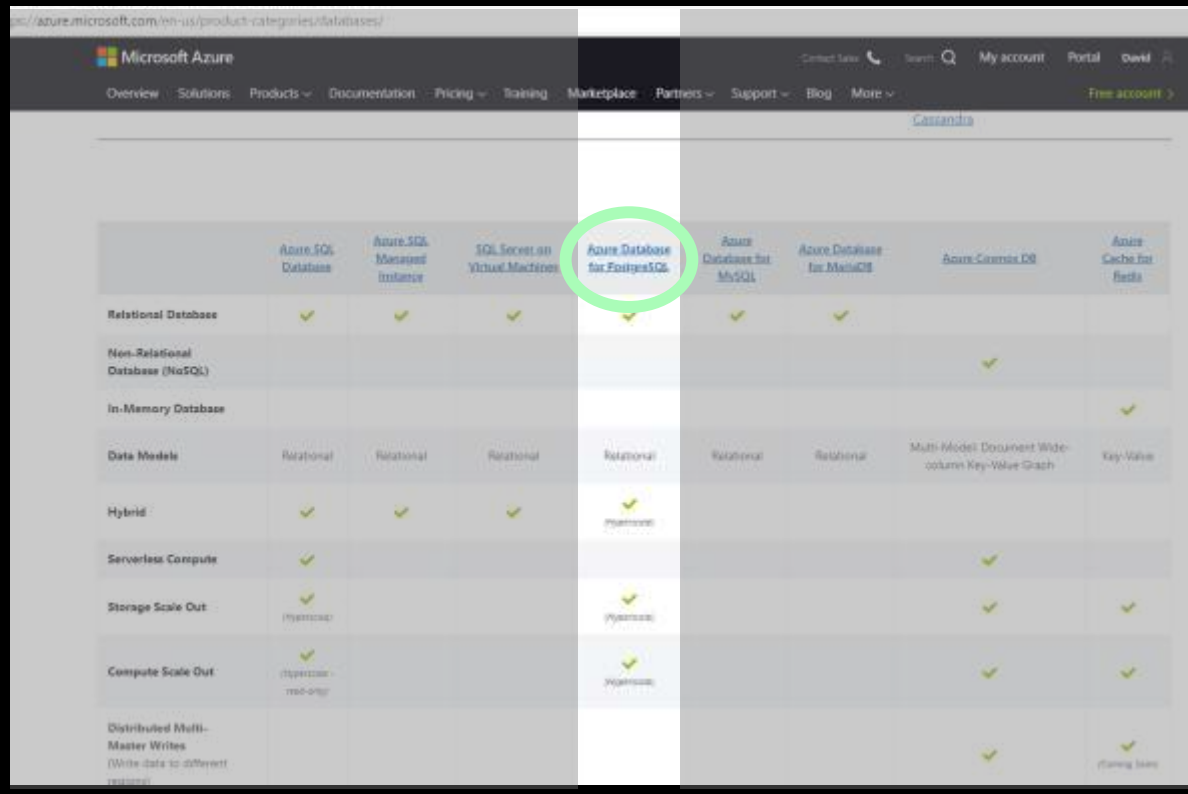
Azure database for PostgreSQL

Single or multiple servers

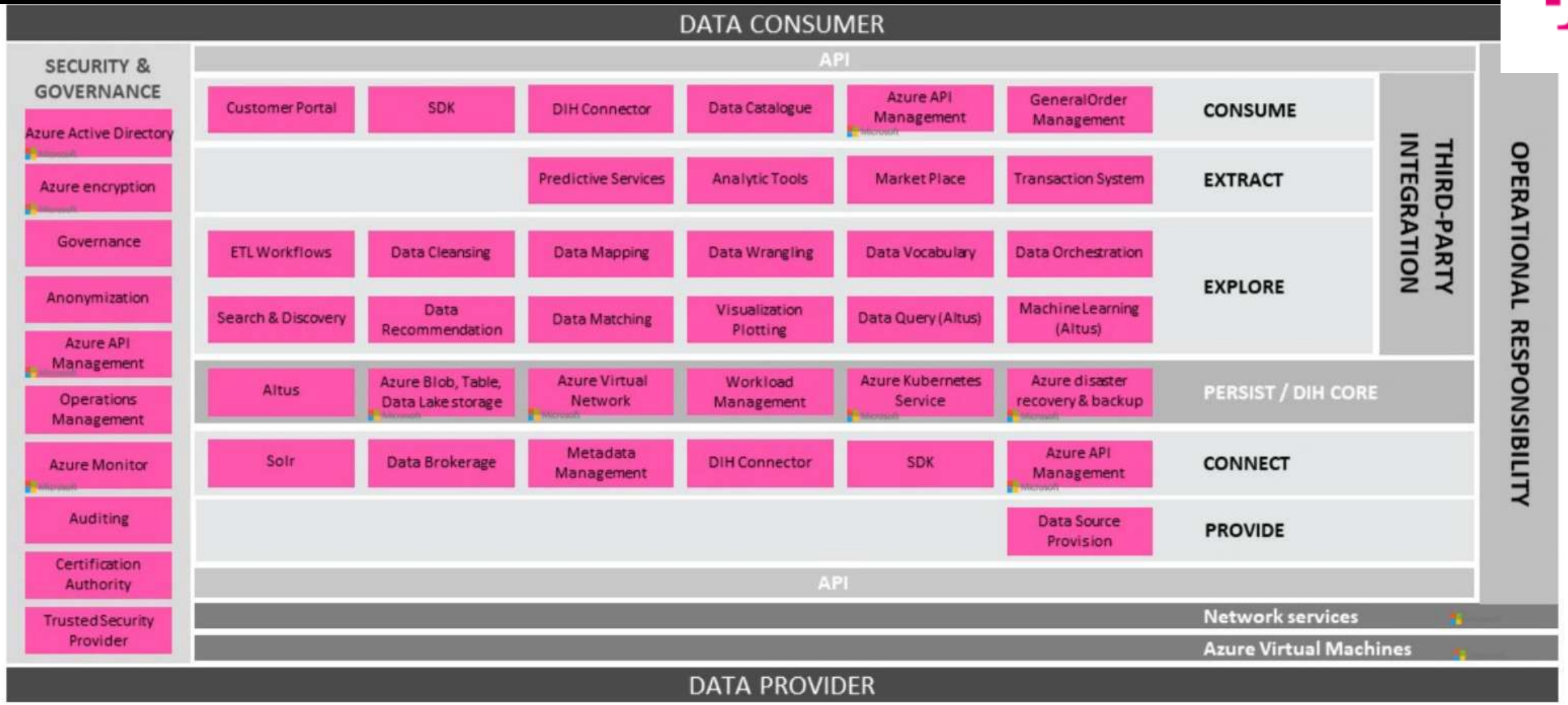
Single or multiple databases per server

A very pink example comes in the next slide.



Is this where I should upload my Kimball modelled DW?

Functional architecture - Microsoft



Quick recap

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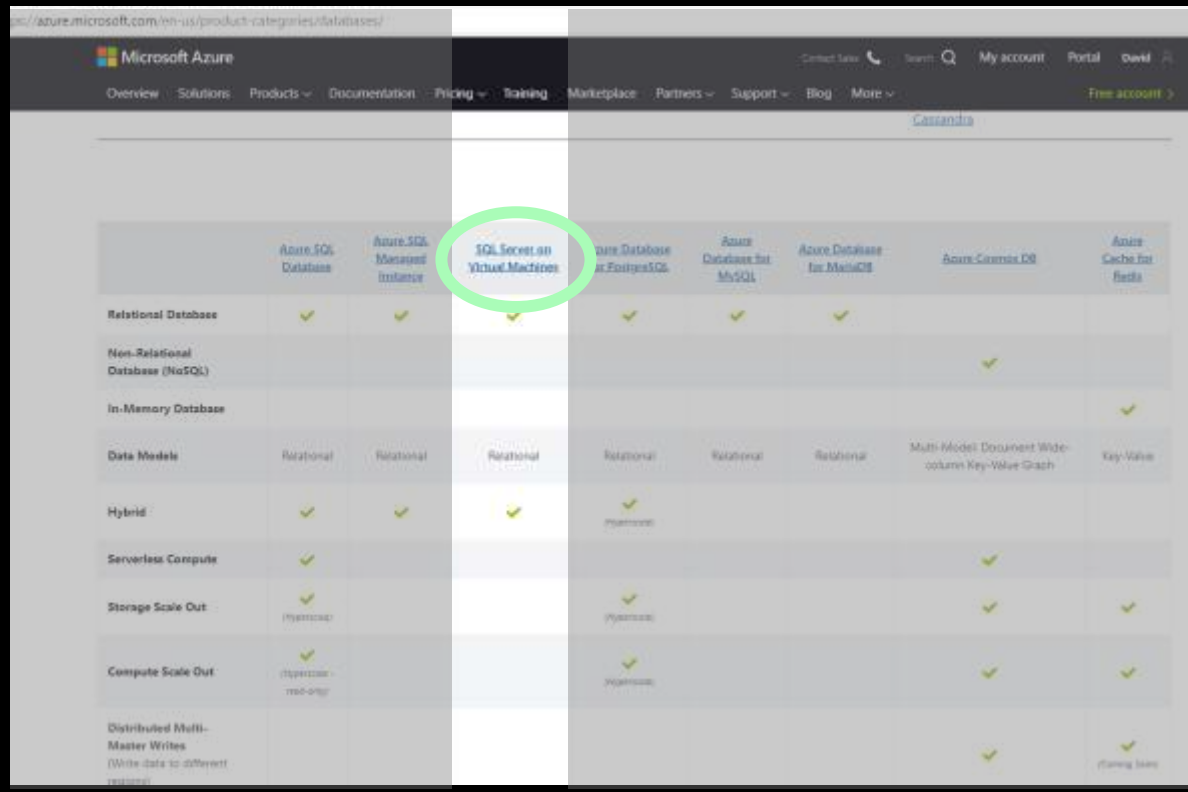
Distributed Multi-Master Writes (Write data to different regions)							✓	✓ *(Coming Soon)*

