

# Microsoft Cloud Workshop

## App modernization

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# Abstract and learning objectives

In this whiteboard design session, you work with a group to design a solution for modernizing legacy on-premises applications and infrastructure by leveraging cloud services. As part of the modernization effort, application enhancements are added using a mix of web and mobile services, all secured using Azure Active Directory.

At the end of this whiteboard design session, your ability to design a modernization plan for organizations looking to move services from on-premises to the cloud will be improved.



# Review the customer case study

## Outcome

Analyze your customer needs.

## Timeframe

15 minutes

# Customer situation

- Contoso, Ltd. provides a full range of long-term insurance services to help underinsured people.
- They are trying to cope with being overloaded due to faster-than-expected growth.

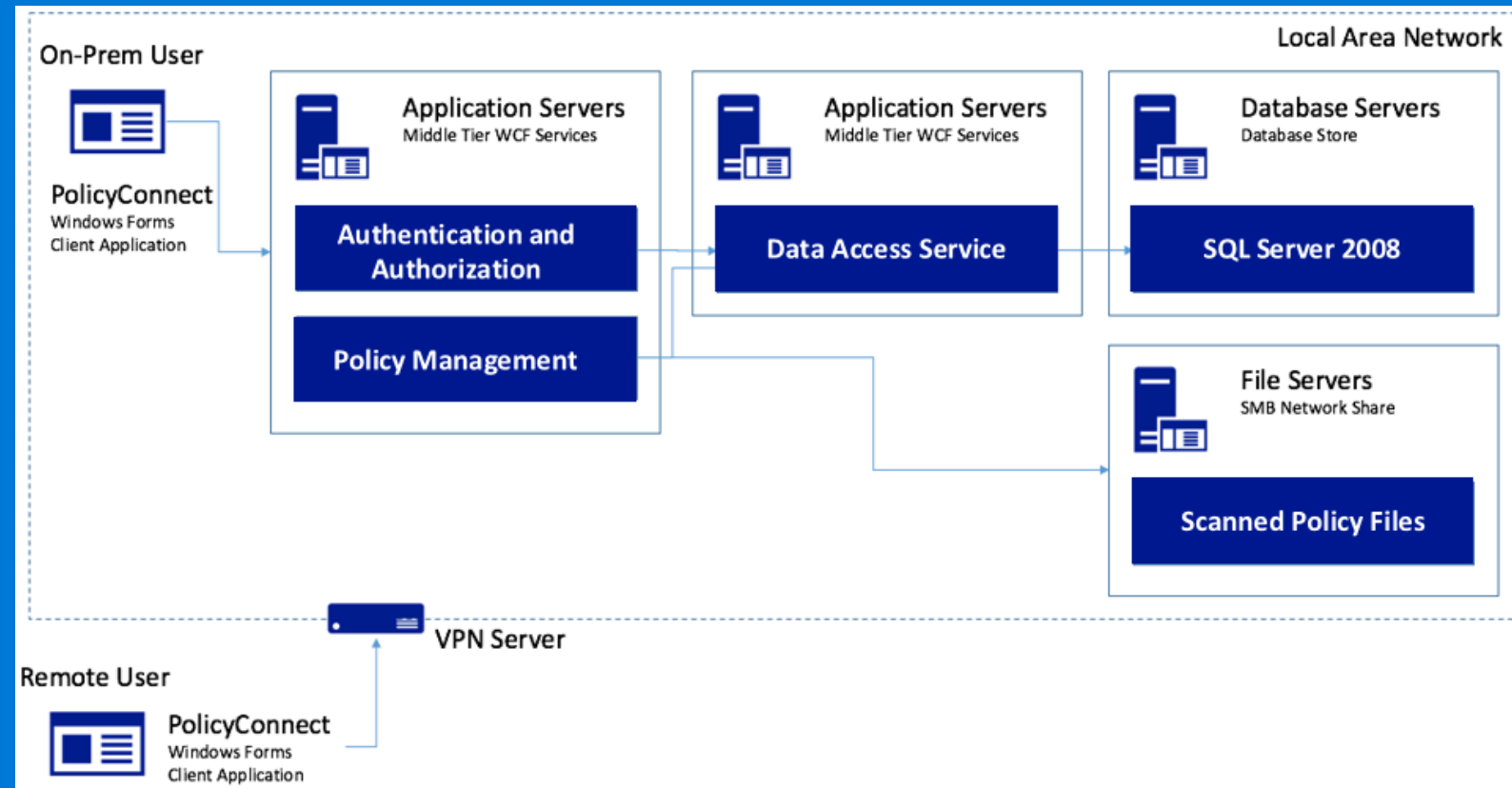


# Customer situation - 2

- Contoso, Ltd. created a custom Windows Forms app called PolicyConnect for their employees to manage policy holder information.
- Their data is stored in a SQL Server 2008 database, and a file server on their local area network.



