



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

David March 12th

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

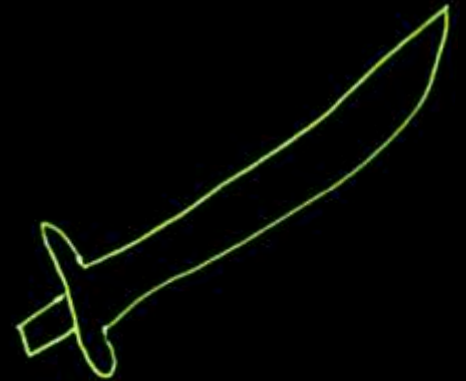


Basically, it's a
jungle when you
log in to Azure the
first time

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



I am David



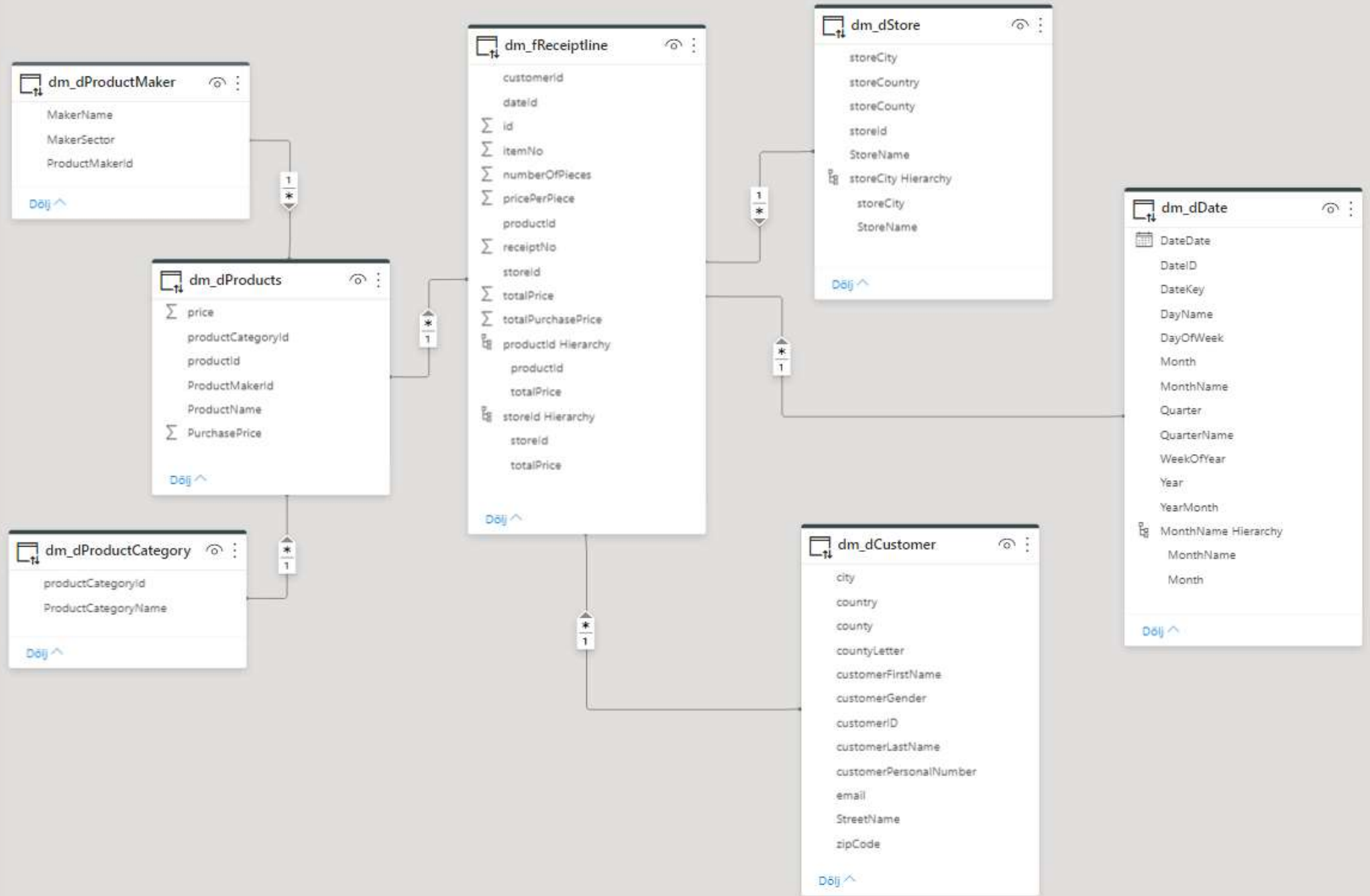
I am David

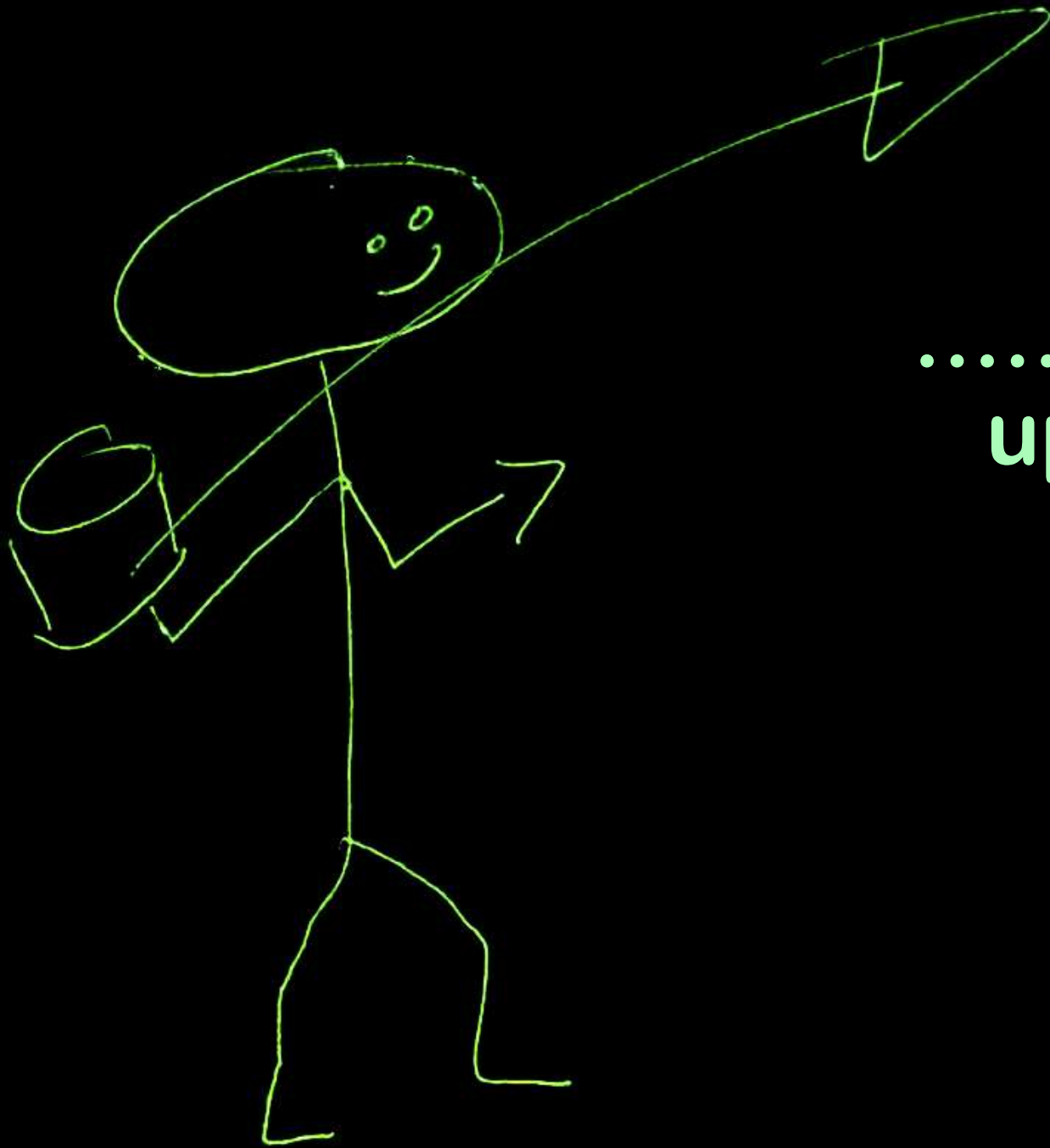
Thursdays on linkedin

I am David



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...

https://azure.microsoft.com/en-us/

Microsoft Azure

Contact Sales Search My account Portal David

Overview Solutions Products Documentation Pricing Training Marketplace Partners Support Blog More

Free account

We're in this together. Explore Azure resources and tools to help you navigate COVID-19

INVENT WITH PURPOSE

Build what you want, where you want

Create future-ready innovations across all of your environments using the newest technologies announced at Microsoft Ignite. Sign up for an Azure free account and get popular services free for 12 months.

Try Azure for free

On-premises, hybrid, multicloud, or at the edge—create highly secure cloud solutions on Azure

FREE EVENT

Learn, connect, and explore at Microsoft Ignite

Bring AI and machine learning to the edge, from silicon to service, with out-of-the-box IoT devices and services.

New hybrid and multicloud flexibility

Simplify and supercharge complex environments with new Kubernetes and machine learning capabilities for Azure Arc.

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

What is a free account?