SQL Server on virtual machine in Azure

Customer decides the ‘hardware’ and performance

This is *just* a virtual machine with SQL Server installed (”any” os/sql server version supported)

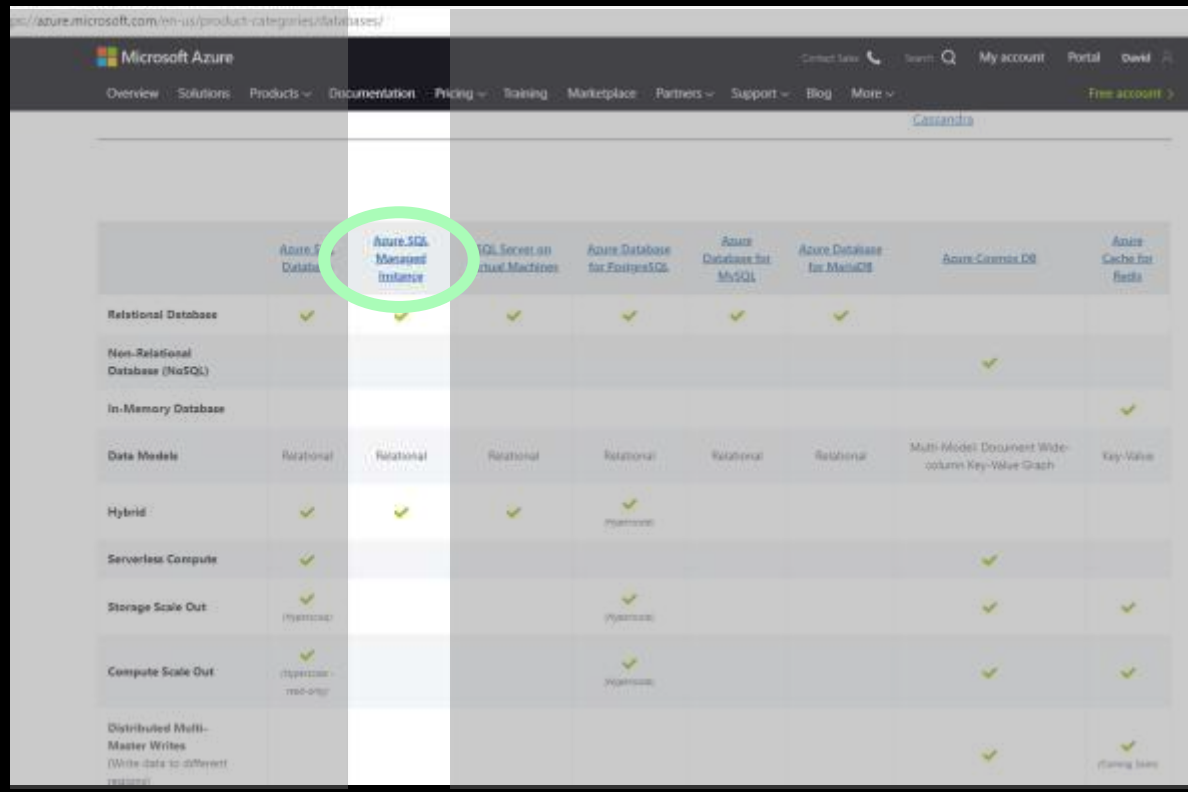
600 virtual machines running SQL Server lifted in a few weeks



Is this where I should upload my Kimball modelled DW?

Azure SQL Managed Instance

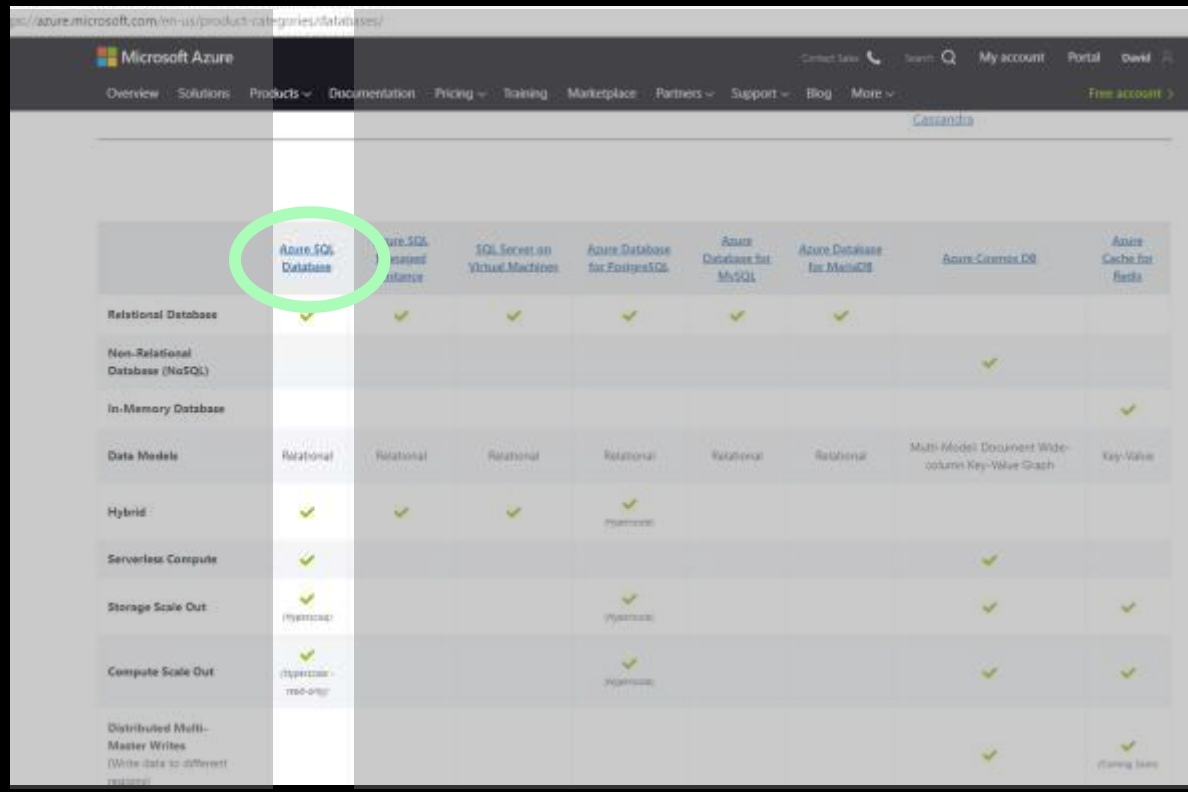
- ’Full’ SQL Server feature set (like SQL Agent etc)
- Fully managed (no hw/os/patch stress)
- Was called ”Cloud lifter project” when it was developed
- Uses Azure Virtual Private Network



Is this where I should upload my Kimball modelled DW?

