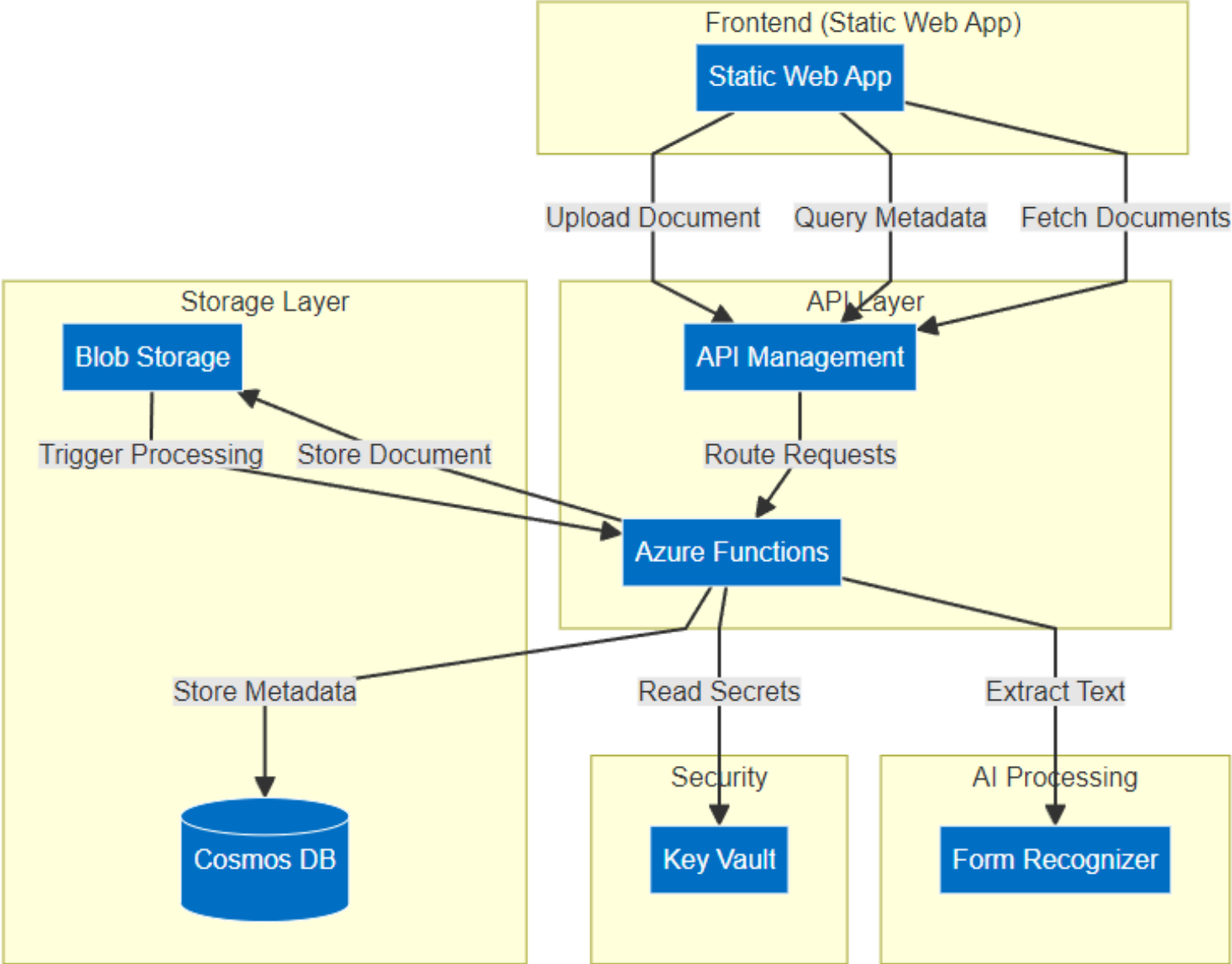# PaperPulse

Serverless Document Processing Platform

Overview

- Automatic document analysis and metadata extraction
- Built entirely on Azure serverless architecture
- Focus on scalability and cost efficiency
- Infrastructure as Code (IaC) with Azure Bicep