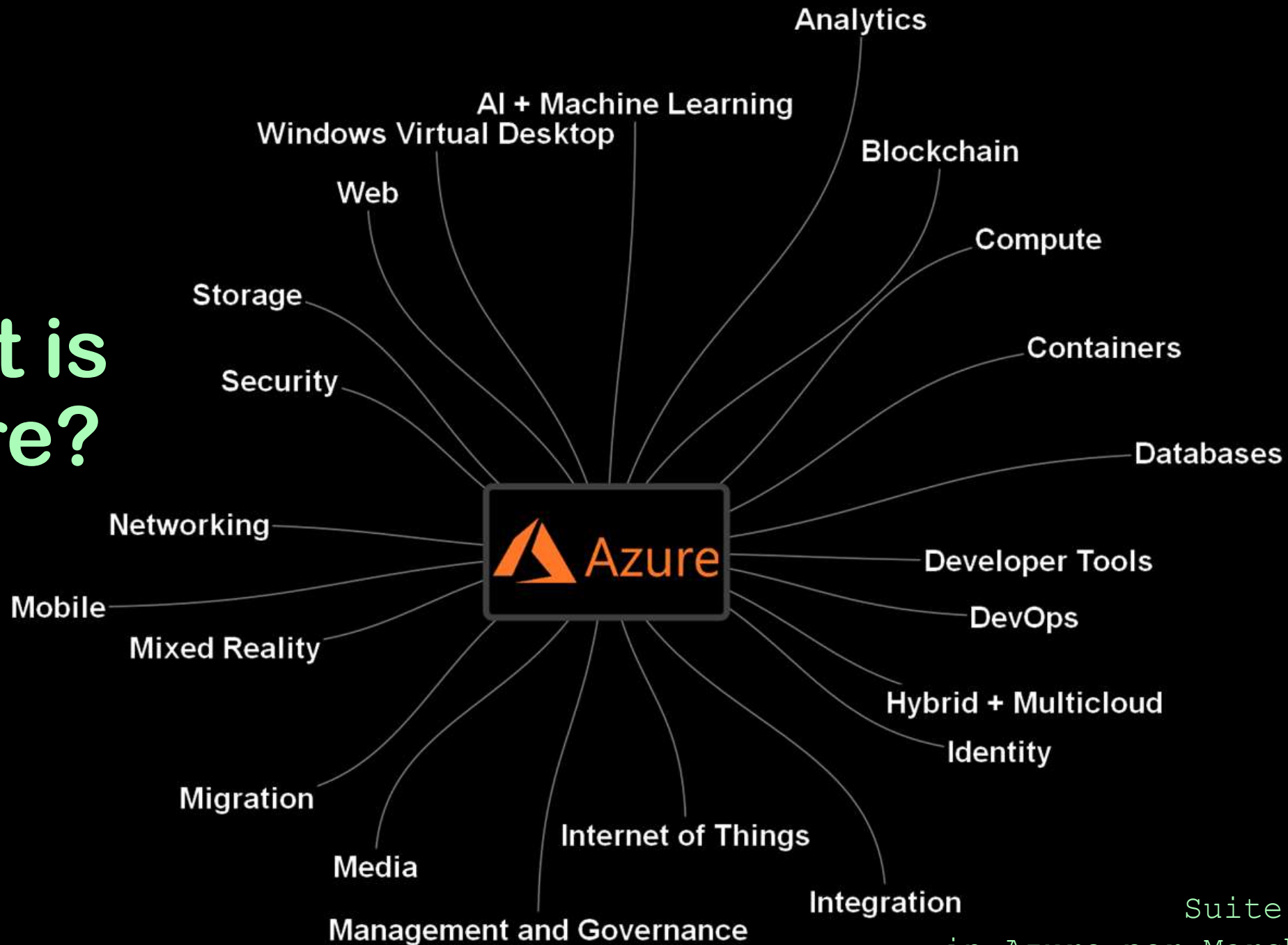
No starting fee
(you get \$200 to spend the first 30 days)

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

All you need is

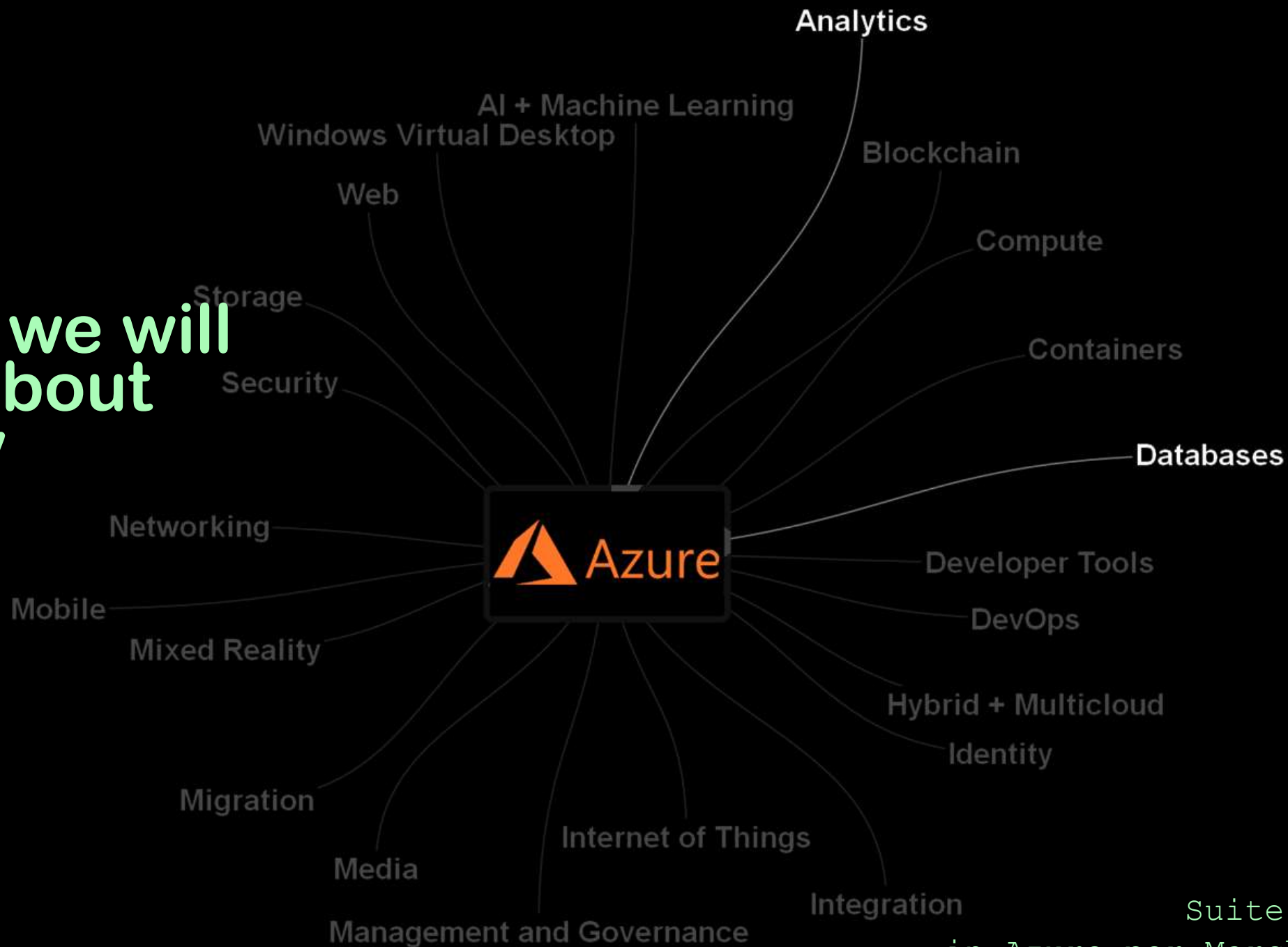
- * A phone number
- * A credit card
- * GitHub or Microsoft account

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 categorizes their offerings

Databases

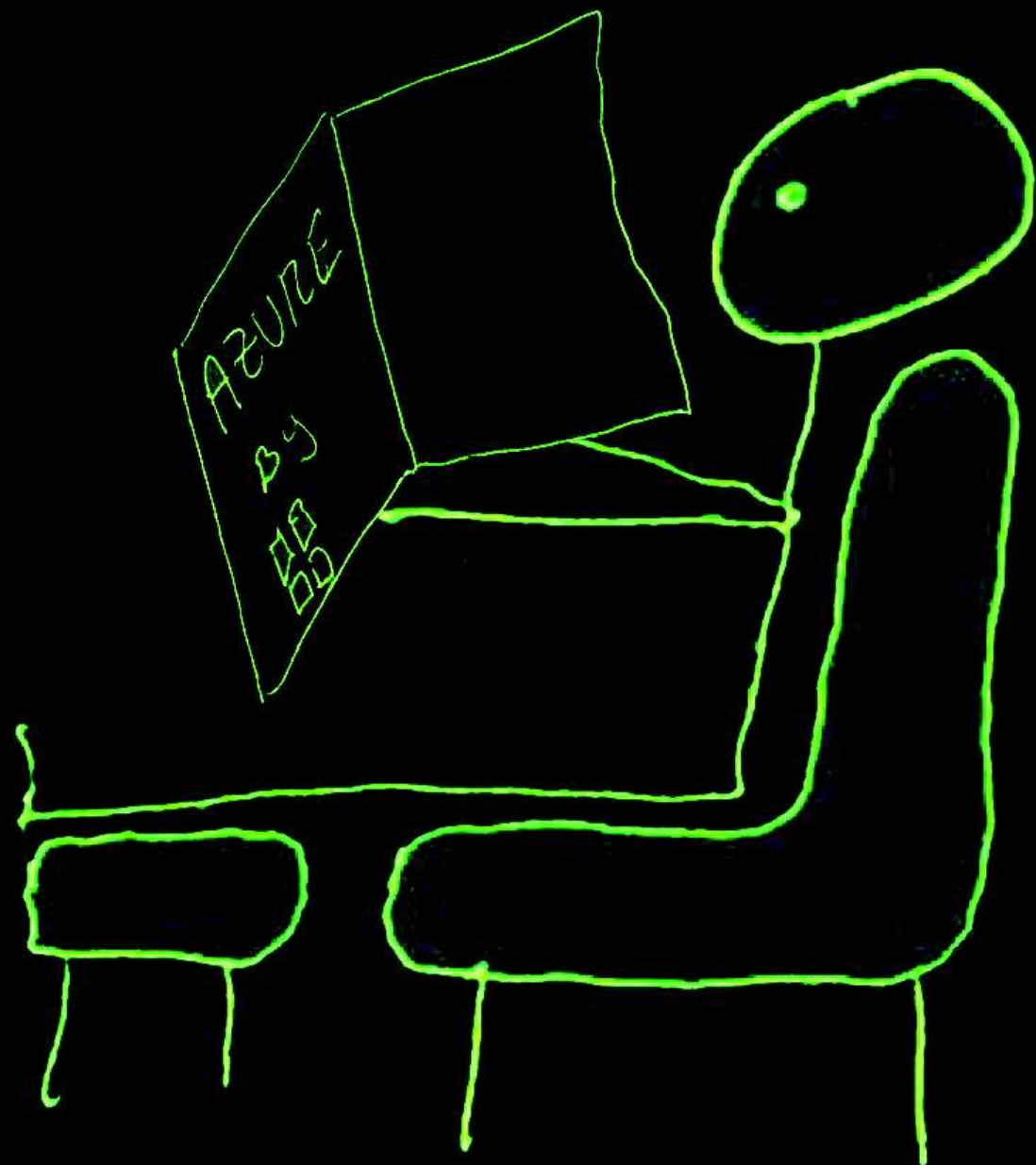
Azure SQL Database
Azure SQL Managed Instance
SQL Server on a virtual machine
Azure db for PostgreSQL
Azure db for MySQL
Azure db for Maria DB
Azure Cosmos DB
Azure Cache for Redis