Azure SQL Database

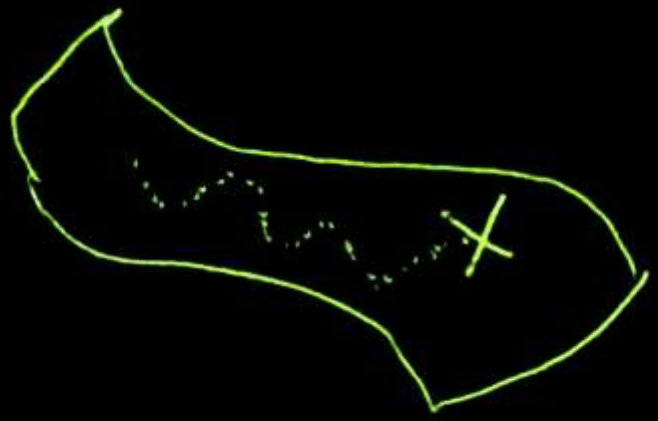
- Auto update/ provisioning/ backups
- Hyperscale storage
- Serverless
- Elastic pools
- Not 100% comparable with onprem
- Uses Azure Virtual Private Network



Is this where I should upload my Kimball modelled DW?

Quick recap

Davids mindmap of dbs in Azure 2021



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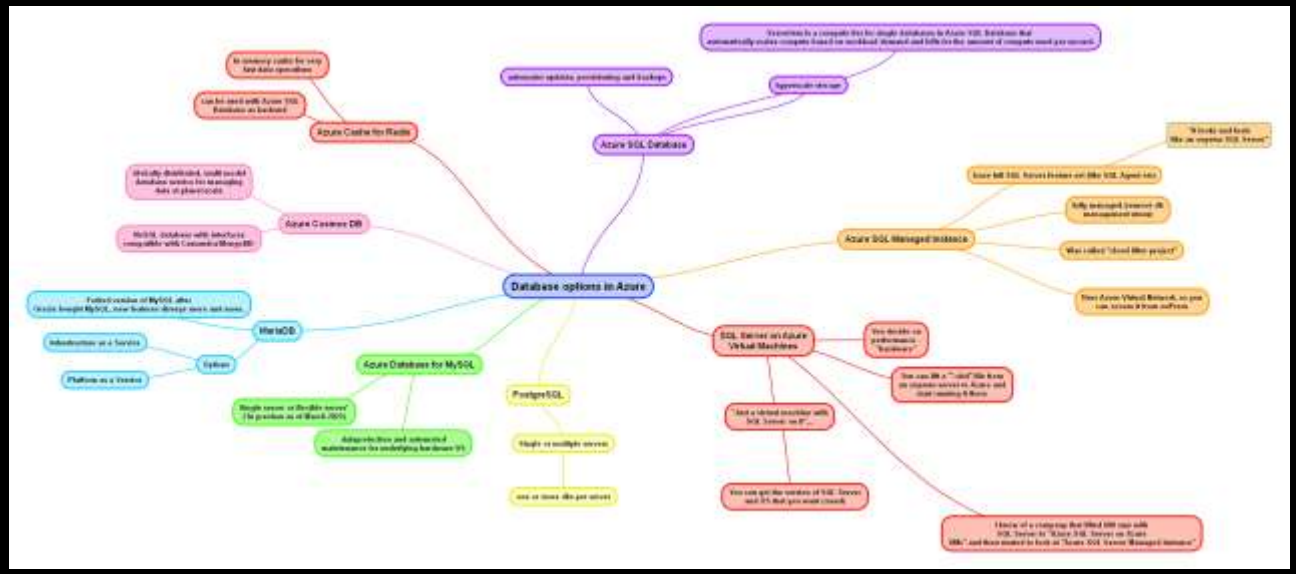
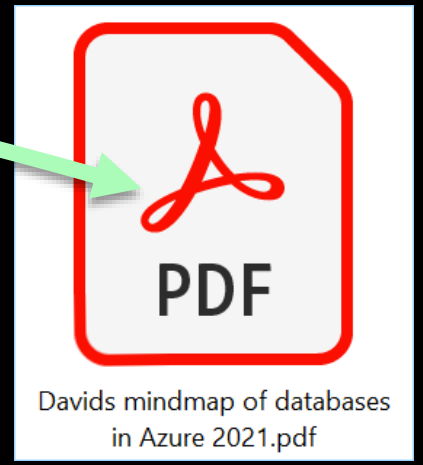
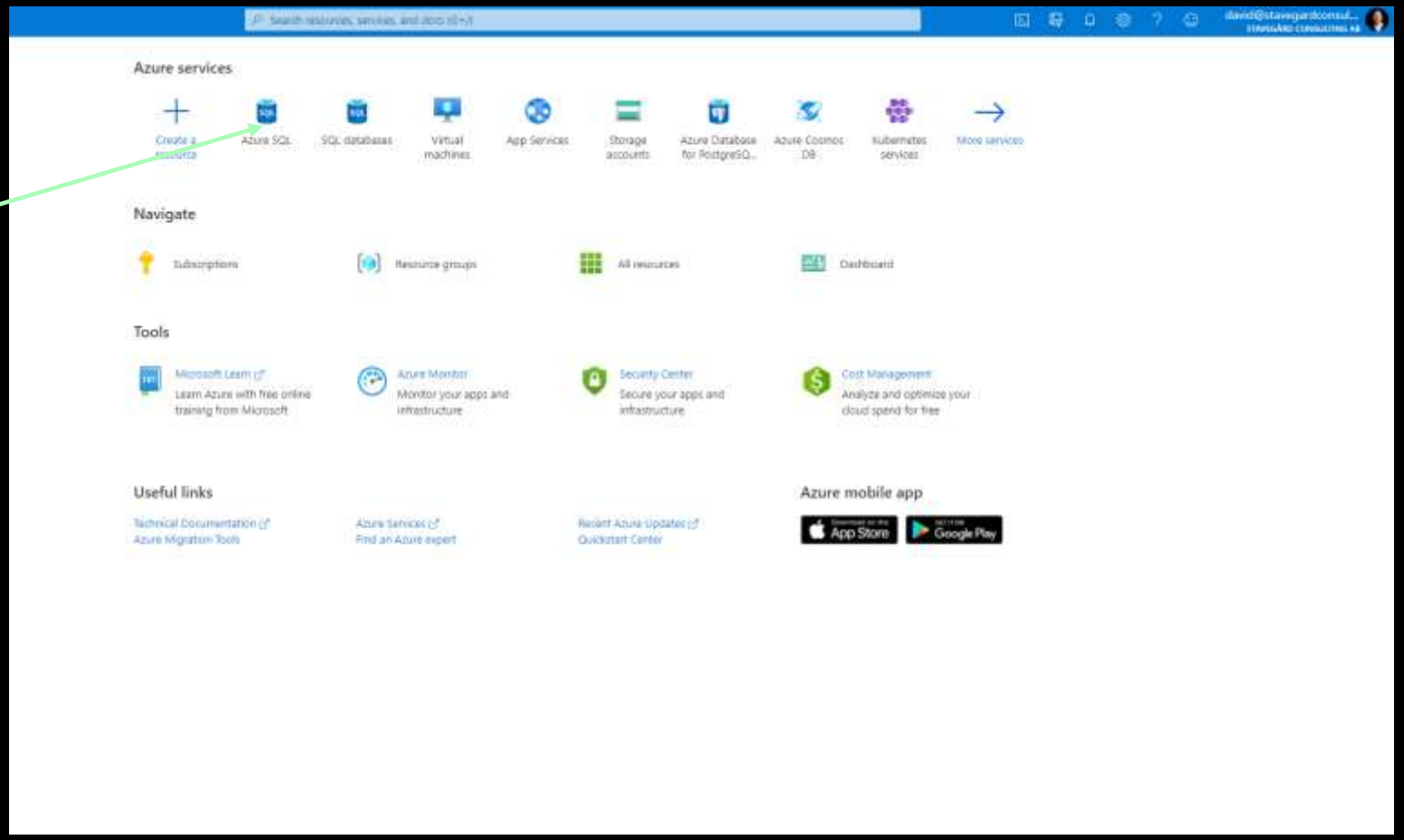


Ask me on Twitter and I'll send it to you!