Contoso  
Insurance  
PolicyConnect



# Customer situation - 3



Employees rely on email as a workflow engine for document management tasks.



Would like options to gain insights without requiring custom development each time.



Wants to make policy holder system available through web and mobile applications without VPN.

# Customer situation - 4

We would like to make sure our database isn't overtaxed, show a dashboard with user statistics, allow non-developers in other departments to make mobile apps, and improve security by protecting application secrets.

Can you help us do this?



# Customer needs - 5

- Modernize our architecture
- Go mobile
- Enable non-developer employees to create apps
- Improve management of app secrets
- Add cognitive search
- Use serverless API technologies
- Migrate to fully-managed SQL database service
- Add caching to our solution



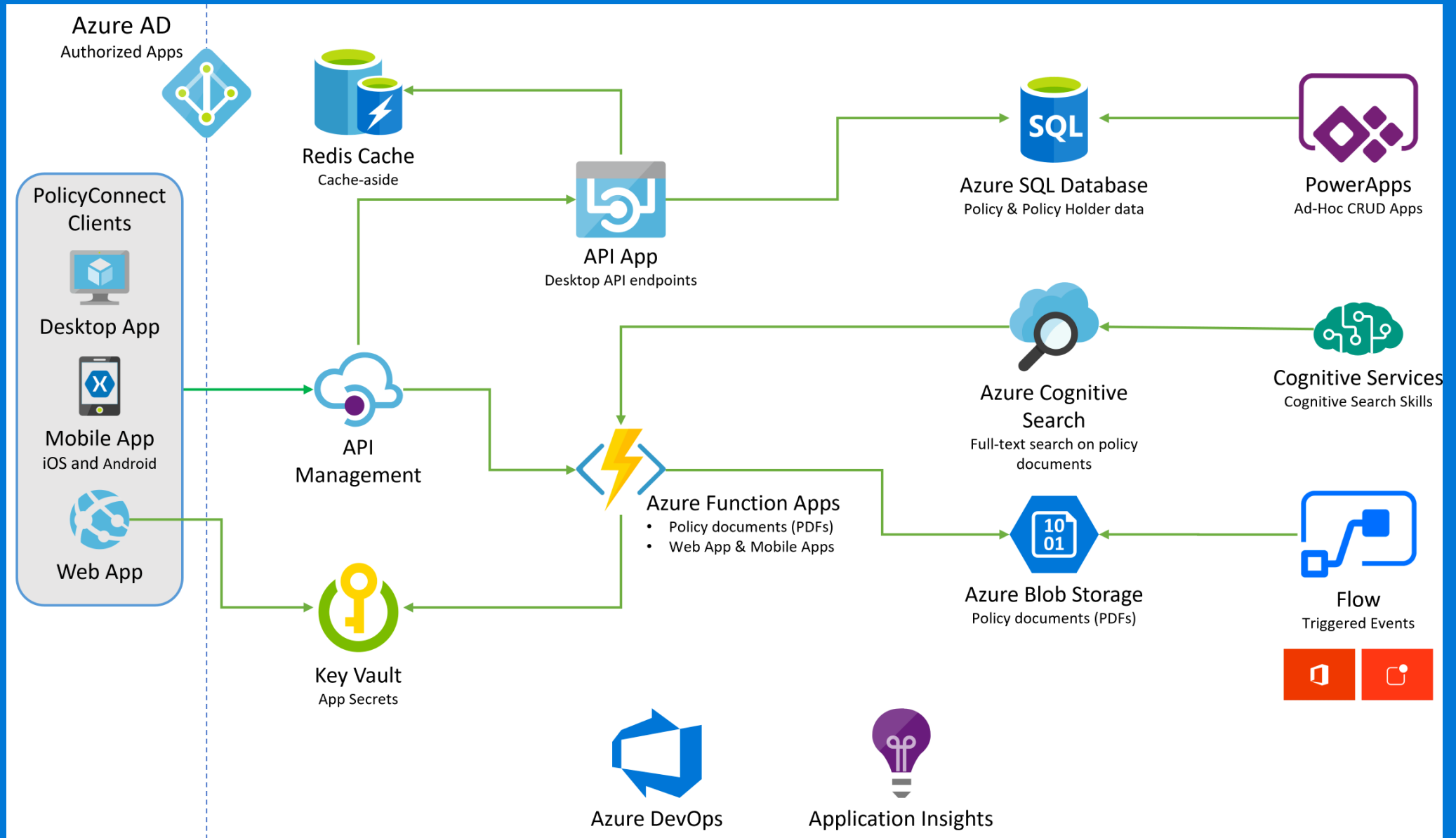


# Customer objections

- How can we automate our processes?
- Will Microsoft Flow replace Logic Apps?
- Is there really a way to securely store application secrets in the cloud?
- We won't have all of the SQL features available to us in the cloud.
- Our API inventory will grow, and we are concerned about how to best manage that.
- Wants to understand how choose correct .NET framework



