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Факультет математики та інформатики  
Кафедра інформаційних технологій

Інформатика і програмування

Лабораторна робота No 9а

Тема: Implement Web Apps

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Івано-Франківськ – 2025

# Task 1: Create and configure an Azure web app

In this task, you create an Azure web app. Azure App Services is a Platform As a Service (PAAS) solution for web, mobile, and other web-based applications. Azure web apps is part Azure App Services hosting most runtime environments, such as PHP, Java, and .NET. The app service plan that you select determines the web app compute, storage, and features.

The screenshot displays the Microsoft Azure portal interface for a web app named 'coolname'. The browser address bar shows the URL: `portal.azure.com/#@vladkeeksgmail.onmicrosoft.com/resource/subscriptions/9889ebc0-ca1f-4e0d-8116-0764f6dbd196`. The portal header includes the Microsoft Azure logo, a search bar, and a Copilot button. The left sidebar contains a navigation menu with options like Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Microsoft Defender for Cloud, Events (preview), Log stream, Resource visualizer, Deployment, Settings, Performance, App Service plan, Development Tools, API, Monitoring, Automation, and Support + troubleshooting. The main content area is divided into two sections: 'Essentials' and 'Properties'. The 'Essentials' section provides a quick overview of the web app's configuration, including the resource group (az104-rg9), status (Running), location (Canada Central), subscription (Azure subscription 1), and subscription ID (9889ebc0-ca1f-4e0d-8116-0764f6dbd196). It also lists the default domain (coolname-g7djasgcccysgwfj.canadacentral-01...), the app service plan (ASP-az104rg9-a859 (P1v3: 1)), the operating system (Linux), and the health check status (Not Configured). The 'Properties' section is currently selected and shows the 'Web app' configuration. It lists the name (coolname), publishing model (Code), runtime stack (Php - 8.2), and runtime status (Healthy). Below the 'Web app' section, there are sections for 'Domains' and 'Hosting'. The 'Domains' section shows the default domain (coolname-g7djasgcccysgwfj.canadacentral-01.azurewebsites.net) and a link to add a custom domain. The 'Hosting' section is partially visible at the bottom.

Microsoft Azure

Search resources, services, and docs (G+)

Copilot

Home >

coolname  
Web App

Search

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Microsoft Defender for Cloud

Events (preview)

Log stream

Resource visualizer

Deployment

Settings

Performance

App Service plan

Development Tools

API

Monitoring

Automation

Support + troubleshooting

Essentials

JSON View

Resource group (move)  
az104-rg9

Status  
Running

Location (move)  
Canada Central

Subscription (move)  
Azure subscription 1

Subscription ID  
9889ebc0-ca1f-4e0d-8116-0764f6dbd196

Tags (edit)  
Add tags

Default domain  
coolname-g7djasgcccysgwfj.canadacentral-01...

App Service Plan  
ASP-az104rg9-a859 (P1v3: 1)