So, we go into Azure again

Create an Azure SQL Database



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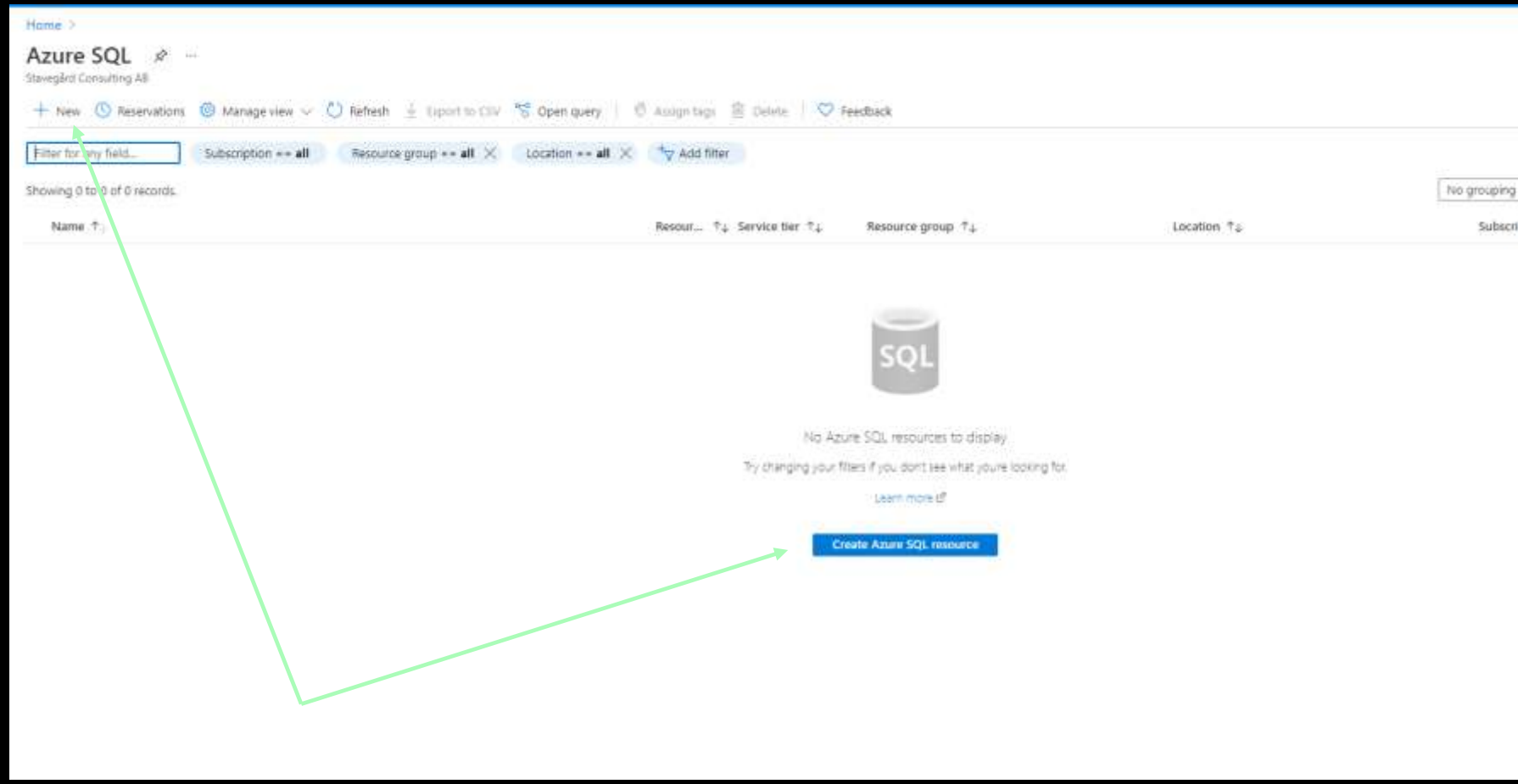

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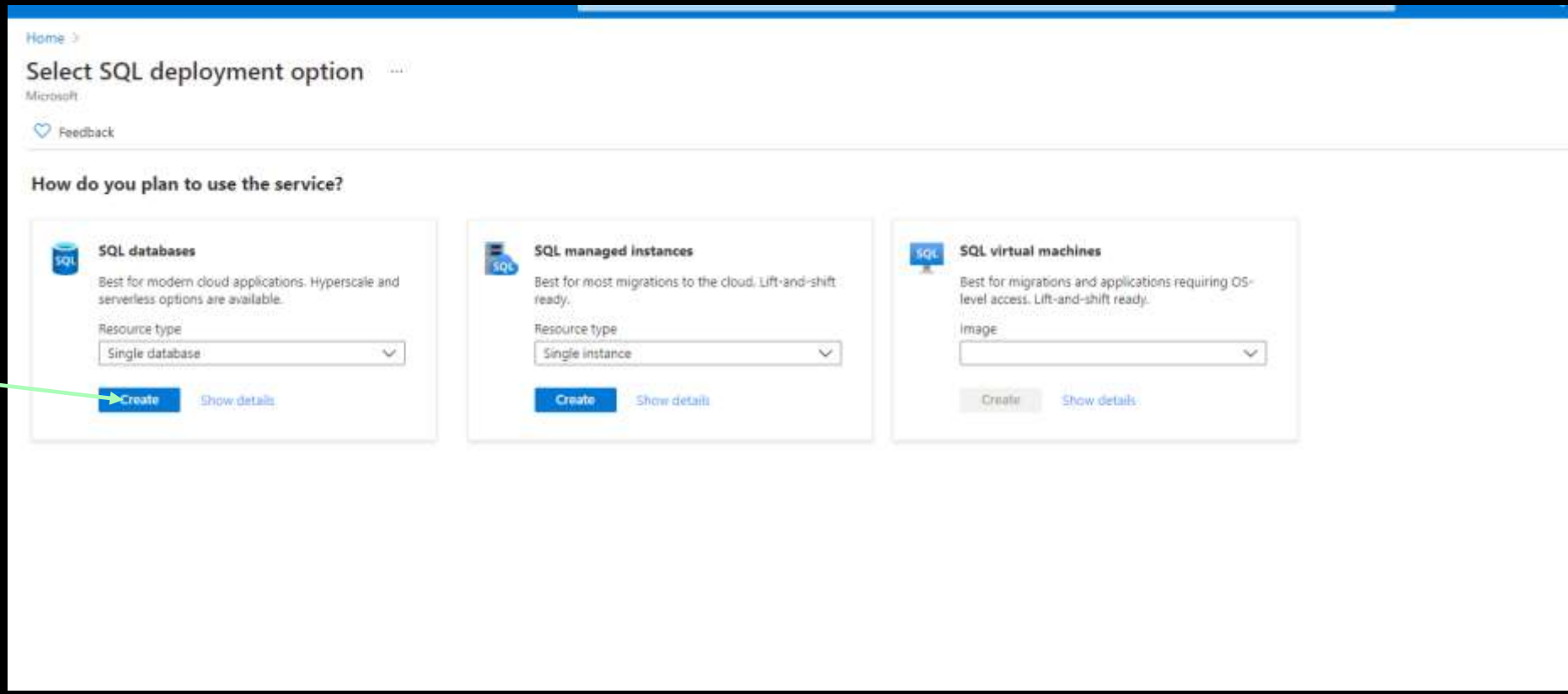

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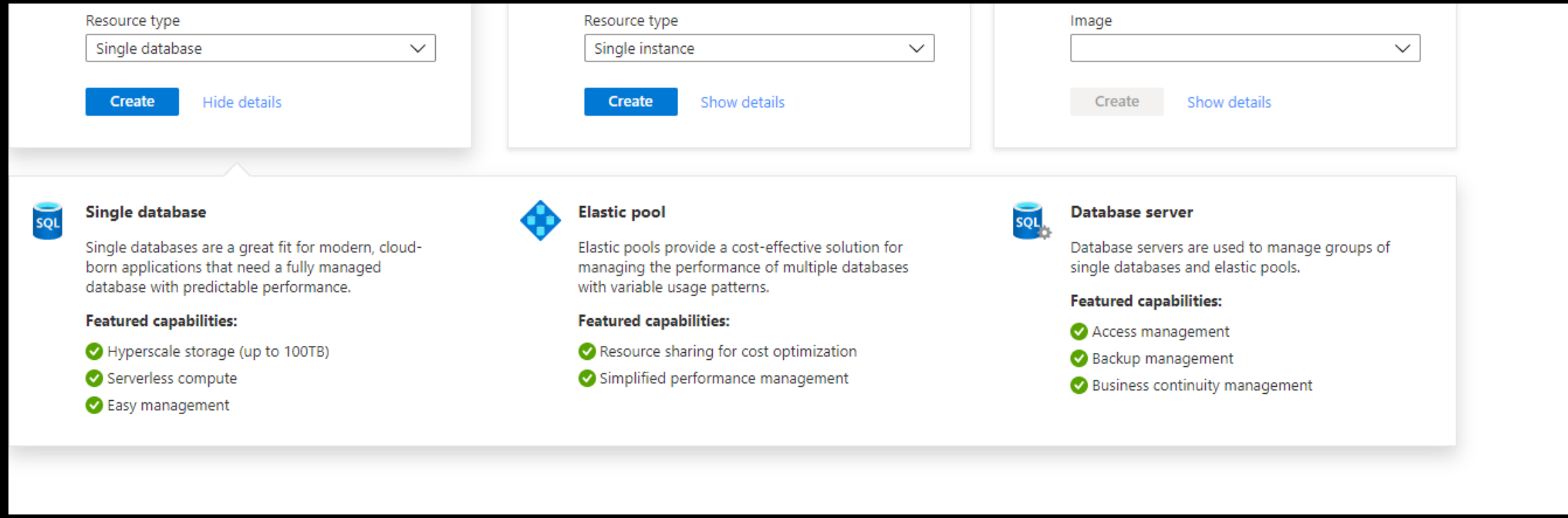

