Міністерство освіти і науки України

Карпатський національний університет

імені В.Стефаника

Факультет математики та інформатики

Кафедра інформаційних технологій

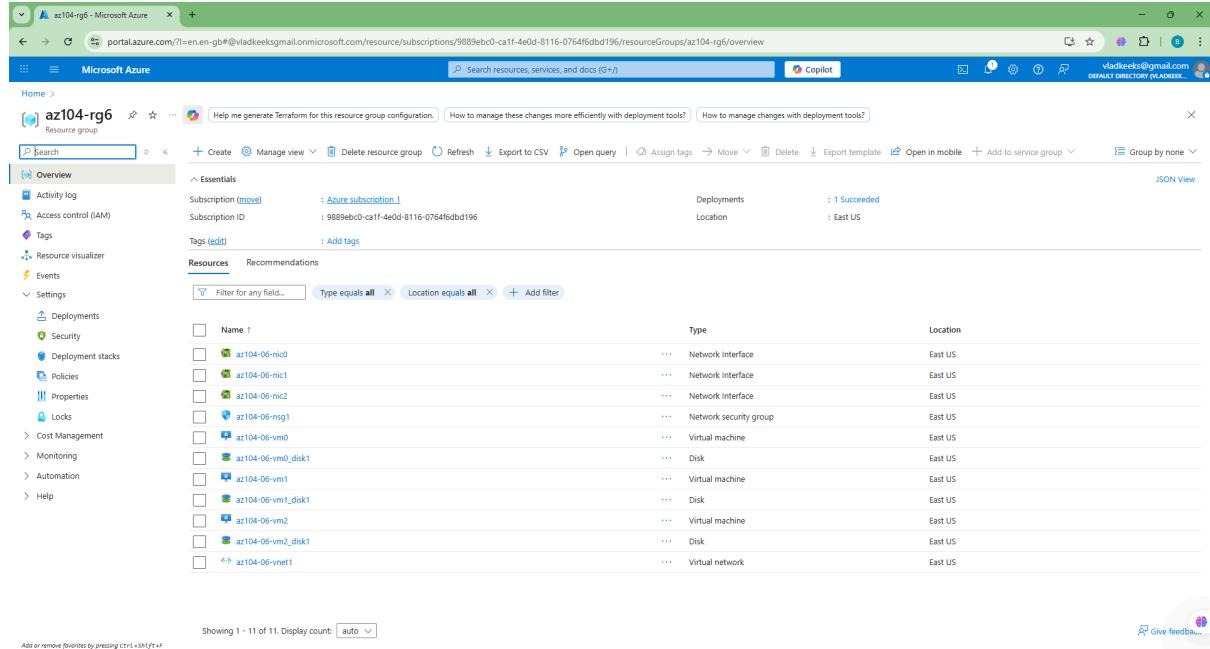Інформатика і програмування

Лабораторна робота No 6

Тема: Implement Network Traffic Management

Виконав: Прокутко В.В

Група ІПЗ-43

Дата: 12 грудня 2025

Викладач: Поварчук Д.Д

Івано-Франківськ – 2025

Task 1: Use a template to provision an infrastructure

In this task, you will use a template to deploy one virtual network, one network security group, and three virtual machines.

Task 2: Configure an Azure Load Balancer

In this task, you implement an Azure Load Balancer in front of the two Azure virtual machines in the virtual network. Load Balancers in Azure provide layer 4 connectivity across resources, such as virtual machines. Load Balancer configuration includes a front-end IP address to accept connections, a backend pool, and rules that define how connections should traverse the load balancer.

portal.azure.com/?l=en.en-gb#@vladkeeksgmail.onmicrosoft.com/resource/subscriptio...

Microsoft Azure

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az104-lb
Load balancer

Check performance for my Load Balancer

Analyze traffic flow through this load balancer

+1

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Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Resource visualizer

> Settings

> Monitoring

> Automation

> Help

→ Move ∨   🗑 Delete   ↻ Refresh   Give feedback

∧ Essentials   JSON View

Resource group (move)   Backend pool
az104-rg6   az104-be (2 virtual machines)

Location (move)   Load balancing rule
East US   -

Subscription (move)   Health probe
Azure subscription 1   -

Subscription ID   Inbound NAT rules
9889ebc0-ca1f-4e0d-8116-0764f6dbd196   -

SKU   Outbound rules
Standard   -

Tier   Frontend IP address
Regional   4.157.227.243 (az104-lbpip)