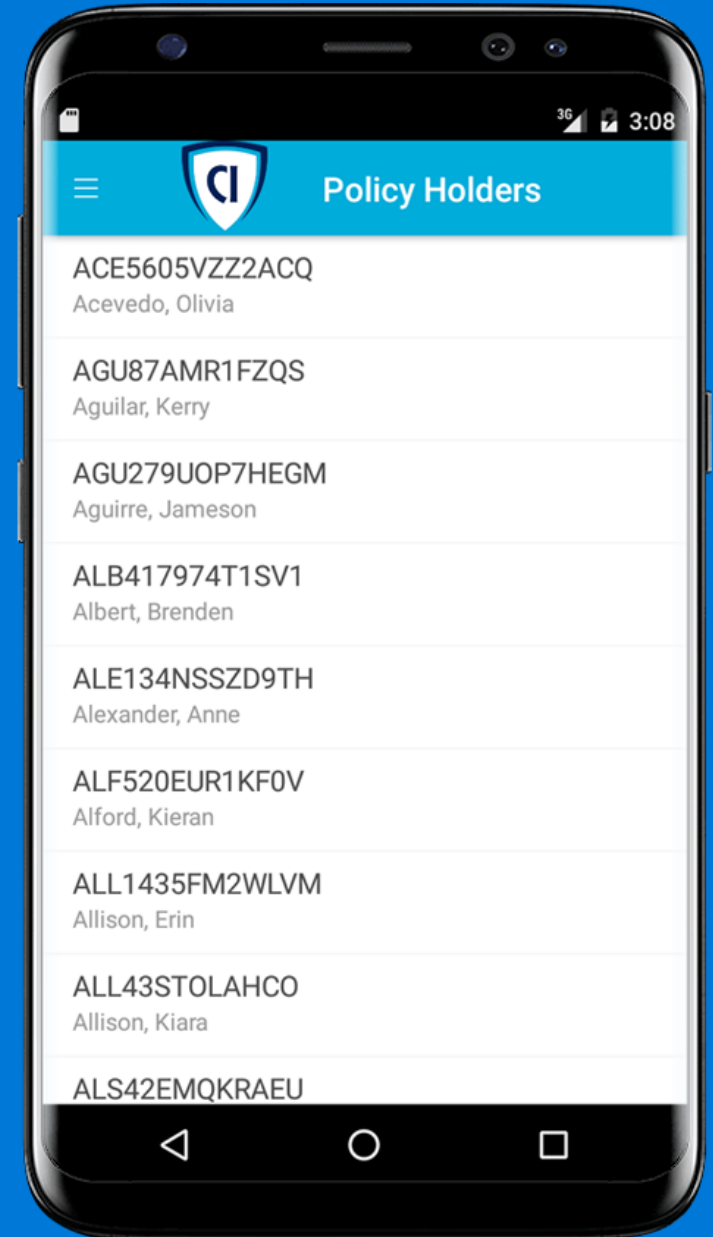
# Preferred solution



# Preferred solution - 2

## Mobile and Web Applications

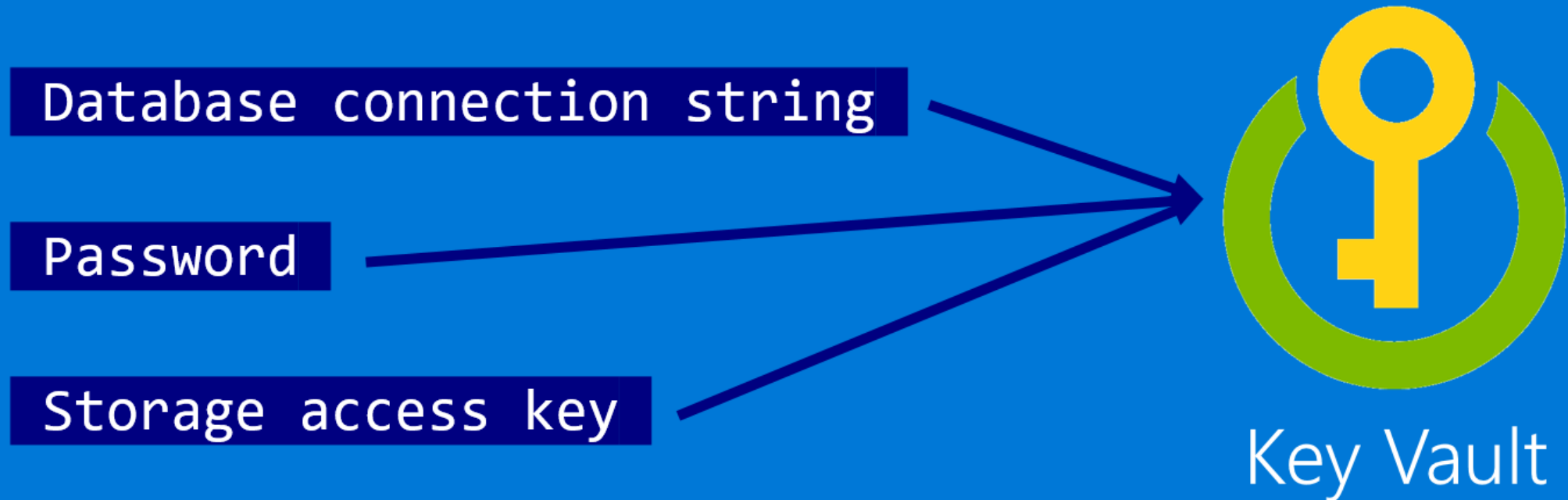
- Build mobile with Xamarin
- Use an API App for the back-end
- Host web site with a Web App
- Use Azure Functions Proxies



# Preferred solution - 3

## Mobile and Web Applications

- Use Key Vault to store sensitive application secrets like database connection strings.