Operating System  
Linux

Health Check  
Not Configured

Properties

Monitoring

Logs

Capabilities

Notifications

Recommendations

Web app

Name  
coolname

Publishing model  
Code

Runtime Stack  
Php - 8.2

Runtime status  
Healthy

Domains

Default domain  
coolname-g7djasgcccysgwfj.canadacentral-01.azurewebsites.net

Custom domain  
Add custom domain

Hosting

Plan Type

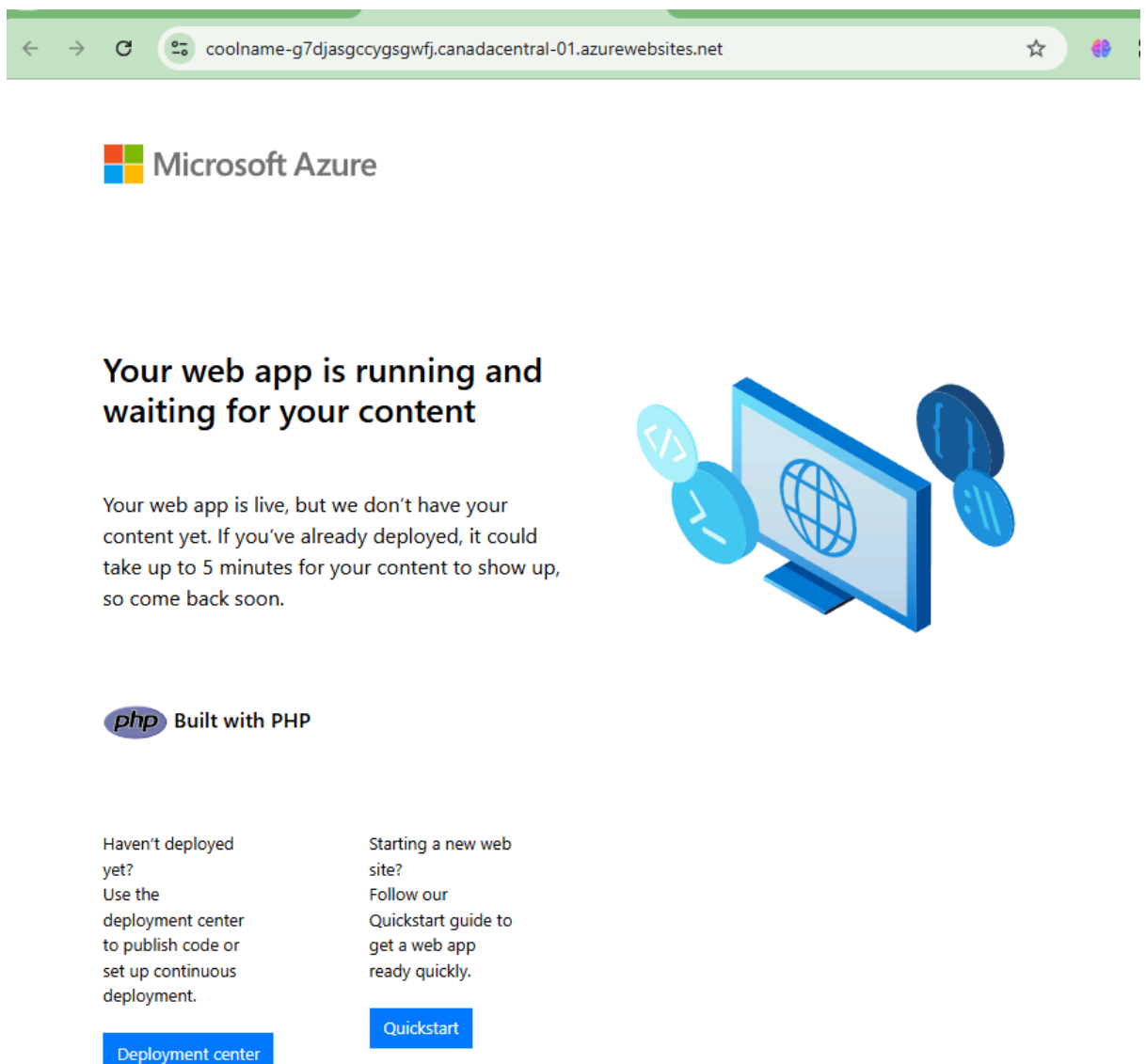
App Service plan

Add or remove favorites by pressing Ctrl+Shift+F

## Task 2: Create and configure a deployment slot

In this task, you will create a staging deployment slot. Deployment slots enable you to perform testing prior to making your app available to the public (or your end users). After you have performed testing, you can swap the slot from development or staging to production. Many organizations use slots to perform pre-production testing. Additionally, many organizations run multiple slots for every application (for example, development, QA, test, and production).

1. On the blade of the newly deployed Web App, click the Default domain link to display the default web page in a new browser tab.



Click Add slot, and add a new slot with the following settings:



Save



Discard



Add



Swap



Logs



Refresh



Send us your feedback

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Microsoft Defender for Cloud

Events (preview)

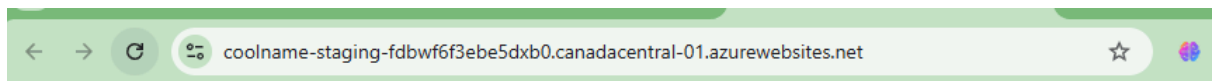
Log stream

Resource visualizer

Deployment slots are live apps with their own hostnames. App content and configurations elements can be swapped between two deployment slots, including the production slot.

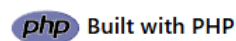
Name	Status	App service plan	Traffic %
coolname <b>PRODUCTION</b>	Running	ASP-az104rg9-a859	100
coolname-staging	Running	ASP-az104rg9-a859	<input type="text" value="0"/>

1. Review the staging slot blade and note that its URL differs from the one assigned to the production slot.



## Your web app is running and waiting for your content

Your web app is live, but we don't have your content yet. If you've already deployed, it could take up to 5 minutes for your content to show up, so come back soon.



Haven't deployed yet?  
Use the deployment center to publish code or set up continuous deployment.

[Deployment center](#)

Starting a new web site?  
Follow our Quickstart guide to get a web app ready quickly.