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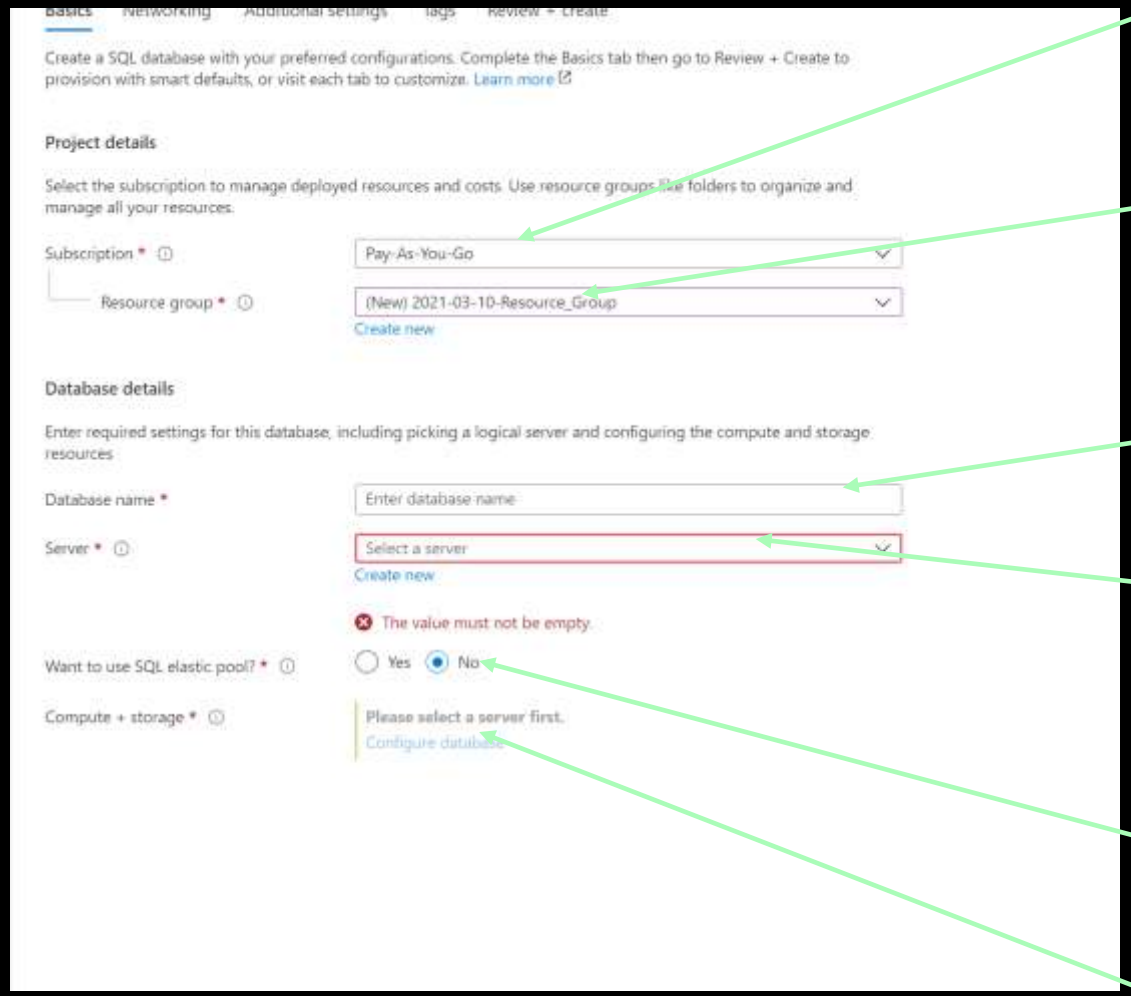


Subscription, everything in this gets billed together

Resource group is grouping of products sharing the same lifecycle, permissions and policies

db name

Eventhough it's server-less, this is a step to guide how much hw this db will need

Do we want elastic pools?

Configure the servers "hardware"

Create an Azure SQL Database

Database name *

2021_03_05_db

Server * (i)

(new) 2021-03-05-server (North Europe)

Create new

Want to use SQL elastic pool? * (i)

Yes No

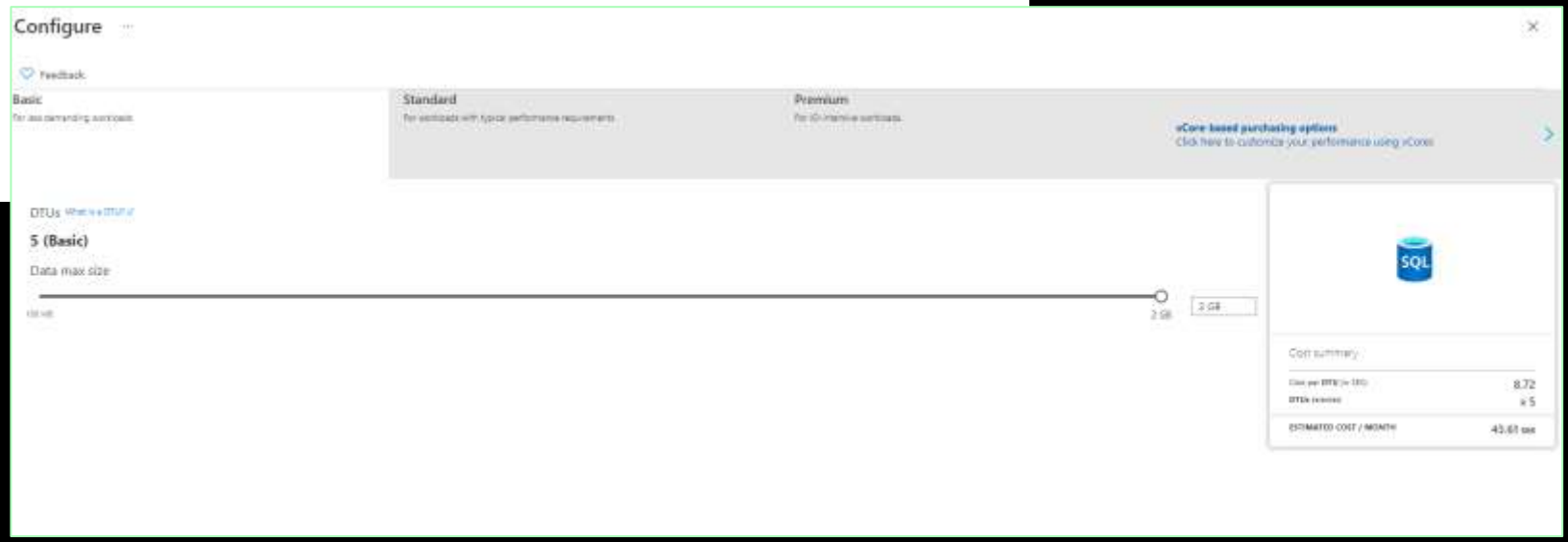
Compute + storage * (i)

Basic

2 GB storage

Configure database

Database transaction unit (DTU) är bundled compute and storage packages balanced for common workloads.