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	
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)			✓	



Let's be wild and crazy!

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

Microsoft Azure

Contact Sales Search My account Portal David

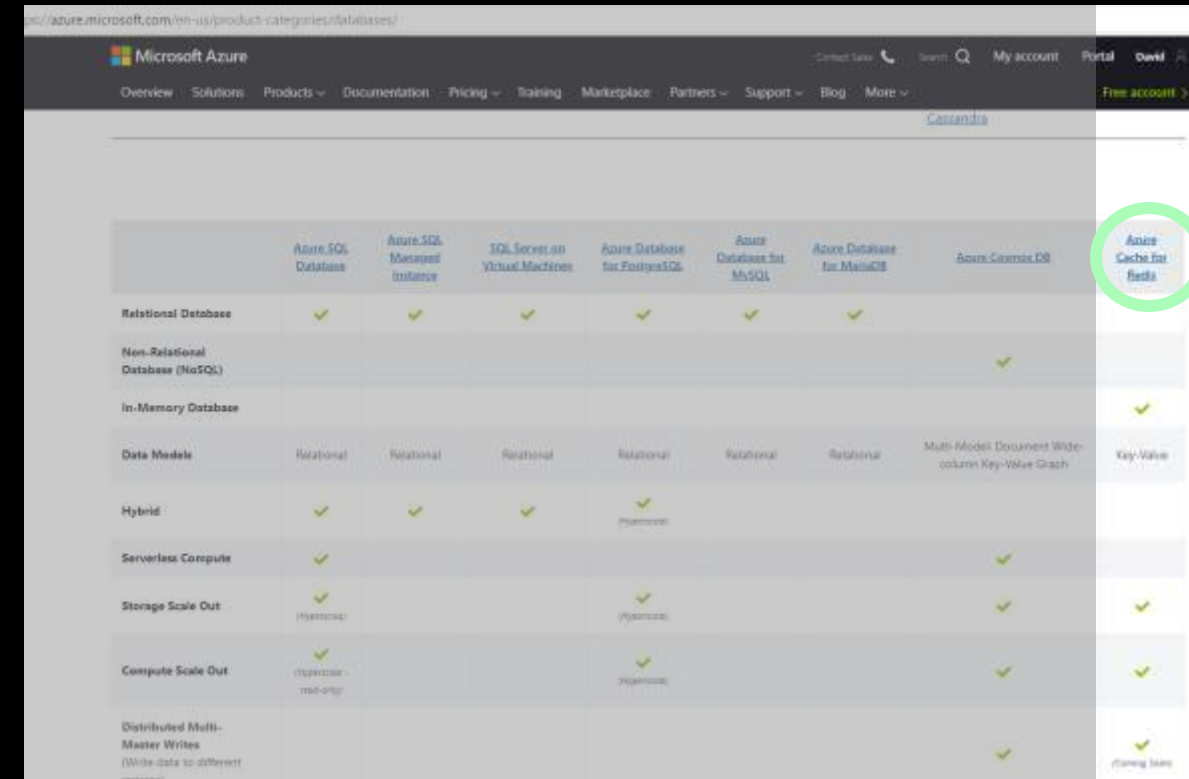
Overview Solutions Products Documentation Pricing Training Marketplace Partners Support Blog More Free account

	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 Cache for Redis

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



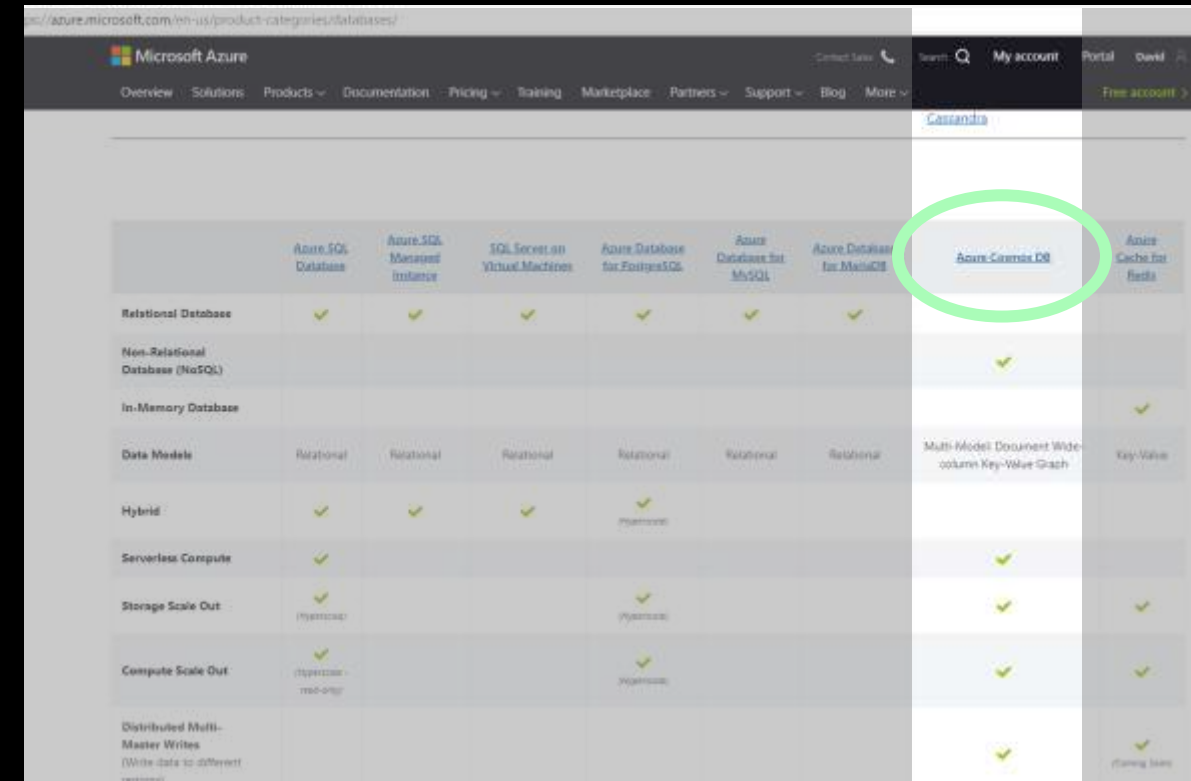
The screenshot shows the Microsoft Azure portal's 'Databases' page. The page lists various database services with their capabilities. A red circle highlights 'Azure Cache for Redis' in the right-hand navigation pane.

	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 Model	Relational	Relational	Relational	Relational	Relational	Relational	Multi-Model Document Wide-column Key-Value Graph	Key-Value
Hybrid	✓	✓	✓	Hybrid				
Serverless Compute	✓						✓	
Storage Scale Out	Hybrid			Hybrid			✓	✓
Compute Scale Out	Hybrid			Hybrid			✓	✓
Distributed Multi-Master Writes (Write data to different regions)							✓	Hybrid

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



The screenshot shows the Microsoft Azure website's 'Databases' category page. The 'Azure Cosmos DB' link is circled in red. The table below summarizes the features of various Azure database services.