[Quickstart](#)

## Task 3: Configure Web App deployment settings

In this task, you will configure Web App deployment settings. Deployment settings allow for continuous deployment. This ensures that the app service has the latest version of the application.

staging (coolname/staging) - M

Microsoft Azure App Service - V

Microsoft Azure App Service - V

+

portal.azure.com/#@vladkeeksgmail.onmicrosoft.com/resource/subscriptions/9889ebc0-ca1f...

Microsoft Azure

Search resources, services, and docs (G+)

Copilot

Home > coolname | Deployment slots > staging (coolname/staging)

staging (coolname/staging) | Deployment Center

App Service (Slot)

Search

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Microsoft Defender for Cloud

Log stream

Resource visualizer

Deployment

Deployment slots

Deployment Center

Settings

Performance

App Service plan

Development Tools

API

Monitoring

Automation

Support + troubleshooting

Settings

Containers (new)

Logs

FTPS Credentials

Save

Discard

Refresh

Browse

Sync

Send us your feedback

Deploy and build code from your preferred source and build provider. [Learn more](#)

Source

External Git

Disconnect

Repository

https://github.com/Azure-Samples/php-docs-hello-world

Branch

master

Build

Build provider

App Service Build Service

Runtime stack

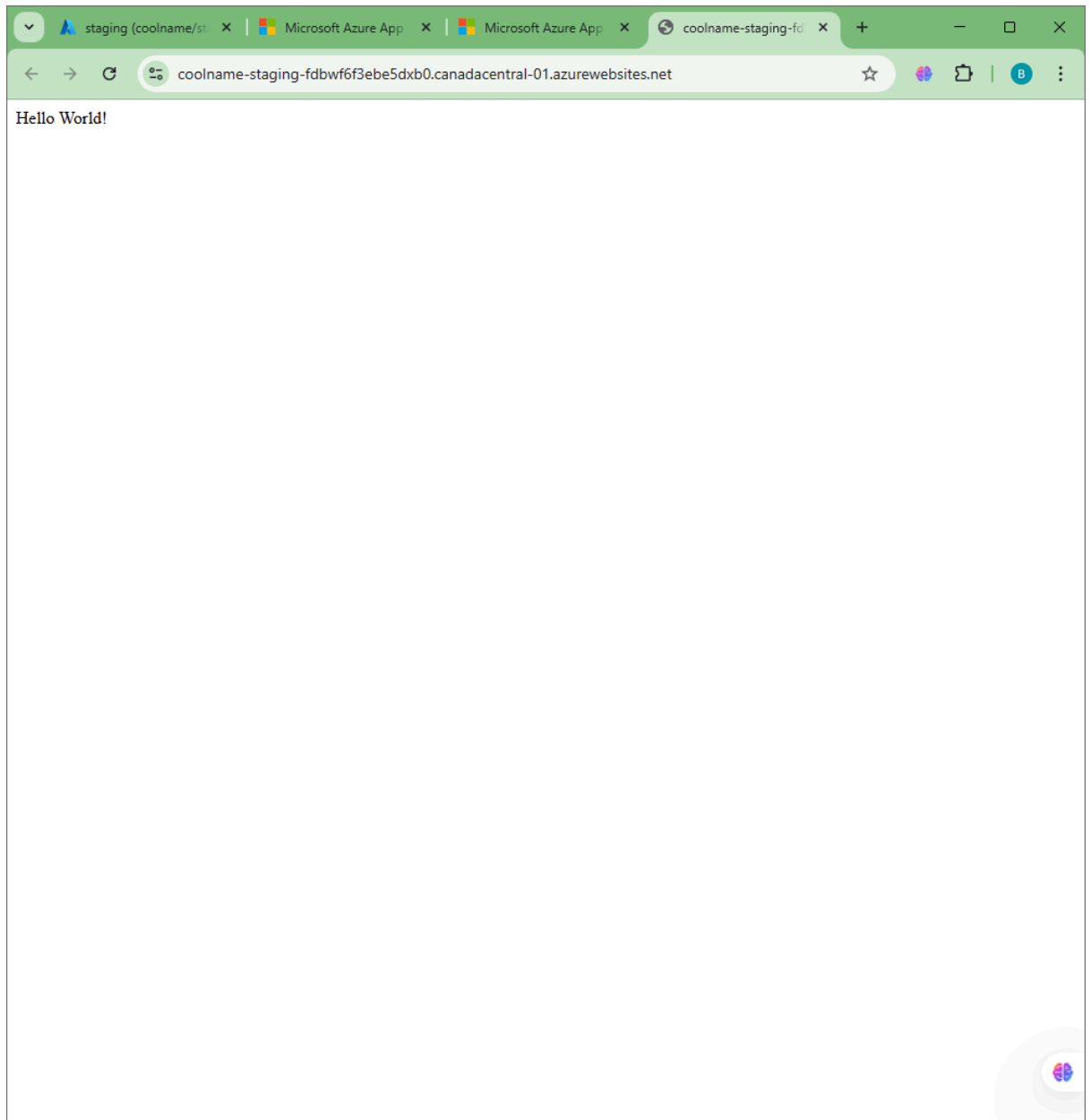
PHP

Version

8.2

Add or remove favorites by pressing Ctrl+Shift+F

1. Verify that the staging slot displays Hello World.



## Task 4: Swap deployment slots

In this task, you will swap the staging slot with the production slot. Swapping a slot allows you to use the code that you have tested in your staging slot, and move it to production. The Azure portal will also prompt you if you need to move other application settings that you have customized for the slot. Swapping slots is a common task for application teams and application support teams, especially those deploying routine app updates and bug fixes.

