

# Przewodnik po hostowaniu aplikacji w Azure: od teorii do praktyki

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**Kłamstwa dla  
dzieci**

**Dwa największe  
błędy w  
używaniu  
Azure?**

**1 Nie czytanie dokumentacji  
do końca**

**2 Klikanie na produkcji i brak  
CI/CD**

**Czego potrzebuje  
aplikacja?**

- 1 Hostowanie kodu
- 2 Baza danych
- 3 Kolejki
- 4 Miejsce na pliki

# Hostowanie kodu

- 1 Maszyny wirtualne
- 2 Azure Kubernetes Service (AKS)
- 3 Azure App Service
- 4 Azure Container Apps – Namespaces-as-a-Service



**Co wybrać?**

**Kod - Azure App Service**  
**Kontener - Azure Container**  
**Apps**

# Chwila na narzędzia do Infrastructure as code

- 1 Terraform
- 2 Bicep
- 3 Azure CLI
- 4 Azure Developer CLI

# Azure Developer CLI

```
azd init --template  
todo-python-mongo  
azd up  
azd deploy
```

## Typical `azd` workflow

Once you've [installed Azure Developer CLI](#), you can get your app running on Azure in just a few steps.

1. Select an [Azure Developer CLI template](#).
2. Initialize the project with the template by running `azd init`
3. Package, provision and deploy the app by running `azd up`.
4. Continue iterating on your application code and deploying changes as needed by running `azd deploy`
5. Update Azure resources by modifying the template's Infrastructure as Code (IaC) and then running `azd provision` (optional)