	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 Model	Relational	Relational	Relational	Relational	Relational	Relational	Multi-Model Document Wide-column Key-Value Graph	Key-Value
Hybrid	✓	✓	✓	Hybrid				
Serverless Compute	✓						✓	
Storage Scale Out	Hybrid			Hybrid			✓	✓
Compute Scale Out	Hybrid			Hybrid			✓	✓
Distributed Multi-Master Writes (Write data to different regions)							✓	✓

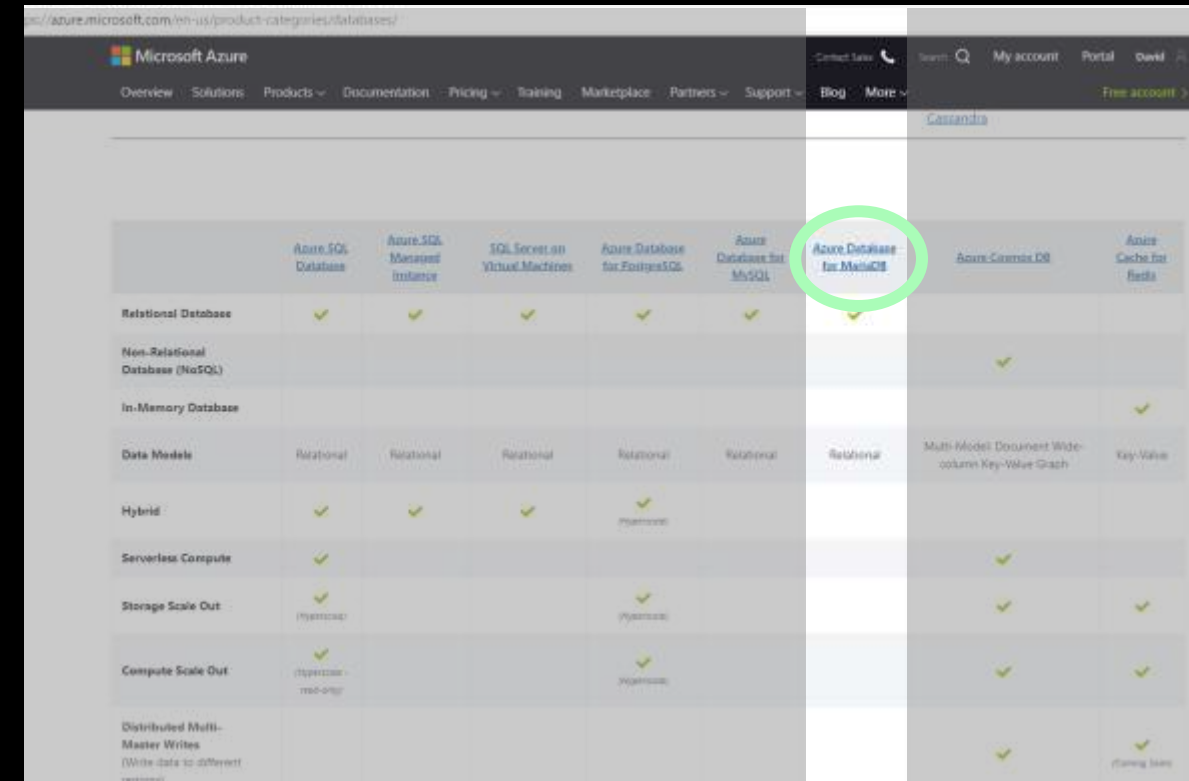
Is this where I should upload my Kimball modelled DW?

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

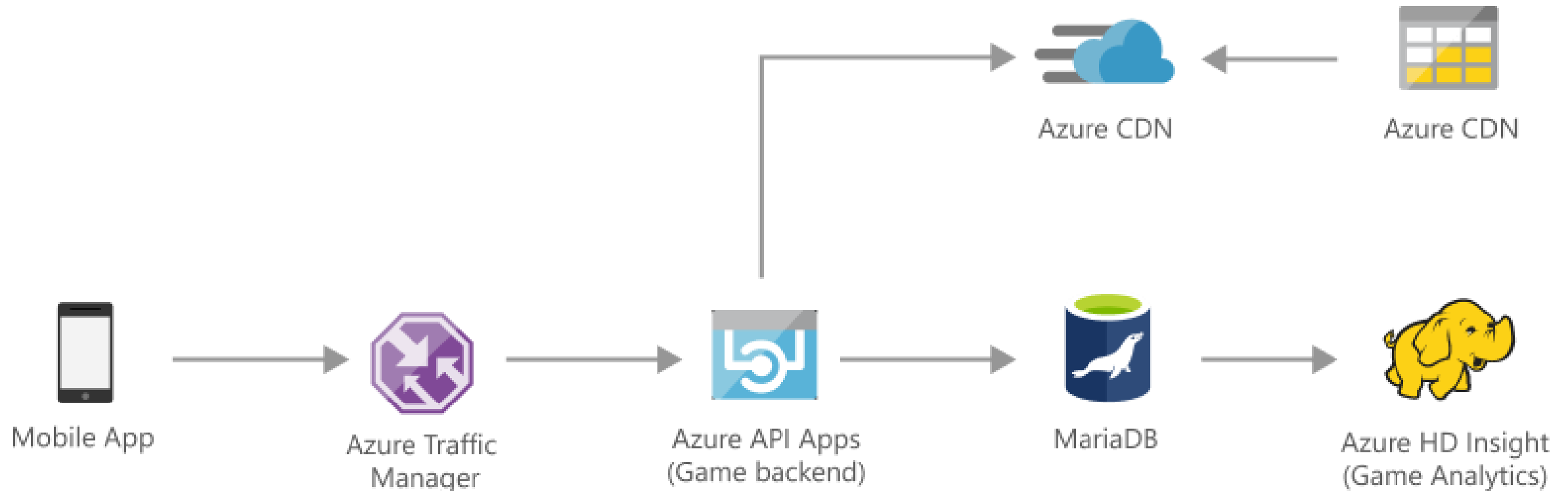


The screenshot shows the Microsoft Azure website's 'Databases' page. The 'Azure Database for MariaDB' link is circled in red. Below the navigation bar is a table comparing various database services across different categories.

	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 Model	Relational	Relational	Relational	Relational	Relational	Relational	Multi-Model Document Wide-column Key-Value Graph	Key-Value
Hybrid	✓	✓	✓	Hybrid				
Serverless Compute	✓						✓	
Storage Scale Out	Hybrid			Hybrid			✓	✓
Compute Scale Out	Hybrid			Hybrid			✓	✓
Distributed Multi-Master Writes (Write data to different regions)							✓	✓

Is this where I should upload my Kimball modelled DW?

Example of a use-case for a MariaDB

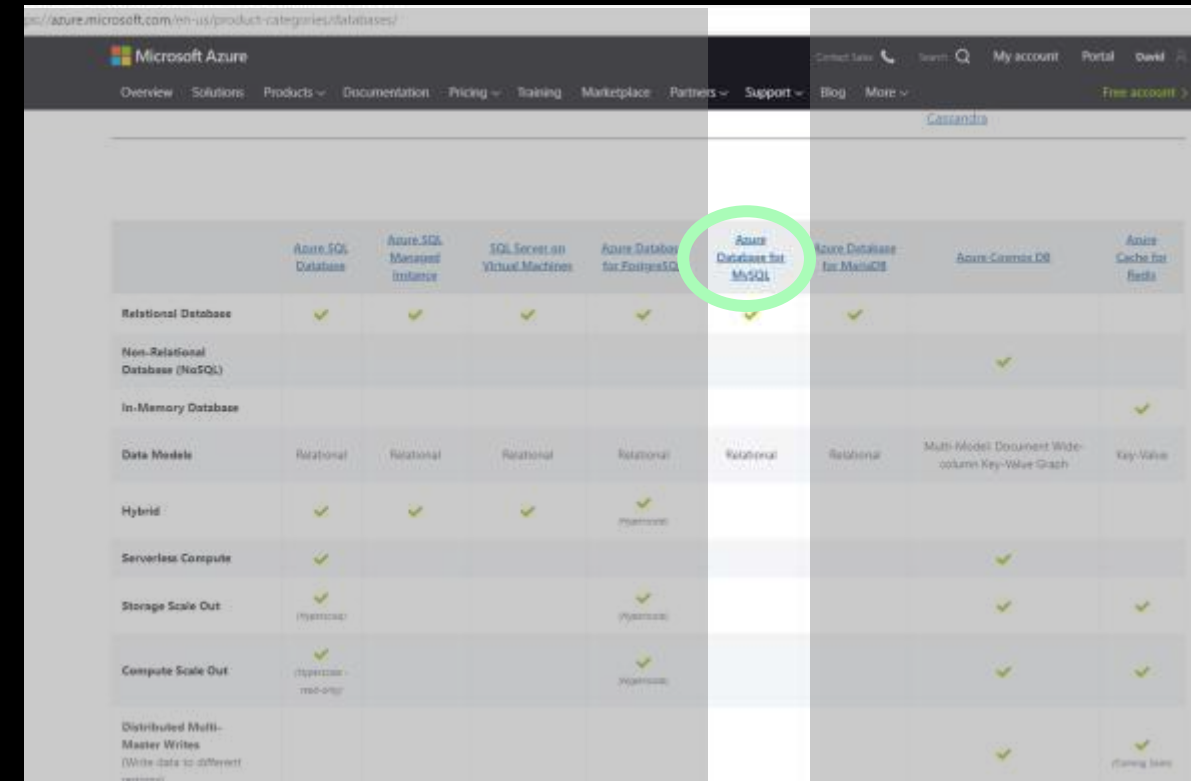


Azure database for MySQL

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.



The screenshot shows the Microsoft Azure website's 'Databases' section. The 'Azure Database for MySQL' link is circled in red. Below the navigation bar is a table comparing various Azure database services across different categories.

	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 Model	Relational	Relational	Relational	Relational	Relational	Relational	Multi-Model Document Wide-column Key-Value Graph	Key-Value
Hybrid	✓	✓	✓	Hybrid				
Serverless Compute	✓						✓	
Storage Scale Out	Hybrid			Hybrid			✓	✓
Compute Scale Out	Hybrid			Hybrid			✓	✓
Distributed Multi-Master Writes (Write data to different regions)							✓	✓