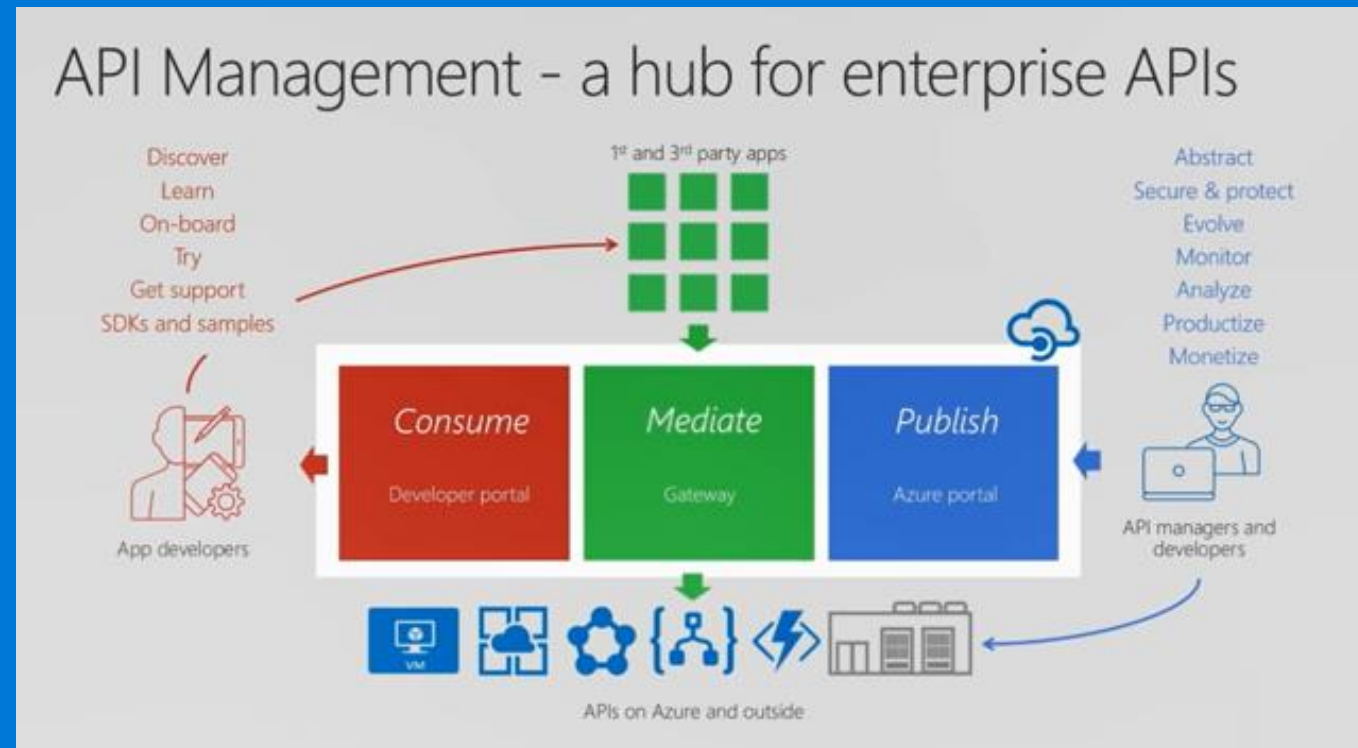
# Preferred solution - 4

## API Management

- Contoso should use Azure API Management now to put together a proof of concept solution.



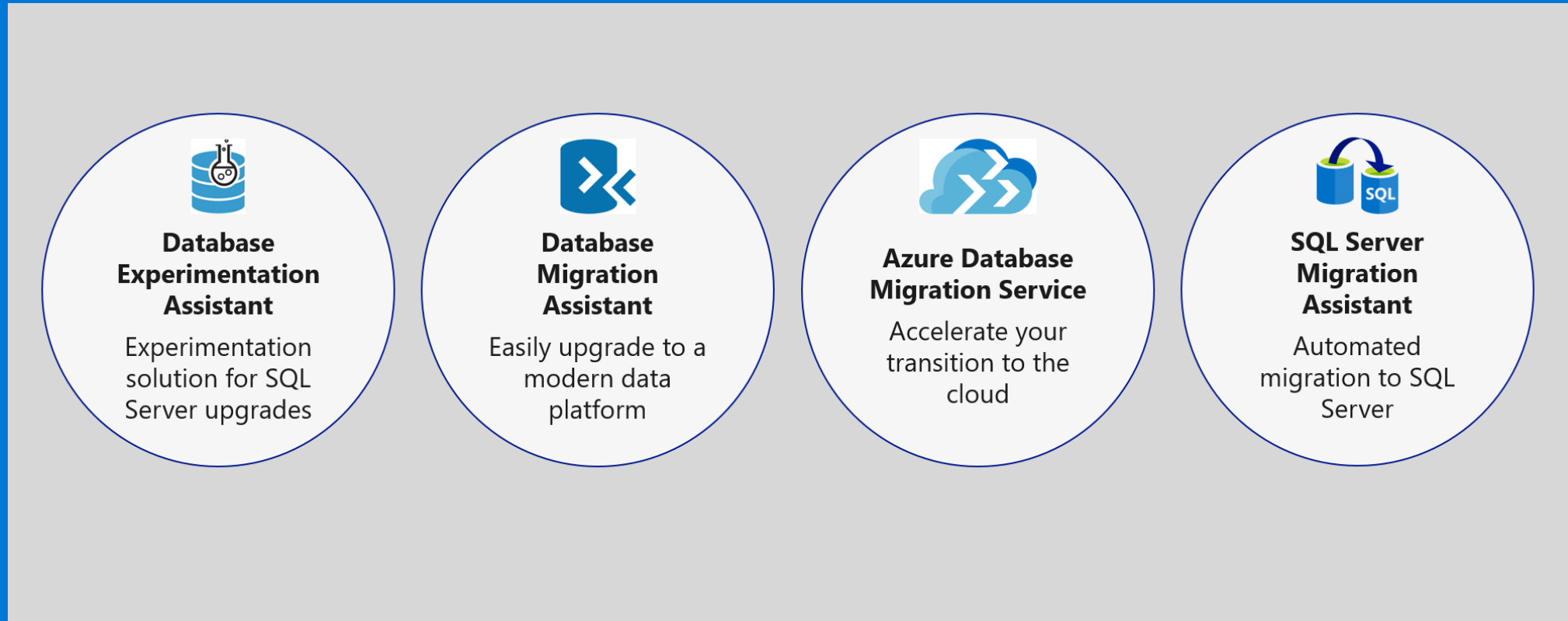
Azure API Management



# Preferred solution - 5

## Data Management

- Migrate database to Azure SQL using Database Migration Service



# Preferred solution - 6

## Data management

- Use Azure Redis Cache to reduce load on database and implement scoreboards.