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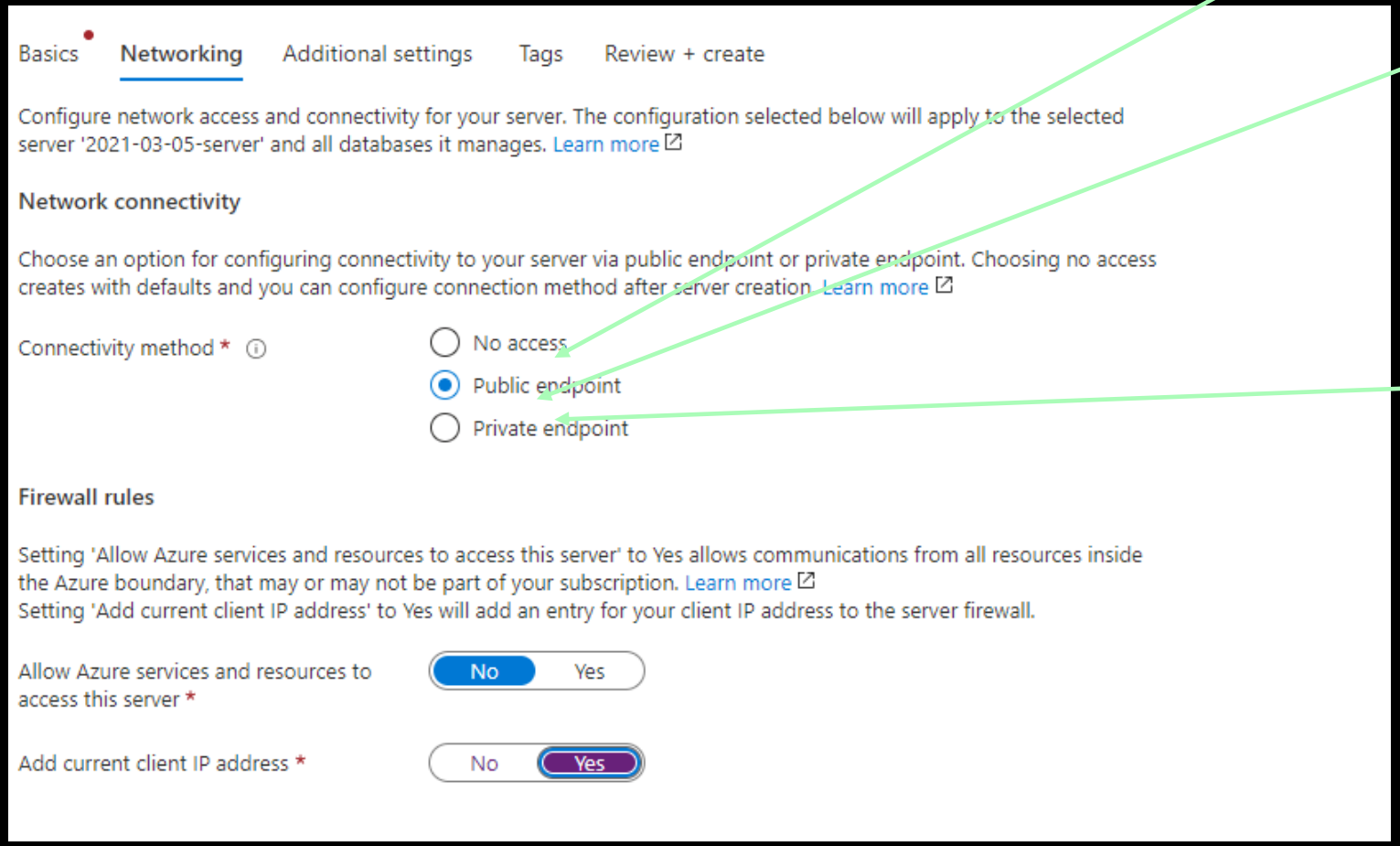


No access means no external access

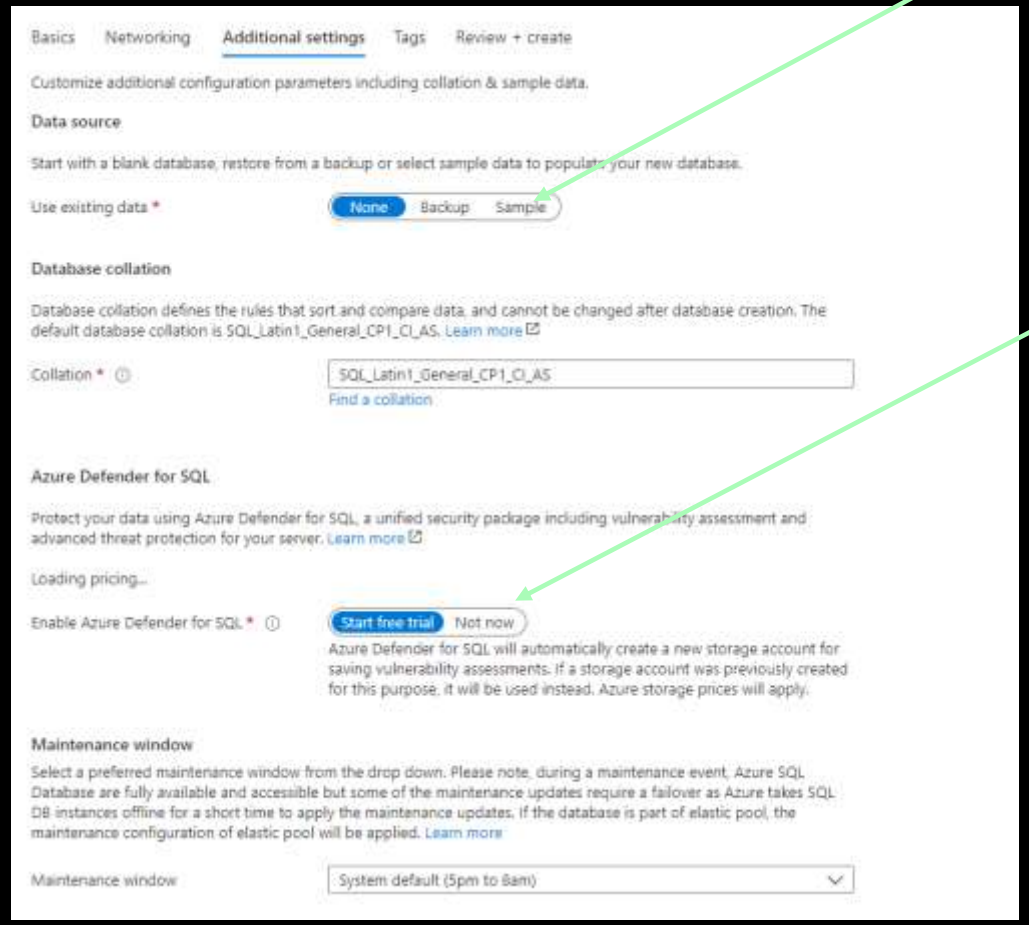
Open for everyone (but with firewalls)

Move the end-point to your own network

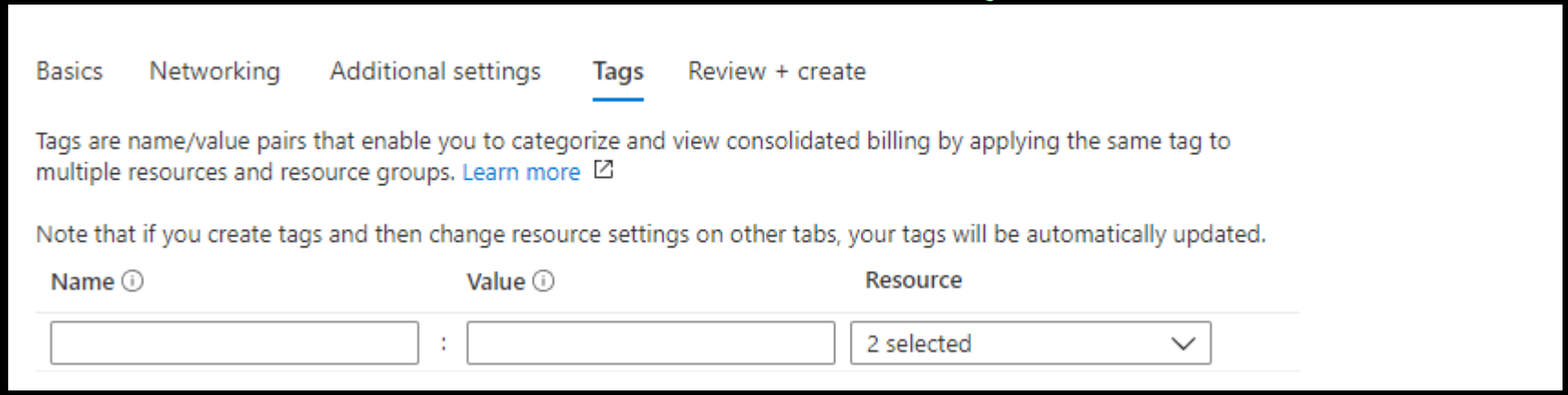
Create an Azure SQL Database

Do you want Adventure Works?