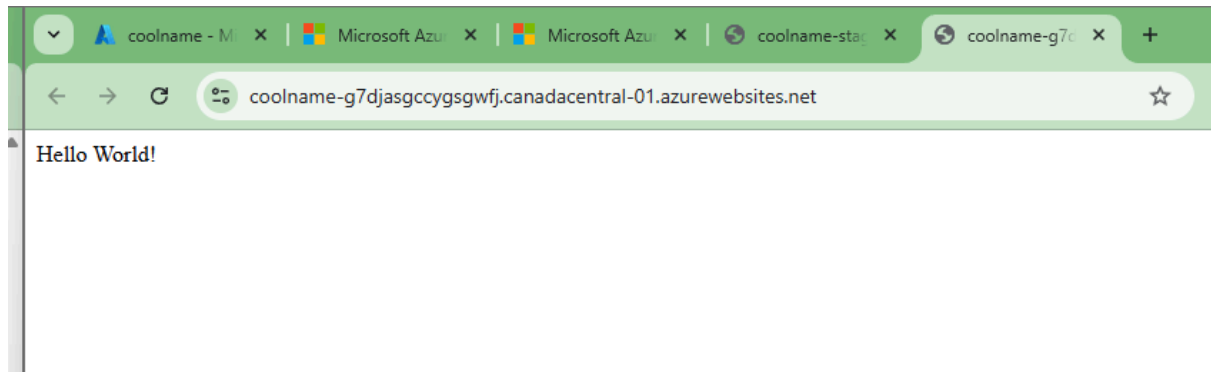
1. Review the default settings and click Start Swap. Wait for the notification that the swap has finished.

The screenshot shows the Microsoft Azure portal interface. The browser tabs include 'staging (coolname/staging)', 'Microsoft Azure App', and 'coolname-staging-fid'. The address bar shows the URL 'portal.azure.com/#@vladkeeksgmail.onmicrosoft.com/resource/subscriptions/9889ebc0-ca1f...'. The page title is 'staging (coolname/staging) | Deployment slots'. The left sidebar contains a navigation menu with options like Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Microsoft Defender for Cloud, Log stream, Resource visualizer, and Deployment. The 'Deployment slots' section is expanded, showing a table of deployment slots.

Name	Status	App service plan	Traffic %
coolname <b>PRODUCTION</b>	Running	ASP-az104rg9-a859	100
coolname-staging	Running	ASP-az104rg9-a859	0

1. Select the App Service web app and on the Overview blade of the Web App select the Default domain link to display the website home page.





## Task 5: Configure and test autoscaling of the Azure Web App

In this task, you will configure autoscaling of Azure Web App. Autoscaling enables you to maintain optimal performance for your web app when traffic to the web app increases. To determine when the app should scale you can monitor metrics like CPU usage, memory, or bandwidth.

In the left pane, in the App Service plan section, select Scale out.

The screenshot shows the Microsoft Azure portal interface. The browser's address bar displays the URL: `portal.azure.com/#@vladkeeksgmail.onmicrosoft.com/resource/subscriptions/9889ebc0-ca1f...`. The page title is "coolname | Scale out" with a star icon and a close button. Below the title, there's a search bar and links for "Refresh" and "Send us your feedback".

