LNC Apps AzFunctionsPerformance

Azure Functions Performance is a benchmarking and comparison tool designed to help developers analyze, compare, and visualize performance characteristics of Azure Functions across multiple runtimes (such as .NET, Node.js, Python, PowerShell, and Java). The tool deploys identical workloads to Azure Functions in different languages and visualizes latency trends, enabling data-driven decision-making for performance optimization in serverless environments.

What is the community tool AzFunctionsPerformance?

Modern serverless applications often rely on Azure Functions due to their scalability and cost-efficiency. However, performance can vary significantly between runtimes, workloads, and hosting plans. AzFunctionsPerformance provides:

- A deployable benchmark suite that provisions function apps in various runtimes.
- A static web UI that runs tests and visualizes results.
- A framework to execute common workload patterns (CPU, IO, delay) with controlled parameters.
- Comparative insights to inform performance tuning and architectural choices.

All resources, technical documentation and more can be found in the Github repository: Azure-Functions-Performance

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Supported Runtimes

- .NET
- Node.js
- Python
- PowerShell

- Java

Each runtime exposes identical workload parameters to ensure fair and consistent benchmarking.

Use Cases

- Compare raw performance of Azure Functions across languages.
- Understand latency and execution trends for specific workload types.
- Evaluate impact of Azure hosting plans under load.
- Validate performance regression after code or configuration changes.
- Educate teams about performance variability in serverless environments.

Architecture Overview

AzFunctionsPerformance comprises three logical components:

1. Deployment Templates

- Bicep / ARM templates for provisioning:
  - One Azure Function App per runtime
  - Required storage dependencies
  - Application Insights for log analysis

2. Functions

- Identical benchmark functions per runtime
- Parameterized CPU, IO, and delay workloads

3. Web App

- Static UI for:
  - Registering signed function URLs
  - Running benchmark batches
  - Visualizing latency results
  - Comparing runtimes

This can either be run by yourself or using the free link that is provided publicly: Public Example

Get Started Yourself

If you want to explore the tool AzFunctionsPerformance hands-on, you can deploy and run the benchmark suite yourself. The complete source code, deployment templates, and web UI are available in the Azure-Functions-Performance repository on Github and are MIT licensed.

You can get started by cloning the repository and following the setup instructions provided in the README: https://github.com/lucanoahcaprez/Azure-Functions-Performance

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