# azd template list

@kaluzaaa → /workspace (main) \$ azd template list		
Name	Source	Repository Path
Event Driven Java Application with Azure Service Bus on Azure Spring Apps	Awesome AZD	<a href="#">Azure-Samples/ASA-Samples-Event-Driven-Application</a>
Static React Web App with Java API and PostgreSQL	Awesome AZD	<a href="#">Azure-Samples/ASA-Samples-Web-Application</a>
SAP CAP on Azure App Service Quickstart	Awesome AZD	<a href="#">Azure-Samples/app-service-javascript-sap-cap-quickstart</a>
SAP Cloud SDK on Azure App Service Quickstart (TypeScript)	Awesome AZD	<a href="#">Azure-Samples/app-service-javascript-sap-cloud-sdk-quickstart</a>
Java Spring Apps with Azure OpenAI	Awesome AZD	<a href="#">Azure-Samples/app-templates-java-openai-springapps</a>
WordPress with Azure Container Apps	Awesome AZD	<a href="#">Azure-Samples/apptemplate-wordpress-on-ACA</a>
Bicep template to bootstrap Azure Deployment Environments	Awesome AZD	<a href="#">Azure-Samples/azd-deployment-environments</a>
Starter – Bicep	Awesome AZD	<a href="#">Azure-Samples/azd-starter-bicep</a>
Starter – Terraform	Awesome AZD	<a href="#">Azure-Samples/azd-starter-terraform</a>
Python (Django) Web App with PostgreSQL via Azure Container Apps	Awesome AZD	<a href="#">Azure-Samples/azure-django-postgres-aca</a>
ChatGPT and Enterprise data with Azure OpenAI and Cognitive Search	Awesome AZD	<a href="#">Azure-Samples/azure-search-openai-demo</a>
ChatGPT + Enterprise Data with Azure OpenAI and Cognitive Search	Awesome AZD	<a href="#">Azure-Samples/azure-search-openai-demo-csharp</a>
Java – ChatGPT + Enterprise data with Azure OpenAI and Cognitive Search	Awesome AZD	<a href="#">Azure-Samples/azure-search-openai-demo-java</a>
ChatGPT and RAG with Azure OpenAI and Cognitive Search for JavaScript	Awesome AZD	<a href="#">Azure-Samples/azure-search-openai-javascript</a>
Azure OpenAI Conference Session Recommender	Awesome AZD	<a href="#">Azure-Samples/azure-sql-db-session-recommender</a>
Azure OpenAI Conference Session Assistant	Awesome AZD	<a href="#">Azure-Samples/azure-sql-db-session-recommender-v2</a>
Microservices App – Dapr Bindings Cron C# ACA PostgreSQL	Awesome AZD	<a href="#">Azure-Samples/bindings-dapr-csharp-cron-postgres</a>
Microservices App – Dapr Bindings Cron Node.js ACA PostgreSQL	Awesome AZD	<a href="#">Azure-Samples/bindings-dapr-nodejs-cron-postgres</a>
Microservices App – Dapr Bindings Cron Python ACA PostgreSQL	Awesome AZD	<a href="#">Azure-Samples/bindings-dapr-python-cron-postgres</a>
Simple Chat Application using Azure OpenAI	Awesome AZD	<a href="#">Azure-Samples/chatgpt-quickstart</a>
Enterprise-Grade Reference Architecture for JavaScript	Awesome AZD	<a href="#">Azure-Samples/contoso-real-estate</a>
FastAPI on Azure Functions	Awesome AZD	<a href="#">Azure-Samples/fastapi-on-azure-functions</a>
Azure Functions – Text Summarization using AI Cognitive Language Service (C#-Isolated)	Awesome AZD	<a href="#">Azure-Samples/function-csharp-ai-textsummarize</a>
Azure Function with Event Hub with optional virtual network capabilities	Awesome AZD	<a href="#">Azure-Samples/function-eventhub-vnet</a>
Azure Functions – Chat using ChatGPT (Node.js JavaScript Function)	Awesome AZD	<a href="#">Azure-Samples/function-javascript-ai-openai-chatgpt</a>
Azure Functions – LangChain with Azure OpenAI and ChatGPT (Python v2 Function)	Awesome AZD	<a href="#">Azure-Samples/function-python-ai-langchain</a>
Azure Functions – Chat using ChatGPT (Python v2 Function)	Awesome AZD	<a href="#">Azure-Samples/function-python-ai-openai-chatgpt</a>
Azure Functions – Text Summarization using AI Cognitive Language Service (Python v2 Function)	Awesome AZD	<a href="#">Azure-Samples/function-python-ai-textsummarize</a>
SAP Cloud SDK on Azure Functions Quickstart (TypeScript)	Awesome AZD	<a href="#">Azure-Samples/functions-javascript-sap-cloud-sdk-quickstart</a>
Langfuse on Azure	Awesome AZD	<a href="#">Azure-Samples/langfuse-on-azure</a>
Python (Django) Web App with PostgreSQL in VNet	Awesome AZD	<a href="#">Azure-Samples/msdocs-django-postgresql-sample-app</a>
Python (Flask) Web App with PostgreSQL in VNet	Awesome AZD	<a href="#">Azure-Samples/msdocs-flask-postgresql-sample-app</a>
Azure OpenAI priority-based load balancer with Azure Container Apps	Awesome AZD	<a href="#">Azure-Samples/openai-aca-lb</a>
Azure API Management policy for priority-based routing to Azure OpenAI	Awesome AZD	<a href="#">Azure-Samples/openai-apim-lb</a>
ChatGPT Plugin using Python (FastAPI)	Awesome AZD	<a href="#">Azure-Samples/openai-plugin-fastapi</a>
Microservices App – Dapr PubSub Java AKS	Awesome AZD	<a href="#">Azure-Samples/pubsub-dapr-aks-java</a>
Microservices App – Dapr PubSub C# ACA ServiceBus	Awesome AZD	<a href="#">Azure-Samples/pubsub-dapr-csharp-servicebus</a>
Microservices App – Dapr PubSub Node.js ACA ServiceBus	Awesome AZD	<a href="#">Azure-Samples/pubsub-dapr-nodejs-servicebus</a>
Microservices App – Dapr PubSub Python ACA ServiceBus	Awesome AZD	<a href="#">Azure-Samples/pubsub-dapr-python-servicebus</a>
React Component Toolkit with ChatGPT and OpenAI	Awesome AZD	<a href="#">Azure-Samples/react-component-toolkit-openai-demo</a>
Spring ChatGPT Application using Azure OpenAI on Azure Spring Apps	Awesome AZD	<a href="#">Azure-Samples/spring-chatgpt-sample</a>
Spring PetClinic – Java Spring MySQL	Awesome AZD	<a href="#">Azure-Samples/spring-petclinic-java-mysql</a>
Microservices App – Dapr Service Invoke C# ACA	Awesome AZD	<a href="#">Azure-Samples/svc-invoke-dapr-csharp</a>
Microservices App – Dapr Service Invoke Node.js ACA	Awesome AZD	<a href="#">Azure-Samples/svc-invoke-dapr-nodejs</a>
Microservices App – Dapr Service Invoke Python ACA	Awesome AZD	<a href="#">Azure-Samples/svc-invoke-dapr-python</a>
React Web App with C# API and MongoDB	Awesome AZD	<a href="#">Azure-Samples/todo-csharp-cosmos-sql</a>
React Web App with C# API and SQL Database	Awesome AZD	<a href="#">Azure-Samples/todo-csharp-sql</a>
Static React Web App + Functions with C# API and SQL Database	Awesome AZD	<a href="#">Azure-Samples/todo-csharp-sql-swa-func</a>
React Web App with Java API and MongoDB	Awesome AZD	<a href="#">Azure-Samples/todo-java-mongo</a>
Containerized React Web App with Java API and MongoDB	Awesome AZD	<a href="#">Azure-Samples/todo-java-mongo-aca</a>
React Web App with Node.js API and MongoDB	Awesome AZD	<a href="#">Azure-Samples/todo-nodejs-mongo</a>

