

# Running Applications and Storing Data



Run your application in Azure



Store your data in Azure

# Running Your App in Azure: Questions to Ask

How much control  
do I need?

Where do I need my  
app to run?

What usage model  
do I need?

Which functionality do I  
need?

# How Much Control Do I Need?

## Control and Responsibility

- App configuration
- Application
- Server configuration
- Operating system
- Antivirus
- Network

- App configuration
- Application
- Server configuration

- App configuration
- Application

- App configuration



IaaS



PaaS



LaaS (Serverless)



SaaS

Working on business value

# Where Do I Need My App to Run?



In Azure

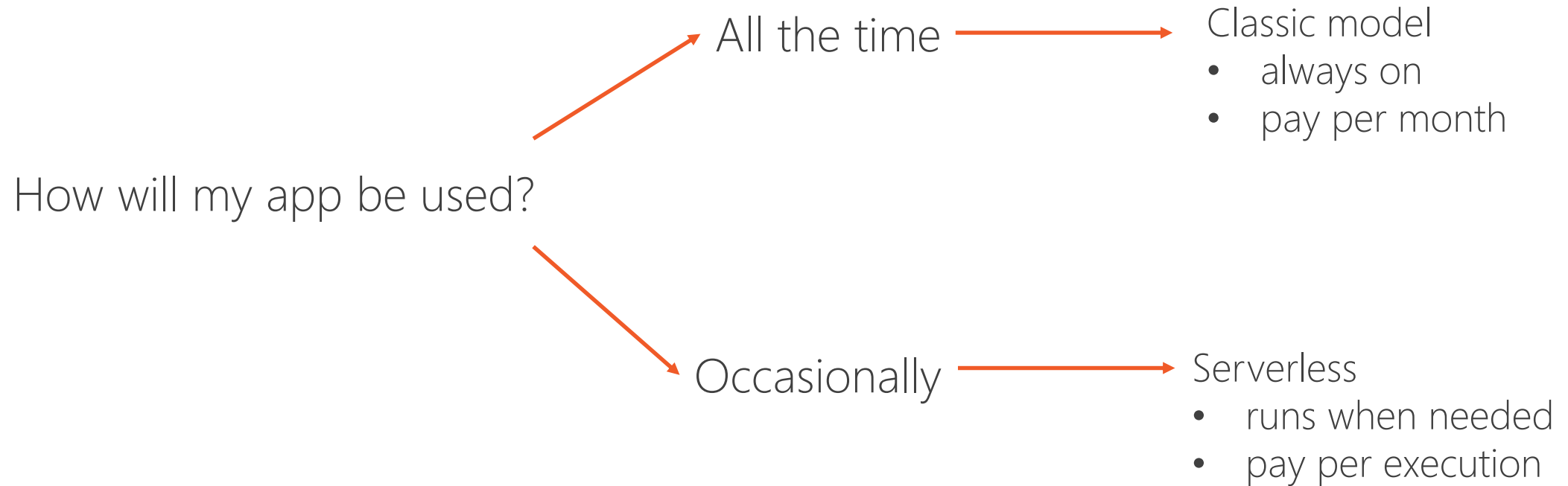
- Azure Public Cloud
  - Azure Stack



Somewhere else

- On-premises
- Local development computer
  - Other clouds

# What Usage Model Do I Need?



# Questions to Ask

How much control  
do I need?

Where do I need my  
app to run?

What usage model  
do I need?

Which functionality do I  
need?

- I trust Azure to **scale for me**
- My app needs to run in **Azure and on-premises**
- My app only needs to run **once every hour**

# Options for Running Your Application in Azure

## Infrastructure-as-a-Service (IaaS)



VM



Container  
Instances



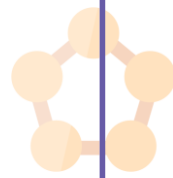
Batch



Container  
Service  
(AKS)



Web App for  
Containers



Service  
Fabric

## Platform-as-a-Service (PaaS)



Cloud Services

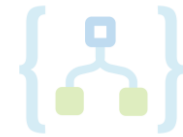


Mobile  
App



Web  
App

## Logic-as-a-Service (LaaS, *serverless*)



Logic  
App



Functions



# Options for Running Your Application in Azure

## Infrastructure-as-a-Service (IaaS)



VM



Container  
Instances



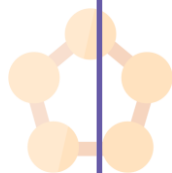
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Web App for  
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## Platform-as-a-Service (PaaS)