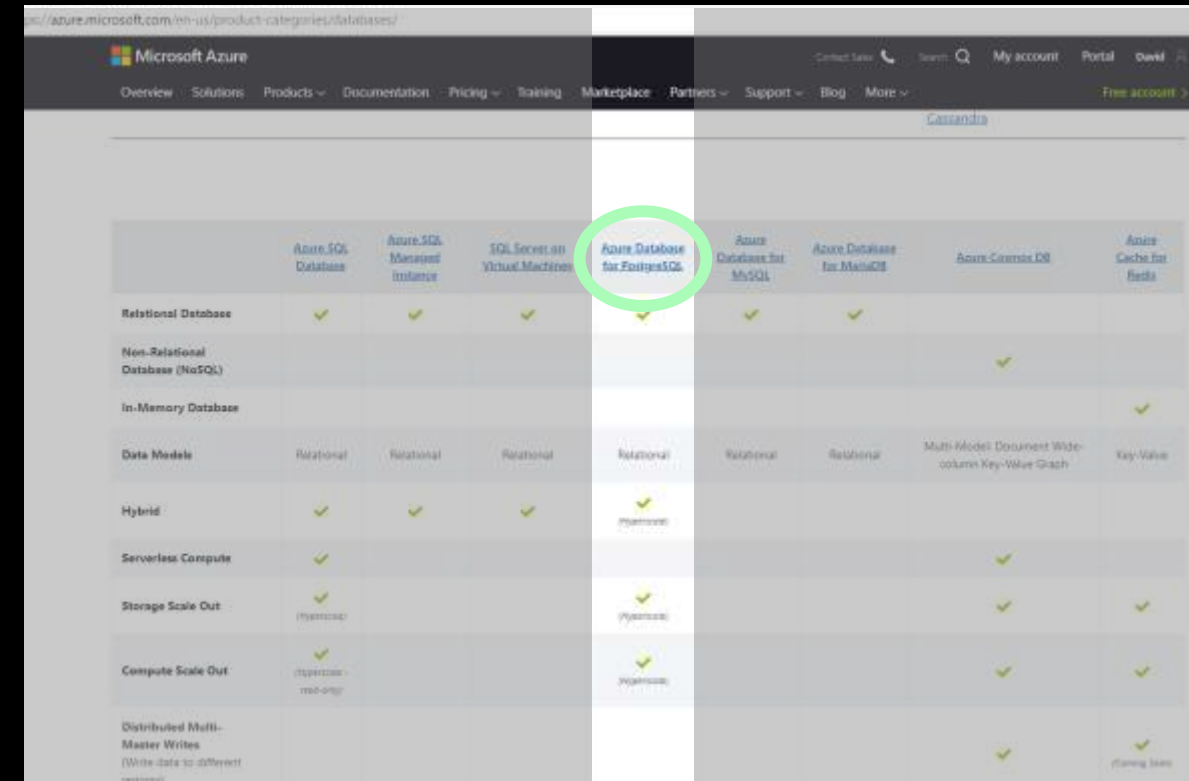
Is this where I should upload my Kimball modelled DW?

Azure database for PostgreSQL

Single or multiple servers

Single or multiple databases
per server

A very pink example comes in the next slide.

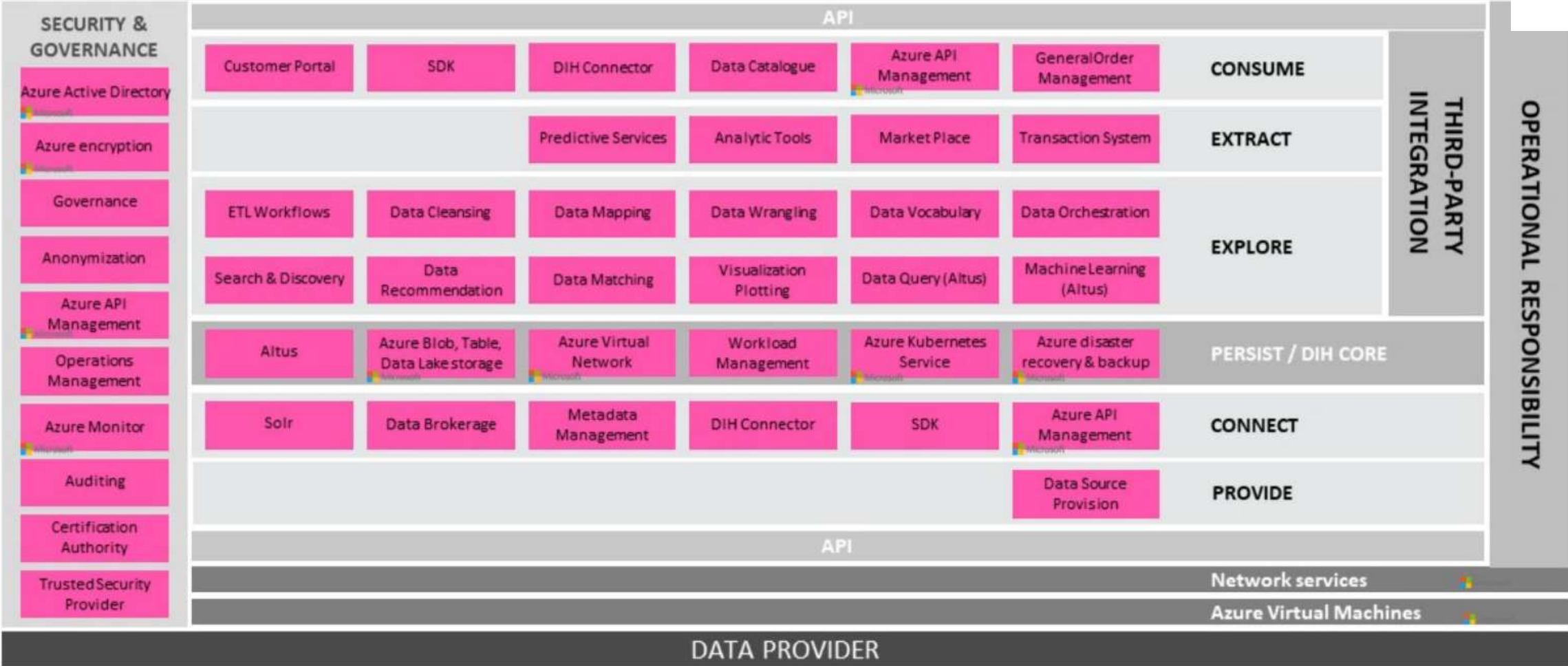


The screenshot shows the Microsoft Azure website's 'Databases' page. The 'Azure Database for PostgreSQL' option is circled in green. The page displays a comparison table of various Azure database services across different categories.

	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 Model	Relational	Relational	Relational	Relational	Relational	Relational	Multi-Model Document Wide-column Key-Value Graph	Key-Value
Hybrid	✓	✓	✓	Hybrid				
Serverless Compute	✓						✓	
Storage Scale Out	Hybrid			Hybrid			✓	✓
Compute Scale Out	Hybrid			Hybrid			✓	✓
Distributed Multi-Master Writes (Write data to different regions)							✓	✓

Is this where I should upload my Kimball modelled DW?

Functional architecture - Microsoft



Quick recap

	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)

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

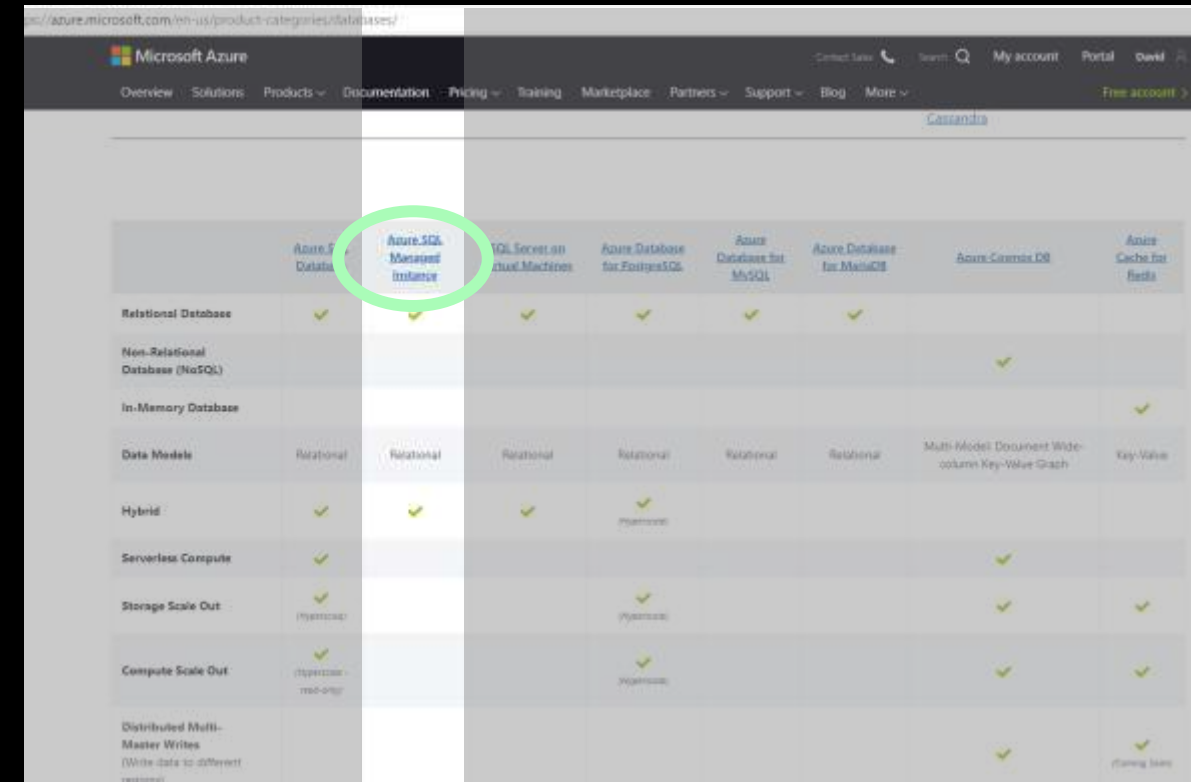
Is this where I should upload my Kimball modelled DW?

The screenshot shows the Microsoft Azure website's 'Databases' category. The navigation bar includes links for Overview, Solutions, Products, Documentation, Pricing, Training, Marketplace, Partners, Support, Blog, and More. The 'SQL Server on Virtual Machines' option is highlighted with a green circle. The main content area displays a table of database services and their capabilities across different categories.