# Azure CLI

```
az containerapp up \
  --resource-group $RESOURCE_GROUP \
  --location $LOCATION \
  --name $CAPP_NAME \
  --ingress external \
  --target-port 50505 \
  --source . \
  --env-vars
AZURE_POSTGRESQL_CONNECTIONSTRING="$AZURE_POSTGRESQL_CONNECTIONSTRING" \
AZURE_REDIS_CONNECTIONSTRING="$AZURE_REDIS_CONNECTIONSTRING" \
AZURE_SERVICEBUS_CONNECTIONSTRING="$AZURE_SERVICEBUS_CONNECTIONSTRING" \
SECRET_KEY="$SECRET_KEY" \
CONTAINER_APPS="True"
```

# Azure App Service



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*Azure App Service is an HTTP-based service for hosting web applications, REST APIs, and mobile back ends. You can develop in your favorite language, be it .NET, .NET Core, Java, Node.js, PHP, and Python. Applications run and scale with ease on both Windows and Linux-based environments.*

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**Demo**

# Azure Container Apps

# Azure Container Apps

Namespaces-as-a-  
Service, czyli  
warstwa abstrakcji  
na K8s

## Features

With Azure Container Apps, you can:

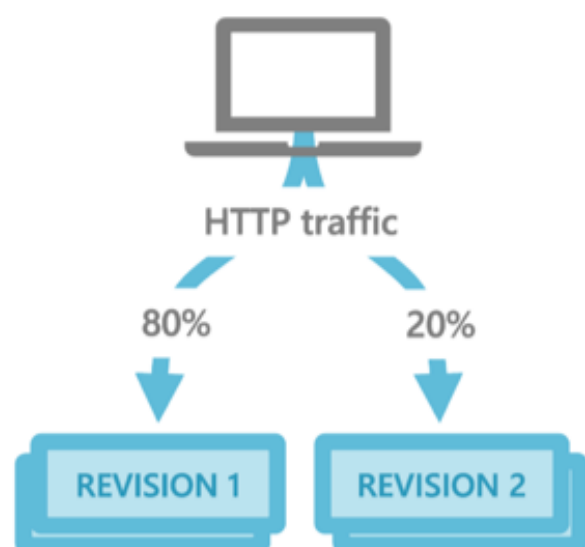
- [Use the Azure CLI extension, Azure portal or ARM templates](#) to manage your applications.
- [Enable HTTPS or TCP ingress](#) without having to manage other Azure infrastructure.
- [Build microservices with Dapr](#) and [access its rich set of APIs](#).
- [Run jobs](#) on-demand, on a schedule, or based on events.
- Add [Azure Functions](#) [↗](#) and [Azure Spring Apps](#) [↗](#) to your Azure Container Apps environment.
- [Use specialized hardware](#) for access to increased compute resources.
- [Run multiple container revisions](#) and manage the container app's application lifecycle.
- [Autoscale](#) your apps based on any KEDA-supported scale trigger. Most applications can scale to zero<sup>1</sup>.
- [Split traffic](#) across multiple versions of an application for Blue/Green deployments and A/B testing scenarios.
- [Use internal ingress and service discovery](#) for secure internal-only endpoints with built-in DNS-based service discovery.
- [Run containers from any registry](#), public or private, including Docker Hub and Azure Container Registry (ACR).
- [Provide an existing virtual network](#) when creating an environment for your container apps.
- [Securely manage secrets](#) directly in your application.
- [Monitor logs](#) using Azure Log Analytics.
- [Generous quotas](#) which can be overridden to increase limits on a per-account basis.