**Left Navigation Panel:**

- Overview
- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems
- Microsoft Defender for Cloud
- Events (preview)
- Log stream
- Resource visualizer
- Deployment
  - Deployment slots
  - Deployment Center
- Settings
- Performance
- App Service plan
  - App Service plan
  - Scale up
  - Scale out**
- Development Tools
- API
- Monitoring
- Automation
- Support + troubleshooting

**Main Content Area:**

**Pricing plan**

Current plan	Premium v3 P1V3 <a href="#">(Change)</a>
Price (instance)	0.168 USD/hour (122.64 USD/month)
Memory (GB)	8
Maximum scale (instance)	30
Active instance count	1

**Scaling**

When scaling demand changes, you can manually scale your resource to a specific instance count, or via a custom Autoscale rule based policy that scales based on metric(s) thresholds, or schedule instance count which scales during designated time windows. You can also use Automatic Scaling features which enables platform managed scale in and scale out for your apps based on incoming HTTP traffic. [Learn more about Azure Autoscale, Automatic Scaling or view the how-to video.](#)

**Scale out method**

- ☒ **Manual**  
Maintain a constant instance count for your application
- ☐ **Automatic**  
Platform managed scale out and in based on traffic
- ☐ **Rules Based**  
User defined rules to scale on a schedule or based on any app metric

**Instance count**

Slider: 1

**Async scaling**

☐ Async scaling provides more flexibility for your app's scale out. [Learn](#)

**Buttons:** Save, Discard

Add or remove favorites by pressing Ctrl+Shift+F

1. Wait for the load test to create, and then select Go to resource.

test-01unique

Microsoft Azure

Microsoft Azure

coolname-stag

coolname-g7d


portal.azure.com/#@vladkeeksgmail.onmicrosoft.com/resource/subscriptions/9889ebc0-ca1f-4e0...

Microsoft Azure

Search resources, services, and docs (G+/)

Copilot

Home > Microsoft.CloudNativeTesting1765640431614 | Overview >

**test-01unique**  
Azure Load Testing

Summarize properties of this Azure Load Testing.

How do I troubleshoot this Azure Load Testing?

+1

X

Search

Refresh

Delete resource

Manage budget

Give feedback

Overview

Activity log

Access control (IAM)

Tags

Resource visualizer

Tests

Settings

Monitoring

Automation

Help

Introducing 'AI powered insights': Optimize performance, identify bottlenecks, and enhance scalability with AI-driven analytics and recommendations. [Try it now!](#)

Essentials

Subscription [\(move\)](#)  
[Azure subscription 1](#)

Subscription ID  
9889ebc0-ca1f-4e0d-8116-0764f6dbd196

VUH usage (current month)  
[0 / No limit](#)

Resource group [\(move\)](#)  
[az104-rg9](#)

Status  
---

Location  
East US


JSON View


Get started


Test runs

Tutorials

Load test your application and infrastructure

**Create by adding HTTP requests**  
Create a test by adding your HTTP endpoints and request details in portal.  
[Create](#)

**Run existing scripts at scale**  
Create a test by uploading JMeter or Locust scripts.  
[Create](#)

**Create scripts using Copilot**  
AI-powered Locust scripting in VS Code using GitHub Copilot.  
[Get extension](#)

Add or remove favorites by pressing Ctrl+Shift+F

TestRun\_12/13/2025\_5:43:29 PM

Last updated by: vladkeeks@gmail.com | Initiated on: 12/13/2025, 5:43:29 PM

View all test runs

Stop

Delete

Configure server side metrics

Download

View logs

Share

Refresh

Give feedback

Test run feedback

How was your experience running a load test with Azure Load Testing?

Provisioning

Start time : 12/13/2025, 5:43:32 PM

End time : --

Duration : --

Engine instances : 1

Virtual users (Max) : --

Virtual user hours : --

Test run ID : 8cd35920-e39a-4722-9f54-af100c9c203e

Baseline : [Set baseline](#)

AI Insights

Client side metrics

Server side metrics

Engine health

AI summary and insights

: AI-powered insights will be available after the test run is completed and artifacts are available. [Learn more](#)

Server-side metrics aren't configured. [Configure them now](#) to unlock deeper AI-based insights and results. [Learn more](#)

Client-side metrics

The test run will start shortly.

Server-side metrics

You have not configured any server side metrics. [Configure server side metrics](#) to see server side metrics.

Load engine health metrics

Monitor and troubleshoot the performance of the load test engines. [Learn more](#)

The test run will start shortly.