	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	✓	✓	✓	✓ (Hybrid)				
Serverless Compute	✓						✓	
Storage Scale Out	✓ (Hybrid)			✓ (Hybrid)			✓	✓
Compute Scale Out	✓ (Hybrid - read-only)			✓ (Hybrid)			✓	✓
Distributed Multi-Master Writes (Write data to different regions)							✓	✓ (Using links)

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



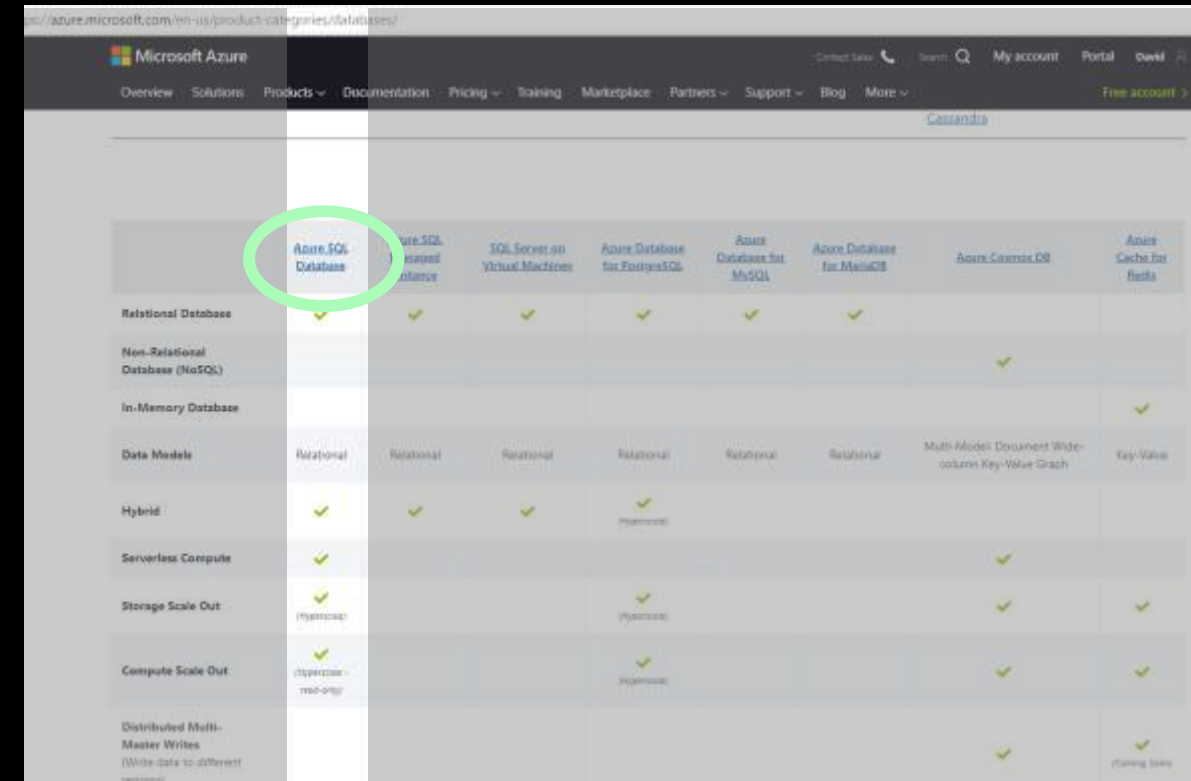
The screenshot shows the Microsoft Azure portal's 'Data services' page. The 'Azure SQL Managed Instance' link is circled in green. Below is a table summarizing the capabilities of various Azure database services.

	Azure SQL Database	Azure SQL Managed Instance	SQL Server on Azure 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 Model	Relational	Relational	Relational	Relational	Relational	Relational	Multi-Model Document Wide-column Key-Value Graph	Key-Value
Hybrid	✓	✓	✓	Hybrid				
Serverless Compute	✓						✓	
Storage Scale Out	Hybrid			Hybrid			✓	✓
Compute Scale Out	Hybrid			Hybrid			✓	✓
Distributed Multi-Master Writes (Write data to different regions)							✓	✓

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



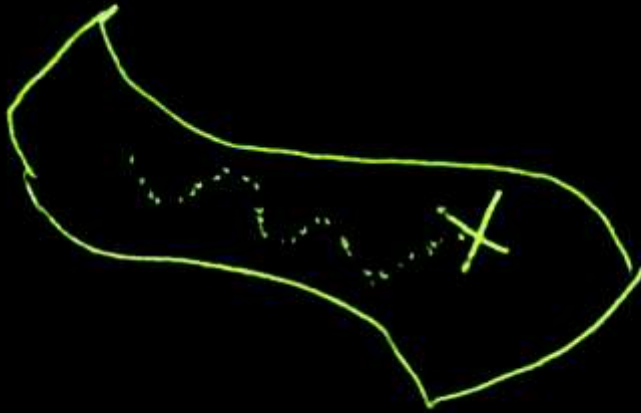
The screenshot shows the Microsoft Azure website's product categories page. The 'Azure SQL Database' link is circled in red. Below it is a comparison table for various database services.

	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 Model	Relational	Relational	Relational	Relational	Relational	Relational	Multi-Model Document Wide-column Key-Value Graph	Key-Value
Hybrid	✓	✓	✓	Hybrid				
Serverless Compute	✓						✓	
Storage Scale Out	Hybrid			Hybrid			✓	✓
Compute Scale Out	Hybrid			Hybrid			✓	✓
Distributed Multi-Master Writes (Write data to different regions)							✓	✓

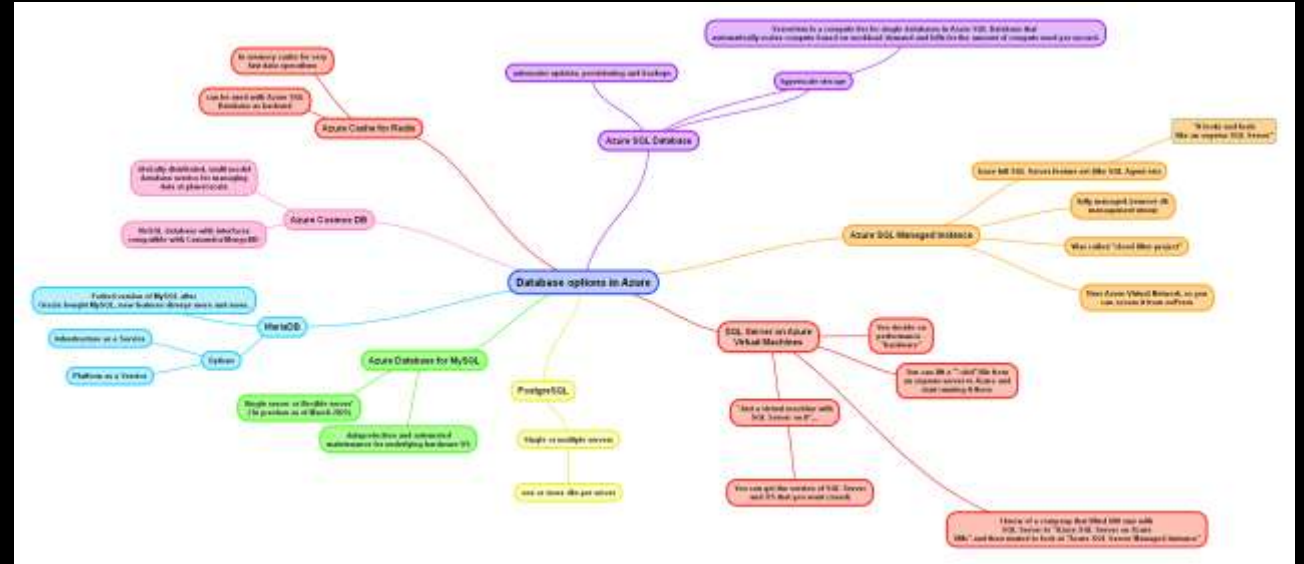
Is this where I should upload my Kimball modelled DW?

Quick recap

Dauids mindmap of dbs in Azure 2021



=



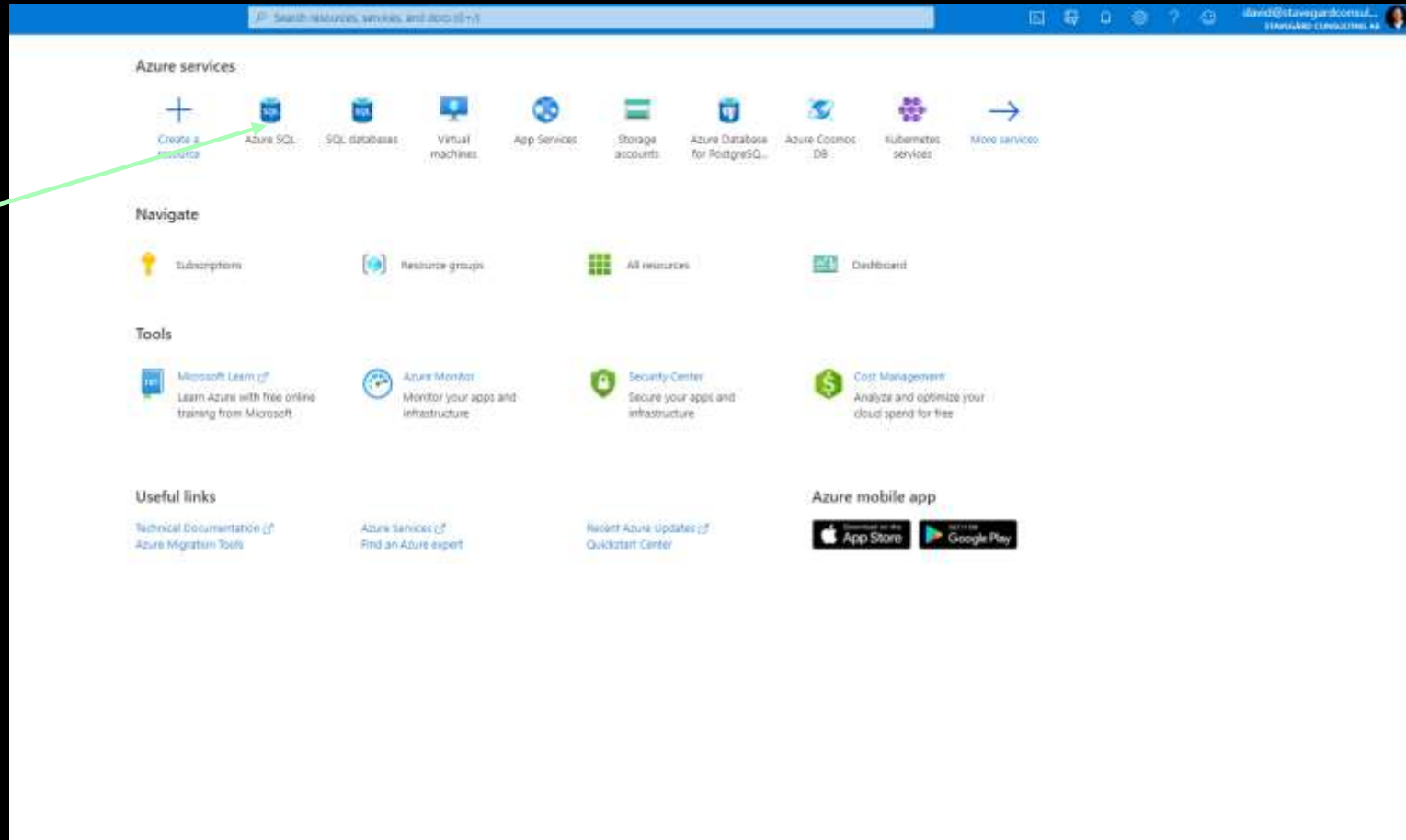
Ask me on Twitter and I'll send it to you!