Azure defender for SQL: protect your databases

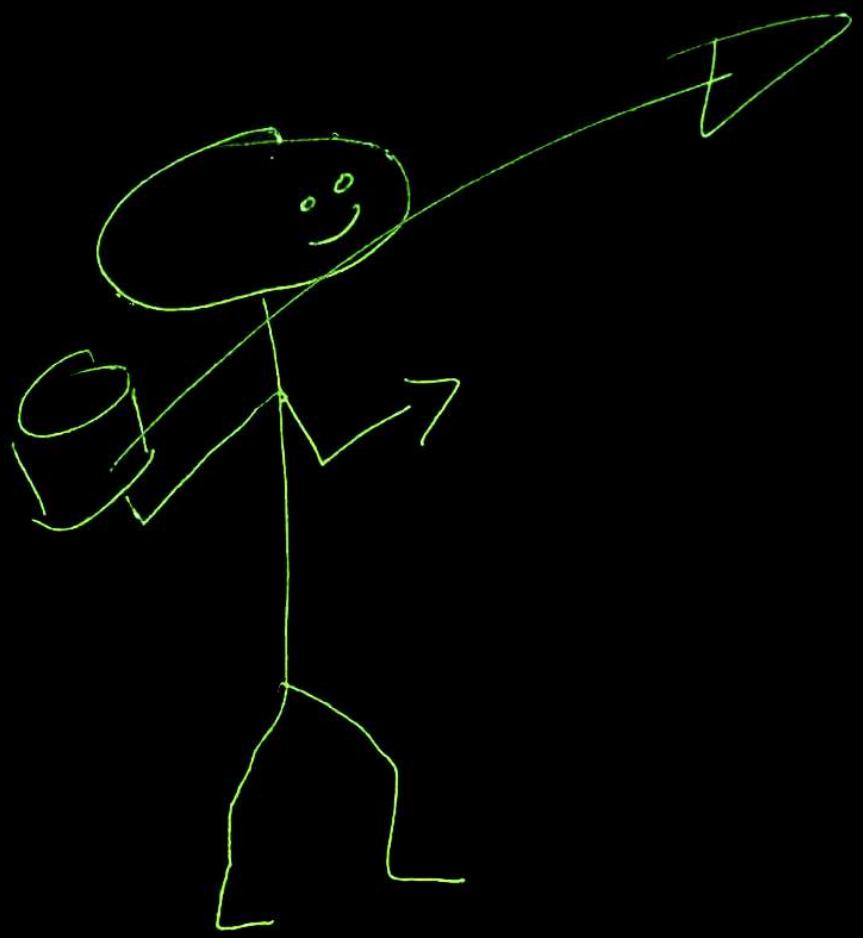


Create an Azure SQL Database



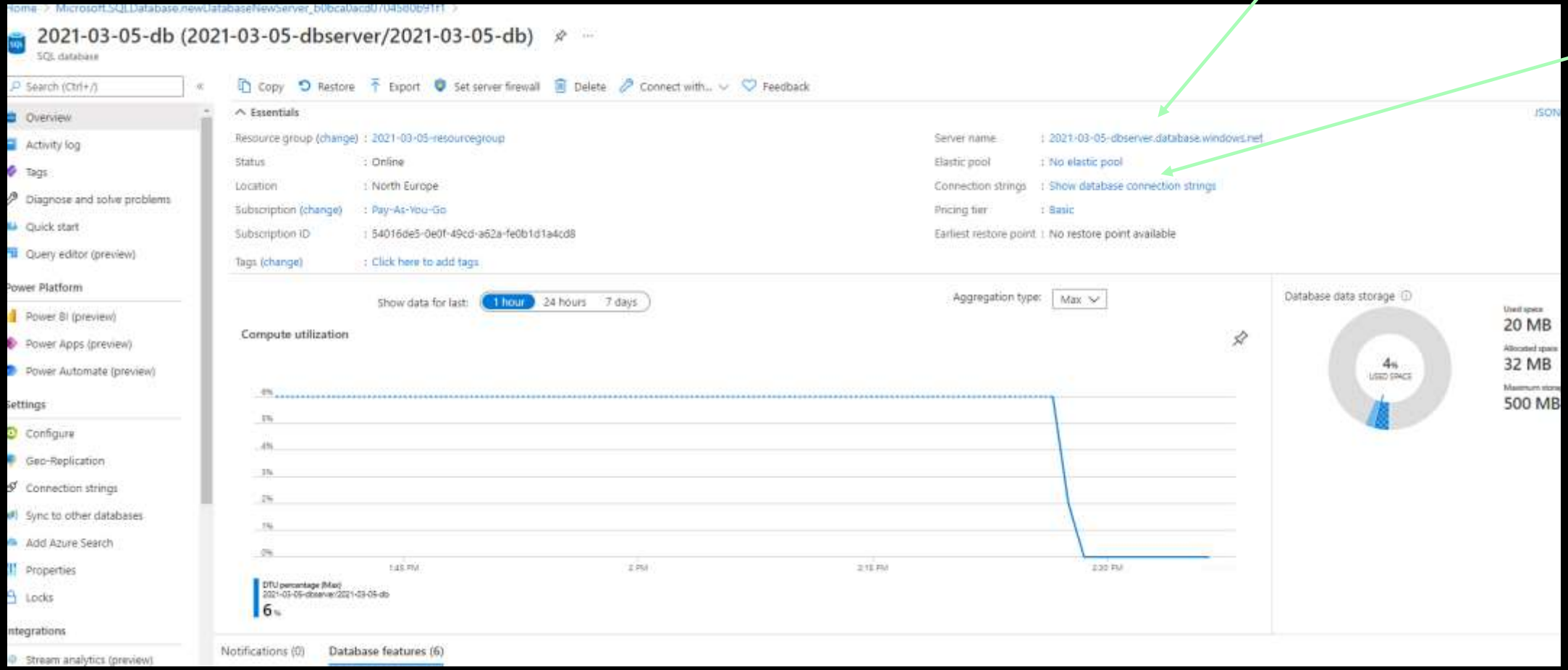
Tags are cool!

Create an Azure SQL Database



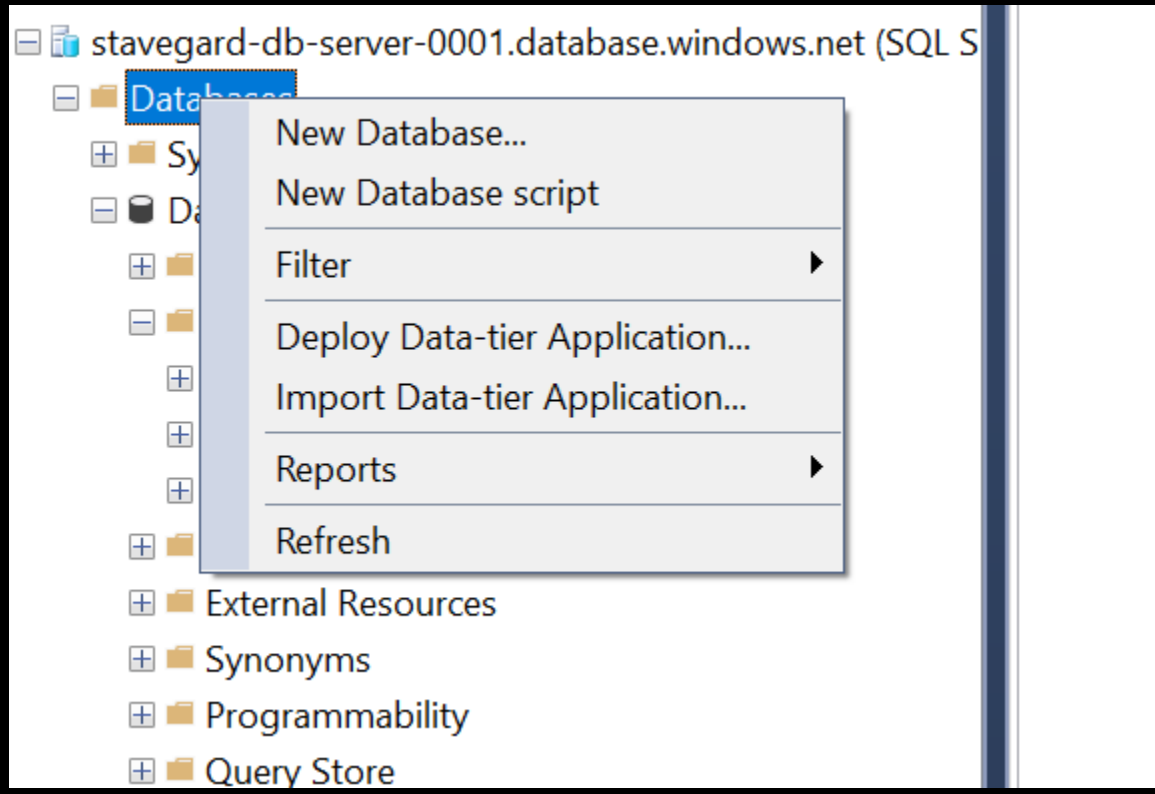
So, why are there so many option, when I just want a ”somewhere” to put my database?

