# Azure SQL Databases

Azure SQL Database service

- a fully managed Platform as a Service (PaaS) Database Engine

- Handles most of the database management functions such as

  - upgrading, patching, backups, and monitoring

- It's based on the latest stable version of the Microsoft SQL Server database engine.

Azure SQL Database service

- Two different purchasing models:
  - A vCore-based purchasing model and
  - A DTU-based purchasing model.

- Microsoft handles all patching and updating of the SQL and operating system code.

- You don't have to manage the underlying infrastructure.

Deployment models

- Managed instance
  - A fully managed instance of the Microsoft SQL Server Database Engine.
  - It contains a set of databases that can be used together.

- Single database
  - Represents a fully managed, isolated database.

- Elastic pool
  - A collection of single databases with a shared set of resources, such as CPU or memory. Single databases can be moved into and out of an elastic pool.

Azure PASS Database
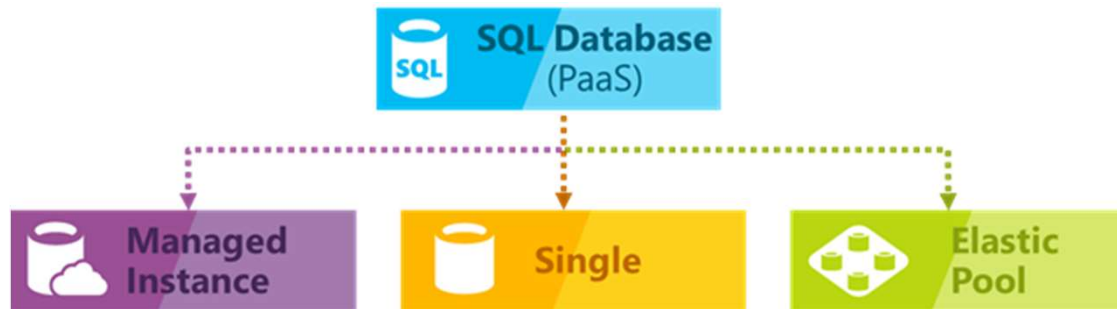
Choose the right deployment option in Azure SQL