**Redis Cache**  
cache-aside pattern

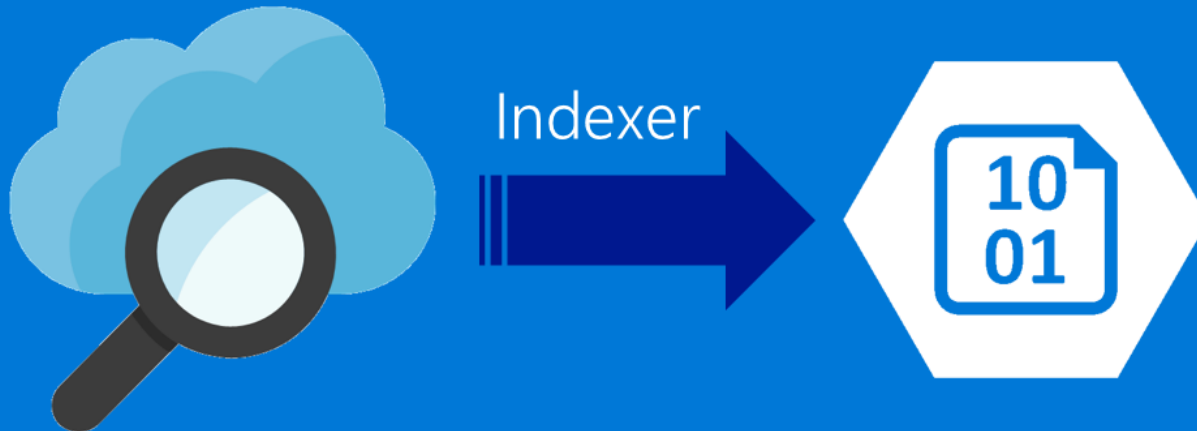
Redis HyperLogLog	
username	count
custserv89	9834793
alrickman	9453452
sandrabrown	8350927
vishwashn	8277314