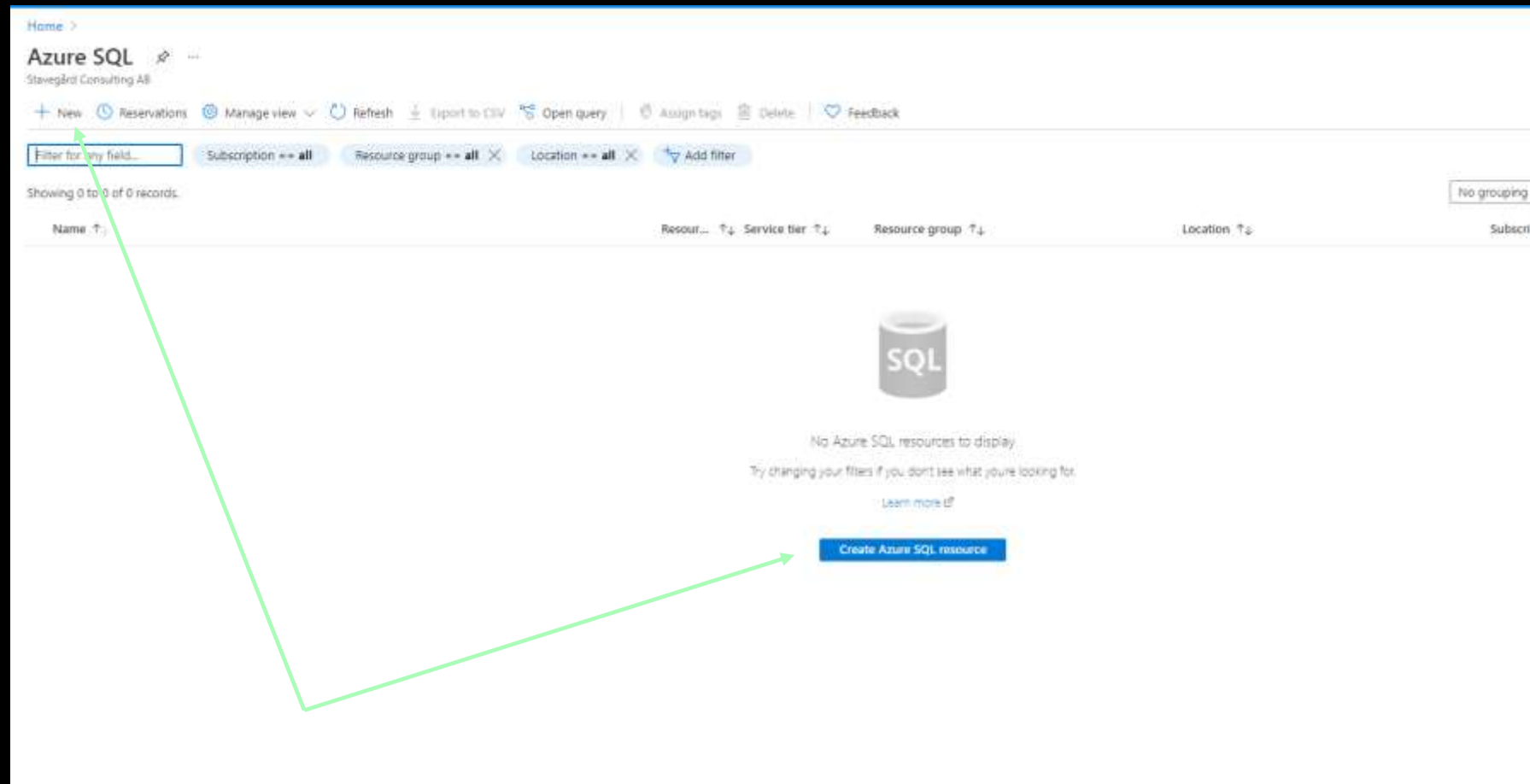
Dauids mindmap of databases in Azure 2021.pdf

So, we go into Azure again

Create an Azure SQL Database



Create an Azure SQL Database



Create an Azure SQL Database


Home >

Select SQL deployment option

Microsoft

Feedback

How do you plan to use the service?


 **SQL databases**

Best for modern cloud applications. Hyperscale and serverless options are available.

Resource type

Single database

Create Show details


 **SQL managed instances**

Best for most migrations to the cloud. Lift-and-shift ready.

Resource type

Single instance

Create Show details

 **SQL virtual machines**


Best for migrations and applications requiring OS-level access. Lift-and-shift ready.

Image

Create Show details

Create an Azure SQL Database

Resource type	Resource type	Image
Single database	Single instance	
Create Hide details	Create Show details	Create Show details




Single database

Single databases are a great fit for modern, cloud-born applications that need a fully managed database with predictable performance.

Featured capabilities:

- ✓ Hyperscale storage (up to 100TB)
- ✓ Serverless compute
- ✓ Easy management




Elastic pool

Elastic pools provide a cost-effective solution for managing the performance of multiple databases with variable usage patterns.

Featured capabilities:

- ✓ Resource sharing for cost optimization
- ✓ Simplified performance management



Database server

Database servers are used to manage groups of single databases and elastic pools.

Featured capabilities:

- ✓ Access management
- ✓ Backup management
- ✓ Business continuity management

Create an Azure SQL Database

The screenshot shows the 'Basics' tab of the Azure SQL Database creation wizard. It includes sections for 'Project details' (Subscription and Resource group), 'Database details' (Database name, Server, and Elastic pool options), and 'Compute + storage'. Red arrows point from text annotations to specific fields: 'Pay-As-You-Go' for Subscription, '(New) 2021-03-10-Resource_Group' for Resource group, 'Enter database name' for Database name, 'Select a server' for Server, 'No' for the SQL elastic pool option, and 'Please select a server first.' for the Compute + storage section.

basics Networking Additional settings tags Review + Create

Create a SQL database with your preferred configurations. Complete the Basics tab then go to Review + Create to provision with smart defaults, or visit each tab to customize. [Learn more](#)

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *

Resource group *

[Create new](#)

Database details

Enter required settings for this database, including picking a logical server and configuring the compute and storage resources.

Database name *

Server *

[Create new](#)

☒ The value must not be empty.

Want to use SQL elastic pool? * ☐ Yes ☒ No

Compute + storage *

[Configure database](#)

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

Resources

Database name *

Server * ⓘ

[Create new](#)

Want to use SQL elastic pool? * ⓘ ☐ Yes ☒ No

Compute + storage * ⓘ

Basic
2 GB storage
[Configure database](#)

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

Configure

Feedback

Basic
For less demanding workloads.

Standard
For workloads with typical performance requirements.

Premium
For IO-intensive workloads.

[vCore-based purchasing options](#)
Click here to customize your performance using vCores

DTUs [What is DTU?](#)

5 (Basic)

Data max size

100 GB

2 GB

2 GB

SQL

Config summary

Cost per DTU (v100)	8.72
DTUs selected	x 5
ESTIMATED COST / MONTH	43.61 SEK

Create an Azure SQL Database

No access
means no
external access

Open for everyone
(but with firewalls)

Move the end-point to
your own network

Basics **Networking** Additional settings Tags Review + create

Configure network access and connectivity for your server. The configuration selected below will apply to the selected server '2021-03-05-server' and all databases it manages. [Learn more](#)

Network connectivity

Choose an option for configuring connectivity to your server via public endpoint or private endpoint. Choosing no access creates with defaults and you can configure connection method after server creation. [Learn more](#)

Connectivity method * ⓘ

☐ No access

☒ Public endpoint

☐ Private endpoint

Firewall rules

Setting 'Allow Azure services and resources to access this server' to Yes allows communications from all resources inside the Azure boundary, that may or may not be part of your subscription. [Learn more](#)

Setting 'Add current client IP address' to Yes will add an entry for your client IP address to the server firewall.

Allow Azure services and resources to access this server *

No Yes

Add current client IP address *

No Yes

Create an Azure SQL Database

Do you want Adventure Works?

Basics Networking **Additional settings** Tags Review + create

Customize additional configuration parameters including collation & sample data.

Data source

Start with a blank database, restore from a backup or select sample data to populate your new database.

Use existing data * None Backup Sample

Database collation

Database collation defines the rules that sort and compare data, and cannot be changed after database creation. The default database collation is SQL_Latin1_General_CP1_CI_AS. [Learn more](#)

Collation * SQL_Latin1_General_CP1_CI_AS
[Find a collation](#)

Azure Defender for SQL

Protect your data using Azure Defender for SQL, a unified security package including vulnerability assessment and advanced threat protection for your server. [Learn more](#)

Loading pricing...