Azure PASS Database
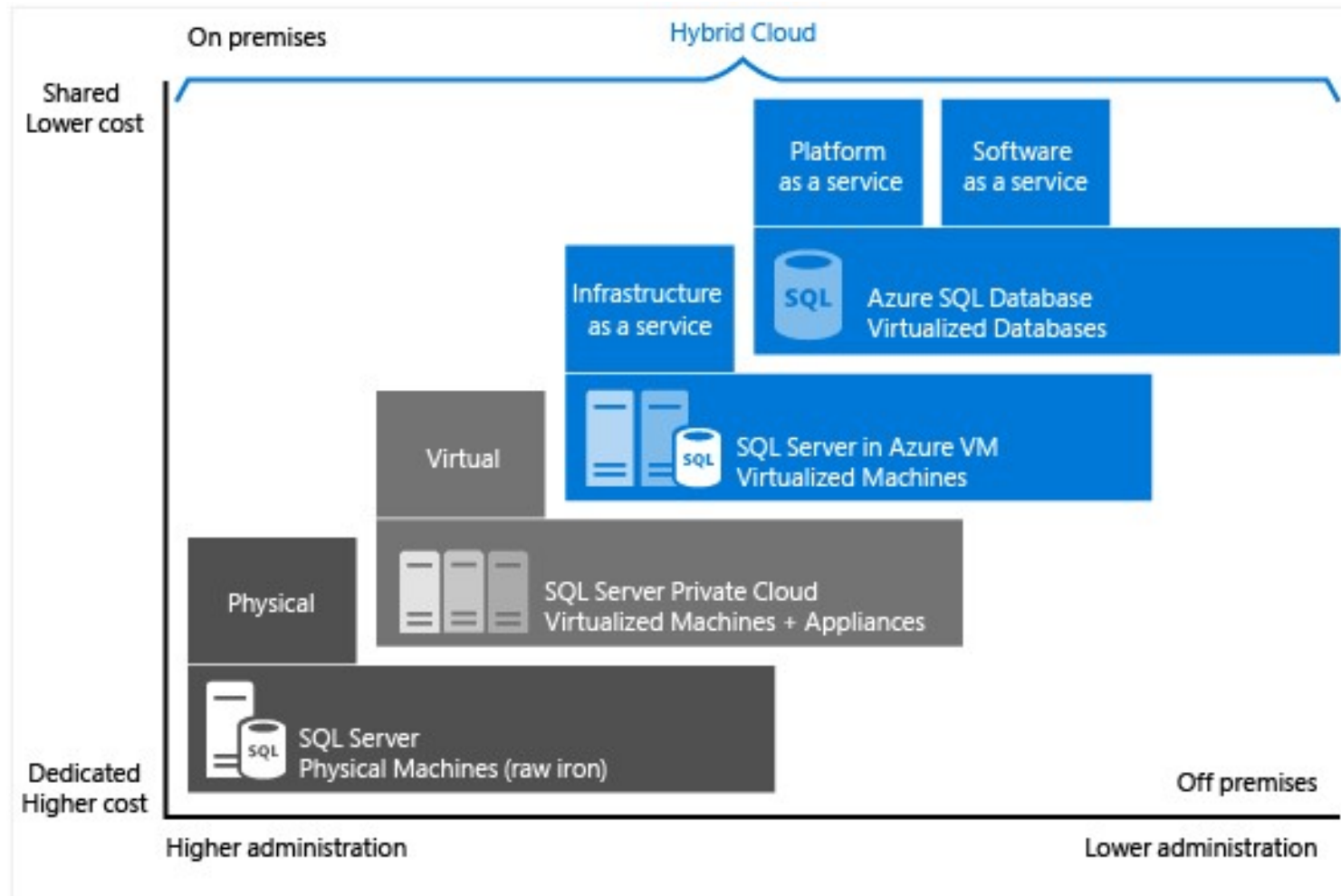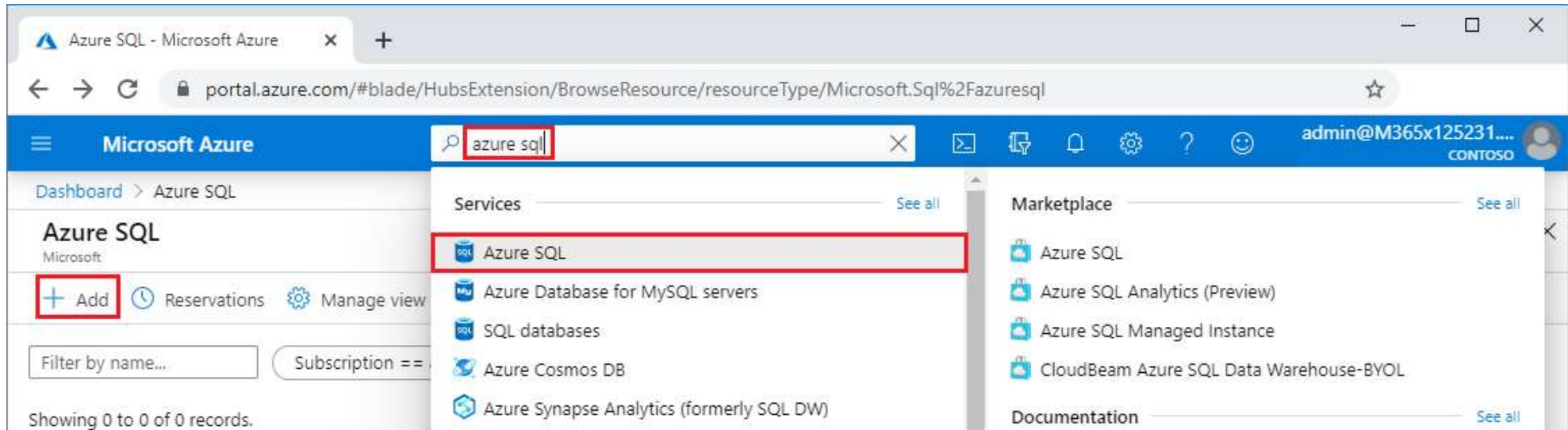
Purchasing models

- vCore-based purchasing model

  - Allows choose the number of vCores, the amount of memory, and the amount and speed of storage.

- DTU-based purchasing model

  - Offers a blend of compute, memory, and I/O resources in three service tiers.

  - Compute sizes within each tier provide a different mix of these resources, to which you can add additional storage resources.

- Serverless model

  - Automatically scales compute based on workload demand, and bills for the amount of compute used per second.

  - Automatically pauses databases during inactive periods to save bills.

Azure PASS Database

Service tiers

- General Purpose/Standard service tier

  - Designed for common workloads.

  - It offers budget-oriented balanced compute and storage options.

- Business Critical/Premium service tier

  - Designed for OLTP applications with high transaction rate and lowest-latency I/O.

  - It offers the highest resilience to failures by using several isolated replicas.

- Hyperscale service tier

  - Designed for very large OLTP database and the ability to autoscale storage and scale compute fluidly.

Create an Azure SQL Database single database

- Using Azure Portal

Thanks