Tags (edit)
Add tags

Configure high availability and scalability for your applications

Create highly-available and scalable applications in minutes by using built-in load balancing for cloud services and virtual machines. Azure Load Balancer supports TCP/UDP-based protocols and protocols used for real-time voice and video messaging applications. Learn more ⧉
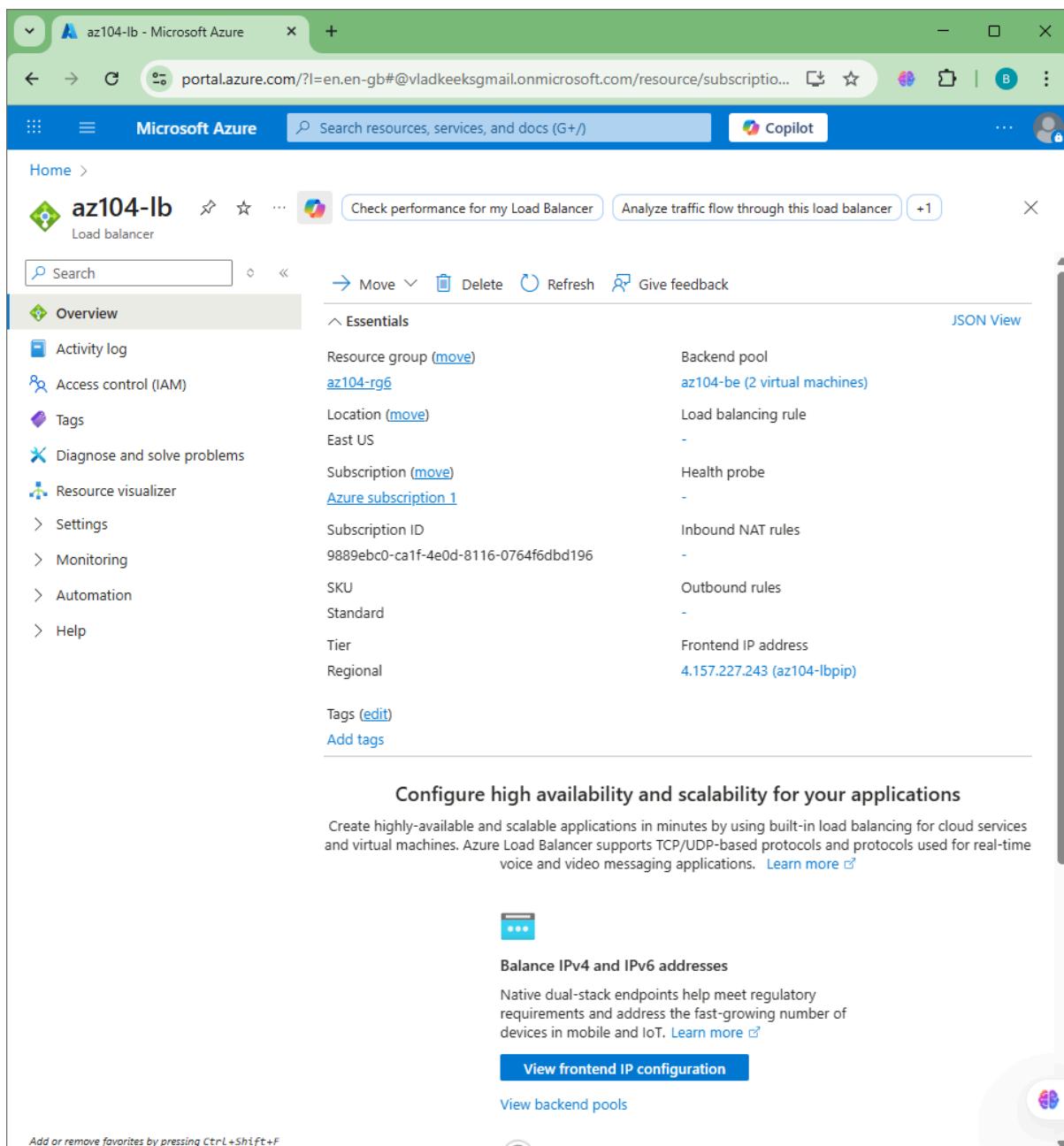
Balance IPv4 and IPv6 addresses

Native dual-stack endpoints help meet regulatory requirements and address the fast-growing number of devices in mobile and IoT. Learn more ⧉

View frontend IP configuration

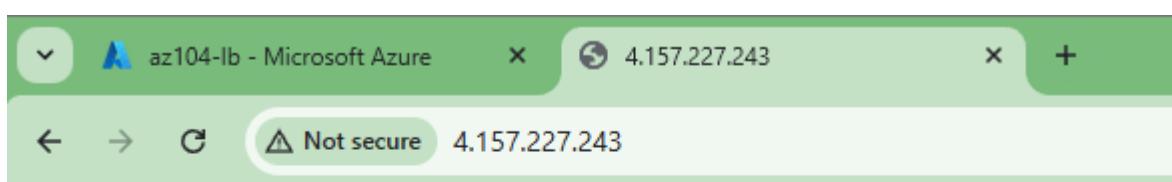View backend pools

Add or remove favorites by pressing Ctrl+Shift+F

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az104-lb - Microsoft Azure   🌐 4.157.227.243   +

← → C   ⚠ Not secure   4.157.227.243

Hello World from az104-06-vm1

Task 3: Configure an Azure Application Gateway

az104-appgw - Microsoft Azure   4.157.227.243

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az104-appgw | Backend health ☆ ⋯

Application gateway

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- 🔷 Overview
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- 🏷 Tags
- 🔧 Diagnose and solve problems
- 🔺 Resource visualizer
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- ⌄ Monitoring
  - ⚠ Alerts
  - 📊 Metrics
  - Diagnostic settings
  - 📘 Logs
  - Advisor recommendations
  - 💡 Insights
  - ❤ Backend health
  - 🖥 Connection troubleshoot
- › Automation
- › Help

↺ Refresh   🗨 Feedback

Backend health

By default, Azure Application Gateway probes backend servers to check their health and whether they're ready to serve requests. You can also create custom Health Probes to mention a specific hostname and path to be probed or a response code to be accepted as Healthy.

ℹ The Backend health report is updated based on the respective probe's refresh interval and doesn't depend on the page refresh.

All	Healthy
❤ 4	✅ 4
out of 4	out of 4

🔽 Search backend health

Server (backend... ↑↓	Status ↑↓	Port (Backend s... ↑↓	Protocol ↑↓	Details
10.60.2.4 (az104-app...	✅ Healthy	80 (az104-http)	Http	Success. Receiv code
10.60.1.4 (az104-app...	✅ Healthy	80 (az104-http)	Http	Success. Receiv code
10.60.2.4 (az104-vid...	✅ Healthy	80 (az104-http)	Http	Success. Receiv code
10.60.1.4 (az104-ima...	✅ Healthy	80 (az104-http)	Http	Success. Receiv code

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Image from: az104-06-vm1

Video from: az104-06-vm2