Notifications

More events in the activity log →

Dismiss all

Test started

Successfully started 'TestRun\_12/13/2025\_5:43:29 PM'.

a few seconds ago

JMeter script creation successful

The JMeter script was created successfully.

a few seconds ago

Test successfully created

Test\_12/13/2025\_5:42:21 PM was successfully created.

a few seconds ago

Deployment succeeded

Deployment 'Microsoft.CloudNativeTesting1765640431614' to resource group 'az104-rgr' was successful.

Go to resource

Go to resource group

2 minutes ago

Copilot connectivity error

Sorry, something went wrong. Please try again or share your feedback.

Help me troubleshoot

7 minutes ago

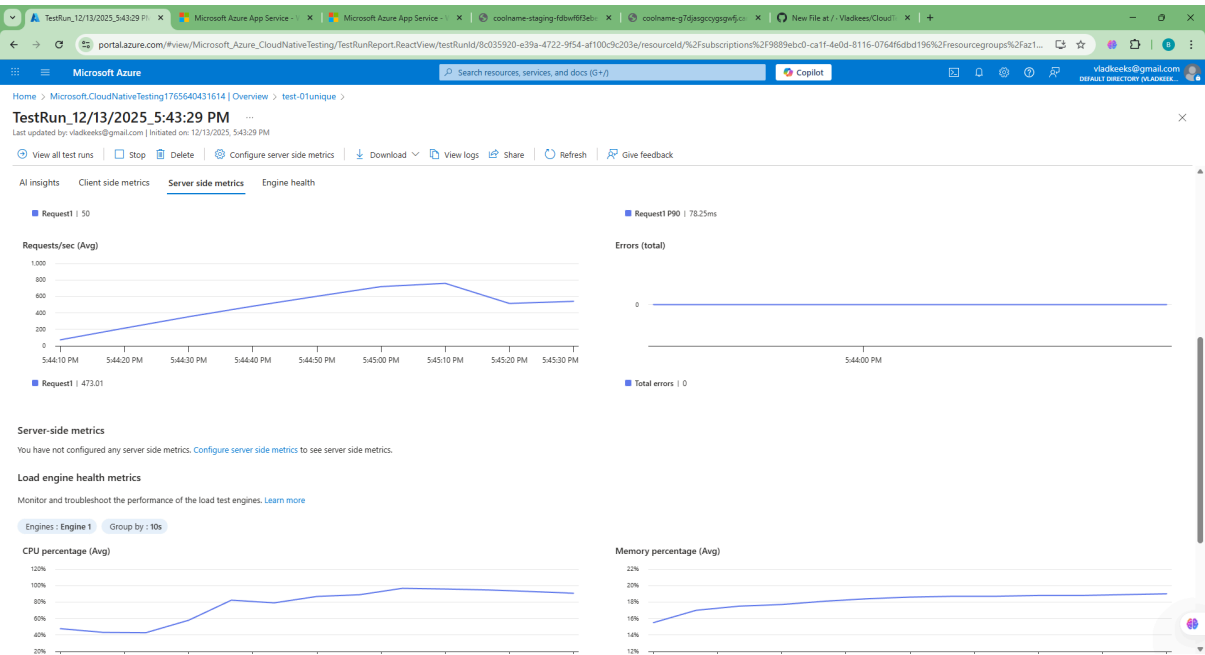
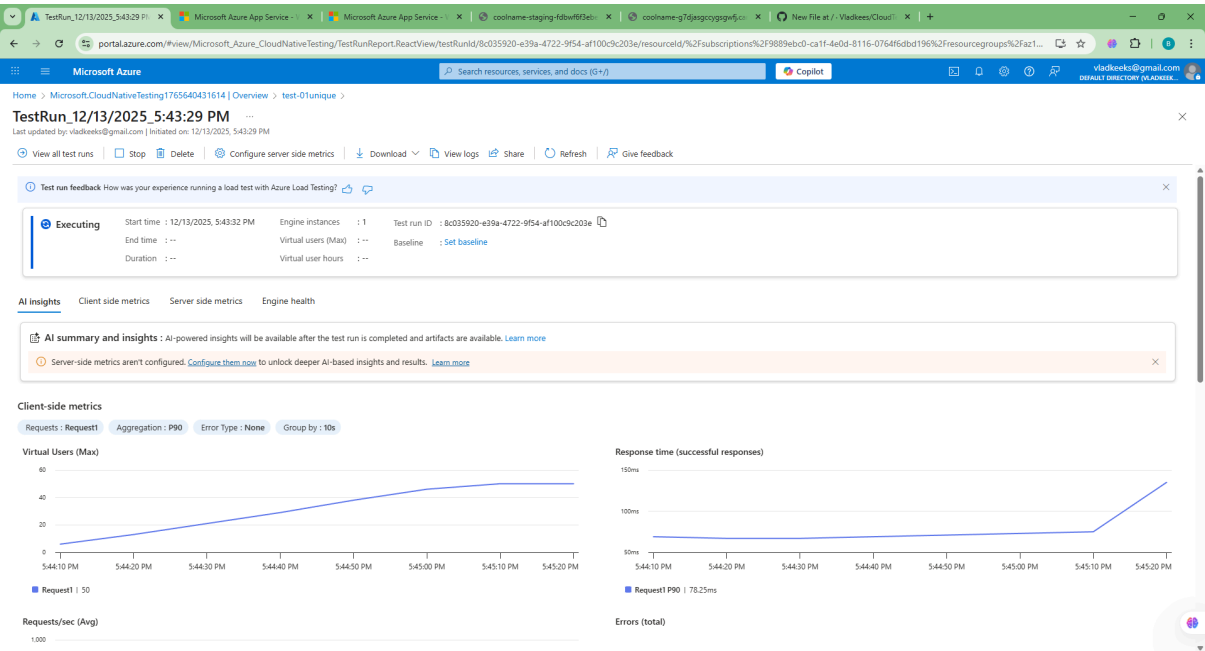
Scale out app