<sup>1</sup> Applications that [scale on CPU or memory load](#) can't scale to zero.



# Azure Container Apps: Example scenarios

## PUBLIC API ENDPOINTS



HTTP requests are split between two versions of the container app where the first revision gets 80% of the traffic, while a new revision receives the remaining 20%.

## BACKGROUND PROCESSING



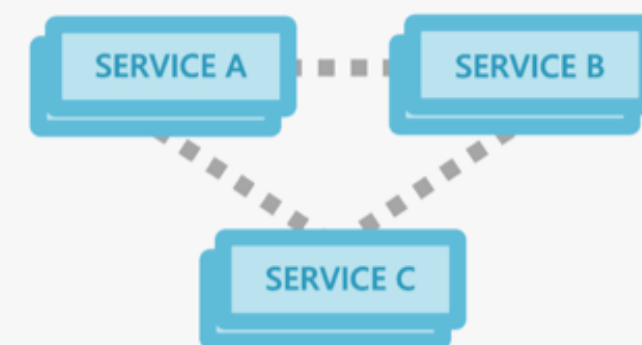
A background job that transforms data in a database.

## EVENT-DRIVEN PROCESSING



A queue reader application that processes messages as they arrive in a queue.

## MICROSERVICES



Deploy and manage a microservices architecture with the option to integrate with Dapr.

### AUTO-SCALE CRITERIA

Scaling is determined by the number of concurrent HTTP requests.

### AUTO-SCALE CRITERIA

Triggered by a schedule, on demand, or based on events.

### AUTO-SCALE CRITERIA

Scaling is determined by the number of messages in the queue.

### AUTO-SCALE CRITERIA

Individual microservices can scale according to any KEDA scale triggers.

**Demo**

# Bazy dany

## Databases

Support rapid growth and innovate faster with secure, enterprise-grade, and fully managed database services



### Azure SQL

Migrate, modernize, and innovate on the modern SQL family of cloud databases



### Azure Cosmos DB

Build or modernize scalable, high-performance apps



### Azure SQL Database

Build apps that scale with managed and intelligent SQL database in the cloud



### Azure Database for PostgreSQL

Fully managed, intelligent, and scalable PostgreSQL



### Azure SQL Managed Instance

Modernize SQL Server applications with a managed, always-up-to-date SQL instance in the cloud



### Azure Database for MySQL

Fully managed, scalable MySQL Database



### SQL Server on Azure Virtual Machines

Migrate SQL Server workloads to the cloud at lower total cost of ownership (TCO)



### Azure Cache for Redis

Accelerate apps with high-throughput, low-latency data caching



### Azure Database Migration Service (classic)

Accelerate your data migration to Azure



### Azure Managed Instance for Apache Cassandra

Modernize Cassandra data clusters with a managed instance in the cloud



### Azure Database for MariaDB

Deploy applications to the cloud with enterprise-ready, fully managed community MariaDB

# Kolejki

- 1 Service Bus (AMQP)
- 2 Event Hub (zgodny też z Kafka)
- 3 Event Grid



**Pliiki**

**Azure Blob Storage**

- 1 Dostęp po API (jest SDK, też na frontend)
- 2 Immutable storage, Soft delete,
- 3 Change feed
- 4 Lifecycle management policies (delete/tiering)
- 5 Offloading do aplikacji

- 1 Sprawdź dokumentację
- 2 Użyj CLI/IaC i CI/CD
- 3 Zacznij z App Service lub Container Apps



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