Cloud Services

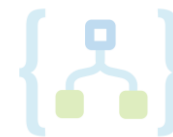


Mobile  
App



Web  
App

## Logic-as-a-Service (LaaS, *serverless*)



Logic  
App



Functions

Control & responsibility

Business value

# Stay Vendor Agnostic (Run Anywhere)

## Infrastructure-as-a-Service (IaaS)



VM



Container  
Instances



Batch



Container  
Service  
(AKS)



Web App for  
Containers



Service  
Fabric

## Platform-as-a-Service (PaaS)



Cloud Services



Mobile  
App



Web  
App

## Logic-as-a-Service (LaaS, serverless)



Logic  
App



Functions

# Run Occasionally (serverless)

## Infrastructure-as-a-Service (IaaS)



VM



Container  
Instances



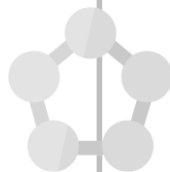
Batch



Container  
Service  
(AKS)



Web App for  
Containers



Service  
Fabric

## Platform-as-a-Service (PaaS)



Cloud Services



Mobile  
App



Web  
App

## Logic-as-a-Service (IaaS, *serverless*)









Logic  
App



Functions

# Comparing Container Options and VMs

	 VM	 Container Instances	 Container Service	 Web App for Containers	 Batch	 Service Fabric
Lift-and shift your app to the cloud	●					
Simple apps (without orchestrator)	●	●				
Complex apps (with orchestrator)			●			●
Run orchestrated microservices						●
Run anywhere						●
Run web app on Linux with app service features				●		
Repetitive jobs (on massive scale)					●	

# Where to Run Your Background Tasks?



Cloud  
Services



WebJob









Functions



Batch

	Cloud Services	WebJob	Functions	Batch
Short-running tasks	●	●	●	●
Long-running tasks	●	●	●	●
Resource intensive tasks				●
Pay all month	●	●		
Pay only for what and when you run			●	
Need to deploy a complete app to run	●			●
Can deploy only the code necessary to run		●	●	

# Where to Run Your Applications?

						
	Web App	Mobile App	Cloud Services	Service Fabric	Functions	Logic App
Host web applications	●		●	●		
Host your own APIs	●		●	●	●	
Host backend for mobile apps		●				
Automate one step of a process					●	
Automate a complete process						●
Enjoy features like deployment slots, auth	●	●	●		●	
Run (micro)services at massive scale				●	●	

# Running Applications and Storing Data



Run your application in Azure



Store your data in Azure

# Storing Your Data in Azure: Questions to Ask

What will I use the data for?

What type of data am I going to store?

Which functionality do I need?