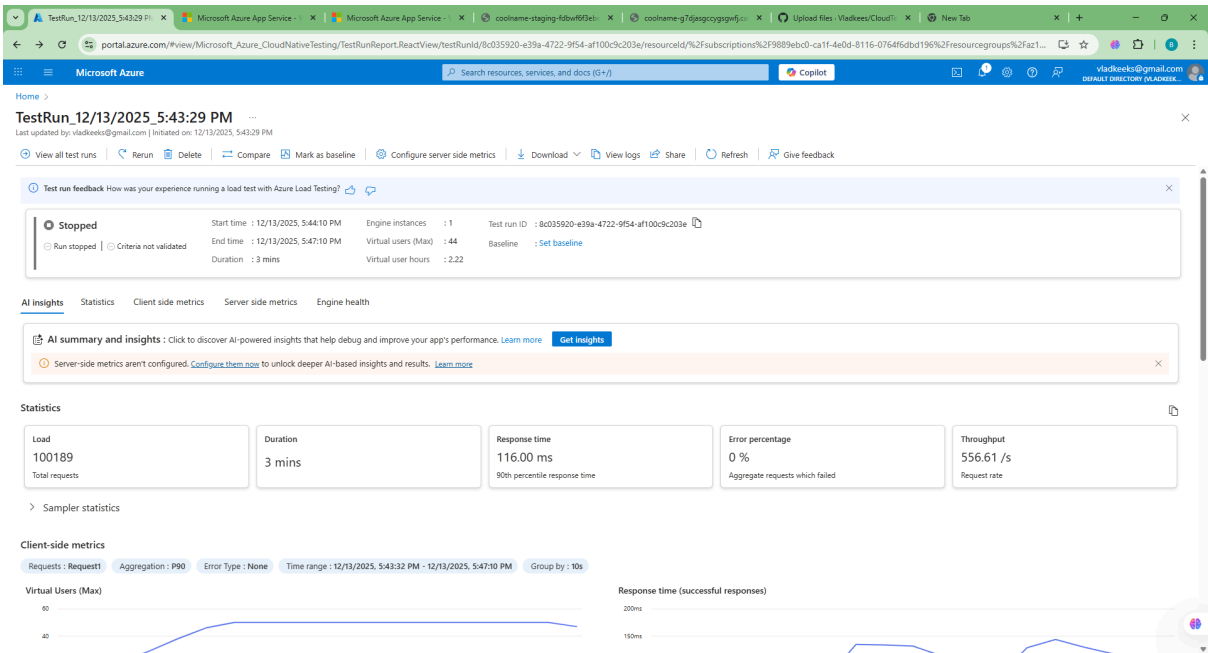
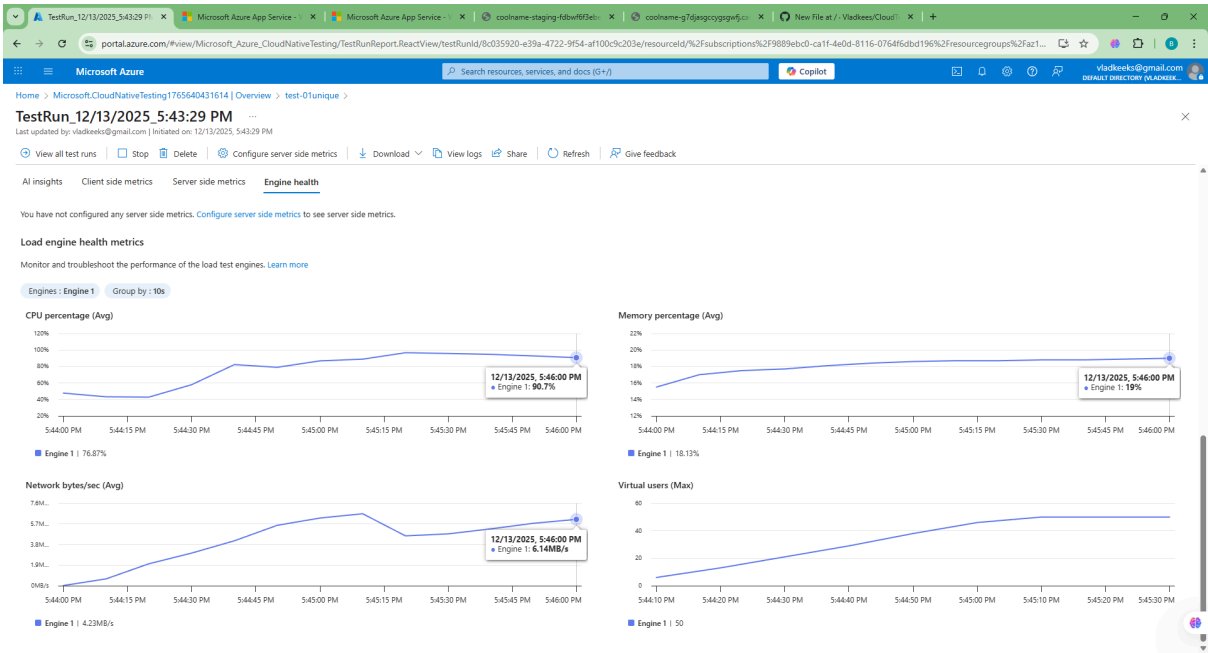
The scale out operation for the app 'coolname' failed: The parameter 'MinimumElasticInstanceCount' has an invalid value. Details: The desired MinimumElasticInstanceCount (0) for the site 'coolname\_784a' must be greater than zero.