Architecture

Key Cloud Features

- **Serverless Architecture**

  - Azure Functions

  - Pay-per-use model

  - Auto-scaling

- **Managed Services**

  - Cosmos DB for NoSQL storage

  - Form Recognizer for AI processing

  - Key Vault for secrets

Name ↑↓	Type ↑↓	Location ↑↓
apim-dev-uuzyqakmx3wpo	API Management service	East US 2
cosmos-dev-uuzyqakmx3wpo	Azure Cosmos DB account	East US 2
fr-dev-uuzyqakmx3wpo	Document intelligence	East US 2
func-dev-uuzyqakmx3wpo	Function App	East US 2
kv-dev-uuzyqakmx3wpo	Key vault	East US 2
plan-dev-uuzyqakmx3wpo	App Service plan	East US 2
stapp-dev-uuzyqakmx3wpo	Static Web App	East US 2
stdevuuzyqakmx3wpo	Storage account	East US 2

Cost Analysis

Service	Pricing
Azure Functions	$0.20 per million executions
Cosmos DB	$10-100
Blob Storage	$0.02/GB (hot)
Form Recognizer	$1.50 per 1,000 pages (0-1M)
API Management	$0.042 per 10,000 API operations *(consumption)*
Static Web App	$9/app/month *(production use)*

No initial costs! Can be expensive depending on usage and replica configuration

Source: https://azure.microsoft.com/en-us/pricing/details/

Scalability & Performance

- **Auto-scaling** at every layer

  - Functions scale to zero

  - Cosmos DB auto-scales

  - Blob storage virtually unlimited

- **High Availability**

  - Multi-region deployment options

  - Built-in redundancy

  - Automatic failover

Security Implementation

- Azure Key Vault integration
- Managed Identities
- RBAC for service access
- HTTPS-only communication
- API Management security
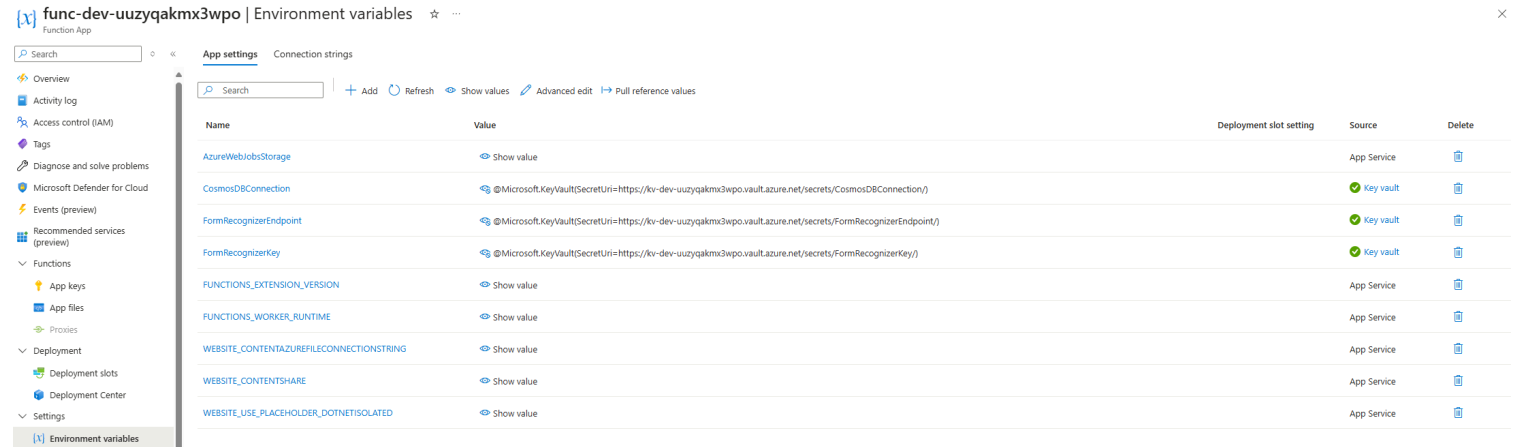
Live Demo Time

Key Learnings

- Serverless isn't always simpler

- Scripting saves time

- Azure documentation can be misleading

- Cost optimization requires planning

- Infrastructure as Code is essential

- https://github.com/Azure/Azure-Functions/issues/2248

Thank You!

Questions?

GitHub Repository