# What Will I Use the Data For?



For my application

OLTP

Online Transactional Processing

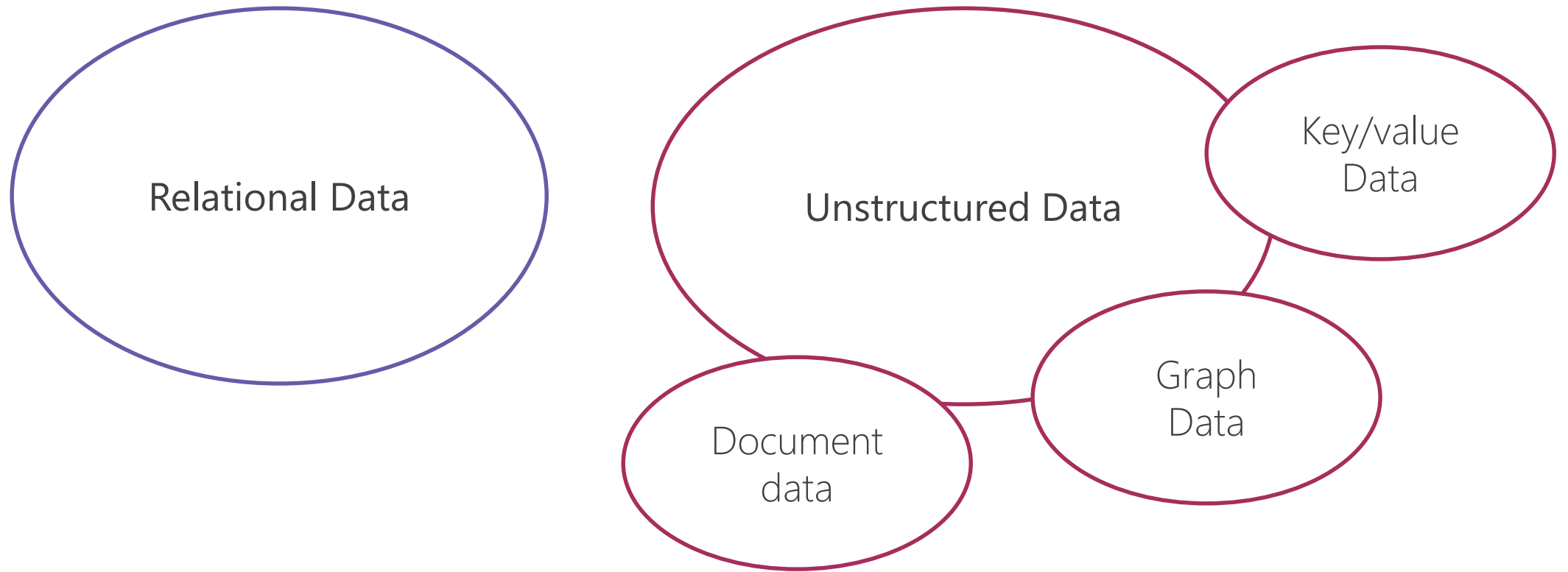


For data analytics

OLAP

Online Analytical Processing

# What Type of Data Am I Going to Store?



- My app is an online reservation system
- My app needs to **store and retrieve document data**

# Options for Storing Data in Azure



Azure SQL Database



Azure Databases for MySQL



Azure Databases for PostgreSQL



Azure Databases for MariaDB



Azure Cosmos DB



Azure Storage



Azure SQL Data Warehouse



Azure Data Lake Store



File



Queue



Blob



Table



Disk

# Application or Data Analytics?

## Online Transactional Processing (OLTP)



Azure SQL Database



Azure Databases for MySQL



Azure Databases for PostgreSQL



Azure Databases for MariaDB



Azure Cosmos DB



Azure Storage



Azure SQL Data Warehouse



Azure Data Lake Store



File



Queue



Blob



Table



Disk

## Online Analytical Processing (OLAP)

# What Type of Data?

## Relational Data



Azure SQL Database



Azure Databases for MySQL



Azure Databases for PostgreSQL



Azure Databases for MariaDB



Azure Cosmos DB



Azure Storage



Azure SQL Data Warehouse



Azure Data Lake Store



File



Queue



Blob



Table



Disk

# What Type of Data?

## Relational Data



Azure SQL Database



Azure Databases for MySQL



Azure Databases for PostgreSQL



Azure Databases for MariaDB



Azure SQL Data Warehouse



Azure Data Lake Store

## Unstructured / document data



Azure Cosmos DB



Azure Storage



File



Queue



Blob



Table



Disk

# What Type of Data?

## Relational Data



Azure SQL Database



Azure Databases for MySQL



Azure Databases for PostgreSQL



Azure Databases for MariaDB

## Data Analytics



Azure SQL Data Warehouse



Azure Data Lake Store

## Unstructured / document data



Azure Cosmos DB



Azure Storage



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Disk



# Comparing Data Stores for OLTP



SQL



MySQL



PSQL



MariaDB



Cosmos



Storage

Relational data



Semi- or non-relational data



Can use Microsoft tools to manage



Advanced querying capabilities



Use multiple APIs to access data



# Comparing Data Stores for OLAP



Azure SQL Data Warehouse



Azure Data Lake Store

	Azure SQL Data Warehouse	Azure Data Lake Store
Relational data	●	●
Non-relational data		●
Requires you need to define a data schema	●	
No file- or database size limits		●
Use when you know which questions you want the data to answer	●	

# Where Can You Find All the Azure Services?

<https://azure.microsoft.com/services/>