Help me troubleshoot

8 minutes ago

Swapping slots





overall

Microsoft Azure portal screenshot showing the Resource Manager interface. The left sidebar displays the navigation menu with options like Resource Manager, All resources, Favorite resources, Recent resources, Resource groups, Tags, Organization, Service groups, Management groups, Subscriptions, Tools, Resource graph explorer, Resource graph queries, Resource visualizer, Resource explorer, ARM API playground, Resource mover, Deployments, Templates, Template specs, and Help. The main content area shows the 'az104-rg9' resource group overview, including activity log, access control (IAM), tags, resource visualizer, events, settings, deployments, security, deployment stacks, policies, properties, locks, cost management, monitoring, automation, and help. The 'Resources' tab is active, displaying a table of resources:

Name	Type	Location
ASP-az104rg9-a859	App Service plan	Canada Central
coolname	App Service	Canada Central
staging (coolname/staging)	App Service (Slot)	Canada Central
test-01unique	Azure Load Testing	East US

costs:

Microsoft Azure portal screenshot showing the Billing account interface for 'Влад Прокутко'. The left sidebar displays the navigation menu with options like Overview, Access control (IAM), Billing scopes, Diagnose and solve problems, Cost management, Cost analysis, Cost alerts, Budgets, Advisor recommendations, Billing, Invoices, Payment methods, Payment history, Reservation transactions, Billing profiles, Benefits (preview), Products + services, Settings, and Support + troubleshooting. The main content area shows the 'Summary' tab, displaying various billing metrics and charts:

- Amount due:** US\$0.00. No payment needed.
- Upcoming invoices:** Available on 06/01/2026. Billing period: 01/12/2025 - 31/12/2025. Pre-tax total so far: US\$0.00.
- Invoices over time:** No invoices in last 6 months.
- Spending rate and forecast:** Current charges: US\$7.76. Forecast: US\$7.76.
- This month's top products by charges:** Virtual Machines (Dedicated Series VM) - US\$4.48, Application Gateway (Standard) - US\$2.52, Premium SSD Managed Disks - US\$0.66, Other purchases - US\$0.10.
- Billing alerts (0):** No billing alerts to display.
- Shortcuts:** Download usage and prices, Manage payment methods, View billing subscriptions, Share monthly invoice by email, View your support plan.
- Credits remaining:** US\$192.24. US\$7.76 used of US\$200.