Enable Azure Defender for SQL * Start free trial Not now

Azure Defender for SQL will automatically create a new storage account for saving vulnerability assessments. If a storage account was previously created for this purpose, it will be used instead. Azure storage prices will apply.

Maintenance window


Select a preferred maintenance window from the drop down. Please note, during a maintenance event, Azure SQL Database are fully available and accessible but some of the maintenance updates require a failover as Azure takes SQL DB instances offline for a short time to apply the maintenance updates, if the database is part of elastic pool, the maintenance configuration of elastic pool will be applied. [Learn more](#)

Maintenance window System default (5pm to 8am)


Azure defender for SQL:
protect your databases

Create an Azure SQL Database

Basics Networking Additional settings **Tags** Review + create

Tags are name/value pairs that enable you to categorize and view consolidated billing by applying the same tag to multiple resources and resource groups. [Learn more](#) 

Note that if you create tags and then change resource settings on other tabs, your tags will be automatically updated.

Name ⓘ	Value ⓘ	Resource
<input type="text"/>	:	<input type="text" value="2 selected"/> 

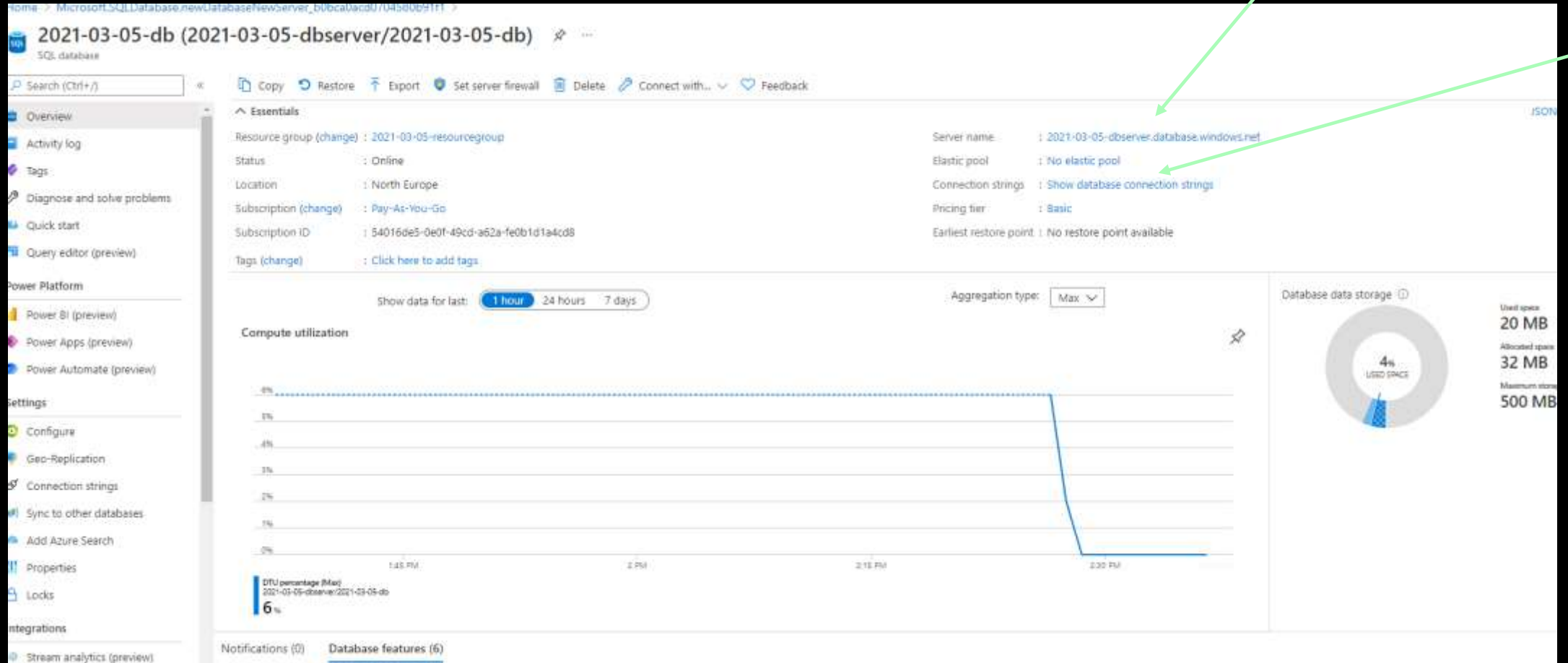
Tags are cool!

Create an Azure SQL Database



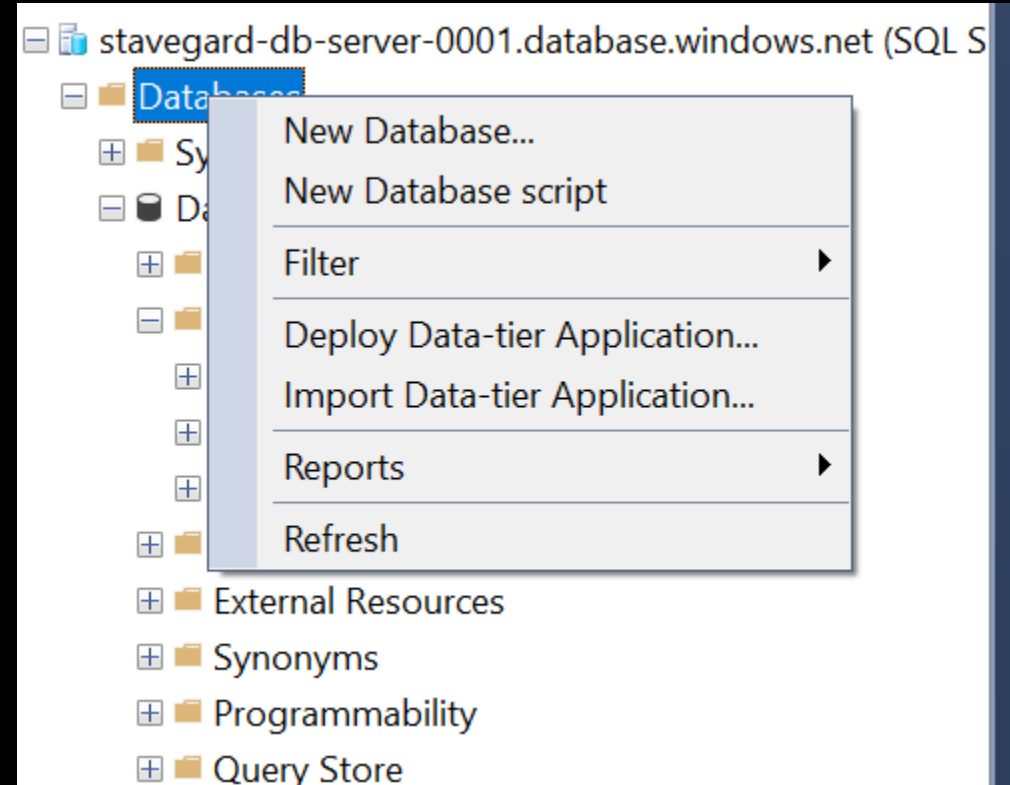
So, why are there so many options, when I just want a "somewhere" to put my database?

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?

The screenshot shows a Beamer presentation slide titled "How Microsoft categorizes their offerings". The slide is divided into two columns: "Databases" and "Analytics". The "Databases" column lists: Azure SQL Database, Azure SQL Managed Instance, SQL Server on a virtual machine, Azure SQL for PostgreSQL, Azure database for MySQL, Azure Database for Maria DB, Azure Cosmos DB, and Azure Cache for Redis. The "Analytics" column lists: Azure Synapse, Azure Purview, HDInsight, Machine Learning packages, and Datalakes, streaming data... The slide is displayed in a Beamer window with a red title bar and a sidebar on the left showing the presentation navigation. A right sidebar shows the "Formatera bakgrund" (Format background) panel.

Databases	Analytics
Azure SQL Database	Azure Synapse
Azure SQL Managed Instance	Azure Purview
SQL Server on a virtual machine	HDInsight
Azure SQL for PostgreSQL	Machine Learning packages
Azure database for MySQL	Datalakes, streaming data...
Azure Database for Maria DB	
Azure Cosmos DB	
Azure Cache for Redis	

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

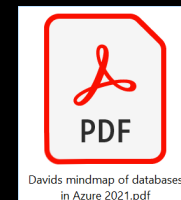
ML Services, data lakes, streaming analytics etc

Conclusions

Lots of databases. Lots of options.

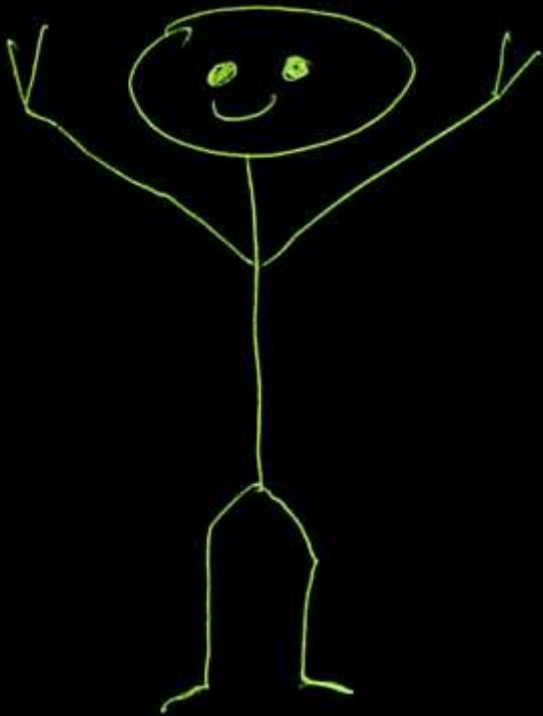
It's the future. Learn this!

(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