Create an Azure SQL Database



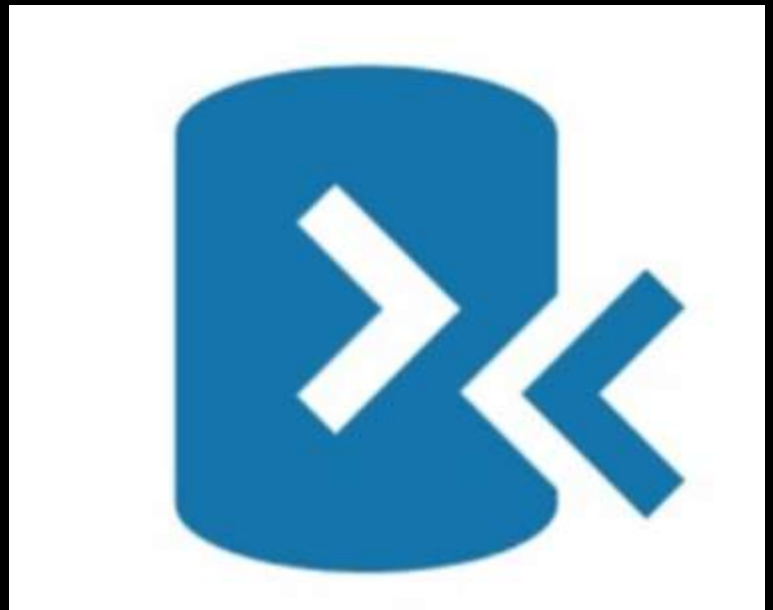
Finally – SSMS!

NOW it's time to BackupRestore!



Time to do some Database migrations!

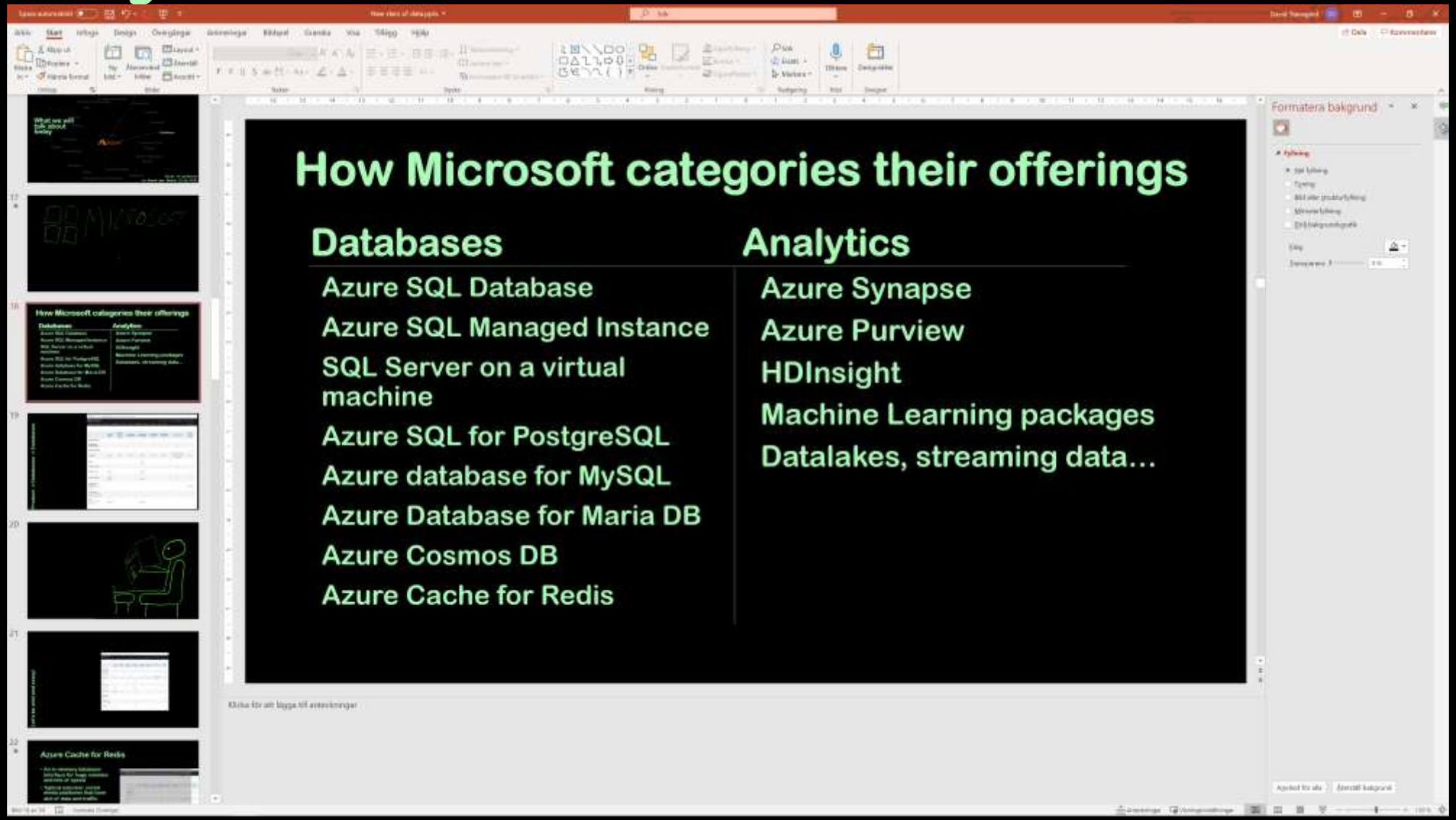
Microsoft Data Migration Assistant:



End point of Azure SQL Database

Happy days – once it's up there, everything runs very smoothly, and I immediately forgot that it was in the cloud.

But wait, David! What about the Analytics side of this slide?



Azure Synapse

Huge platform (you get what you pay for!)

”Power-up-do-some-stuff–shut-down”-principal

Azure Purview

Data governance service, companion to Synapse

“Purview helps discover all data across your organization, track lineage of data, and create a business glossary wherever it is stored: on-premises, across clouds, in SaaS applications, and in Power BI.”,

Microsoft corporate vice president Julia White

HDInsight, ML, datalakes, streaming data…

HDInsight : open-source analytics service that runs Hadoop, Spark, and Kafka

ML Services, data lakes, streaming analytics etc

Conclusions

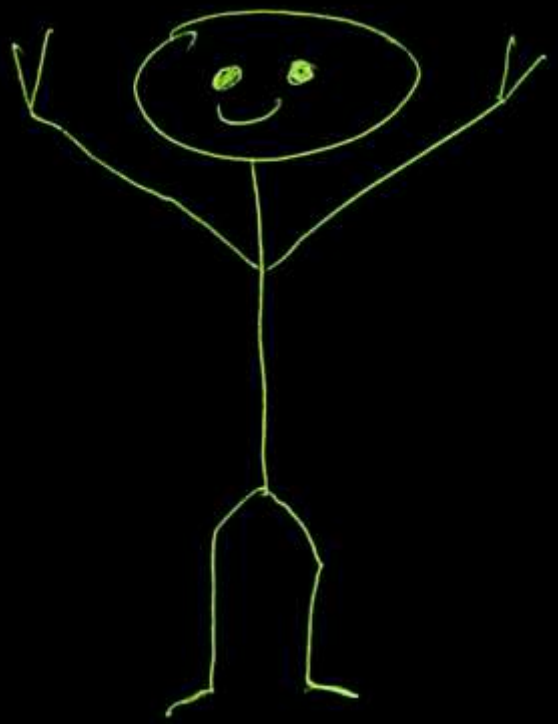
Lots of databases. Lots of options.

It’s the future. Learn this!

(Need a map? Ask me on Twitter!)

Thank you, Ben Weissman and
William Durkin, for hosting this.

Thank you, Alexander Arvidsson,
for mentoring me.



Thank you for watching.

Reach out:
Twitter @DavidStavegard
LinkedIn: David Stavegård