**Scoreboard**  
using HyperLogLog

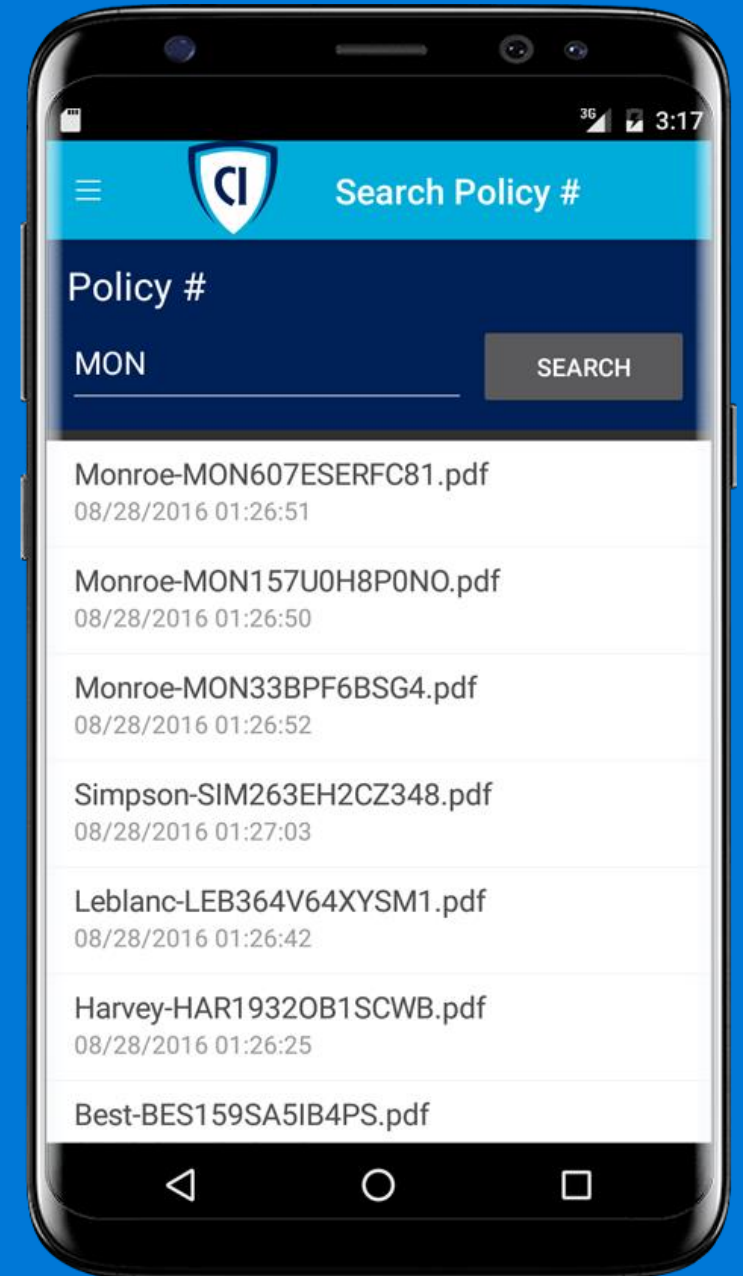
# Preferred solution - 7

## Search

- Enable full-text search of policy documents with Azure Cognitive Search.



Azure Cognitive Search + Indexer for Azure Storage blobs

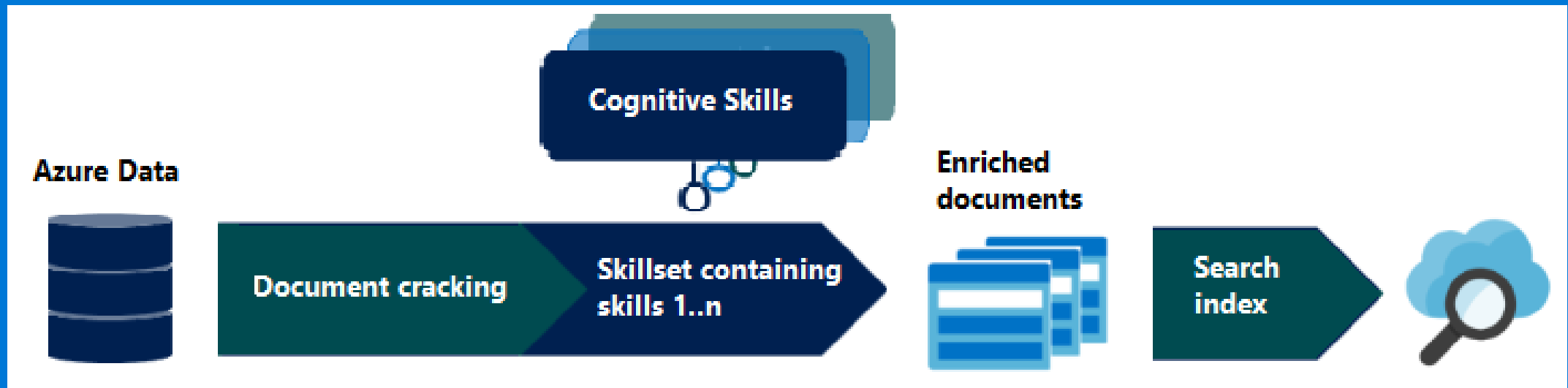




# Preferred solution - 8

## Search

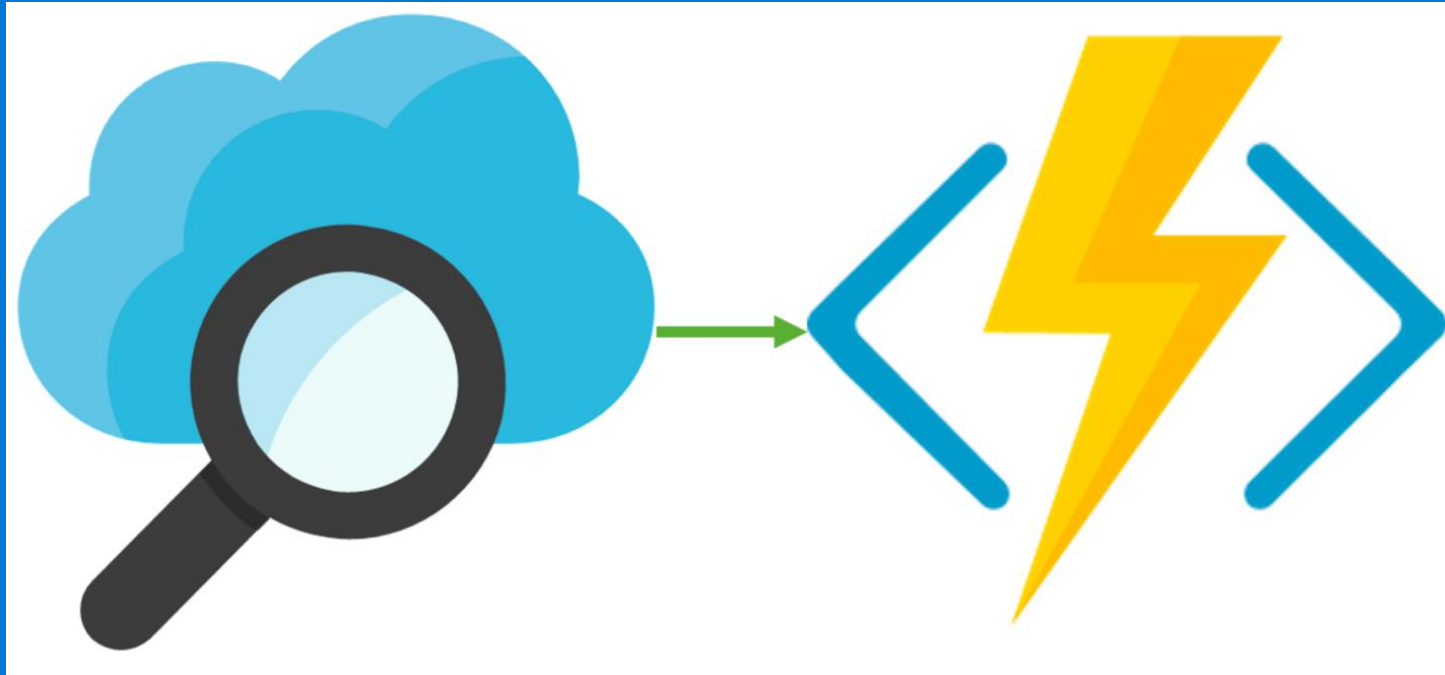
- Enrich search index with Cognitive Search



# Preferred solution - 9

## Search

- Custom cognitive skills

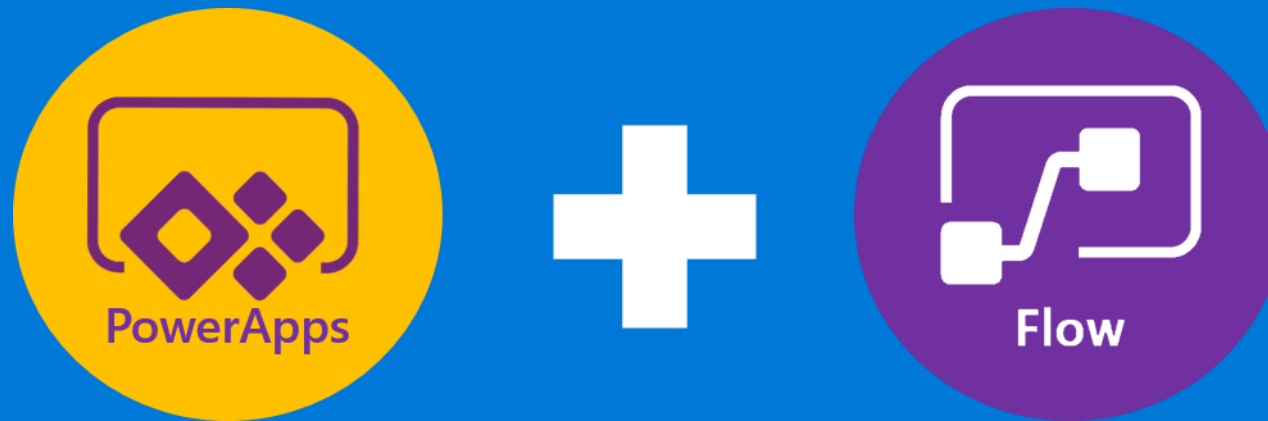


Azure Cognitive Search + Functions

# Preferred solution - 10

## Extensibility

- Enable business users to create their own internal mobile apps using PowerApps.
- They can use Microsoft Flow to create ad-hoc automated processes.



# Preferred solution – 11

## Extensibility

Business users can create an automated email workflow with Microsoft Flow in 3 easy steps:

1. Create a new flow that starts with Office 365, on new email with High priority.
2. Send a push notification action using subject and sender from email.
3. User would install Microsoft Flow app to receive notifications.



# Preferred objection handling

- How can we automate our processes?
- Will Microsoft Flow replace Logic Apps?
- Is there really a way to securely store application secrets in the cloud?
- How can we stay on top of a growing API ecosystem?
- We won't have all of the SQL features available to us in the cloud.
- Which .NET framework should we choose?



Lab

